Note No. #1

SMART CITIES-III DIVISION

******

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the **Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites"** (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017 in the chamber of Economic Advisor-II (Room No.665-A) Nirman Bhawan, New Delhi.

2. The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Mr. Sajessh Kumar N., Director (Smart Cities)-Member
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Mr. Raja Dawn, PMU (CBUD), Member
- Mr Nilesh Rajayadhaksha, PMU (CBUD), Member

(Sh. Shiv Pal Singh, Director (AMRUT) was on leave)

3. The Request for Expression of Interest (EOI "Assessment of Liveability in Selected Cites" was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017. The list of EOIs received is **PUC1.**

4. After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

5. As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No Lead Firm Consortium Partner Primary Eligibility Technical Score (max. 100)
1 M/s CRISIL Risk and Infrastructure Solutions Limited Hansa Research Group Lead partner registered as Company, hence eligible and got 100 marks.
2 Deloitte Touche Tohmatsu India LLP Lead partner registered as LLP, hence eligible and got 100 marks
3 Infrastructure Development Corporation (Karnataka) Limited (iDecK) Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd. Lead partner registered as Company, hence eligible 90 and got marks

6. The abstract sheet of marks obtained by each firm is as per and evaluation sheets are at PUC3.

As mentioned in para above and since the cost of project is estimated more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank.

7. The Minutes of the Meeting may be seen at **PUC2.**

8. The recommendations of procurement committee may be forwarded to the World Bank for prior review as per World Bank procurement guidelines.

9. Submitted for consideration, please

MoM EOI Liveability.pdf

02/06/2017 6:48 PM

G Vijay Kumar
(US SC-III)

Note No. #2

File put up for the approval of recommendation by the procurement committee.

02/06/2017 6:50 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #3

Approved.

SS

02/06/2017 7:42 PM

SAMEER SHARMA
(AS (SC))

Note No. #4

07/06/2017 12:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #5

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. on 9th May, 2017 publishing in leading newspapers and uploading the same on e-procurement website with the last date of receipt of EOI as 30th May 2017. EOIs were opened on 31st May, 2017 and 17 bids were received.

2. The procurement committee meeting was held on 2nd June, 2017 for shortlisting of the firms. The EOIs were evaluated by the PMU of CBUD Team and reviewed by the procurement committee. it has been found that only 3 firms could only qualify as per evaluation criteria. As per World Bank procurement norms at least six firms need to be shortlisted. Besides as per procurement norms of World Bank any procurement above US$ one million needs prior review of the World Bank. The same was recommended by the Procurement Committee. After getting the approval form the competent authority, the matter was referred to the World Bank for their consideration on 2nd June 2017.

3. The World Bank vide email dated 7th June, 2016 (PUC3)has observed that

"only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms"

4. **The matter was placed before the procurement committee in its 2nd meeting held on 7th June, 2017. The procurement committee has recommended that the bids may be re invited and programme division may also consider revising the eligibility criteria to have better competition as advised by the World Bank.(PUC1)**

5. In view of the advice of the World Bank, and recommendations of the Procurement Committee, eligibility criteria has been revised. The earlier eligibility criteria and revised criteria is given below:

Existing Eligibility Criteria

S.No.	**Parameter**	**Maximum Marks**
	General Experience of the Firm	**5**
1. 2.	Financial Strength of the Firm	**15**
1. 3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
5	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**

S.No.	Parameter	Maximum Marks
6	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

Revised Eligibility Criteria

S.No.	Parameter	Maximum Marks
	General Experience of the Firm	**10**
1. 5.	Financial Strength of the Firm	**15**
1. 6.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12	**20**
	Total	**100**

6. The eligibility criteria 4 and 5 have been revised to make the bidding wider and more competitive. However, the eligibility marks have been kept in the same ratio as advised by the IFD i.e. 15% for financial strength, Key personnel 25% and experience of the firm 60%. The revised REOI may be uploaded for inviting bids giving 14 day’s time.

7. The file is submitted for consideration/approval of

(1) Approval of recommendations/minutes of the Procurement Committee held on 7th June 2017 and thereby Cancellation of the existing REOI.

(2) Approval of the revised REOI (PUC2) prepared on the basis of certain recommendations of Procurement Committee and if, approved the file may be sent to IFD for their concurrence.

MOM_07062017.pdf

Revised REOI Liveability Index.pdf

08/06/2017 10:49 AM

G Vijay Kumar
(US SC-III)

Note No. #6

File put up for the approval of para 7 above as recommended by the procurement committee.

08/06/2017 10:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #7

Approved, as proposed in para. 7

SS

08/06/2017 1:23 PM

SAMEER SHARMA
(AS (SC))

Note No. #8

File put up to IFD for concurrence in regard to revised RfP.

08/06/2017 1:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #9

The difference between sl. no.5&6 of revised EoI is not clear. Any agency that undertakes"Survey and field research" for an assignment will also do "Analysis and assessment of data" for the same assignment. Since the two activities are very similar and interlinked, this will create difficulty at the time of selection of firms.

08/06/2017 3:40 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #10

08/06/2017 5:13 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #11

Reference observations of DS(F):

As advised by DS(F), the criteria have been modified and made mutually exclusive.

Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.----Criteria no. 4

Specific experience of the Firm in implementing assignments related to market research and field surveys **in the urban areas detailed in Annexure 1** to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. - Criteria no. 5

Experience of Applicant in implementing assignments **related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1** to this section.--- Criteria no. 6

The following additional point has also been added to the RfP on page 15:
"Note: The projects mentioned in evaluation criteria 4,5 & 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation"

Accordingly, the REOI has been modified and if considered, the file may be sent to IFD for their concurrence.

Revised_REOI 08062017_Liveability .pdf

08/06/2017 6:12 PM

G Vijay Kumar
(US SC-III)

Note No. #12

May kindly see the remarks of DS/F above. As discussed with DS/F modification has been made in the REOI . We amy send the revised REOI for concurrence of IFD pl.

08/06/2017 6:41 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #13

As proposed.

SS

08/06/2017 6:44 PM

SAMEER SHARMA
(AS (SC))

Note No. #14

08/06/2017 6:46 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #15

Notes on pre pages may kindly be seen. the Smart city Division is preparing a Liveability Index of cities based on 79 parameters.

For carrying out the assessment of cities, an EoI was floated and three Consultants were shortlisted. Since as per World bank criteria, the minimum no. of shortlisted firms is 6, the selection criteria was modified and the revised EoI has been submitted for approval of IFD. This appears to be in order and may be concurred.

09/06/2017 11:13 AM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #16

What is NIUA's role in this? Why are we vetting/concurring their tender where they will be selecting the contractor?

10/06/2017 1:33 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

Note No. #17

12/06/2017 2:24 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #18

Reference observations of JS&FA:

The matter has been re-examined and it has been decided that the role of NIUA will be restricted for help in rolling out of the assignment and co-ordination with the selected agency in assessment of the liveability index of cities.

The REOI will be issued by the Smart Cities-III Division, MoUD through CBUD Project funded by the World Bank. The shortlisting/ evaluation of applications for REOI will be done by the Procurement Committee constituted for the CBUD Project with the approval of the Project Director,CBUD/ Mission Director for Smart Cities as is being done in other assignments. After this, the RFP will be issued to the shortlisted Agencies. The Payment will also be made directly to the selected agency by the MoUD under CBUD project for which provisions have already made in the Procurement Plan. **Accordingly**, **REOI has been amended** (**PUC1**)

If considered, **the file may be sent to IFD for their concurrence**, please.

13/06/2017 3:36 PM

G Vijay Kumar
(US SC-III)

Note No. #19

REOI will be issued by programme division, and the role of NIUA will be limited to rolling out the assaignment and co-ordinating with the selected agency in assessment of the liveability index of cities.

We may send the revised REOI for the concurrence of IFD pl.

13/06/2017 5:03 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #20

Yes, please.

SS

13/06/2017 5:16 PM

SAMEER SHARMA
(AS (SC))

Note No. #21

13/06/2017 5:22 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #22

13/06/2017 5:35 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #23

Integrated Finance Division

This is a proposal for concurrence of revised EoI for shortlisting the consultants for "“Assessment of Liveability in Selected Cites”. This is to be funded under CBUD scheme. Initially, it was decided that the work including payment for the consultancy will be made through NIUA.

Now, the Programme Div. has decided that the procurement will be done by the Ministry itself in consultation with the World Bank and the Payment will also be made directly to the selected agency by the MoUD itself. The role of NIUA will be limited to rolling out the assignment and co-ordinating with the selected agency in assessment of the liveability index of cities.

Accordingly, they have amended the REoI. The draft REoI had already been examined and the present one is only amended version which occurred due to change from NIUA to MoUD only.

We may, therefore, concur to the revised REoI please.

14/06/2017 4:33 PM

Pankaj Kumar
(US(IFD-II))

Note No. #24

IFD may concur.

14/06/2017 5:13 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #25

14/06/2017 5:48 PM

Jhanja Tripathy
(JS &FA)

Note No. #26

15/06/2017 9:29 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #27

Pl issue the REOI today itself.

15/06/2017 11:42 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #28

Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) **(PUC1)** of Assessment of Liveability in selected Indian Cities was published on 15th June 2017 on www. eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017. As per the World Bank guidelines, the RFP has to be issued 6 highest scoring/shortlisted firms.

2. In this regard, a meeting of the procurement committee was held on 05th July 2017 to discuss these proposals. Based on the criteria given in REOI, the evaluation of 21 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project on the above mentioned date. The detailed Evaluation Sheet is attached as Annexure **(PUC2)**.

3. The Procurement Committee has recommended the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP). It has also been recommended that the list of shortlisted firms along with their applications, and the evaluation sheet for all 21 participating firms may be sent to World Bank for their concurrence/review.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Public Affairs**	Athena Infonomics	The Economics Intelligence Unit			**100**
2	**Delloite Touche Tohmatsu India LLP**	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		**100**
3	**Hindusthan**					**88**

	Thompson Associates Pvt. Ltd. (Division IMRB International)					
4	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	**84**
5	**PricewaterhouseCoopers**					**81**
6	**Jones Lang LaSalle**					**80**

4. Submitted for consideration/approval of Project Director (CBUD) for

(i) Accepting the recommendations/minutes **(PUC3)** of the Procurement Committee and

(ii) Sending the list of 6 shortlisted consulting firms along with the detailed evaluation sheet of 21 applications to the World Bank for their concurrence/review.

Minutes of the Procurement Committee on Liveability REOI.pdf

07/07/2017 4:00 PM

G Vijay Kumar
(US SC-III)

Note No. #29

07/07/2017 4:46 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #30

Approved, as proposed.

SS

07/07/2017 4:51 PM

SAMEER SHARMA
(AS (SC))

Note No. #31

Pl send to World Bank as approved.

10/07/2017 10:28 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #32

The REOI for 'Selection of Consultant for Assessment of Liveability in 116 cities" was re-issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan.

2. A total of 21 EOIs were received in response. These were evaluated by the Procurement Committee of CBUD and 6 firms were shortlisted as per the prescribed eligibility criteria. Since the present case falls under prior review category, the list of shortlisted firms along with relevant documents was forwarded to the World Bank for their approval.**(PUC1)**

3. In response, the World Bank has noted that the REOI was not uploaded on the "STEP" platform of the Bank and that the same is a mandatory requirement. It is clarified that though REOI was uploaded on the STEP and it was included in the procurement plan but due to certain technical issues it could not be uploaded on the UNDP procurement portal. Every effort had been made to ensure wide circulation and international participation (the e-procurement website is itself a global website). However, given the mandatory nature of the procedure, the World Bank has advised that the REOI be issued afresh (**PUC2**) , so that compliance with all procedural modalities required at the Bank's end may be met.

4. Keeping in view of above, the Procurement Committee of CBUD has

recommended that the REOI may be considered for fresh issuance on the same terms and conditions as before, giving the minimum period of 14 days as required under the World Bank guidelines. Minutes may be seen at **PUC3.**

5. Submitted for accepting the recommendation of the Procurement Committee, please

Minutes of the Procurement Committee.pdf

10/08/2017 5:35 PM

G Vijay Kumar
(US SC-III)

Note No. #33

10/08/2017 6:37 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #34

Approved.

SS

11/08/2017 11:28 AM

SAMEER SHARMA
(AS (SC))

Note No. #35

11/08/2017 11:45 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #36

28/08/2017 10:11 AM

G Vijay Kumar
(US SC-III)

Note No. #37

May like to see the preceding note. It was approved to reissue the EOI by the competent authority based on the recommendation of the procurement committee. IFD has also given their concurrence to the RfP for the Liveability index which have to be issued to the shortlisted firms based on the EOI.

As per the work reallocation , CBUD is dealt by the JS/ NULM and the Liveability Index is dealt by JS/ AMRUT. As the Index is to be prepared by April 2018, there is a need to expedite the procurement of agency based on the EOI and RfP lready approved by the IFD.

For direction pl.

28/08/2017 10:23 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #38

Liveability is looked after by JS (AMRUT); however, the funding for the first year is from CBUD. Importantly, this is a time bound activity. I suggest that Sajeesh may continue to assist you upto the completion of all tender activities as he has been doing this for two years in CBUD and particularly for the Liveability Index file. Please get the EOI issued today.

SS

28/08/2017 11:10 AM

SAMEER SHARMA
(AS (SC))

Note No. #39

May like to see before further action is taken.

29/08/2017 5:47 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #40

01/09/2017 10:17 AM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #41

Put up for further action.

01/09/2017 11:06 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #42

May like to see the note of AS(SC) and JS(AMRUT) please

01/09/2017 12:45 PM

Parmod Kumar
(Dir(UD))

Note No. #43

Next step is to issue the REOI. This has to be done by the Mission Deirectorate, CBUD as it is funded under CBUD. I can only assist the CBUD division regarding the process and being part of Procurement Committee if the division desires to do so. As the next step CBUD division may issue the REOI.

04/09/2017 10:17 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #44

04/09/2017 11:36 AM

Parmod Kumar
(Dir(UD))

Note No. #45

04/09/2017 5:34 PM

G Vijay Kumar
(US SC-III)

Note No. #46

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:41 PM

Parmod Kumar
(Dir(UD))

Note No. #47

06/09/2017 11:08 AM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #48

Discussed with JS(AMRUT).

This is a procurement under the World Bank funded CBUD project and the procurement has to be done by the CBUD division.

In the past also in case of capacity building and reforms under the AMRUT, when they were being funded by the CBUD project, the procurement was done by the CBUD division.

Therefore the procurement of agency may kindly be done by the CBUD division.

It is proposed that the file alongwith RfP file may be returned to CBUD division.

For approval please

06/09/2017 5:44 PM

Shiv Pal Singh
(DIR (AMRUT))

Note No. #49

06/09/2017 6:56 PM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #50

REOI may be issued. Put up for reconstitution of Procurement Committee in view of the change/ absence of some members.

07/09/2017 5:47 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #51

08/09/2017 9:09 AM

Parmod Kumar
(Dir(UD))

Note No. #52

REOI was issued on 8th September 2017 and the same was uploaded on the website of the Ministry www. moud.gov.in, procurement portal www.eprocurement.gov.in and the World Bank's STEP and UNDB site (kindly see the attachment).

2. The advertisement was also sent on 8th Septemebr 2017 to DAVP for the publication in two national dailies (Hindi and English) for wide publicity.

3. But, after lapse of one week, no response was given by the DAVP even after repetitive attempts. So, the official from CBUD Division) visited the O/o DAVP on 15 thSeptember 2017 and met to the concerned person Mr. Nitesh Jha, Deputy Director. He informed that for placing of advertisement 100% amount of estimate is required as specified in the Ministry of I & B's order dated 15 th February 2017 (copy enclosed) . He also suggested that the release order of the advertisement shall be issued only upon receipt of letter of acceptance / sanction letter from the Ministry.

4. In view of the above, the O/o DAVP has sent an email on 15 th September 2017 for the **estimation (Copy attached)** in r/o the publication and requested to send the sanction letter for publication the same. The total cost for the publication is **Rs.2,06,870/-.**

5. In this connection, it is also mentioned here that estimation incurred against advertisement done in the last financial year (FY 2016-17) has not been sent to the Ministry by the O/o DAVP after asking for sending the same at several times through telephonic conversation and visting the DAVP office. So, if the outstanding estimate cost received, the same may also be reimbursed.

6. In this context, it may be informed that there is no fund is available under the advertising head of CBUD. Since this is the proposal related to Smart City, so, if agreed, we may use the fund from the advertising head of Smart Cities Mission where sufficient fund is available.

7. File is submitted for approval of Project Director CBUD/ Mission Director (Smart Cities) and concurrence of JS&FA, please.

Procurement Notice for Liveability Project_ P099979 - Capacity Building for Urban Development Project - WB5294-09_17.pdf

Request to DAVP for the publication of advertisemnt.pdf

OM of DAVP.pdf

Estimation from DAVPpdf.pdf

18/09/2017 5:47 PM

G Vijay Kumar
(US (CBUD))

Note No. #53

submitted pl for approval

19/09/2017 12:07 PM

Parmod Kumar
(Dir(UD))

Note No. #54

We may agree to use the Smart City fund as proposed

19/09/2017 12:16 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #55

Approved. Let us also consult IFD.

SS

19/09/2017 12:18 PM

SAMEER SHARMA
(AS (SC))

Note No. #56

19/09/2017 12:23 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #57

19/09/2017 12:33 PM

Parmod Kumar
(Dir(UD))

Note No. #58

Expenditure sanction of **Rs.2,06,870** to DAVP for publication as proposed

19/09/2017 2:25 PM

Parmod Kumar
(Dir(UD))

Note No. #59

19/09/2017 2:26 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #60

Finance Division

Ref. proposal at p. 20-21/N.

CBUD Division has forwarded a proposal for the payment of Rs. 2,06,870/- to DAVP for publishing of Request for Expression of Interest (REoI) for shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities in two National Dailies (Hindi and English) for wide publicity.

2. It is mentioned that a request was made to DAVP for publishing a above REoI for the above mentioned procurement to be published in National Dailies. In this regard, DAVP has furnished an estimation of Rs. 2,06,870/- for this purpose (copy attached) and informed that release order of the advertisement shall be issued only upon receipt of letter of acceptance / sanction letter from the Ministry. it is also mentioned that REoI has been already issued on 8th September 2017 and the same has been uploaded on the website of the Ministry www. moud.gov.in, procurement portal www.eprocurement.gov.in and the World Bank's STEP and UNDB site.

3. Further, it is mentioned that there is no fund is available under the advertising head of CBUD. Since this procurement is related with Smart City Mission, expenditure of Rs. 2,06,870/- will be incurred from the advertising head of Smart Cities Mission where sufficient fund is available.

4. Project Director CBUD/Mission Director (Smart Cities) has approved the proposal vide p-22/N.

5. In view of above, Finance Division may have No Objection for payment of Rs. 2,06,870/- to DAVP for publishing the REOI mentioned at para 1 above subject to approval of Competent Authority and compliance of Mission Guidelines in this regard.

Submitted please.

19/09/2017 5:31 PM

RAJEEV KUMAR
(US(IFD-I))

Note No. #61

Expenditure of Rs. 206,870/- for publication of EoI may be incurred from advertising budget of SCM where funds are available as informed by the Division.

20/09/2017 10:33 AM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #62

21/09/2017 2:27 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

Note No. #63

21/09/2017 2:38 PM

Yashodhara Vijayan

(DS(FINANCE))

Note No. #64

21/09/2017 4:15 PM

RAJEEV KUMAR
(US(IFD-I))

Note No. #65

22/09/2017 3:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #66

A sanction letter (pg-753-758) dated 21st September 2017 for release of Rs.2,06,8701- to DAVP, Ministry of Information and Broadcasting for the Publication of Request for Expression Interest (REOI) has been issued to O/o PAO, MoHUA to issue the letter of Authority (LOA) in favour of Pr. Accounts Officer, M/o I&B, DAVP.

2. The publication in r/o advertisement of above REOI in the leading English national newspaper namely Hindustan Times dated 23rd December 2017 may be seen at page 759. Advertisement in Hindi newspaper namely Amar Ujala (pg-760) dated 22nd September 2017 & Punjab Kesari (pg-761) dated 22nd September 2017 has also been published.

Submitted for information please.

25/09/2017 1:11 PM

Pankaj Sinha
(ASO)

Note No. #67

This is regarding selection of consulting firm for the assignment of Assessment of Liveability in selected Indian Cities. In this regard, applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) **(PUC1)** published on 08th September 2017 on e-procurement portal (www. eprocure.gov.in) with the last date of 3rd October 2017.

2. As per the World Bank's requirements, the REOI was also published in STEP, World Bank and subsequently published on UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS. Besides, The REOI was published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only.

3. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017

4. In this regard, a meeting of the procurement committee was held on 24-25 October 2017 to discuss these proposals. Based on the criteria given in REOI, the evaluation of 28 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project. The detailed Evaluation Sheet is attached as Annexed to the minutes of the meeting (PUC2).

5. On the basis of evaluation, the Procurement Committee has recommended the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP), as per procedure.

Sl.No	**Name of Lead Partner**	**Consortium Member 1**	**Consortium Member 2**	**Consortium Member 3**	**Consortium Member 4**	**Total Marks Obtained (Max.100)**
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle**	-	-	-	-	**80**

	Property Consultants India Private Limited					
4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

6. Submitted for consideration/approval of Project Director (CBUD) for

(i) Accepting the recommendations/minutes **(PUC2)** of the Procurement Committee

and

(ii) Sending the list of 6 shortlisted consulting firms along with the detailed evaluation sheet of 21 applications to the World Bank for their concurrence/review.

Minutes of the meeting held on 24-25 October 2017.pdf

The deatailed Evaluation Sheet.pdf

27/10/2017 2:43 PM

G Vijay Kumar
(US (CBUD))

Note No. #68

27/10/2017 5:51 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #69

Sir, may like to see and advise.

27/10/2017 6:37 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #70

I would suggest that we seek the consent of World Bank and then PD can take a decision to issue RfPs to the shortlisted vendors.

SS

30/10/2017 10:27 AM

SAMEER SHARMA
(AS (SC))

Note No. #71

30/10/2017 10:29 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #72

Action accordingly pl.

30/10/2017 10:44 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #73

An e-mail was sent to the World Bank for their concurrence/comments.

Liveability_ REOI_Minutes to the World Bnak for Concurrence Clearance.pdf

30/10/2017 12:18 PM

G Vijay Kumar
(US (CBUD))

Note No. #74

30/10/2017 1:01 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #75

Reference notes above:

An email was sent to the World Bank for their concurrence/comments and thereafter the RFP and the Standard form of Contract concurred by IFD, MoHUA was also provided through STEP of the World Bank.

The World Bank have informed that they have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the qualified consultants being included in the shortlist. However, they have observed that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement". In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.

To this effect, we have written to the World Bank that MoHUA have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.

No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.

Since only 6 firms have qualified, we may issue RFP only to the qualified firms only.

File of Liveability Index (Noting portion)-Concurrence of IFD for RFP.pdf

File of Liveability Index (Correspondence portion)-Concurrence of IFD for RFP.pdf

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons.pdf

14/11/2017 11:31 AM

G Vijay Kumar
(US (CBUD))

Note No. #76

As per the directions of JS(NULM-CBUD), an-email was sent to the World Bank on 15th November 2017 stating that the REOI was issued with approval of the World Bank and minimum of 75 marks were fixed for qualification of firm as per the criteria for evaluation of applications. Based on the Evaluation Criteria, only six firms have been qualified, all of which are registered/incorporated in India. Further, out of 28 responses, only one firm i.e. Ecorys Netherlands BV is registered out of India and could obtain only 65 marks and could not qualify as per evaluation criteria.

In view of the above, we have requested an urgent response from the World Bank through STEP on issuing RFP to the six shortlisted firms.

In response to this, the World Bank vide their e-mail dated 21st November 2017 have stated that based on MoHUA's recommendation that the foreign firm from the Netherlands is not qualified for the assignment, they are fine with the Shortlist.

The World Bank have also requested to incorporate some comments (detailed below with the remarks) and resend the RFP for Bank's review and no objection as MOUD like to follow e-procurement and the RFP will need to be modified to suit the same.

Comments from the World Bank on the RFP for Liveability Index	
Comments by the World Bank	**Remark**
The contact details of the firms to whom the RFP is issued may be deleted.	Deleted

Data Sheet : Please delete the Notes to Client at the beginning of the Data Sheet	Deleted
Data Sheet 1 (c) : Shall be “Law of Republic of India”	Done
Data Sheet 12.1 : Please enter the date at the time of issuing the RFP	Dates entered
Data Sheet 13.1 : Please change the date according to the date of issue of RFP. It should be mid way between date of issue of RFP and last date of proposal submission	Dates entered
Data Sheet 16.1 : Please include the list of reimbursable expenses as per standard RFP	Included
Data Sheet 16.3: Please replace service tax with GST and any other applicable tax	Done
Data Sheet 17.1 : e-procurement clauses are not incorporated in ITC whereas in the Datasheet it is indicated that proposals shall be submitted on e-procurement portal. Further, in Data Sheet Clause 17.4 it is indicated that hard copy of original proposal shall be submitted which is not allowed in e-procurement. Please modify e-procurement provisions in line with Bank’s modified RFP for e-procurement, in case e-procurement is envisaged	Corrections made.
Data Sheet 17.7 and 17.9 : Please change the date as per RFP issuance date. Proposals to be submitted manually or else the RFP needs to be substantially modified to incorporate all e-procurement provisions.	Dates changed
Data Sheet 19.1 Same as above	Dates changed
Data Sheet 21.1 : Criteria no. (ii) Adequacy of the proposal, methodology and work plan, the total marks may be reduced to 30 and for criteria no.(ii) the total marks may be increased to 60. Marks for individual key experts may be accordingly adjusted	Discussed with the World Bank. They are fine with criteria providing that a Note will be submitted through STEP saying that in view of complex nature of the Work.
Data Sheet 23.1 : Please incorporate all e-procurement provisions	Needful done
Data Sheet 30.2 please insert approximate date, say 15 days from contract signing	Done.
ToR para 7.8 : For Bank funded CBUD project the IA is MoUD. Therefore, the contract shall be signed by MoUD	Yes.
SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	replaced.

As per the comments of the World Bank, the RFP to be issued is modified to the effect of e-procurement format. Regarding Evaluation Criteria, as advised by the World Bank, we may submit the Modified RFP of electronic format through STEP saying that the present assignment is of complex nature; a new one and within the limits set out in the World Bank procurement guidelines. **As comments/modifications are purely technical in nature the approval of Project**

Director, CBUD is sought.

The Important dates for the RFP on liveability are:
i. Date of issuance: 22nd November 2017
ii. last date for Clarifications to be sough thorough e-mail: 1st December 2017
iii. Pre-Application Conference: 4th December 2017 at 3.00 pm.
iv. last date for submission of Applications: 14th December 2017 by 3.00 pm
v. Expected date of commencement of services: 1st January 2018

If approved, the modified RFP along with above mentioned Note will be submitted to STEP, please.

Letter to the World Bank for urgent reponse through STEP.pdf

Interim reposne from the STEP, World Bank.pdf

Comments of the World Bank on the RFP for liveability index.pdf

SRFP Liveability-e-procurement.pdf

22/11/2017 12:56 PM

G Vijay Kumar
(US (CBUD))

Note No. #77

22/11/2017 2:18 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #78

May like to see before its uploaded

22/11/2017 2:44 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #79

Seen, thanks. As PD you may decide at your end please.

SS

22/11/2017 4:56 PM

SAMEER SHARMA
(AS (SC))

Note No. #80

22/11/2017 5:40 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #81

22/11/2017 5:43 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #82

Reference Notes above:

The Ministry has submitted the modified RFP in STEP on 22nd November 2017 and confirmed the World Bank that the package of Liveability is a lump sum contract. The World Bank have reviewed the draft Request for Proposals (including the shortlist) for the above-mentioned consulting services, submitted to the Bank on 2017/11/22 and based on the information provided the Bank has no objection to the Request for Proposals and to the qualified consultants being included in the shortlist.The World Bank have requested for incorporation of the comments given below.

Incorporation of the following Bank comments :	Remarks.
(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.	Done
(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.	Done accordingly
(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or	Inserted

reference to any procedure available on the portal may be indicated.	
(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.	Done
(5) Delete “Foreword” from Section-8 “Conditions of Contract and Contract Forms”.	Deleted
(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.	Deleted Time based
(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.	Inserted
(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.	Inserted
(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.	Done
(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.	Done
(11) SCC 23.1 : Please insert relevant option	Done
(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.	Indicated
(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions	Done
(14) SCC 27.2 : Insert relevant option	Done
(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.	Done
(16) SCC 39.1 & 39.2 : insert relevant option.	Done
(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.	Done
(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).	Done
For payments in foreign currency, it should be LIBOR + 2%.	Done
(19) SCC 45.1 Delete the instructions in brackets.	Done
(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.	Done

(21) SCC Clause 45.1 5 (a) Please replace with the following : "The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	Done

Further, discussed with DS (CBUD) and incorporated all the above comments.

The Important dates for the RFP on liveability are:
i. Date of issuance: 27th November 2017
ii. last date for Clarifications to be sough thorough e-mail: 8th December 2017
iii. Pre-Application Conference: 12th December 2017 at 3.00 pm.
iv. last date for submission of Applications: 27th December 2017 by 3.00 pm

The RFP document was uploaded on www.eprocurment.gov.in and the system has already sent the e-mails to the shortlisted consultants.

Submitted for kind perusal, please.

No object from World Bank for issuance of RFP on Liveability.pdf

Government electronic Procurement notification for the tender to the shortlisted firms.pdf

RFP Liveability Final _27th November 2017_3PM.pdf

27/11/2017 4:16 PM

G Vijay Kumar
(US (CBUD))

Note No. #83

27/11/2017 5:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #84

28/11/2017 11:33 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #85

28/11/2017 12:36 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #86

28/11/2017 1:10 PM

G Vijay Kumar
(US (CBUD))

Note No. #87

13/12/2017 10:07 AM

Pankaj Sinha
(ASO)

Note No. #88

The Pre-Application Conference for the RFP on Livaeability was held on 12th December 2017. All the six consulting firms, who have been issued the RFP, attended the Conference. The attendance sheet has also been attached.

The queries raised by the consulting firms and the clarifications are listed out and attached below.

If considered, the same may be up-loaded on the e procurement portal, please.

attendance sheet on 12th December 2017.pdf

Pre Bid_Clarifications_12Dec17.pdf

13/12/2017 2:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #89

May kindly see, before it is uploaded on e-proc portal.

13/12/2017 5:35 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #90

Pl incorporate the corrections as discussed and issue.

13/12/2017 7:23 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #91

13/12/2017 7:30 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #92

As discussed, the corrections have been in incorporated and the revised document (attached below) has been uploaded on e procurement portal.

Reply_Pre Bid_Clarification_12Dec17.pdf

14/12/2017 11:00 AM

G Vijay Kumar
(US (CBUD))

Note No. #93

08/01/2018 5:58 PM

Pankaj Sinha
(ASO)

Note No. #94

The meetings of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for evaluation of technical proposals of firms for **Assessment of Liveability Indices for 116 cities in India** was held on 3rd January and 5th January, 2018 in the chamber of Economic Advisor, (room No.

232-C), Nirman Bhawan, New Delhi for the evaluation of the technical proposals. The following were present:

- Mr. Sudhir Kumar Tiwari, Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD
- Mr. Sajeesh Kumar N., Director (SC)
- Mr Shiv Pal Singh, Director (AMRUT) only on 3rd January, 2018.
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM)
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Mr Amit Gupta, PMU, CBUD

The Final RFP with shortlist was forwarded to World Bank on 30th October, 2017 whose 'No Objection' was received on 24th November, 2017. The RFP was issued to shortlisted consultants on 27th November, 2017. A pre proposal meeting was held on 12th December, 2017 and minutes were issued on 14th December, 2018. No addendum was issued. The last date and time of submission of the proposal was 15.00 hours on 27th December, 2017. Till last date and time, following proposals were received from following shortlisted consultants:

1	Ipsos Public Affairs	● Athena Infonomics India Pvt Ltd. ● The Economic Group Limited
2	PricewaterhouseCoopers	
3	Jones Lang LaSalle	
4	Delloite Touche Tohmatsu India LLP	● Insight Development Group Pvt Ltd ● Stesalit Systems Limited ● Kadence International Pvt Ltd ● Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	● Institute for Social and Economic Change (ISEC) ● Public Affairs Centre (PAC) ● Sigma Research & Consulting Pvt. Ltd ● Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	

The technical proposals received till deadline were opened by the Procurement Committee on 28th December, 2017. The Financial Proposals were securely stored. It was noted that as per clause 5.2 of RFP, "*The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet*". The evaluation criteria indicated at Data sheet of RFP is as follows:

	Description	Points
(	**Specific experience of the Consultant (as a**	**10**

i)	**firm) relevant to the Assignment:**	
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The Committee evaluated the Technical Proposals on the basis of firm's responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and rating system as specified in the RFP.

As per RFP, minimum technical score required to qualify and eligible for opening of financial proposals is 75 out of maximum of 100 points. As such financial proposal of following firms are recommended to be opened by the Procurement Committee:

1. M/s IPSOS Public Affairs in consortia with Athena Infonomics India Pvt Ltd. and The Economic Group Limited
2. Delloite Touche Tohmatsu India LLP in consortia with Insight Development Group,Pvt Ltd, Stesalit Systems Limited, Kadence International Pvt Ltd, Operations Research Guild (ORG) India Private Limited

The minutes of the meeting are placed at p. 1024-1026/c and the evaluation of bidders by the Committee members may be seen at p. 1017-1023/c.

Submitted for the approval of Project Director, CBUD for accepting the recommendations/minutes of the Procurement Committee and thereafter sending the same to the World Bank (through STEP) for their review/comments.

Minutes of the Meeting of Liveability.pdf

Evaluation sheet of Bidders for Liveability.pdf

08/01/2018 6:33 PM

G Vijay Kumar
(US (CBUD))

Note No. #95

08/01/2018 7:09 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #96

09/01/2018 3:00 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #97

10/01/2018 10:22 AM

YOGENDRA SINGH AWANA

(DEPUTY SECRETARY)

Note No. #98

This is regarding selection of the consulting firm for the assignment of **Assessment of Liveability Indices for 116 cities in India.** With the approval of the Project Director, CBUD, the Technical Evaluation of the RFP was submitted to the World Bank through STEP. The World bank have given their No-objection for the Technical Proposal of RFP and they have conveyed for receiving of the Combined Technical and Financial Evaluation and a draft initialled negotiated contract for their review. (p.1027-1028/c)

In this regard, a meeting of the Procurement Committee of CBUD Project for opening of financial proposals and final combined technical and financial evaluation was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi (p.1029/c).

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD
- The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	**93.70**
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	**77.60**
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. (p. 1030-1033) Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes) (attached p. 1034-1053/c)

Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)

(attached p. 1054-1061/c)

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS								
The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-								
T=0.80, and P=0.20								
Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ´ P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score.							
	Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)							
S(t) = Technical Scores of the bidder								
S(f) = Financial Score of the bidder								

Keeping in view of above, the Procurement Committee of CBUD recommended (the minutes attached p. 1062-1063/c) the the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

Submitted for the approval of Secretary (MoHUA) for accepting the recommendations of the Procurement Committee, please.

No Objection from the World bank for Evaluation of Technical Proposals of RFP on Liveability - Shortlisting of Cons.pdf

Deloitte.pdf

Ipsos.pdf

Minutes of the Procurement Committee Meeting held on 15th January 2018.pdf

16/01/2018 4:21 PM

G Vijay Kumar
(US (CBUD))

Note No. #99

The minutes have been shown to EA. His signatures on the same would be obtained once he is in office. Due to paucity of time, the proposal is submitted for approval before approaching WB for their confirmation on selection of M/s IPSOS and consortium.

16/01/2018 4:26 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #100

16/01/2018 4:29 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #101

16/01/2018 4:31 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #102

Reference Notes on pre-pages:

With the approval of the Project Director, CBUD, the Combined Evaluation consisting of Technical Evaluation and Financial Evaluation of the **RFP on Liveability** was submitted to the World Bank through STEP.

The World Bank have given their No-objection for the Combined Technical and Financial Evaluation and requested the Ministry to proceed with the negotiations with the selected consulting firms with draft negotiated contract (DNC) for their review. *(p.1066-1067/c)*

Keeping in view of the recommendations of the Procurement Committee of CBUD {the minutes attached *(p. 1064-1065/c)}* and subsequent no objection from the World bank, the the highest ranked consulting firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India) and The Economic Group Ltd (United Kingdom)** may be issued a **letter of Intent** for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA). **DFA**, please.

No Objection from the World bank for combined technical and financial evaluation of RFP on Liveability.pdf

Minutes of the meeting of Procurement Committe for opening of Financial Bids and final evaulation of Liveability.pdf

17/01/2018 6:06 PM

G Vijay Kumar
(US (CBUD))

Note No. #103

After issue of LoI to M/s IPSOS as proposed above, the draft Contract to be signed between M/o HUA and M/s IPSOS would be forwarded to JS (AMRUT) for finalizing the same in consultation with the IFD and signing it for execution thereof.

17/01/2018 6:21 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #104

Submitted for approval **to issue LOI** to highest ranked consulting firm of M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India) and The Economic Group Ltd (United Kingdom) for assessment of Livability Indices of 116 cities.

After issue of LoI, the draft Contract to be signed between MoHUA and M/s IPSOS would be forwarded to JS (AMRUT) for finalizing the same in consultation with the IFD and signing it for execution thereof.

18/01/2018 11:09 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #105

19/01/2018 11:11 AM

DURGA SHANKER MISHRA
(SECRETARY)

Note No. #106

19/01/2018 11:13 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #107

19/01/2018 11:20 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #108

Reference notes above:

The Procurement Committee of CBUD {the minutes attached*(p. 1064-1065/c)}* had recommended the the highest ranked consulting firm M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) for the selection as a Consultant for the assignment of **Assessment of Liveability Indices for 116 cities in India** on the basis of REOI and RFP issued for the purpose; and to be invited for the contract negotiations. The World Bank has also given their no objection.

Before inviting the consulting for the contract negotiations, we may get the vetting of the draft contract by IFD, MoHUA.

In this regard, the initial estimation for the project is Rs. 16.41 Crores *(p. 1070-1071/c). The proposal was concurred by the IFD at REOI and RFP stage (file attached) and also by the World Bank*

The total cost of the Financial Proposal of M/s IPSOS consortium is Rs. 10,94,28,200/- (excluding taxes) (p. 1034-1053/c) which means Rs. 12,91,25,276/- (including GST of 18%).

The Cost of the Financial Proposal is within the limits of the estimated cost. As such, the file alonwith the draft contract (attached p. 1072-1120/c)) may be sent to IFD, for their vetting please.

Liveability REOI and RFP file -Concurrence of IFD (Noting Protion).pdf

Liveability REOI and RFP file -Concurrence of IFD (Correspondence Protion).pdf

Draft_Contract_Liviability .pdf

22/01/2018 12:37 PM

G Vijay Kumar
(US (CBUD))

Note No. #109

Please bring out the changes in the final draft of contract from the one approved by IFD with the RfP.

22/01/2018 2:45 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #110

Please refer to my notes dated 22nd and 27th November 2017:

As per the request made by the World Bank, the following minor changes have been carried out in the RFP and the Standard Form of Contract. This was necessitated as the Ministry followed e-procurement and the RFP was modified to suit the same.

Incorporation of the following Bank comments :	Remarks.
(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.	Done
(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.	Done accordingly
(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or reference to any procedure available on the portal may be indicated.	Inserted
(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.	Done
(5) Delete "Foreword" from Section-8 "Conditions of Contract and Contract Forms".	Deleted
(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.	Deleted Time based
(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.	Inserted
(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.	Inserted
(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.	Done
(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.	Done
(11) SCC 23.1 : Please insert relevant option	Done
(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.	Indicated
(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions	Done
(14) SCC 27.2 : Insert relevant option	Done

(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.	Done
(16) SCC 39.1 & 39.2 : insert relevant option.	Done
(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.	Done
(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).	Done
For payments in foreign currency, it should be LIBOR + 2%.	Done
(19) SCC 45.1 Delete the instructions in brackets.	Done
(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.	Done
(21) SCC Clause 45.1 5 (a) Please replace with the following : "The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	Done

There is no major change in the RFP and the Standard Form of Contract due to the fact that the Ministry did not agree for the change in the Evaluation Criteria, which was concurred by the IFD, MoHUA.

We may send the file to IFD, for vetting of the Draft Contract, please.

22/01/2018 3:26 PM

G Vijay Kumar
(US (CBUD))

Note No. #111

We may refer the draft contract to be signed between MoHUA and M/s IPSOS Research Pvt Ltd, to IFD for their vetting.

22/01/2018 5:14 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #112

29/01/2018 10:06 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #113

Please complete the the tender process first.

29/01/2018 12:58 PM

Jhanja Tripathy
(JS &FA)

Note No. #114

30/01/2018 2:46 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #115

Ref. query of JS & FA.

2. It is mentioned that tendering process has already been completed as a result of which M/s IPSOS Research Pvt Ltd has been finally selected. It is proposed to sign proposed contract with it. We may accordingly refer the file back for vetting of draft contract by IFD.

30/01/2018 4:39 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #116

30/01/2018 4:51 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #117

30/01/2018 6:01 PM

Jhanja Tripathy
(JS &FA)

Note No. #118

30/01/2018 6:15 PM

RAMESH CHAND
(DIRECTOR)

Note No. #119

Integrated Finance Division

This is regarding vetting of the draft contract to be signed between MoHUA and selected consultant for "Assessment of Liveablity Indices for 116 cities in India".

2. M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) has been selected a total cost of **Rs. 10,94,28,2009/- plus taxes** after following the due process of procurement prescribed by MoF/ World Bank. The draft contract has been shown to the World Bank and they have no objection. The draft contract seems to be in order subject to following minor corrections:

(i) in 4th line of Part I, word 'with' may be added after 'consortium'.
(ii) in the 1st line of Part I (c), word 'or ' has to be deleted.
(iii) Para 41.2.4 continued in 41.2.3. This may be segregated.
(iv) in the last line of Para 44.2, it should be GCC 45.1 in place of GCC 49.1.
(v) 11.1 may be added in Part III: Special Conditions of Contract.
(vi) Appendix B on Key Experts as per the WB guidelines may be attached.

31/01/2018 3:38 PM

Pankaj Kumar
(US(IFD-II))

Note No. #120

31/01/2018 3:57 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #121

31/01/2018 5:55 PM

Jhanja Tripathy
(JS &FA)

Note No. #122

01/02/2018 10:24 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #123

01/02/2018 11:37 AM

Pankaj Kumar
(US(IFD-II))

Note No. #124

02/02/2018 2:28 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #125

Reference Notes on pre-pages:

With the approval of the Project Director, CBUD, the draft contract of **Liveability** was submitted to the World Bank through STEP.

The World Bank have given their No-objection for the the combined technical and financial evaluation report and the draft negotiated contract subject to the clearance on The Economist Group (The World Bank's database research on debarred firms has shown that "The Economic Consulting Group, UK" has been permanently debarred. In this regard, the Ministry and the World Bank would like a confirmation from the M/S IPSOS Research Private Limited and the consortium partners that "The Economist Group Limited, UK" is a separate entity/firm from "The Economic Consulting Group, UK") **and they have also requested to send the signed contract to the Bank prior to requesting or making any payments under this contract.**

It may be submitted that M/s IPSOS Research India Private Limited has clarified that The Economist Intelligence Unit (EIU) is a business within The Economist Group. It is a highly reputed organization and working with many esteemed organizations in the world. More information about the organization can be accessed at www.eiu.com. The attached affidavit also confirms that they are not blacklisted anywhere. They also informed that they re not aware of organizations named Economic Consulting Group, UK or Economic Consultancy Associates, UK. These appear to be different organizations and not connected to EIU.(copy attached)

Meanwhile, the IFD, MoHUA has concurred the draft contract (refer p. 42-46/N) subject to following minor corrections:
(i) in 4th line of Part I, word 'with' may be added after 'consortium'.
(ii) in the 1st line of Part I (c), word 'or ' has to be deleted.
(iii) Para 41.2.4 continued in 41.2.3. This may be segregated.
(iv) in the last line of Para 44.2, it should be GCC 45.1 in place of GCC 49.1.
(v) 11.1 may be added in Part III: Special Conditions of Contract.
(vi) Appendix B on Key Experts as per the WB guidelines may be attached.

Keeping in view of above, the contract was modified accordingly and attached below. If approved, the contract may be signed, please.

Submitted for kind approval, please.

Contract_Liviability Index_Final.pdf

No Objection from the World Bank for signing of the Liveability Contract.pdf

Clarifications from IPSOS Reaserach india private Limited on EIU.pdf

15/02/2018 6:22 PM

G Vijay Kumar
(US (CBUD))

Note No. #126

Discussed with DS (CBUD).

The Appendix B and C as per advice of IFD, the relevant portions (particulars of Key Experts) of Technical Proposal and breakdown of Contract price from the Financial Proposal will be taken while signing the contract.

As the IFD, MoHUA and the World Bank have given their no objection for signing the contract, if approved the contract may be signed, please.

Technical Proposal of IPSOS.pdf

Finacial Proposal of IPSOS.pdf

Contract_Liviability Index_Final.pdf

15/02/2018 7:00 PM

G Vijay Kumar
(US (CBUD))

Note No. #127

15/02/2018 7:07 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #128

Draft agreement with IPSOS consortium for assessment and ranking of cities for livability indices is put up for approval.

IFD and World Bank have already agreed to it.

16/02/2018 1:07 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #129

20/02/2018 8:29 PM

DURGA SHANKER MISHRA
(SECRETARY)

Note No. #130

21/02/2018 11:25 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #131

21/02/2018 3:21 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #132

The contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

20/03/2018 4:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #133

K.14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

Ministry of Housing and Urban Affairs has prepared Liveability Standards for Indian Cities and the same were launched by the Hon'ble Minister, Ministry of Housing and Urban Affairs in the National workshop held on 23rd June 2017 at Vigyan Bhawan, New Delhi. Through an international bidding process under World Bank funded CBUD programme, the Ministry has selected M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities at a total cost of Rs.10,94,28,200/- plus taxes after following the due process of procurement prescribed by MoF/ World Bank and the same to be completed by June, 2018. After that, the Ministry will be able to issue liveability indexes of the 116 selected Cities.

2. In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract) is as under:

% of Payment	Deliverables
Twenty percent (20%) of the contract price	Acceptance / approval of Inception Report
Fifty percent (50%) of the contract price	Acceptance / approval of Draft Final Report
Thirty percent (30%) of the contract price	Acceptance / approval of Final Report

4. The Consultant has raised the invoices for Rs.2,58,25,055/- (incl GST) for the submission of inception report (pg-1369-1833) against which Rs.2,18,85,640/- (excl Taxes) has been recommended / verified by CBUD team (vide PUC--pg-1837-1842). The consultant has not submitted a CA certificate confirming the payment of GST. The project implementation committee has recommended the approval of the report and same has been confirmed by JS (AMRUT), Minutes of the same has been attached at page 1834-1836. The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.

Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released**
			Fee	GST@18%	**Fee**
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640	39,39,415/-	2,18,85,640/- (excl GST) only
	Grand total to be released				**2,18,85,640/-(excl GST)**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

22/03/2018 5:01 PM

Pankaj Sinha
(ASO)

Note No. #134

22/03/2018 5:15 PM

G Vijay Kumar
(US (CBUD))

Note No. #135

22/03/2018 5:41 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #136

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 2,18,85,640/- (excluding GST @18%)** in respect of 20% value of **Inception Report** *(p. 1369-1833/c)* submitted by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Liveability Indices for 116 Cities in India.

In this regard, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected by the Ministry of Housing and Urban Affairs after following the due process of procurement prescribed by MoF/the World Bank. With due concurrence of IFD, MoHUA (p. 46/N) and approval of Secretary (MoHUA) (p. 49-50/N), a contract ***(p.1121-1368/c)*** was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium, at a total cost of Rs. 10,94,28,200/- plus applicable taxes..

*In the instant case, the consulting firm has submitted the Inception Report, one of the deliverables according to the contract. T**he Inception Report submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA (p.1839/c)** on the basis of recommendations of the Project Implementation Committee on City Liveability Index (p.1834-1836/c).*

The Inception Report has been **recommended by PMU, CBUD team** *(p. 1837/c)* and the **Sector Expert has examined the Inception Report and conveyed that report confirms to the deliverables as per ToR. The Accounts Division has also verified** the claim.

The fund of Rs. 30.25 cr. was allocated for the year 2017-18. An amount of Rs. 24,34,96,909/- was already sanctioned and the fund of Rs. 5,90,03,091/- is available. The sanctioning orders are being issued for the proposals concurred by the IFD.

In the instant proposal, **Rs. 2, 18,85,640/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

23/03/2018 11:52 AM

G Vijay Kumar
(US (CBUD))

Note No. #137

23/03/2018 7:02 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #138

26/03/2018 2:57 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #139

26/03/2018 3:35 PM

Jhanja Tripathy
(JS &FA)

Note No. #140

Integrated Finance Division

Ref. Program Div's notes on pg 51-54/N.:

This is regarding payment of Rs.2,18,85,640/-(excl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable i.e. inception report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes.

2. The Inception Report submitted by the consultant, has been recommended by the Project Implementation Committee and approved by the Mission Director. As per the contract agreement, the consultant is eligible for payment of 20% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment excluding GST since the consulting firm has not submitted the proof of depositing the same.

3. On going through the contract document, in accordance with Para 7.5 (p.35 of the contract document), the consultant had to submit separate inception reports for each city. This has not been confirmed by the Programme Div. in their notes.

4. In view of above, we may concur to release Rs.2,18,85,640/-(excl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

26/03/2018 5:02 PM

Pankaj Kumar
(US(IFD-II))

Note No. #141

26/03/2018 6:32 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #142

26/03/2018 7:47 PM

Jhanja Tripathy
(JS &FA)

Note No. #143

27/03/2018 10:11 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #144

27/03/2018 1:26 PM

Pankaj Kumar
(US(IFD-II))

Note No. #145

27/03/2018 1:57 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #146

27/03/2018 2:13 PM

G Vijay Kumar
(US (CBUD))

Note No. #147

Ref above:

Observation of US (IFD) in r/o the payment to be released to M/s IPSOS Research Pvt Ltd for submission of first deliverable against liveability index in 116 Cities, may be perused. IFD suggested that the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

2. In this regard, it may be stated that the separate report for each city has been submitted by the consultant which may be seen at page 1843-2202. So, if approved, a sanction letter may be prepared. Submitted for perusal and approval please.

28/03/2018 6:20 PM

Pankaj Sinha
(ASO)

Note No. #148

Reference note above and observations of IFD at p. 54/ N.

A separate Inception Report for each city ***(P. 1843-2202/c)*** was already prepared by the Consultant. On the basis of this an Inception Report ***(p. 1369-1833/c)*** was submitted by the Consultant to the Ministry.

The Inception Report submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA *(p.1839/c)* on the basis of recommendations of the Project Implementation Committee on City Liveability Index (p.1834-1836/c).

We may issue the sanction orders, if considered, please.

28/03/2018 6:39 PM

G Vijay Kumar
(US (CBUD))

Note No. #149

The advice of IFD has been complied with the submission of city-wise inception reports by IPSOS. We may release the amount concurred by IFD. However, after release of amount, we may forward the individual city wise reports to JS (AMRUT) for their necessary action.

28/03/2018 6:49 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #150

28/03/2018 7:14 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #151

28/03/2018 7:15 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #152

28/03/2018 7:17 PM

G Vijay Kumar
(US (CBUD))

Note No. #153

Ref above:

The amount of Rs.2,18,85,640/- (excl Taxes) against the submission of Inception Report for assessment of liveability indices in 116 cities under CBUD Project has been released vide sanction letter dated 28-03-2018 (pg-2203-2205) as concurred by IFD. Individual City-wise reports have been attached from pg 1843-2202. Now, we may forward the individual city wise reports to JS (AMRUT) for their consideration please.

04/04/2018 1:02 PM

Pankaj Sinha
(ASO)

Note No. #154

04/04/2018 4:12 PM

G Vijay Kumar
(US (CBUD))

Note No. #155

05/04/2018 3:40 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #156

06/04/2018 10:47 AM

G Vijay Kumar
(US (CBUD))

Note No. #157

Please examine and discuss.

09/04/2018 1:18 PM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #158

24/04/2018 4:12 PM

VINAY PRATAP SINGH
(DIR (AMRUT-II))

Note No. #159

Discussed

26/04/2018 7:39 PM

GURJEET SINGH DHILLON
(DIR (AMRUT))

Note No. #160

09/05/2018 2:31 PM

REEMA JAIN
(DEPUTY DIRECTOR)

Note No. #161

10/05/2018 4:07 PM

G Vijay Kumar
(US (CBUD))

Note No. #162

10/05/2018 4:35 PM

Pankaj Sinha
(ASO)

Note No. #163

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the release of **Rs.39,39,415/- in r/o claim of GST payment paid against Inception Report** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities **(**vide PUC--pg--2206-2208). An amount of Rs.2,18,85,640/- (Excl GST) was already paid vide sanction letter dated 28-03-2018 (pg-2203-2205).

2. In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018 at a total cost of Rs.10,94,28,200/- plus taxes. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract) is as under:

% of Payment	Deliverables
Twenty percent (20%) of the contract price	Acceptance / approval of Inception Report
Fifty percent (50%) of the contract price	Acceptance / approval of Draft Final Report
Thirty percent (30%) of the contract price	Acceptance / approval of Final Report

4. The Consultant earlier raised the invoices for Rs.2,58,25,055/- (incl GST) for the submission of inception report (pg-1369-1833) against which Rs.2,18,85,640/- (excl Taxes) was reimbursed to the Consultant vide sanction letter dated 28-03-2018.

Now, the Consultant has submitted the proof of GST payment which has been recommended / verified by the CBUD team (PUC-2206-2208). The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl No.	Invoice No. & Date	Deliverables	Fee	GST@18%	Amount to be released
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640-paid vide letter dated 28-3-2018.	39,39,415/-	Rs.39,39,415/- against GST
	Grand total to be released :				**Rs.39,39,415/- against GST**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

28/05/2018 4:29 PM

Pankaj Sinha
(ASO)

Note No. #164

28/05/2018 4:50 PM

G Vijay Kumar
(US (CBUD))

Note No. #165

29/05/2018 4:33 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #166

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 39,39,415/- as GST** to the consulting firm M/s IPSOS Research Private Limited in consortium with Athena Infonomics India Private Limited and The Economist Group Limited on the submission of proof. In this regard, the payment for the Inception Report (Rs. 2,18,85,640/-) was already made with the approval of Joint Secretary (AMRUT) and Project Director, CBUD with the concurrence of IFD in connection with CBUD assignment for the Assessment of Liveability Indices for 116 Cities in India.

The CBUD Team (p. 2206-2208/c) as well as the Accounts Division has also verified the claim.

The fund of Rs. 166.6 Cr. was allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date, in this Financial Year, 35 sanction orders have been issued for Rs. 3,48,52,772/- and Rs. 163.12 Cr is available.

In the instant proposal, **Rs. 39,39,415/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

29/05/2018 4:48 PM

G Vijay Kumar
(US (CBUD))

Note No. #167

29/05/2018 5:40 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #168

01/06/2018 11:41 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #169

01/06/2018 12:20 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #170

01/06/2018 12:35 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #171

Integrated Finance Division

Due to non submission of the proof of depositing the GST, proposal for payment against 1st deliverable to M/s. IPSOS Research Private Limited (India) w.r.t. consultancy work for providing assessment of liveability indices in 116 cities, was concurred to excluding GST - refer p.49/N.

Now, the consultant has submitted the proof of depositing the GST amounting to Rs.39,39,415/- (18% of the payment of Rs. 2,18,85,640/- for 1st deliverable). We may, therefore, concur to the proposal for reimbursement of Rs.39,39,415/- to the consultant.

04/06/2018 10:13 AM

Pankaj Kumar
(US(IFD-II))

Note No. #172

05/06/2018 1:41 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #173

Ref. IFD's notes above:

We may forward the file to JS&FA for her approval please.

06/06/2018 4:55 PM

Pankaj Kumar
(US(IFD-II))

Note No. #174

06/06/2018 5:21 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #175

08/06/2018 4:45 PM

Jhanja Tripathy
(JS &FA)

Note No. #176

08/06/2018 4:47 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #177

08/06/2018 5:29 PM

Pankaj Kumar
(US(IFD-II))

Note No. #178

11/06/2018 10:09 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #179

11/06/2018 12:28 PM

G Vijay Kumar
(US (CBUD))

Note No. #180

23/08/2018 12:29 PM

NEERAJ
(ASO)

Note No. #181

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.6,45,62,638/-(incl. GST) [Rs.5,47,14,100/- Fee + Rs.98,48,538/- GST @18%] (vide PUC—pg-6579-6584) to M/s. IPSOS Research Private Limited (India) for submission of 2nd deliverable i.e. Draft City Assessment Report i.e. Draft Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-2215-6578). The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes. Payment of Rs.2,58,25,055/- (incl GST) against the 1st deliverable i.e. inception report has already been made vide sanction letter dated 31/03/2018 & dated 12/06/2018 (pg-2203-2205 & pg-2209-2214)

2. The Draft City Assessment Report submitted by the consultant, has been approved by the Project Monitoring Committee chaired by Secretary (HUA) held on 17.07.2018. As per the contract agreement, the consultant is eligible for payment of 50% of the total contract amount against submission of 2nd deliverable.

In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c). Copies of the aforesaid reports have been submitted on 29/ 06/2018.

3. The payment schedule (as per clause 41.2 –Special Condition of Contract-pg-1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.6,45,62,638/-(incl. GST) [Rs.5,47,14,100/- Fee + Rs.98,48,538/- GST @18%] for the submission of 2nd deliverable i.e. Draft Final / Draft City Assessment Report of 116 Cities (pg-2215-6578) against which raised the invoice may be processed as approved by the Project Monitoring Committee chaired by Secretary (HUA). Minutes of the same has been attached with PUC (pg-6579-6584). The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.				
Sl.	Invoice No. &	Details of the	Amount claimed	**Amount to be**

No.	Date	Deliverable			**released (incl GST)**
			Fee	GST@18 %	Rs.6,45,62,638/-
1.	18271257 dated 29-05-2018	Draft City Assessment Report (50%)	5,47,14,100/-	98,48,538/-	
	Grand total to be released				**6,45,62,638/-(incl GST)**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

27/08/2018 12:21 PM

Pankaj Sinha
(ASO)

Note No. #182

27/08/2018 12:38 PM

G Vijay Kumar
(US (CBUD))

Note No. #183

Calculation has been checked however as per 7.5-Timelines and Deliverables for year 1 of Appendix A(pg-1173), Draft assessment Report should be submitted on 12 weeks from start date as per contract whereas same has been submitted on29/6/18 i.e after 20 weeks.

29/08/2018 3:31 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #184

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 6,45,62,638/- (including GST @18%)** in respect of 50% value of **Draft Final Report/ Draft City Assessment Report** *(p. 2215-6578/c)* submitted by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Liveability Indices for 116 Cities in India.

In this regard, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected and a contract ***(p.1121-1368/ c)*** was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium, at a total cost of Rs. 10,94,28,200/- plus applicable taxes..

*In the instant case, the consulting firm has submitted the Draft Final Report/Draft City Assessment Reports for 116 Cities, one of the deliverables according to the contract. T**he Draft City Assessment Reports submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA** on the basis of basis of the minutes of the Project Monitoring Committee on "Ease of Living Index" which was held under Chairmanship of Secretary (HUA) on 17th July 2018.* (p. 6579-6584).

The Accounts Division has also verified the claim.

In this regard, it is also submitted that the payment for Inception Report (including GST@18%) was already paid to the consulting firm with the approval of Project Director (CBUD) and with the concurrence of JS&FA (please see Note# 133-175/N) and the status of deliverables is detailed below:

Contractual Amount: - Rs. 10,94,28,200/- exclusive of GST		
Details of deliverable	Amount paid to the consultant	Amount recommend for payment at this stage
Inception Report (20%)	Rs. 2,58,25,055/- (with GST)	
Draft Final Report/ Draft Cit Assessment Report (50%)		**Rs. 6,45,62,638/-**

		(including GST)
Final Report (30%)		**yet to to be approved**
Total	Rs.2,58,25,055/--	**Rs. 6,45,62,638/-** (including GST)

The fund of Rs. 166.6 Cr. was allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date, in this Financial Year, 125 sanction orders have been issued for Rs. 20,99,71,601/- and Rs. 145,60,28,399/- is available.

In the instant proposal, **Rs. 6,45,62,638/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

29/08/2018 5:33 PM

G Vijay Kumar
(US (CBUD))

Note No. #185

30/08/2018 10:28 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #186

31/08/2018 11:00 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #187

31/08/2018 11:09 AM

Jhanja Tripathy
(JS &FA)

Note No. #188

31/08/2018 3:22 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #189

Integrated Finance Division

Reference Notes above:

The proposal is for release of the payment of Rs. 6,45,62,638/- (including GST @18%) on submission of Draft Final Report/ Draft City Assessment Report by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Livability Indices for 116 Cities in India. For preparation of the said Reports, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected and a contract was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium at a total cost of Rs.10,94,28,200/- plus applicable taxes (pp.1121-1368/c).

2. Now, the consulting firm has submitted the Draft Final Report/Draft City Assessment Reports for 116 Cities, one of the deliverables according to the contract and these Reports has been accepted/approved by the Joint Secretary (AMRUT), MoHUA on the basis of the minutes of the Project Monitoring Committee on "Ease of Living Index" which was held under Chairmanship of Secretary (HUA) on 17th July 2018. (pp. 6579-6584/c) and the Accounts Division has also verified the claim. Now the Programme Division has proposd to release Rs. 6,45,62,638/- (including GST) to the consultant.

3. The fund of Rs. 166.6 Cr. Have been allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date Rs. 20,99,71,601/- has been utilized leaving a balance amount Rs. 145,60,28,399/-.

4. In view of the above, IFD may concur the proposal to release Rs. 6,45,62,638/- to the consultant as sufficient funds are available and the reports have been accepted by the Project Director of CBUD.

Submitted please.

06/09/2018 5:38 PM

SHESH KUMAR
(US (D-V))

Note No. #190

07/09/2018 3:33 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #191

Discussed with Director(F).

The proposal relates to release Rs. 6,45,62,638/-(including IGST 18% amounting Rs.98,48,538/-) to M/s IPSOS Research Private Limited(India), a consortium, for submission of Draft Final Report in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Livability Indices for 116 Cities in India.

2. M/o HUA has signed a contract vide pp. 1121-1368/c with the firm at a contract price of Rs.10,94,28,200/- exclusive of indirect taxes for the above said project with the payment schedule as under:

- 20% of contact price on acceptance/approval of the inception report
- 50% of contact price on acceptance/approval of the draft final report
- 30% of contact price on acceptance/approval of the final report

3. 20% of the contract price (Rs. 2,58,25,055/- including IGST 18%) has already been paid on submission of Inception Report vide letters dated 31.03.2018 & 12.06.2018 (pp.2203-2205/c & pp. 2209-2214/c) to the firm.

4. Now, the firm has submitted Draft Final Report alongwith the invoice No. 18271257 dated 29.05.2018 vide pp. 6583/c for their claims of Rs. 6,45,62,638/- alongwith a Certificate confirming that IGST 18% amounting Rs. 98,48,538/- has been made to the Govt. account on 19.06.2018 vide pp.6584/c.

5. As the draft final report has been approved /accepted in the meeting of Monitoring Committee held on 17.07.2018 under the Chairmanship of Secretary (HUA) (minutes are at pp.6581-6582/c), therefore, Programme Division has recommended for release of Rs.6,45,62,638/-(including IGST 18%).

6. In view of the above and funds availability, IFD may concur the proposal for release of Rs. 6,45,62,638/- (including Rs. 98,48,538/- as IGST 18%) for payment to the firm.

Submitted please.

- 20% of contract price will be paid on acceptance/approval of the inception report

10/09/2018 5:39 PM

SHESH KUMAR
(US (D-V))

Note No. #192

11/09/2018 11:23 AM

Yashodhara Vijayan
(CONSULTANT)

Note No. #193

11/09/2018 5:50 PM

Jhanja Tripathy
(JS &FA)

Note No. #194

12/09/2018 9:44 AM

Yashodhara Vijayan
(CONSULTANT)

Note No. #195

12/09/2018 12:19 PM

SHESH KUMAR
(US (D-V))

Note No. #196

12/09/2018 1:03 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #197

12/09/2018 1:16 PM

G Vijay Kumar
(US (CBUD))

Note No. #198

14/09/2018 11:00 AM

NEERAJ
(ASO)

Note No. #199

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.3,87,37,583 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,123/-GST] (vide -PUC—pg-9520-9522) to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-6589-9519). The work has been awarded to M/s IPSOS Research Private Limited (India) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes.

2. Ms Reema Jain, Deputy Director (AMRUT) has informed [vide PUC (pg-9520)] that ''Copies of the Final City Assessment Report submitted by the Consultant have been approved by AS & PD (AMRUT). The final consolidated report of ease of living, 2018 ha been released by Hon'ble Minister (I/C) of Housing & Urban Affairs on 10.08.2018."

In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract- pg-1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.3,87,37,582.80/-(incl. GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST] for the submission of 3rd & final deliverable i.e. Final City Assessment Report of 116 Cities (pg-6589-9519) against which the invoice may be processed, the same has been approved by AS & PD (AMRUT). The payment for the previous 2 deliverables has already been made (pg-2203-2205 , pg-2209-2214 , pg-6585-6588). The details of the payment to be made are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (incl GST)**
			Fee	GST@18%	Rs.3,87,37,582.80/-
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment. Since Sr Accounts Officer and Under Secretary (CBUD) are on leave. So, as discussed, the file may be directly submitted to DS (CBUD).

Submitted pl.

Pankaj Sinha
(ASO)

Note No. #200

Ref. Note above.

2. The Accounts Office is unwell and not attending the office. US (CBUD) is out. In view of the time constraints for processing of bills, the file is being processed accordingly.

3. The final deliverable against preparation of liveability index has been achieved with the approval of final report by the Ministry. With this the final payment to M/s IPSOS has become due and is recommended for release. May kindly approve sanction of Rs. 3,87,37,582.80/- (including GST), to M/s IPSOS and refer the file to IFD for their concurrence.

18/10/2018 2:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #201

18/10/2018 3:12 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #202

18/10/2018 4:24 PM

Jhanja Tripathy
(JS &FA)

Note No. #203

22/10/2018 12:16 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #204

24/10/2018 12:37 PM

SHESH KUMAR
(US (D-V))

Note No. #205

24/10/2018 1:52 PM

S K SARKAR
(CONSULTANT)

Note No. #206

Integrated Finance Division

Ref. Program Div's notes on pg 80-82/N.:

This is regarding payment of 3rd & final installment amounting to Rs.3,87,37,582.80/-(incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of last deliverable i.e. Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes. An amount of Rs.9,03,87,693/- (including GST) has been released to the consultant for 1st two deliverables - concurrence of IFD may be seen at pp.58-59/N, p.68/N & pp 78-79/N.

2. The last deliverables i.e. Final Report submitted by the consultant, has been approved by the Mission Director (AMRUT) and the final consolidated report has been released by the Hon'ble Minister (I/C). As per the contract agreement, the consultant is now eligible for payment of 30% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment including GST.

3. In view of above, we may concur to release Rs.3,87,37,582.80/-(incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

25/10/2018 12:19 PM

Pankaj Kumar
(US (IFD-III))

Note No. #207

26/10/2018 5:08 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #208

29/10/2018 4:05 PM

Jhanja Tripathy
(JS &FA)

Note No. #209

29/10/2018 4:47 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #210

29/10/2018 5:20 PM

Pankaj Kumar
(US (IFD-III))

Note No. #211

30/10/2018 10:57 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #212

30/10/2018 11:00 AM

G Vijay Kumar
(US (CBUD))

Note No. #213

Ref above:

A separate report for each city has been submitted by the consultant and enclosed from page 6589-9519. Now, as concurred by IFD, an amount of Rs.3,87,37,582.80 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST @18%] may be sanctioned.

2. For rounding figure & if approved, the sanction letter for Rs.3,87,37,582/- (incl GST) may be prepared.

Submitted please.

Note # 199

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.3,87,37,583 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,123/-GST] (vide -PUC—pg-9520-9522) to M/s. IPSOS Research Private Limited (India) for submission of 3 rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-6589-9519) . The work has been awarded to M/s IPSOS Research Private Limited (India) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes.

2. Ms Reema Jain, Deputy Director (AMRUT) has informed [vide PUC (pg-9520)] that "Copies of the Final City Assessment Report submitted by the Consultant have been approved by AS & PD (AMRUT). The final consolidated report of ease of living, 2018 ha been released by Hon'ble Minister (I/C) of Housing & Urban Affairs on 10.08.2018."

In this context, it may be submitted that the contract was signed on 21st

February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

Page: 80

3. The payment schedule (as per clause 41.2 –Special Condition of Contract- pg- 1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.3,87,37,582.80/-(incl. GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST] for the submission of 3 rd & final deliverable i.e. Final City Assessment Report of 116 Cities (pg-6589-9519) against which the invoice may be processed, the same has been approved by AS & PD (AMRUT). The payment for the previous 2 deliverables has already been made (pg-2203-2205 , pg-2209-2214 , pg-6585-6588). The details of the payment to be made are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (incl GST)**
			Fee	GST@18%	Rs.3,87,37,582.80/-
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	

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5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment. Since Sr Accounts Officer and Under Secretary (CBUD) are on leave. So, as discussed, the file may be directly submitted to DS (CBUD).

Submitted pl.

18/10/2018 1:01 PM

Pankaj Sinha
(ASO)

Note # 200

Ref. Note above.

2. The Accounts Office is unwell and not attending the office. US (CBUD) is out. In view of the time constraints for processing of bills, the file is being processed accordingly.

3. The final deliverable against preparation of liveability index has been achieved with the approval of final report by the Ministry. With this the final payment to M/s IPSOS has become due and is recommended for release. May kindly approve sanction of Rs. 3,87,37,582.80/- (including GST), to M/s IPSOS and refer the file to IFD for their concurrence.

18/10/2018 2:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note # 201

18/10/2018 3:12 PM

Sanjay Kumar
(JOINT SECRETARY)

Note # 202

18/10/2018 4:24 PM

Jhanja Tripathy
(JS &FA)

Note # 203

22/10/2018 12:16 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note # 204

24/10/2018 12:37 PM

SHESH KUMAR
(US (D-V))

Note # 205

24/10/2018 1:52 PM

S K SARKAR
(CONSULTANT)

Note # 206

Integrated Finance Division

Page: 83

Ref. Program Div's notes on pg 80-82/N.:

This is regarding payment of 3rd & final installment amounting to Rs.3,87,37,582.80/- (incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of last deliverable i.e. Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes. An amount of Rs.9,03,87,693/- (including GST) has been released to the consultant for 1st two deliverables - concurrence of IFD may be seen at pp.58-59/N, p.68/N & pp 78-79/N.

2. The last deliverables i.e. Final Report submitted by the consultant, has been approved by the Mission Director (AMRUT) and the final consolidated report has been released by the Hon'ble Minister (I/C). As per the contract agreement, the consultant is now eligible for payment of 30% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment including GST.

3. In view of above, we may concur to release Rs. 3,87,37,582.80/- (incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

30/10/2018 11:31 AM

Pankaj Sinha
(ASO)

Note No. #214

30/10/2018 11:34 AM

G Vijay Kumar
(US (CBUD))

Note No. #215

18/12/2018 4:44 PM

G Vijay Kumar
(US (CBUD))

Note No. #216

Subject: Issuance of Completion Certificate - reg.

Ref: Note#199 to Note#213 above.

Ministry signed the contract for "Assessment of Liveability Indices in 116 cities in India" with M/s IPSOS Research Private Limited(Lead) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd on 21.02.2018 and the effective date of commencement of services was 08.02.2018. The time period of the contract was 20 weeks (from 8th February 2018 to 28th June 2018).

2) As per the terms of the contract, the last deliverable was submission of 116 Final City Reports. The consortium has submitted Final City Reports which have been duly approved by AS&MD (AMRUT), accordingly,the third and final installment has been released to the consortium. Hence, there is no unconcluded/outstanding deliverable left.

3) In view of the above, it is proposed that 'Completion Certificate' may be issued to the consortium. The draft completion certificate is attached for approval at DFA/9051757.

File is submitted for kind approval with respect to para 3 above.

19/12/2018 2:26 PM

REEMA JAIN
(DEPUTY DIRECTOR)

Note No. #217

As per the terms of contract, the work as been completed by the agency. there is no maintenance period in the contract. Further, no earnest money/security deposit was given by the agency against this contract. We may therefore approve the issuance of Completion Certificate as per DFA.

21/12/2018 5:29 PM

Rahul Kapoor
(DIR (SC-III))

Note No. #218

24/12/2018 9:50 AM

Kunal Kumar
(JS(SC))

Note No. #219

24/12/2018 1:52 PM

Rahul Kapoor
(DIR (SC-III))

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for

Assessment of Liveability in Selected Cities held on

2nd June, 2017

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017 in the chamber of Economic Advisor-II (Room No.665-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Mr. Sajessh Kumar N., Director (Smart Cities)-Member
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Mr. Raja Dawn, PMU (CBUD), Member
- Mr Nilesh Rajayadhaksha, PMU (CBUD), Member

(Sh. Shiv Pal Singh, Director (AMRUT) was on leave)

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017.. **The list of EOIs received is at Annexure 1.**

After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No	Lead Firm	Consortium Partner	Primary Eligibility	Technical Score (max. 100)
1	M/s CRISIL Risk and Infrastructure Solutions Limited	Hansa Research Group	Lead partner registered as Company, hence eligible	100

2	Deloitte Touche Tohmatsu India LLP		Lead partner registered as LLP, hence eligible	100
3	Infrastructure Development Corporation (Karnataka) Limited (iDecK)	Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd.	Lead partner registered as Company, hence eligible	90

The abstract sheet of marks obtained by each firm is as per Annexure 2 and evaluation sheets are at Annexure 3.

As mentioned in para above and since the cost of project is estimated more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank. The recommendations of procurement committee may be forwarded to the World Bank for prior review as per World Bank procurement guidelines.

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for Assessment of Liveability in Selected Cities held on

7th June, 2017

2nd meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for assignment of "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 7th June, 2017 in the chamber of Economic Advisor-II (Room No.655-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Sh. Sajeesh Kumar N., Director (Smart Cities)-Member
- Sh. Shiv Pal Singh, Director (AMRUT)
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Sh. Raja Dawn, PMU (CBUD), Member
- Sh. Nilesh Rajayadhaksha, PMU (CBUD), Member

The minutes of the procurement committee meeting held on 2nd June, 2017 have been shared with the World Bank on 2nd June 2017 itself. Only three firms could qualify as against six required under the procurement guidelines of World Bank. The procurement also needed prior review by the World Bank being above US$ One million.

The World Bank vide email dated 7th June, 2017 has observed as under:

"We observe that only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms."

In view of observations of the World Bank, the procurement committee recommends to re-invite the bids by giving due publicity. Programme division may also consider revising the eligibility criteria to have better competition as advised by the World Bank.

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sh. Shiv Pal Singh)
Director(AMRUT)

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;
  d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
  e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
  f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,
   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:

   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the member)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**

5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all

those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
  a. is not received online as indicated at 2.11;
  b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
  c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
  d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a

position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**

f. Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**

S.No.	Parameter	Maximum Marks
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12	**20**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Shortlisting Process;

d. “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. “**Restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____________________________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only**[1]**) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

---

1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12

Category No.	Criteria[1]	Number and Name of Cities
1	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only[2])(Lead firm)**	
2	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 3)………..**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197

32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803

69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348

106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context Ministry of Urban Development has developed a set of ‘Liveability Standards of Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards’ are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in the various standards and develop a ‘City Liveability Index’ of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	8-May-2017
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	NIUA’s response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**By 3:00 p.m on 22-May-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;
  d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
  e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
  f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

  i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
  ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**

3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:

  a. is not received online as indicated at 2.11;
  b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
  c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
  d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Shortlisting Process;

d. “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. “**Restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

---

1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.**. (Substantially Completed only) (Consortium partner 3)………..**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643

108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Minutes of the Meeting of Procurement Committee for shortlisting of applications in response to REOI for **"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"**

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of "**Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**" was held under the chairmanship of Dr Kumar V. Pratap Economic Advisor-I/. MoUD on 05th July 2017 in the Room No 237C, Nirman Bhawan, New Delhi

The following were present in the meeting

1. Dr. Kumar V. Pratap, Economic Advisor, MoUD
2. Shri Shiv Pal Singh, Director(AMRUT), MoUD.
3. Shri Sajeesh Kumar N, Director (SC-III), MoUD
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoUD.
5. Shri G. Vijay Kumar, Under Secretary (SC-III), MoUD
6. Shri Utpal Deka, Team Leader, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, CBUD
8. Shri Raja Dawn, Procurement Specialist, CBUD

2 As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under

[illegible]	[illegible]	[illegible]
1	General Experience of the Firm	10
2	Financial Strength of the Firm	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments, departments, para-statals, ULBs and multilateral agencies.	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
	Total	100

Utpal Deka

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) published on 15th June 2017 on www.eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on [illegible] and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through [illegible] only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017. As per the World Bank guidelines, the RFP has to be issued 6 highest scoring/shortlisted firms.

4. In this regard, a meeting of the procurement committee was held on 05th July 2017 to discuss these proposals. Based on the criteria given in REOI and introduced in para 2 above, the evaluation of 21 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project on the above mentioned date. The detailed Evaluation Sheet is attached as **Annexure.**

5. The Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP). The list of shortlisted firms along with their applications, and the evaluation sheet for all 21 participating firms may be sent to World Bank for their concurrence/review.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
	Ipsos Public Affairs	Athena Infonomics	The Economics Intelligence Unit			100
2	Deloitte Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		100
3	Hindusthan Thompson Associates Pvt. Ltd (Division IMRB International)					88
4	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	84
5	PricewaterhouseCoopers					81
6	Jones Lang LaSalle					80

Nilesh Rajadhyaksha
Capacity Building Expert, CBUD

Raja Dawn
Procurement Specialist
CBUD

Utpal Deka
Team Leader
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

Evaluation of Bidders for Assessment of Liveability Index of 116 cities of India

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	Ipsos Public Affairs	Athena Infonomics	The Economist Intelligence Unit			100
2	Deloitte Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Sitesalit Systems Limited	Kadence International Pvt Ltd		100
3	Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					88
4	Infrastructure Development Corporation (Karnataka) Ltd (iDeck)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	84
5	PricewaterhouseCoopers					81
6	Jones Lang LaSalle					80
7	KPMG Ltd.					70
8	Mott MacDonald					69
9	Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			67
10	Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		66
11	Sutra Consultants	H I I INSPIRATION				64
12	Chrome Data Analytics & Media Pvt Ltd					62
13	Frost & Sullivan					60
14	Larsen & Toubro					55
15	Voyants Solution Pvt. Ltd					46
16	Caritas Ecosystem					42
17	Quality Council of India					0
18	C-Voter					0
19	ICLEI South Asia					0
20	Institute for Financial Management and Research	Core CarbonX Sols Pvt. Ltd	Administrative Staff College of India	Nathan Economic Consulting India Pvt. Ltd		0
21	MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

Shortlisting of applications in response to REOI for

"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"

The REOI for 'Selection of Consultant for Assessment of Liveability in 116 cities" was re-issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan.

A total of 21 EOIs were received in response. These were evaluated by the Procurement Committee of CBUD and 6 firms were shortlisted as per the prescribed eligibility criteria. Since the present case falls under prior review category, the list of shortlisted firms along with relevant documents was forwarded to the World Bank for their approval.

In response, the World Bank has noted that the REOI was not uploaded on the "STEP" platform of the Bank and that the same is a mandatory requirement. It is clarified that though REOI was uploaded on the STEP and it was included in the procurement plan but due to certain technical issues it could not be uploaded on the UNDP procurement portal. Every effort had been made to ensure wide circulation and international participation (the e-procurement website is itself a global website). However, given the mandatory nature of the procedure, the World Bank has advised that the REOI be issued afresh, so that compliance with all procedural modalities required at the Bank's end may be met.

It is therefore, recommended that the REOI may be considered for fresh issuance on the same terms and conditions as before, giving the minimum period of 14 days as required under the World Bank guidelines.

Nilesh Rajadhyaksha
Capacity Building
Expert, CBUD

Rakesh Gujral
Finance Management Specialist
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RE: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project - WB5294-09/17

UN Development Business <undb@worldbank.org> Mon, Sep 11, 2017 at 11:11 PM
To: "noreply@worldbankgroup.org" <noreply@worldbankgroup.org>, Vasudha Thawakar <vsarda@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Radha Narayan <rnarayan@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, UN Development Business <undb@worldbank.org>, "G. Vijay Kumar" <g.vijaykumar.moud@gmail.com>

This is to confirm that the following is published in *UN Development Business (UNDB) online.*

Attached is a copy of the notice.

Best regards,

Dorothée Collard

UN Development Business

Development Business
Connecting you to a world of opportunities

From: STEP Admin [mailto:noreply@worldbankgroup.org]
Sent: Monday, September 11, 2017 7:35 AM

To: Vasudha Thawakar <vsarda@worldbank.org>; Swayamsiddha Mohanty <smohanty1@worldbank.org>; Radha Narayan <rnarayan@worldbank.org>; Payal Malik Madan <pmmadan@worldbank.org>; UN Development Business <undb@worldbank.org>; info@dgmarket.com; G. Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Procurement Systems Service Account <procservices@worldbank.org>
Subject: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project

Borrower G. Vijay Kumar (g.vijaykumar.moud@gmail.com)

has published a Procurement Notice for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS

Country: India

Project Id: P099979

Project Name: Capacity Building for Urban Development Project

Loan/Credit/TF Info.: IDA-49970

Notice Version No.: 1

General Information

Notice Type	Request for Expression of Interest
Borrower Bid Reference	IN-MOUD-27866-CS-QCBS
Bid Description	Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities
Language of Notice	English
Deadline for Application Submission Date	2017/10/03
Local Time	15:00
Selected category codes for product to be procured	86132101 - Training facilitation service

Contact Information on Advertisement

Organization/Department	CBUD, Ministry of Housing and Urban Affairs, Government of India
Name	G. Vijay Kumar

Title	Under Secretary to the Government of India
Address	Ministry of Housing and Urban Affairs, Government of India Maulana Azad Road, New Delhi 110001.
City	
Province/State	
Postal Code	
Country	India
Phone	011-23063217
Fax	
Email	g.vijaykumar.moud@gmail.com
Website	

Detailed Information for Advertisement

REQUEST FOR EXPRESSIONS OF INTEREST

(CONSULTING SERVICES – FIRMS SELECTION)

[INDIA]

[CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT]

Loan No./Credit No./Grant No: 4997-IN

Assignment Title: Short listing of Consulting Firms for Assessment of Liveability in Selected Cities

Reference No. (as per Procurement Plan): IN-MoUD-27866-CS-QCBS

The *Ministry of Housing and Urban Affairs , Government of India* has received financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include Assessment of Liveability in 116 cities. The 'Liveability Standards for Cities' and methodology for assessment is available at linkhttp://smartcities.gov.in/content/innerpage/others.php

The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites www.moud.gov.in and www.eprocure.gov.in. The application shall be uploaded/submitted on the web portal www.eprocure.gov.in duly digitally signed.

The *Ministry of Housing and Urban Affairs , Government of India* now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
	General Experience of the Firm	**10**
1.	Financial Strength of the Firm	**15**
1.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers*, January 2011, updated July 2014 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a joint venture or a sub-consultancy to enhance their qualifications. In case the Consultants associate with other firms, the nature of association whether Joint Venture or Sub-consultancy has to be indicated in the EOI.

A Consulting firm will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [**15:00 hrs of 03rd October, 2017 IST**].

Ministry of Housing and Urban Affairs, Government of India

Mr. G Vijay Kumar, Under Secretary (CBUD), O/o Project Director (CBUD)

Government of India, Room No 202-C, Nirman Bhawan

Maulana Azad Road, New Delhi 110001.

Tel: 011-23063217

E mail: g.vijaykumar@nic.in **and** g.vijaykumar.moud@gmail.com

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Notice-WB5294-09-17.pdf
598K

K-14012/101(11)/2017-SCM-III(V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
Capacity Building for Urban Development CBUD Division

Room No. 202 C Wing,
Nirman Bhavan, New Delhi.
Dated 08th September, 2017

To

Shri **Dhiraj Kakaria,**
Director,
Directorate of Advertising and Visual Publicity (DAVP),
9th Floor, Soochna Bhawan, Phase-IV,
CGO Complex, Lodhi Road, New Delhi-110003.
(e-mail: davpco111@gmail.com)

Subject: **Publication of Request for Expression Interest (REOI) for " Selection of Consulting Firms for providing consulting services for the Assessment of Liveability in 116 cities".**

Sir,

I am directed to enclose a copy of Request for Expression of Interest (REOI) for " **Selection of Consulting Firms for providing consulting services for the Assessment of Liveability in 116** cities" and to request you to publish the same in the leading national dailies (in **Hindi** and **English**) urgently.

2. You are requested to send the invoices to the undersigned after publishing the advertisement for releasing of the payment.

Yours faithfully,

8/9/2017

(G.Vijay Kumar)
Under Secretary to Government of India
Tel.23062717

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई [illegible]

Encl: As above

GOVERNEMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
REQUEST FOR EXPRESSION OF INTEREST (REOI)
CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT

The Government of India has received financing from the International Development Association (IDA) (Credit No. 4997-IN) toward the cost of the Capacity Building for Urban Development Project (CBUD), and intends to apply part of the proceeds for consulting services

Ministry of Urban Development now invites eligible consultancy firms to apply for the **Request for Expression of Interest (REOI) for "Selection of Consulting Firm for Providing consulting services of Assessment of Liveability in 116 cities"**. The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites www.moud.gov.in and www.eprocure.gov.in. The application shall be uploaded/submitted on the web portal www.eprocure.gov.in duly digitally signed.

Interested firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2	Financial Strength of the Firm	15
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure I to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure I to section 2.12	20
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

Consulting firm may associate with other firm(s) in the form of a consortium and joint venture to enhance their qualifications. A Consulting firm will be selected on QCBS method set out in the Consultant Guidelines.

An applicant requiring any clarification on the REOI Document may request MoHUA through Email: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com. **Expression of Interest must be submitted on line by 15:00 hrs of 03rd October, 2017.** No physical submission of applications shall be accepted.

Mr. G Vijay Kumar
Under Secretary (CBUD), O/o Project Director (CBUD),
Ministry of Housing and Urban Affairs,
Government of India, Room No 202-C, Nirman Bhawan,
Maulana Azad Road, New Delhi 110001.
Tel: 011-23063217

No. M-24013/108/2016-MUC
GOVERNMENT OF INDIA
MINISTRY OF INFORMATION AND BROADCASTING

Shastri Bhawan, New Delhi, dated 15 February, 2017

OFFICE MEMORANDUM

Subject: Clearing of Outstanding dues of DAVP – reg.

The undersigned is directed to say that the matter regarding the outstanding payments in DAVP from the client Ministries/Departments has been under consideration in this Ministry. This issue was also raised in the meeting of Committee of Secretaries (CoS) held on 17.7.2014 and it was inter-alia decided that DAVP should be provided 85% advance payments by client Ministries/Departments.

2. In this regard, it has been noted that the bills pending with DAVP for 2014-15, 2015-16 and 2016-17 comes upto Rs. 26.72 Crore, Rs. 100.12 Crore, Rs. 577.06 Crore. The total effective pendency after discounting the funds made available to DAVP amounts to Rs. 589.39 Crores. It is further noticed that the situation of release of outstanding payments is not improving and the LoAs are not being received in times and client Ministries/Departments have failed to release their payments in time.

3. Therefore, it has been decided that DAVP henceforth shall follow the following instructions in letter and spirit:

(i) In cases where Ministries/departments have already placed 85% of advertisement budget through LOA, DAVP will honour their bills till exhaustion of LOAs. DAVP will request the Ministries for committing 100% of their budget through LoA, as soon as the expenditure reaches 75%.

Contd......./-

: 2 :

(ii) In all other cases, it will be mandatory for Ministries/Departments to make 100% advance payment through LoAs of the estimated expenditure of campaign/advertisements to DAVP.

(iii) In all cases where there is a pendency of payment for more than one year, DAVP shall send a consolidated statement to Secretaries of concerned Ministries/Departments with a copy endorsed to CCA of the respective Ministries/Departments for immediate release of payments. If the payments are not received within a month, DAVP shall not entertain any further new request for campaign/ advertisements in respect of such Ministries/Departments.

(iv) In cases of urgency where a campaign/advertisement has to be released without accompanying funds, DAVP shall ask the concerned Department/Ministry to send a request from their Secretary to Secretary(I&B). Only on the instruction of Ministry of I&B, DAVP shall consider release of advertisements and the funds should be recouped immediately thereafter from the concerned Ministries. DAVP shall also send a monthly statement of all those Ministries to Ministry of I&B which have failed to honor in the commitment of release of funds, with a copy to the respective Secretaries of the Ministries.

4. This has approval of the Competent Authority.

Vijay Kaushik
(Vijay Kaushik)
Under Secretary to the Government of India
TELE: 2338 5795

To,

Directorate of Advertising and Visual Publicity (DAVP)
(Kind Attention to: Shri K. Ganesan, Pr. Director General)
Soochna Bhawan, Lodhi Road, New Delhi.

Copy alongwith the above enclosure to:

1. Shri Satyendra Prakash, ADG, DAVP.
2. Shri Prashant Pathrabe, Director (DAVP).

Subject: **Estimate and LoA transfer**
To: pankaj.sinha88@nic.in, g.vijaykumar.moud@gmail.com
Date: 09/15/17 06:26 PM
From: "FACILITATION CELL, DAVP" <ad.davp@gmail.com>

452.pdf (45kB) OM For Funds .pdf (486kB)

Dear sir,
PFA the estimate of the advt as requested.

2.To issue the advt it is requested to place 100% amount of Estimate, as specified in the Ministry of I and B's enclosed order, through ONLY LoA.
3. Please send LoA to following address - **Campaign Wing I, DIRECTORATE OF ADVERTISING & VISUAL PUBLICITY, R.No. 289, SOOCHNA BHAVAN, C.G.O. COMPLEX, LODHI ROAD, NEW DELHI-110003** Tel: 011-24369599/94 .
4.the release order of the advertisement shall be issued only upon receipt of LoA.
6. Alongwith LoA please send fresh advt. matter in good quality pdf.
7. Please quote the estimate/R.O number in future correspondence
Regards,
Campaign Wing
DAVP Ph: 011-24369599/94

CHECK LIST FOR APPROVAL

USER : **CO2** **DATE** **9/15/2017**

ESTIMATE NO : 201700452

RO NO : REF. & DATE : K-14012/101(11)/2017-SCM-III(V)/CBUD - 9/8/2017 12:00:00 AM

KEY NO : CONT.PERSON : G VIJAY KUMAR ENGLISH 22.00 X 12.00

AD TYPE : CL.DISPLAY DESIG. : UNDER SECRETARY HINDI 22.00 X 12.00

B.W/COL : B & W ADDRESS : CAPACITY BUILDING FOR URBAN OTHERS 22.00 X 12.00

CATEGORY : TENDER DEVELOPMENT CBUD DIVISION ENGLISH PAGES 0.00

ROOM NO - 202 C WING HINDI PAGES 0.00

NIRMAN BHAWAN OTHER PAGES 0.00

NEW DELHI - 110108

S. NO.	CODE	NAME	CITY	LAN	PERIOD	CIRC	INS DATE	LAST DATE	INST	INS	COST
BIG											
1	100025	THE HINDUSTAN TIMES	DELHI	ENGLISH	DAILY(M)	941020	22/09/2017	22/09/2017	B2	1	84072.00
2	127628	AMAR UJALA	DELHI	HINDI	DAILY(M)	204000	22/09/2017	22/09/2017	B3	1	18225.00
3	120192	PUNJAB KESARI	DELHI	HINDI	DAILY(M)	350363	22/09/2017	22/09/2017	B3	1	31302.00
4	100294	THE TIMES OF INDIA	MUMBAI	ENGLISH	DAILY(M)	820108	22/09/2017	22/09/2017	B2	1	73271.00

PAPER TYPE	NO	AMOUNT	%AGE
BIG	4	206870.00	100.000000
MEDIUM	0	0.00	0.000000
SMALL	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

LANGUAGE	NO	AMOUNT	%AGE
ENGLISH	2	157343.00	76.060000
HINDI	2	49527.00	23.940000
OTHERS	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

Export To Excel **Export To Word**

Minutes of the Meeting of Procurement Committee for **"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"** held on 24-25 October 2017

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of "**Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**" was held under the chairmanship of Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA consecutively on 24-25 October 2017 in Room No. 232C, Nirman Bhawan, N. Delhi.

The following were present in the meeting:

1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA.
2. Shri Sajeesh Kumar N, Director (Smart Cities), MoHUA
3. Shri Yogendra Singh Awana, Deputy Secretary (UPA-II & CBUD), MoHUA.
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoHUA.
5. Shri G. Vijay Kumar, Under Secretary (CBUD), MoHUA
6. Shri Rakesh Gujral, Financial Management Specialist, PMU, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, PMU, CBUD.
8. Ms. Vasavi Narla, Urban Management Specialist, PMU, CBUD.

2. As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under:

S.No	Parameter	Maximum Marks
1	General Experience of the Firm	10
2	Financial Strength of the Firm	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. It was noted by the Committee that applications were invited from the eligible consulting firms through REOI published on 8th September 2017 on www.eprocure.gov.in with the last date of 03rd October 2017. As per the World Bank's requirements, the REOI was also published in STEP, World Bank and subsequently published on UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS. Besides, The REOI was published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017.

4. For evaluating proposals, following detailed examination criteria was adopted.

Sl No	Parameter	Maximum Marks	Details
1.	General Experience of the Firm (Number of years)	**10**	1 Mark for Each Year
2.	Financial Strength of the Firm (Turnover)	**15**	<5 crore- 0 Marks, <=10 crore - 5 Marks >10 crore-<20 crore- 10 Marks => 20 crore 15 Marks
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons: 20 marks > 20 persons - 25 marks
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/	**10**	5 Marks for each project with a maximum of 10 marks

Imran

	departments, para-statals, ULBs and multilateral agencies		
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks
Total		**100**	

5. Accordingly, the 28 applications were evaluated by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project in its meeting held on 24-25 October 2017. The detailed Evaluation Sheet is attached as **Annexure.**

6. On the basis of above evaluation, the Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP), as per procedure.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	100
2	**PricewaterhouseCoopers**	-	-	-	-	85
3	**Jones Lang LaSalle Property Consultants India Private Limited**	-	-	-	-	80

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4	**Deloitte Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

Nilesh Rajadhyaksha
Capacity Building
Expert, PMU,CBUD

Vasavi Narla
Urban Management
Specialist, PMU,CBUD

Rakesh Gujral
Financial Management
Specialist, PMU,CBUD

G. Vijay Kumar
Under Secretary
CBUD, MoHUA

Ms. Yashodara Vijayan
Deputy Secretary
IFD, MoHUA

Y. S. Awana
Deputy Secretary (CBUD)
MoHUA

Sajeesh Kumar N
Director (Smart Cities)
MoHUA

Sudhir Kumar Tewari
Economic Adviser (Coord)
MoHUA

Shortlist of Bidders for Assessment of Liveability Index of 116 cities of India

Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max 100)
Ipsos Research Pvt. Ltd.	Athena Infonomics India Pvt. Ltd.	The Economist Group Limited			100
PricewaterhouseCoopers					85
Jones Lang LaSalle Property Consultants India Pvt. Ltd.					80
Deloitte Touche Tohmatsu India LLP	Insight Development Consultants Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild (ORG) India Private Limited	75
Infrastructure Development Corporation (Karnataka) Ltd (iDeck)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Consortium Partner 4 - Nielsen	75
CRISIL Risk and Infrastructure Solutions Limited, INDIA					75
IBI Consultancy India Private Limited					70
Ecorys Nederland BV	Ecorys India Pvt. Ltd.	BRIEF Private Limited			65
Urban Management Consulting Pvt. Ltd.	International City Manager's Association (ICMA)	Urban Management Centre			65
Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		63
Ernst & Young LLP, India (EY)	Sambodhi Research & Communications Pvt. Ltd.				60
ICRA Management Consulting Services Limited					60
AMS Consulting (P) Limited	Academy of Management Studies				55
Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					50
Centre for Good Governance					50
Creative Circle India	MN Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			50
Delhi Integrated Multi-Modal Transit System Ltd	Crux Consultants Pvt. Ltd.				50
Voyants Solutions Private Limited, India					50
Mehta and Associates					45
Research & Development Initiative Pvt Ltd					45
Terracon Ecotech Pvt. Ltd.	M/s Sustainable Consultants Pvt. Ltd (Formerly M/s Sustainable)	Everest Resources LLP (Formerly M/s Krish Enterprises)			40
Ocean Point Consult Pvt. Ltd					35
Carbon Eco System Private Limited	Maxwell Stamp PLC				32
Environmental Technical services Pvt. Ltd.					10
All India Institute of Local Self Government					10
CRP Risk Management	Infrastructure Management and Advisory Services Pvt Ltd				[illegible]
ICLEI South Asia					[illegible]
MASHAL	College of Engineering, Pune	Abhiyan Consultancy Services LLP	Institute for Housing and Urban Development Studies Rotterdam		8

AIILSG **Society Not Qualified**

S.No.	Parameter	Maximum Marks	Criteria	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year		0
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		100			0

AMS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year	15	10
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.75	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	90	
			Total for consortium	90	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks	4	
			Total for consortium	4	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		100			55

Caritas

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	7	7
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.8	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	30	
			Total for consortium	30	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
	Total	**100**			**32**

Centre for Good Governance -**Society Not Qualified**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			0

Creative Circle

S.No.	Parameter	Maximum Marks	Criteria	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	11.5	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	52	
			Total for consortium	52	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			50

CRISIL Risk and Infrastructure Solutions Limited - Public Limited Company

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	30	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	68.59	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	400	
			Total for consortium	400	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			75

CRP - Inconsistent documentation - Incorporation certificate not given, financial statements do not match date of registration

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

DIMMTS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	145.88	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	178	
			Total for consortium	178	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

Deloitte

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	915.9	15
3	StaffHaving experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	220	
			Total for consortium	220	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			75

OPM

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	8	8
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	7.2	5
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	216	
			Total for consortium	216	25
4	Experience of the Firm in implementing assignements related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to developement of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			**63**

Mehta&Ass

S.No.	Parameter	Maximum Marks	Criteria	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	23	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	15.4	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	75	
			Total for consortium	75	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			45

MASHAL - Society not qualified

S.No.	Parameter	Maximum Marks	Criteria	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

JLL

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	20	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1700	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	65	
			Total for consortium	65	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**80**

IPSOS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	167	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	726	
			Total for consortium	726	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	7	
			Total for consortium	7	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	7	
			Total for consortium	7	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	6	
			Total for consortium	6	20
Total		**100**			**100**

IDECK

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	17	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	19.6	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	1587	
			Total for consortium	1587	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			75

ICRA

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	30	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	18	
			Total for consortium	18	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			**60**

ICLEI - Society Not Qualified

S. No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			0

(B)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	17.8	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	50	
			Total for consortium	50	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**70**

Hindustan Thompson (No work orders submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	79	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	615	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	32	
			Total for consortium	32	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

E&Y (Work orders for only 2 eligible projects submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2202	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	10000	
			Total for consortium	10000	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			**60**

ETS

S.No.	Parameter	Maximum Marks	Criteria	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.6	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 <20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**10**

Ecorys

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	16	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	276	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	53	
			Total for consortium	53	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			65

Designpoint

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.14	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	23	
			Total for consortium	23	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**35**

R&D Ini

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	18	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	3.27	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	6	
			Total for consortium	6	10
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to developement of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**45**

PWC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	34	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1577	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	646	
			Total for consortium	646	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	5	
			Total for consortium	5	20
Total		**100**			**85**

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S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	9	9
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.63	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	19	
			Total for consortium	19	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**44**

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UMC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1.13	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	25	
			Total for consortium	25	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**65**

Voyants

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	84.16	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	26	
			Total for consortium	26	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			50

RE: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project - WB5294-09/17

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Oct 30, 2017 at 12:09 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: jsupa-mhupa@gov.in, dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

This is regarding selection of a consulting firm for the assignment of "**Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**", which is an activity under Procurement Plan of CBUD Project.

2. As per the World Bank's requirements, the Request for Expression of Interest (REOI) was published in STEP, World Bank and subsequently published in UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS.

3. The applications were invited from the eligible consulting firms through REOI published on 8th September 2017 on www. eprocure.gov.in with the last date of 03rd October 2017. Besides, The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017.

4. Further, 28 applications were evaluated by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project in its meeting held on 24-25 October 2017. The detailed Evaluation Sheet is also attached..

5. On the basis of minutes/recommendations of the Procurement Committee, the Ministry has approved the shortlisting of the following 6 consulting firms, who

have secured more than 75 marks, for issuing the Request for Proposal (RFP).

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle Property Consultants India Private Limited**	-	-	-	-	**80**
4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

6. You are requested to give the concurrence/comments of the World Bank for taking further necessary steps viz. issuance of RFP to the shortlisted consulting firms at the earliest.

[Quoted text hidden]

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs

(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

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2 attachments

Minutes of the meeting held on 24-25 October 2017.pdf
2816K

The deatailed Evaluation Sheet.pdf
14912K

Smart City Division

***

Subject:- REOI for shortlisting of agencies for assessment of liveability index in selected cities.

***

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

02. The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework. The proposal has already been approved by IFD in another file.

03. An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains .

04. The selection of the agency shall be made through two tier procurement process of the World Bank. In first step REOI will be issued and based on the qualification criteria, as per World Bank procurement process, 6 consulting firms will be shortlisted. In the second step, RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

05. The budget for the assignment is estimated at Rs. 16.41 crore. World Bank has also given in principle approval for this assignment *(may be seen at correspondence side)*. IFD has given approval to the assignment in a separate file.

REOI is attached below for concurrence of the IFD please.

26/04/2017 2:42 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

May kindly be concurred please.

SS

26/04/2017 2:53 PM

SAMEER SHARMA
(AS (SC))

26/04/2017 5:02 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

26/04/2017 5:43 PM

Yashodhara Vijayan
(DS(FINANCE))

The general principle for shortlisting firms through EoI is that more weightage is to be given to past experience of the firms (60%), Experience of Key personnel(25%) and financial strength of Consulting firm 15%. In the REoI no weightage has been given to financial strength of the firm and weightage given to experience of key personnel is only 10.Appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

28/04/2017 6:58 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 1:06 PM

Jhanja Tripathy
(JS &FA)

03/05/2017 1:28 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 2:49 PM

Pankaj Kumar
(US(IFD-II))

As advised by IFD , the evaluation criteria has been modified. The revised REOI may be seen below. File may be sent to IFD for their concurrence.

03/05/2017 5:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Approved. Let us consult IFD.

SS

03/05/2017 5:27 PM

SAMEER SHARMA
(AS (SC))

03/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/05/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding REoI for shortlisting of agencies for assessment of liveability index in selected cities.

The draft REoI was examined in IFD at pg.2/N. and it was suggested that appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

Accordingly, the Programme division has provided weightage as under:

Experience of Key personnel	25%
Experience of Firm	60%
Financial strength of the firm	15%

We may now concur to the proposal.

04/05/2017 11:23 AM

Pankaj Kumar
(US(IFD-II))

The weightages given to each component are as were discussed with F.A. earlier and in accordance with instructions of M/o Finance.

REoI may issue as proposed.

05/05/2017 11:00 AM

Yashodhara Vijayan
(DS(FINANCE))

05/05/2017 12:46 PM

Pankaj Kumar
(US(IFD-II))

08/05/2017 10:24 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Smart Cities-III Division

*****

Subject:- Request for Proposal (RFP) for shortlisting of agencies for assessment of Liveability Index in selected cities.

After getting the concurrence by IFD, MoUD, the National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment for procurement of Agency. Accordingly, **REOI was floated on 9th May 2017** with the l**ast date of 30th May 2017**(**PUC1**)

2. Meanwhile , RFP has been prepared and sent the World Bank for their comments/no objection. It may be mentioned that the **World Bank have already conveyed that technically the package meets their principal** approval vide their mail dated 13th April 2017.

3 . **The approximate cost for hiring the Agency is Rs. 16.41 cr.**(p. 9/ PUC2). RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

4. **We may send the file to IF for their concurrence for RFP for Liveability Index** (PUC3) and **Standard Form of Contract** (PUC4).

29/05/2017 3:40 PM

G Vijay Kumar
(US SC-III)

29/05/2017 5:24 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

As proposed, let us send to IFD.

SS

29/05/2017 5:25 PM

SAMEER SHARMA
(AS (SC))

29/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

30/05/2017 10:29 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding hiring of a consultant by NIUA for the consultancy services for " assessment of Liveability Index in selected cities".

2. After concurrence of IFD, NIUA floated REoI for which the last date was 30th May, 2017. It is not known whether the firms have been shortlisted. Meanwhile, due to urgency, the draft RfP has been prepared by the Programme Division (pg.60-122/c.) and sent it to IFD for vetting.

3. The draft RfP has been prepared as per the World Bank's guidelines on Selection and Employment of Consultants. The draft RfP seems to be in order. We may, therefore, concur to the proposal subject to vetting the same from the World Bank.

06/06/2017 12:24 PM

Pankaj Kumar
(US(IFD-II))

The Division may confirm that the firms to whom RfP has to be issued have been cleared by World Bank.

07/06/2017 11:09 AM

Yashodhara Vijayan
(DS(FINANCE))

07/06/2017 11:13 AM

Pankaj Kumar
(US(IFD-II))

We have already got the concurrence from bank. May kindly attach their remarks.

07/06/2017 12:11 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

The **Request for Proposal (RFP)** for the selection of Consultant for Assessment of **livability index**, to be procured by NIUA (on behalf of MoUD) **was cleared by the World Bank** vide email dated 31st May 2017. **(PUC3)**

07/06/2017 1:08 PM

G Vijay Kumar
(US SC-III)

With reference to RfP, the following clarifications may be furnished by the Division:-

1.Under the heading Instructions to Consultants – E. Data Sheet clause No. 16.2 it has been mentioned that price adjustment provision applies to remuneration rates.It has been mentioned in ToR that reimbursement will be adjusted every twelve months based on a formula. However, this is not normally done and remuneration is fixed for the entire period of contract. This may be revised.

2.Clause 25.1 only the basic contract price and service tax are to be included in the financial bill and not all taxes payable by the Consultants.

3.As per section-7.1(iv) of ToR, 116 cities will be covered in 1st year and the coverage of cities may be extended in subsequent years. As the number of Smart Cities is 100 (number of AMRUT cities 500, what is the criteria for selection of cities for liveability index).

09/06/2017 4:29 PM

Yashodhara Vijayan
(DS(FINANCE))

While I appreciate the observations, the matter is between NIUA and WB. Why is IFD in picture?

10/06/2017 1:38 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

12/06/2017 10:30 AM

Yashodhara Vijayan

(DS(FINANCE))

12/06/2017 10:39 AM

Pankaj Kumar
(US(IFD-II))

As per the observations of IFD, it has been decided that there will be no adjustment in the price. Appropriate modification has also been made in the updated RFP in the TOR Clause 7.1 (v),(vi),(vii) attached herewith to reflect the same.

2. The Basic Contract Price along with applicable GST will be payable by the client. Appropriate modification has been made to clause 25.1 in the updated RFP attached herewith.

3. The list of 116 Smart Cities represent shortlisted Smart Cities and other million plus cities which may not have been shortlisted. The number of million plus cities may increase in subsequent years and hence the statement that “the number of cities may be extended” has been included. In any case fresh procurement will be undertaken every year for the appointment of an agency(s) for undertaking the study with a fresh list of cities and fresh scope of work.

4. The REOI was issued by MoUD and the evaluation is under process. In a similar way, the RFP is also be issued by MoUD and the necessary modifications have been carried out in the revised RFP. The file may be sent to IFD for their concurrence.

03/07/2017 1:16 PM

G Vijay Kumar
(US SC-III)

03/07/2017 4:05 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/07/2017 6:01 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Observations of IFD have been incorporated in RfP. We may concur.

05/07/2017 12:58 PM

Yashodhara Vijayan
(DS(FINANCE))

Ministry of Urban Development has already developed a set of 79 standards across 15 categories to assess the liveability standards in cities. However, the need to assess the 'Liveability Index' from budgetary support without any defined outcome is not clear. There is already a service level benchmark for the schemes that are being implemented by the Ministry. The entire scheme of AMRUT rests on the outcome parameters that have been fixed on the foundation of these service level benchmark which has been carried out for 500 Urban Agglomerations by the states. This was an unique exercise in capacity building.

Secondly, MoUD also undertook a massive exercise of competition for Smart Cities which helped the cities spell out, in clear-cut terms, the scale and kind of development they wish for their cities to achieve. Towards this, we had empanelled a large number of consultancy firms to do the hand-holding for the cities, wherein a basic exercise was carried out by the cities along with its citizens and the consultants which realised the inherent lacunae in their cities and determine projects which will make their city 'Smart'. Accordingly, a number of cities and States changed policies to strengthen and enable their existing municipalities and parastatals.

Thirdly, there are also a list of urban reforms which determines the quantum of reform funds and funds of devolution of Finance Commission that the city will receive.

In view of the preceding scenario, wherein the cities already have a number of parameters to achieve with clearly defined measurable outcomes linked directly to funds disbursal and which has third-party verification (Bloomberg and MoUD through objective parameters), it is not prudent to clutter the area with another index which is not linked to any outcome. However, NIUA may carry out its own activity if it so desires.

I am unable to concur to the proposal under MoUD's budget.

12/07/2017 10:42 AM

Jhanja Tripathy
(JS &FA)
Digitally Signed

12/07/2017 11:40 AM

Yashodhara Vijayan
(DS(FINANCE))

12/07/2017 12:12 PM

Pankaj Kumar
(US(IFD-II))

12/07/2017 4:56 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

13/07/2017 10:31 AM

G Vijay Kumar
(US SC-III)

The 'Liveability Standards in Cities' is a unique effort initiated by the MoUD for assessing the standards of living in Indian cities. This is the first attempt by any country to systematically identify, track and improve upon critical parameters that define urban quality of life.

02. The framework touches upon all institutional, social, economic and physical aspects that impact the lives of citizens, captured through a detailed set of 79 indicators spread across hitherto unmapped aspects like safety, mixed land use and compactness, availability of open spaces, identity and culture, pollution etc. The framework also covers various traditionally non-urban aspects (not covered under urban missions) which are crucial for making cities more liveable such as health, education, availability of power etc.

03. On the other hand, the indicators adopted under AMRUT and other missions are limited and are meant to be specific milestones for measuring mission progress rather than assess the overall liveability.

04. The Standards have thus been envisioned both as a reference framework as well as a planning tool for cities. The 'City Liveability Index' developed will result in a ranking framework, thereby fostering a competitive environment amongst cities for improving their Liveability. The standards are also strongly linked to the Sustainable Development Goals and successful achievement of standards will contribute to the achievement of such SDGs.

05. The 'Annual Assessment of Liveability Standards' is an ambitious national project that will involve yearly survey (including field surveys) and compilation of a large number of datasets across the various indicators, analysis of such datasets, development of indexes and ranking of cities. This will require extensive human resources and field survey experience, which can be brought in through third party agencies. NIUA will coordinate and provide knowledge support on behalf of the MoUD.

06. The Liveability Standards document (conceptual framework) and the REOI for 'Selection of Consulting firms for assessment of Liveability in 116 cities in India' have both been approved by the IFD earlier.

07. The REOI was issued after concurrence of the IFD and in response, 21 applications were received. Procurement committee duly represented by IFD has shortlisted 6 firms based on their techno-financial capabilities to undertake the assignment. The RfP is in continuation of this process, which has already been concurred by the IFD.

08. It is expected that the implementation of this framework will help cities understand their baseline and pursue tangible outcomes over time,

and result in systematic transformation of Indian Cities over time. The assessment of liveability index was launched by Hon'ble UDM in the National Workshop on Urban Transformation held on 23.06.2017 at Vigyan Bhavan.

09. In light of the above, IFD is requested to reconsider and concur the RfP please.

(Sajeesh Kumar N)
Director (Smart Cities)
17.7.2017

AS (SC)

17/07/2017 4:00 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

17/07/2017 4:39 PM

SAMEER SHARMA
(AS (SC))

17/07/2017 5:10 PM

Jhanja Tripathy
(JS &FA)

It has already been pointed out in note#35 that concept of livability standards should have been part of the Smart City proposals. The proposals were prepared by professional agencies keeping in mind the standards of Smart living and Sustainability. It was expected that application of these concepts would improve the livability of these cities. Moreover, the cities are already competing for Smart City ranking, Swachh Sarvekshan ranking, Reforms incentives etc. As noted earlier, it would not be prudent to introduce another index which is not related to any outcome.

It is also not clear as to how the expenditure of Rs. 16.41 crore for this activity could be met out of CBUD funds since the entire amount of Rs 268.4 crores has already been either spent or committed as per the budget allocation of CBUD funds circulated by Smart City Division in May 2015.

25/07/2017 5:32 PM

Yashodhara Vijayan
(DS(FINANCE))

It has been indicated in Para-5 in preceding pages that this "is an ambitious project that will involve yearly survey (including field survey) and compilation of a large member of datasets, development of indexes and ranking of cities".

As stated by SCM Division, it will require large scale investment to engage human resources for carrying out field survey, data mining and data interpretation.

Before initiating a permanent ongoing yearly exercise of this scale, which tantamounts in its structure, ambition and expenditure , as a new scheme , it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC . The proposal, is its present format , cannot be considered for concurrence.

31/07/2017 2:17 PM

Jhanja Tripathy
(JS &FA)
Digitally Signed

01/08/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

01/08/2017 12:15 PM

Pankaj Kumar
(US(IFD-II))

For information pl.

01/08/2017 2:47 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

01/08/2017 2:49 PM

SAMEER SHARMA
(AS (SC))

02/08/2017 10:25 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/08/2017 12:20 PM

G Vijay Kumar
(US SC-III)

The concept of Liveability and the design of the annual assessment of Liveability has been vetted and approved at all levels before initiation of the REOI for the project. The approval of the Hon’ble UDM was received on 10th April 2017, after which the roll out design and modalities were duly vetted and approved by the IFD on 25th April 2017. Based on this the project was publicly launched by hon’ble UDM on 23rd June 2017.

Funding of the assignment under CBUD has been approved by IFD and the project has been acknowledged as one of the items for funding during the last PMB meeting of the CBUD Project. The procurement plan and budget of CBUD have also been duly realigned for this purpose. The REOI for procurement of consultants was also issued after concurrence of the IFD, and 6 firms have been shortlisted by the Procurement Committee. The RfP is in continuation of this process.

This RfP for assessment of Liveability Standards is only for 1 year. The assessment may be repeated in subsequent years on the basis of the outcomes achieved. It is pertinent to note that Swachh Sarvekshan (on similar lines) has been implemented as an initiative of the Ministry, but not as a separate scheme. This is also an annual exercise, which is now being repeated in the second year.

In light of the above, IFD is requested to reconsider and concur the RfP please.

03/08/2017 12:31 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

There are two other facts, (1) the Swacch Sarvekshan is similar (not a scheme), and (2) the idea of competition to rank cities based on revenue generation and service levels was also sent in a meeting held on PMO. Please get from Ravinder (CPHEO) and link up.

SS

03/08/2017 2:02 PM

SAMEER SHARMA
(AS (SC))

Reference remarks of AS (UA) above.

As brought out in the above note, *'Swachh Survekshan'* has been rolled out on similar lines as proposed liveability index (not as a scheme).

Moreover, the RoD of the meeting chaired by the Hon'ble PM to discuss the progress of 'Clean Ganga Mission' on 18th May 2017 may also kindly be perused at Annexure *(attached below)*. As per point No.XV of the RoD, it is observed that "*the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.*"

The Liveability Index is an effort in this direction. The Index aims to assess the performance of cities across four pillars such as institutional, social, economic and physical. The comprehensive assessment will also involve 79 indicators which include data on tax collection, capital expenditure, performance of utilities such as water supply, transportation, power supply, sewerage etc. The assessment of such liveability indicators and ranking of cities is thus, directly linked to the outcome being targeted under the various urban Missions. This kind of ranking will create a competitive

environment among cities to improve their overall performance and quality of life of citizens.

04/08/2017 2:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Notes on pre-pages may please be seen

This is not a new scheme, but a contract similar to what SBM has done in the Swacch Sarvekshan Survey. We have also completed the empanelment of six agencies and now the RfP has to be issued to them. Moreover, the Liveability standards are largely impact indicators which the Niti Aayog is monitoring through the IFD.

Most important, based on the approval of IFD, the Hon'ble Minister has announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications. After going forward so much retreat will cause great embarrassment to the government and loss of face for all of us.

In view of the above JS&FA may kindly concur.

SS

08/08/2017 7:04 PM

SAMEER SHARMA
(AS (SC))

09/08/2017 9:31 AM

Jhanja Tripathy
(JS &FA)

09/08/2017 9:47 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Integrated Finance Division

This is regarding concurrence of draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that the proposal is a permanent ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has informed that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. Further, it is in advanced stage and the Hon'ble Minister has already announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications.

4. Initially the Programme Division had stated that the World Bank had given their 'in-principle' approval to the REoI. Now it is understood that the World Bank has advised the Division to re-issue the EoI as proper procedure according to the WB guidelines was not followed while issuing /evaluating the EoI.

5. In view of above, there is no need to take any action at present.

18/08/2017 12:41 PM

Pankaj Kumar
(US(IFD-II))

18/08/2017 4:06 PM

Yashodhara Vijayan
(DS(FINANCE))

please discuss.

21/08/2017 3:39 PM

Jhanja Tripathy
(JS &FA)

23/08/2017 4:18 PM

Yashodhara Vijayan
(DS(FINANCE))

Ref. Discussion with JS&FA

This is regarding draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that since the proposal is an ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has stated that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. It may be mentioned that basic structures of SCM and SBM are very different.While a gap analysis and a Service Level Benchmark is already inbuilt in the Smart City Proposals prepared by various empanelled agencies and cities were selected after comprehensive analysis of the proposals, no such exercise was undertaken for SBM. Swachh Sarvekshan was carried out to gauge the progress of the Mission from the baseline.

4. However, the Division has referred to a meeting chaired by Hon'ble PM, wherein it was noted that the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of performance of key utilities. The Liveability Index is an effort in this direction.

5. In view of para 4 above and preceding notes of Programme Division , we may concur to the proposal for assessing the Livability Standards of proposed 116 cities for one year. This would also give a fairly good idea of the progress of the Scheme. The estimates may be pruned accordingly.

25/08/2017 2:53 PM

Jhanja Tripathy
(JS &FA)

25/08/2017 2:55 PM

Yashodhara Vijayan
(DS(FINANCE))

25/08/2017 3:21 PM

Pankaj Kumar
(US(IFD-II))

For information sir.

25/08/2017 4:09 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

26/08/2017 11:09 AM

SAMEER SHARMA
(AS (SC))

28/08/2017 9:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/09/2017 5:35 PM

G Vijay Kumar

(US SC-III)

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:42 PM

Parmod Kumar
(Dir(UD))

06/09/2017 11:07 AM

SHIV DAS MEENA
(JS (AMRUT))

The file is returned as per notes on the other file in this matter.

07/09/2017 3:04 PM

Shiv Pal Singh
(DIR (AMRUT))

Is it part of CBUD?

08/09/2017 4:04 PM

Sanjay Kumar
(JOINT SECRETARY)

08/09/2017 4:23 PM

Parmod Kumar
(Dir(UD))

REQUEST FOR EXPRESSIONS OF INTEREST (CONSULTING SERVICES – FIRMS SELECTION)

[*India*]
[*Capacity Building of Urban Development (CBUD)*]
Loan No./Credit No./ Grant No.: 4997-IN

Assignment Title: Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities
Reference No. (as per Procurement Plan): ____________________

The *Ministry of Urban Development, Government of India has received* financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include Assessment of Liveability in 116 cities. The assignment is for a period of 7 months.
The National Institute of Urban Affairs (NIUA) on behalf of Ministry of Urban Development now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	10
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	20
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	30

S.No.	Parameter	Maximum Marks
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	30
	Total	100

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers* July, 2016 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a consortium and joint venture to enhance their qualifications.

A Consultant will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours [*Director, National Institute of Urban Affairs, Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road New Delhi 11003.0900 to 1700 hours*].

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [____________].

[*National Institute of Urban Affairs*]
Attn: [*insert name of officer & title*]
[*Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road*]
[*110028, New Delhi, India*]
Tel: [*include the country and city code*]
Fax: [*include the country and city code*]
E-mail: *[include e-mail address]*

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

______, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA.

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ____________ and ____________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link__________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:________________ with copy to ________ and __________. The submission shall be electronically on the portal ___________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: ______________.

b) Any Addendum thus issued will also be posted on the website: ________.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: ___________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7 and 7A

	assessment of data related to governance, transportation, environment, housing and sanitation.	
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
c. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
d. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection

bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

e. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**10**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**20**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**30**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………… ……………… (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we .... (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms......................... .... (name and residential address) who is presently employed with us and holding the position of .... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

(Signature)

(Name, Title and Address)

Accepted

.... (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT:

We, M/s. .... (Lead Member), and M/s .... (the respective names and addresses of the registered office) do hereby designate M/s. .... being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ......Day of 2016

....

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date

Name ______________________________

Place

Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [1]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)............**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	Criteria[1]	Number and Name of Cities
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only[2])(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)..........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. .... (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on _________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ....Day of ...., 201....

Name of the Applicant

....
Signature of the Authorised Person

....
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of _________ 2015 at __________ among ________ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

_____, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link_________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:______________________ with copy to _________ and __________. The submission shall be electronically on the portal ____________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7

	assessment of data related to governance, transportation, environment, housing and sanitation.	and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams

consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
Total		**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. …………….. (Lead Member), and M/s …………….. (the respective names and addresses of the registered office) do hereby designate M/s. ……………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	

4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)……….**	

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Description of actual services provided by your staff within the assignment:

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA

72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544

110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: www.worldbank.org/procure.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f)"CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provides the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

	(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant. (u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) "Services" means the work to be performed by the Consultant pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal. 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. 17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal. 17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail. 17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**." 17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**." 17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its “no objection”, if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client’s evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client’s evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant’s overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:_____________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: ______________________ Contact person/conference coordinator:*[insert name and title]* ______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____**21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* *[If appropriate, add translation of the warning marking ["Do not open…."] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

<table>
<tr><td></td><td>The opening shall take place at:
<i>[Insert:</i> “same as the Proposal submission address<i>” OR insert and fill in the following:</i>
Street Address: Maulana Azad Road
Floor, room number: Room No.____, ____Floor, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – “16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:
<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
<tr><td>(a)</td><td><i>Technical approach and Methodology</i></td><td>30</td></tr>
<tr><td>(b)</td><td><i>Work Plan</i></td><td>10</td></tr>
<tr><td>(c)</td><td><i>Organisation and staffing</i></td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (ii) –50 points
<i>{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}</i></td><td>50</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>(iii)</td><td>Key Experts' qualifications and competence for the Assignment</td><td>40</td></tr>
</table>
<table>
<tr><th>Position</th><th>Total points</th></tr>
<tr><td>Team leader</td><td>16</td></tr>
<tr><td>Urban Management Specialist/ Planning Expert</td><td>8</td></tr>
<tr><td>Market Research Specialist</td><td>8</td></tr>
<tr><td>Statistician</td><td>8</td></tr>
<tr><td>Total</td><td>40</td></tr>
</table>
<p>The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:</p>
<p>1) General qualifications (general education, training, and experience): 40%</p>
<p>2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) <i>: 60%</i></p>
<p>Total points for the three criteria<i>:</i> 100</p>
<p>……</p>
<p>The minimum technical score (St) required to pass is<i>:75 (seventy five) points</i></p>
</td></tr>
<tr><td>23.1</td><td>An online option of the opening of the Financial Proposals is offered: Yes</td></tr>
<tr><td>25.1</td><td>For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices
If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
All applicable taxes shall be paid by the Consulting firm
The Client shall reimburse GST to the consultant as per the applicable rates</td></tr>
<tr><td>26.1</td><td>The single currency for the conversion of all prices expressed in various currencies into a single one is: Indian Rupees</td></tr>
</table>

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			*[Home]*													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
									Subtotal								
									Total						▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 "Home" means work in any place other than Client's working place mentioned in the RfP.
4. 'Field" means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Signature Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: _________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

---

[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	___________	_____	[*Home*]	_____	▨	▨	▨	
N-2			[*Field*]	_____				
___	___________			_____	▨	▨	▨	
___								
___				_____				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

   (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

   (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

   (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

  b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

  c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

  a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format attached at Annexure X;
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor’s Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor’s Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master’s Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master’s Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

13/6/2017
Out Today

PRIME MINISTER'S OFFICE

******

964
13/6/17

South Block,
New Delhi – 110 011

Please find enclosed, for information and further necessary action, copy of Record of Discussions (RoD) of the meeting chaired by the Prime Minister on 18.05.2017 to discuss the progress of 'Clean Ganga Mission'.

(Dr. Shrikar Pardeshi)
Director
Tel. No. 2301 8040

CEO, NITI Aayog
Secretary, M/o Water Resources, River Development & Ganga Rejuvenation
Secretary, M/o Environment, Forests and Climate Change
Secretary, M/o Urban Development
Secretary, M/o Drinking Water & Sanitation
DG, National Mission for Clean Ganga
Chairman, Central Pollution Control Board

PMO ID no. 4638569/PMO/2017-ES-2 Dated: 08.06.2017

2|3451390

Record of Discussions of the Meeting chaired by Hon. PM to discuss the progress of 'Clean Ganga Mission', 18th May 2017, 7 pm, South Block

Prime Minister chaired a meeting to discuss the progress of 'Clean Ganga Mission'. The list of the participants is attached.

2. Secretary, M/o Water Resources, River Development and Ganga Rejuvenation made a brief presentation on the concept. Following decisions were taken after detailed deliberations:

i. The voluntary organizations like that of Mata Amritanandmayee, who have made huge donations towards the cause of cleaning of Ganga, may be appropriately involved in the community awareness programmes.

(Action: NMCG)

ii. A system should be put in place to regularly cross-verify the performance of the Real Time Water Quality Monitoring Stations.

(Action: CPCB)

iii. Amongst the Grossly Polluting Industries (GPIs), those which are complying with the pollution control norms should be publicly felicitated, while names of those which are not complying with the pollution control norms may be prominently displayed at public places.

(Action: NMCG, CPCB)

iv. An effort be made to explore whether different eco-friendly technology could be used for the process of tanning by the tanneries, so as to reduce the pollution load in the Ganga.

(Action:MoWR, NMCG)

v. The big temple trusts in the country could be appealed to participate in the process of cleaning of ghats and banks of Ganga. An appropriate plan be made to allocate defined stretches of Ganga, across its length, to these temple trusts for cleaning.

(Action: NMCG)

vi. The possibility deploying of solar operated trash skimmers for river surface cleaning may be explored.

(Action: NMCG)

vii. The possibility of banning usage of plastic within certain zone from the banks of Ganga may be explored.

(Action:MoEF, NMCG)

viii. The works of construction of ghats and crematoria as well as that of cleaning of ghats etc. should be left to the local municipal / village administration and the State Governments. The NMCG should mainly focus on controlling and reducing the pollution of the river Ganga due to sewage and industrial effluents.

(Action: NMCG)

ix. An attempt be made to organize competition in the 5 States on the parameter of Swachhata in the villages located on the banks of the Ganga.

(Action: MoDWS)

x. Regarding the upcoming turtle sanctuary at Varanasi, a holistic view be taken about the location.

(Action: MoEF, NMCG)

xi. For increasing awareness amongst the citizens visiting Ganga, hoardings containing appropriate messages be put up at suitable places near the banks of the river.

(Action: NMCG)

xii. The administrative capacity of local self-governments along the banks of Ganga needs to be augmented. The Ministry should prepare a proposal on comprehensive reforms in UP Jal Nigam with technical assistance of experts.

(Action:MoWR, NMCG)

xiii. The mission should ensure dissemination of information about the works done and about the ongoing activities.

(Action: NMCG)

xiv. M/o Railways may be appealed to buy the treated and recycled water from the STPs.

(Action:M/oRailways, NMCG)

xv. The municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.

(Action: MoUD)

Annexure

LIST OF PARTICIPANTS

1. Shri. Amitabh Kant, CEO, NITI Aayog
2. Dr. Amarjit Singh, Secretary, Water Resources, RD & GR
3. Shri. Parameswaran Iyer, Secretary, Drinking Water & Sanitation
4. Shri. U.P. Singh, Addl. Secretary and DG, NMCG
5. Shri. S.P. Singh Parihar, Chairman, CPCB

Prime Minister's Office

1. Shri. Nripendra Misra, Principal Secretary to PM
2. Dr. P.K. Mishra, Addl. Principal Secretary to PM
3. Shri. A.K. Sharma, Joint Secretary to PM
4. Ms. Debashree Mukherjee, Joint Secretary to PM
5. Dr. Shrikar Pardeshi, Director

Rakesh Gujral

From: Utpal Deka <utpal.deka@gmail.com>
Sent: 13 April 2017 11:49
To: Raja Dawn
Cc: Rakesh Gujral
Subject: REOI-Consulting-English-October2011.docx
Attachments: REOI-Consulting-English-October2011.docx

Sent from myMail for iOS

-------- Forwarded message --------
From: Vasudha Thawakar <vsarda@worldbank.org>
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, sajeesh.kr@gov.in <sajeesh.kr@gov.in>, utpal.deka@gmail.com <utpal.deka@gmail.com>
Date: Thursday, 13 April 2017, 11:16 +0530
Subject: RE: REOI_Liveability

Dear Mr. Kumar:

Technically, the package meets our principal approval. However, to begin procurement please:

- Send the REOI in Bank format, attached for reference
- Please include cost estimate
- Please update activity in STEP as all no objections will be online through STEP and not email

Please check the above parameters for the innovations package also.

Thanks and Best

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

+91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: Vijay Kumar [mailto:g.vijaykumar.moud@gmail.com]
Sent: Wednesday, April 05, 2017 6:30 PM
To: Vasudha Thawakar
Cc: sajeesh.kr@gov.in; utpal.deka@gmail.com; Rakesh Gujral
Subject: Fwd: REOI_Liveability

Dear Madam,

Please find enclosed herewith a REOI for shortlisting of firms for assessment of livability of selected cities out of 79 indicators (may be varied). At present, 114 cities have been identified and the same may be varied.

The procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

--

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Urban Development,

Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217

M. 9582576758

Justification for the Liveability Index Assessment Proposal

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework.

An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains (e.g. solid waste management, transport) and accredited with or belonging to inspection bodies (such as **Bureau Vertitas** (India) Pvt. Ltd., **TUV SUD South Asia** Pvt. Ltd. etc.) having extensive experience in doing such kind of surveys and assessments.

Regional breakup of 116 cities is given as Annexure below – where it emerges that 9 Regional clusters having 13 cities each are formed, based on which city assessment costs are derived. Suggested indicators that require surveys are also described in Table 2. About 15 indicators are assumed to need surveys and/or laboratory tests which are costed tentatively, as survey sample size and need would vary as per indicator and the city. The agency estimates are based on charge-out rates (manpower + expenses + profits) as have been deployed in Project Management Unit (PMU) teams hired by the Ministry till date. Travel and other cost estimates are based on similar costs in other current projects, market trends and contracts given by the Ministry.

NIUA will deploy a team of 5 professionals to monitor the overall project, maintain quality & integrity of data & standards across cities, and capture lessons from the assessment exercise. This will include development of a standard methodology and software to be used by all the teams, so that the assessment is uniform and indexation is possible. The NIUA team is considered for 9 months (May 2017 to January 2018, inclusive) with the first 3 months given for internal team setup, agency procurement process and a universal software development for the Assessment. The next 6 months will be working in tandem with the different teams. The last month is kept for wrapping up the process for 2017 after the results are announced.

The NIUA team will consist of human resources as given in Table 1 below.

Table 1

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Specialist (cross sectoral)	Post Graduate degree in Planning from a recognised university/institution. Experience of planning projects or city development aspects across planning sectors of transport, environment, services, etc.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
IT Specialist/Software Developer	Post Graduate in Software development from a recognized university/institution. Experience in developing software for Database Management System and data analysis	10 years' experience in the field. Developed at least 2 software for similar nature.

NIUA team will also have an Administrative Officer / Office Manager (qualifications and experience to suit the requirement) to manage the above project and its related matters.

Professionals deployed by Agency at the National level

The National level team to be located at NIUA is considered for 7 months (July 2017 to January 2018, inclusive), of which 6 months are common with the regional teams who will do the assessment of the cities. There are 12 workshops planned overall to be attended by the qualified members of the national level team: 1 each at National level for pre-bid, launch with selected agencies and at closing; and 1 each at each of the 9 Regional Centres midway to ascertain progress. The national team will consist of human resources as given in Table 2 below.

Table 2

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

The national team will also have Data Entry Operators (4 Nos.).

The national level team will be responsible for aggregating data received from the teams, etc . An important function of the National level team will be quality control to ensure the authenticity of the data collected through surveys. The authenticity of data shall be ensured through visual backup like photographs etc. and using geo-tagging technology through hand held devices. A useful precedence is the *Swacch Sarvekshan*.

Teams for City level assessment aggregated at Regional Cluster levels

The data collection and ground surveys of all the cities will be carried out by teams deployed by the Agency at Regional levels and travelling to the cities in the cluster. Each City team will carry out the assessment of indicators across in 15 categories through verification of secondary data and deployment of necessary surveyors for each city, and the laboratory tests as required in some

indicators. About 15 indicators are assumed to need surveys and/or laboratory tests. Table 2 gives the details.

Table 2

Standard Category	No. of category	Expected expertise of Assessment Team members
Governance	1	Governance
Social	2	Identity and Cultural
	3	Education
	4	Health
	5	Safety and Security
Economic	6	Economic and Employment
Physical	7	Housing and Inclusive
	8	Public Open Spaces
	9	Mixed Land use & Compactness
	10	Power Supply
	11	Transport and Mobility
	12	Assured water supply
	13	Waste water management
	14	Solid Waste Management
	15	Reduced pollution management

Requirement of Funds:

Liveability Index Assessment - Estimated Budget				
1	**Agency Costs**			
A	**National level team costs**			
a	**Human Resource for 7 months (Jul 2017 - Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.50	7	31.50
2	Survey and Sampling Specialist	3.00	7	21.00
3	Data Analytics and Indexing Specialist	3.00	7	21.00
4	Urban Transport Specialist	3.00	7	21.00
5	Environment Specialist	3.00	7	21.00
6	GIS Specialist	3.00	7	21.00
7	Data Entry Operators (4 nos.)	0.50	28	14.00
	Human Resource Costs		**Sub Total**	**150.50**
b	**Travel & related costs**	**Rate**	**Units**	**Amount (Lakh)**
	Team Lead+5 members airfare to 9 regional nodes once	0.15	54	8.10
	Accommodation for above for 2 days per trip	0.05	108	5.40
	Local Travel costs for 2 days each trip	0.03	54	1.62
	Miscellaneous and out of pocket expenses		lumpsum	0.50
	Travel & related costs		**Sub Total**	**15.62**
c	**Other Costs (reimbursible)**	**Rate**	**Units**	**Amount (Lakh)**
	Hardware & basic software requirements	1.5	10	15.00
	Workshops (9 at regional nodes and 3 at National level)	as per CCBP	12	42.00
	Report Editing & Printing (200 copies)	0.05	200	10.00
	Other Costs		**Sub Total**	**67.00**
	TOTAL National Team Costs for one year assessment (a+b+c)			**233.12**
B	**Assessment Costs for Cities aggregated at Regional level**			
a	**Remuneration**	**Rate/PM**	**No. of Months**	**Amount**
	Assessment Teams for Cities at Regional level	6.00	6	36.00
	Hardware & basic software requirements	1.50	6	9.00
			Sub Total	**45.00**
b	**Assessment costs (assuming avg. 13 cities per region)**	**Rate**	**Unit**	**Amount**
1	Travel airfare by 4 members to cities in region	0.15	52	7.80
2	Lodging Boarding for 2 days on shared basis in region	0.05	52	2.60
4	Local Travel per day	0.03	52	1.56

6	Survey & Lab Test Costs (assuming 15 indicators needing same)	0.50	195	97.50
7	Documentation & Misc. communciation costs		lumpsum	2.00
	Total Cost per region		**Sub Total**	**111.46**
	TOTAL Cost of City Assessment per region (a+b)			**156.46**
	Total Cost for City Level Assessment for 9 regions (covering all 116 cities)			**1408.14**
	Total Agency Cost (National + City assessment Teams) for 116 cities (A+B)			**1641.26**
2	**Monitoring & Project Management Team at NIUA**			
A	**Human Resource for 9 months (May 2017 Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.00	9	36.00
2	Urban Specialist (cross-sectoral)	2.50	9	22.50
3	Data Analytics, Statistics and Indexing Specialist	2.50	9	22.50
4	IT Prof/Software Engineer	2.50	9	22.50
5	Administrative Officer/Office Manager	1.50	9	13.50
	Total Human Resource Costs		**Sub Total**	**117.00**
B	**Other Costs (reimbursible)**			
1	Server & Software Licenses (incl. GIS)		lumpsum	20.00
2	Standard methodology & software development		lumpsum	100.00
3	Training on Software for National & Assessment Teams		lumpsum	130.00
4	Miscellaneous running costs of PMU team at NIUA	1.00	9	9.00
	Total Other Costs		**Sub Total**	**259.00**
	TOTAL Costs of Monitoring & Project Management Team at NIUA			**376.00**
	Total Cost of Assessment (Agency + NIUA) (1+2 above)			**2017.26**

Payment Schedule:

For NIUA:

30% advance

30% at the end of 3rd month,

30% at the end of 6th month,

10% at the end of the 9 months and releasing of the index

The payments will be based on Utilization certificates

For Agency: As per the terms set in the Terms of Reference (TOR) of the Request for Proposal

List of Cities:

Cluster Classiciation of Cities			
Sl. No.	Name of State	Name of City	Population
CLUSTER 1			
1	Uttar Pradesh	Lucknow	2,817,105
2	Uttar Pradesh	Agra	1,585,704
3	Uttar Pradesh	Moradabad	887,871
4	Uttar Pradesh	Aligarh	874,408
5	Uttar Pradesh	Rampur	325,313
6	Uttar Pradesh	Rae Bareli	191,316
7	Uttar Pradesh	Bareilly	903,668
8	Uttar Pradesh	Jhansi	505,693
9	Uttar Pradesh	Saharanpur	705,478
10	Uttar Pradesh	Kanpur	2,765,348
11	Uttar Pradesh	Varanasi	1,198,491
12	Uttar Pradesh	Ghaziabad	1,648,643
13	Uttar Pradesh	Meerut	1,305,429
14	Uttar Pradesh	Allahabad	1,112,544
	TOTAL	**14**	**16,827,011**
CLUSTER 2			
15	Puducherry	Puducherry	244,377
16	Tamil Nadu	Salem	829,267
17	Tamil Nadu	Thanjavur	222,943
18	Tamil Nadu	Vellore	185,803
19	Tamil Nadu	Dindigul	207,327
20	Tamil Nadu	Erode	157,101
21	Tamil Nadu	Tiruchirappalli	847,387
22	Tamil Nadu	Thoothukkudi	237,830
23	Tamil Nadu	Tiruppur	444,352
24	Tamil Nadu	Tirunelveli	473,637
25	Tamil Nadu	Chennai	4,646,732
26	Tamil Nadu	Coimbatore	1,050,721
27	Tamil Nadu	Madurai	1,017,865
	TOTAL	**13**	**10,565,342**
CLUSTER 3			
28	Maharashtra	Solapur	951,558
29	Maharashtra	Pune	5,057,709
30	Maharashtra	Aurangabad	1,175,116
31	Maharashtra	Kalyan-Dombivali	1,247,327
32	Maharashtra	Nagpur	2,405,665
33	Maharashtra	Amravati	647,057
34	Maharashtra	Nashik	1,486,053
35	Maharashtra	Thane	1,841,488
36	Maharashtra	Greater Mumbai	12,442,373
37	Maharashtra	Navi Mumbai	1,120,547
38	Maharashtra	Pimpri Chinchwad	1,727,692
39	Maharashtra	Vasai-Virar City	1,222,390

	TOTAL	12	31,324,975
CLUSTER 4			
40	Dadar & Nagar Haveli	Silvassa	98,265
41	Daman & Diu	Diu	23,991
42	Gujarat	Ahmadabad	5,577,940
43	Gujarat	Surat	4,467,797
44	Gujarat	Vadodara	1,670,806
45	Gujarat	Gandhinagar	202,776
46	Gujarat	Dahod	791,685
47	Gujarat	Rajkot	1,286,678
48	Rajasthan	Udaipur	451,100
49	Rajasthan	Ajmer	542,321
50	Rajasthan	Jaipur	3,046,163
51	Rajasthan	Kota	1,001,694
52	Rajasthan	Jodhpur	1,033,756
	TOTAL	13	20,194,972
CLUSTER 5			
53	Bihar	Bhagalpur	410,210
54	Bihar	Muzaffarpur	354,462
55	Bihar	Biharsharif	297,268
56	Bihar	Patna	1,684,222
57	Chattishgarh	Bilaspur	331,030
58	Chhattisgarh	Naya Raipur	150,000
59	Chhattisgarh	Raipur	1,047,389
60	Jharkhand	Ranchi	1,073,427
61	Jharkhand	Dhanbad	1,162,472
62	Madhya Pradesh	Indore	1,964,086
63	Madhya Pradesh	Bhopal	1,798,218
64	Madhya Pradesh	Ujjain	515,215
65	Madhya Pradesh	Satna	280,222
66	Madhya Pradesh	Sagar	273,296
67	Madhya Pradesh	Jabalpur	1,055,525
68	Madhya Pradesh	Gwalior	1,069,276
	TOTAL	16	13,466,318
CLUSTER 6			
69	Chandigarh	Chandigarh	961,587
70	Haryana	Karnal	286,827
71	Haryana	Faridabad	1,414,050
72	Himachal Pradesh	Dharamshala	22,580
73	Himachal Pradesh	Shimla	169,578
74	Jammu & Kashmir	Jammu	502,197
75	Jammu & Kashmir	Srinagar	1,180,570
76	NCT of Delhi	NDMC	257,803
77	Punjab	Jalandhar	862,886
78	Punjab	Ludhiana	1,618,879
79	Punjab	Amritsar	1,132,383

80	Uttarakhand	Dehradun	569,578
	TOTAL	12	8,978,918
CLUSTER 7			
81	Goa	Panaji	40,017
82	Karnataka	Davanagere	434,971
83	Karnataka	Belagavi	488,157
84	Karnataka	Hubbali-Dharwad	943,788
85	Karnataka	Mangaluru	488,968
86	Karnataka	Shivamogga	322,505
87	Karnataka	Tumakuru	302,143
88	Karnataka	Bangalore	8,443,675
89	Kerala	Kochi	602,046
90	Kerala	Thiruvananthapuram	743,691
91	Lakshadweep	Kavaratti	11,210
	TOTAL	11	12,821,171
CLUSTER 8			
92	Arunachal Pradesh	Itanagar	59,490
93	Arunachal Pradesh	Pasighat	24,656
94	Assam	Guwahati	957,352
95	Manipur	Imphal	268,243
96	Meghalaya	Shillong	143,229
97	Mizoram	Aizawl	293,416
98	Nagaland	Kohima	99,039
99	Sikkim	Namchi	12,194
100	Tripura	Agartala	400,004
101	West Bengal	New Town Kolkata	36,541
102	West Bengal	Durgapur	566,517
103	West Bengal	Bidhan Nagar	618,358
104	West Bengal	Haldia	200,827
105	West Bengal	Kolkata	4,496,694
106	West Bengal	Haora	1,077,075
	TOTAL	15	9,253,635
CLUSTER 9			
107	Andaman Nicobar	Portblair	140,572
108	Andhra Pradesh	Kakinada	312,538
109	Andhra Pradesh	Visakhapatnam	1,728,128
110	Andhra Pradesh	Tirupati	287,482
111	Andhra Pradesh	Amaravati	103,000
112	Andhra Pradesh	Vijayawada	1,034,358
113	Odisha	Bhubaneswar	840,834
114	Odisha	Rourkela	320,000
115	Telengana	Warangal	819,406
116	Telengana	Karimnagar	261,185
	TOTAL	10	5847503
TOTAL Cities selected		116	252712187
Average Cities per cluster		12.9	14364427.2

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

9th May, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context Ministry of Urban Development has developed a set of ‘Liveability Standards of Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards’ are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in the various standards and develop a ‘City Liveability Index’ of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.
f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.
g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.
h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website
https://eprocure.gov.in/cppp,
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link** **http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	9th May 2017
2.	Pre Application Conference	16th May, 2017 2.00 PM
3.	Last Date for receiving queries	19nd May 2017
4.	NIUA's response to queries latest by	23th May 2017
5.	**Last Date of Submission of EOI**	**30th May 2017 3.00PM**

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date: 16th May, 2017
Time: 2.00 PM
Venue: Conference Hall, National Institute of Urban Affairs, Core 4- B,
Ist Floor, India Habitat Centre, Lodhi Road, New Delhi 110003

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

    i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

    ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website:
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email:niua@niua.org Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India)	Refer Appendix 6 and 6A

	Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____________________________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only**)(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REOI FOR SHORTLISTING OF CONSULTING FIRMS FOR ASSESSMENT OF LIVEABILITY IN SELECTED CITIES

RESPONSE TO PRE-BID QUERIES

S.NO	QUERY	RESPONSE
	REGARDING ELIGIBILITY	
	'A business entity' - Government entities, formed by cabinet decisions are not incorporated in companies Act/LLP Act. There should be a provision for such entities.	Explained in Clause 2.2 (b) page 7. As per procurement guidelines, State-owned enterprises are eligible to compete if they are: i. Legally and financially autonomous ii. Operate under commercial law iii. Are not under supervision by the agency contracting them In any case, such entities can participate as a consortium partner
	EMD processing fee required in EOI phase or not?	No
	REGARDING FINANCIAL QUALIFICATION CRITERIA	
	How do you define 'financial strength of the organization'? (What secures full marks?)	Information needs to be provided as per Annexure 4 of the REOI. The Procurement Committee will decide the same.
	Financial strength of the firm (Pg. no. 15, 3.1 b) Vague statement: Is there any lower limit?	
	Elucidation required for 'Financial strength evaluation'.	
	Is there any limit of turnover to apply for this bid?	No
	Valuation of consortium to be for 'lead partner' or consortium as a whole?	Technical criteria valuation will be for all consortium partners. For financial strength Lead partner shall only be evaluated.

	REGARDING SCOPE	
	You give assignment in a single company for PAN India. (Can someone apply for few cities only?)	Single selected agency has to carry out the entire assignment for 116 cities.
	There are 116 cities given in Annexure - 1, whether NIUA is going to split this assignment among many organizations or will it be given to one agency?	
	Would single or multiple agencies be deployed to conduct the research? If multiple, what would be min/max size of deliverables(state wise/zone wise)?	
	Please clarify if this is a single project or how would the cities be packaged if multiple projects.	
	Will you select one agency for 116 cities or there will be multiple agencies?	
	Will the complete assignment be taken by a single firm?	
	In case the number of firms are to be engaged, how would the lot be divided?	
	How many bidders will be considered for contract award for all 130 cities/towns.	
	How many firms are to be selected?	
	Can a consultant bid for few states or it has to bid for all the 116 cities?	
	In the background, 114 cities is mentioned whereas Annexure A has names of 116 cities in the list. So what is the exact number?	116 cities

	Standard of Liveability is defined or it has to be redefined by the consultant?	Please refer to the "Liveability Standards in Cities" along with "Methodology for Collection and Computation of Liveability Standards in Cities " which may be downloaded at http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Is the methodology and related indices confirmed or are under development?	
	Do you expect us to contribute to development of indices and calculations?	No
	Once the data is submitted, does the research agency gets a role in policy defining?	No
	What all does city inspection report contains?	In case this refers to 'Inception Reports': Refer 1.2.1.b for details on City wise Inception Report
	What is the definition of a city - Municipality area or UA?	Municipal area
	Will there be separate reports for each city?	Yes
	REGARDING TECHNICAL QUALIFICATION CRITERIA	
	What is the type of expertise required for the assignment?	Refer Clause 3.1 of REOI
	Why is accreditation with B.V. or UV SUD or equivalent necessary?	To ensure quality
	Can 'equivalent' in the above query be elucidated?	Please follow the terms of reference.
	Why specific certification required when we have more experiences of Market Research/Field surveys urban slums surveys/socio- economic surveys?	
	Teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (india) pvt. Ltd., UV SUD South Asia pvt. or of equivalent status and	

	repute (Pg. no. 15, 3.1b) Which all bodies do include under this head? However, it is very difficult to get investigators/team for such a huge assignment	
	Section 3.1(e): Will ISO certifications quality? If yes, please specify how many projects or people to get 30 marks. If no, please specify the kind of accreditation.	
	Consideration of 30 marks in evaluation criteria for accreditation with Bureau veritas / UV SUD is too high. This criterion needs to be dropped to allow wider participation by industry in the project.	No change
	With respect to section 3 (b) of REOI on evaluation parameters, We have significant experience in undertaking field surveys and research and analysis in urban areas including household surveys, property survey and mapping etc. We have well laid out processes for data collection and quality assurance and are ISO 9001-2015 certified. As we mostly use in house survey designers, supervisors and data collectors, we have not worked with external terms specifically accredited by the specific organizations listed in REOI. The specific reference to inspection bodies may be removed in favour of generic quality assurance processes or certification or process demonstration.	
	From 3.1 Evaluation: Within each evaluation parameter, how will the marking be done? Is there any breakup of marks based on no. of assignments?	This will be decided by the Procurement Committee

	From 3.1 - Experience of staff- 25 marks: For how many similar assignments, maximum 25 marks will be awarded?	
	Point 3: Criteria for evaluation 3.1: Evaluation of applications a. What is the min number of experience for general experience? b. What is the minimum of staff having experience for similar assignment c. What is the minimum number of assignments related to market research and field survey in urban areas? d. What is the minimum number of assignments for experience of the firm in implementing assignments for analysis and assessment of data related to governance, transportation etc.	
	What is the score given to each assignment	
	The query is for the 'criteria for evaluation' marked at section 3. Under section 3.1 sub-point b, 4 parameters are grouped in 2 and marked as (3) and (4). The parameters include experience of the firm and the related assignments. The collective staff experience defines the firm's experience thus in that view the pointers are same except the expectations raised for the data collectors to be accredited with inspection bodies. Suggestion: In order to get more reliable data, one pointer should be added or weightage should be given to the consultants who are conducting the field work digitally.	

	Geotag information gives you more accuracy in terms of relying on data collected from that city itself.	
	On evaluation criteria what would be treated as Gold standard for each parameter i.e. what credential will make one eligible for full marks under each? What financial strength criteria will ensure 15 marks? How many projects as reference/experience?	
	Is the surveys held as large scale urban planning assignments will be counted or not?	Eligibility based on project details to be evaluated by the Procurement Committee
	Can we obtain global experience?	Yes
	Can study conducted in domain like governance, transportation, environment, conducted globally be shown in the experience?	Yes
	Is our global experience in similar studies relevant here?	Yes
	Reference Appendix 6 - Pg 28 ; Specific experience of the firm in implementing……….lead firm. Please clarify why pvt. Companies are mentioned and what kind of affiliation/equivalent status needed.	Self-Explanatory
	Reference Appendix 5,7 - Pg 26 and 30; A copy of the work order/agreement.........as per clause 2.19 Work order may not mention the survey work in most of the cases. But projects like PMAY are totally based on ground level survey as per the SOW mentioned by MOHUPA. Please consider these projects as under survey related work.	Project details to be submitted as per REOI

	REGARDING METHODOLOGY	
	Is primary data collection expected or the data needs to be collected from the ULB officials?	Both
	From 1.2 Brief TOR: What should be the methodology for data collection? Is this fixed or we have flexibility to opt for digital or other solutions?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Research mode : physical surveys, government data, online research about the city. These need to be defined (for accuracy) and how to submit data (pre defined formats)	
	Please elaborate on secondary data availability from different line departments and primary data collection requirements in the project.	
	Data collection and field survey- What would be the universe/TG selection process?	
	REOI refers to a detailed methodology already developed for this experience. Will the selected consultant be allowed to improvise it?	
	Will usage of 'lateral' or 'proxy' data sources such as satellite imagery to access traffic patterns, built density, green cover, water bodies, open spaces etc, telephone data on mobility patterns etc be supported or encouraged?	
	What does identification of data resources and submission of resources of data mean?	This will be part of the detailed Terms of Reference as part of the Request for Proposal

	Has there been a baseline study conducted on the availability of administrative data across all the indicators mentioned in REOI? If so, will that be made available to the consultants at RFP stage?	No.
	Will data collected previously under other mission and programs viz. Swachh Survekshan etc. be made available for Liveability Index? (Can be very useful and avoid duplication of efforts)	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Will the government agencies provide support? To what extent? How?	
	Can data collection be a 'computer assisted personal interview' using CAPI devices (hand handled). REOI does mention that 'maintain and submit raw data and data collection forms to NIUA'.	
	Are you okay with digital form of data collection as you mentioned to submit raw data and data collection forms?	
	How is data to be submitted? Digitally or manually?	
	REGARDING DURATION OF ASSIGNMENT	
	What is the duration of this assignment?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	What would be the expected duration of the project(s)?	
	Once the purpose is defined then the research will make more sense. Also regarding the research - What is the time frame?	
	How much time is available for the actual execution of the project?	

	OTHER QUERIES	
	Define the purpose of research.	Please refer to the "Liveability Standards in Cities" and the "Methodology for Collection and Computation of Liveability Standards in Cities " documents, which can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Assuming [that] in data collection for the government, [it is necessary] to identify the core areas which need to be addressed in the city, then the research need to be divided into three main parts - a. Physical structure - infrastructure b. social structure - occupation/education c. governance structure - how are things managed for a common man's life	
	Existing city infrastructure is required? Mapping the existing infrastructure in terms of connectivity, utilities, garbage management, education, employment opportunities and air quality.	
	Social structure : Liveability? What is the basic parameter which needs to be defined?	
	Governance structure : How is a common man's basic life and need governed? Who is accountable and answerable? Does the existing structure meets a common man's need?	
	Please provide the link for accessing liveability standards. Current link redirects to a page where it asks for EOI for Kakinada KMPs.	

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: *National Institute of Urban Affairs*
(An autonomous body under Ministry of Urban Affairs)

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

Issued on: [date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No.**4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The National Institute of Urban affairs, (an autonomous body under Ministry of Urban Development), the implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Assessment of Liveability in 116 Cities cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposal (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank’s Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Form of Contract (Time Based)

6. Please inform us by *[insert date]*, in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal’s submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant*[1]*]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development (g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant. (h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract. (i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices). (j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant.

(u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP.

(v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP.

(w) "Services" means the work to be performed by the Consultant

	pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense. 2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth

	below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

	services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and: (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

	To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of	**8.1.** The Consultant shall bear all costs associated with the

Preparation of Proposal	preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with

	Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and Amendment of RFP	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of

	all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial

Content	information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form

	of a written power of attorney attached to the Technical Proposal. 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. 17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal. 17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail. 17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**." 17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**." 17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any

	extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC. 19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable.

	20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall

	technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	

a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a

	Lump-Sum contract shall not be negotiated. 28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: National Institute of Urban Affairs (Autonomous body under** Government of India) under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated 2016 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:_____________________________ Time: ____ Address: Telephone: ____ Facsimile: ____ E-mail: ______________________ Contact person/conference coordinator:*[insert name and title]* ______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

3	Not used
4.1	*NA*
5	Not used
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* http://web.worldbank.org/external/default/main?theSitePK=84266&contentMDK=64069844&menuPK=116730&pagePK=64148989&piPK=64148984&sort_on=SUPP_CTRY_NAME&sort_order=ascending&sort_data=text
7	Not used
8	Not used
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND

	2d Inner Envelope with the Financial Proposal (if applicable): (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input: 30 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.

16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates:** Yes
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes -reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **Floor** **Place**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____** 2017 *[for example, 15 June 2017]*

<table>
<tr><td></td><td>Time: 15:00 IST <i>[insert time in 24h format, for example, “16:00 local time”]</i>

<i>[If appropriate, add translation of the warning marking [“Do not open....”] in the national language to the outer sealed envelope]</i>

The Proposal submission address is: <u>[insert the web address]</u></td></tr>
<tr><td>19.1</td><td>An online option of the opening of the Technical Proposals is offered: Yes/No

The opening shall take place at:
<i>[Insert: “</i>same as the Proposal submission address<i>” OR insert and fill in the following:</i>
Street Address:
Floor, room number: Room No.____, ____Floor,
City: New Delhi
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – “16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>20</td><td>Not used</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
</table>
</td></tr>
</table>

(a)	*Technical approach and Methodology* *{Notes to Consultant:* *Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from* http://smartcities.gov.in/content/innerpage/otherstoolkit.php. *As part of their methodology, Consultants should indicate* o *A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same* o *The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.* o *The Methodology should also indicate the technology to be used for data collection and ensuring data veracity* The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing* *{Notes to Consultant:* *Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).* *Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.* *The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are*	10

	accredited must also be provided. *Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}*	
	Total points for criterion (ii) –50 points *{Notes to Consultant: The Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts.}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	10
Survey and Sampling Specialist	6
Data Analytics and Indexing Specialist	6
Urban Transport Specialist	6
Environment Specialist	6
GIS Specialist	6
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following two sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the two criteria*:* **100**

………………………………………………………………

The minimum technical score (St) required to pass is*:75 (seventy five) points*

22	Not used

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
24	Not used
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse the Service Tax to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the

	weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, ___________, New Delhi -1100
29	Not used
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: _________________** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
“√ “ If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
“√” If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant’s Organization and Experience.	
√		TECH-2A	A. Consultant’s Organization	
√		TECH-2B	B. Consultant’s Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to National Institute of Urban Affairs in Carrying out surveys in 116 cities of India in order to assess Liveability Standards for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years. (Please give details of not more than 10 assignments)**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report or equivalent deliverable. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of..............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.

Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php.

As part of their methodology, Consultants should indicate
o A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same
o The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.
o The Methodology should also indicate the technology to be used for data collection and ensuring data veracity
The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.}

d) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff

Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).

Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.

The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are accredited must also be provided.

Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1 Financial Proposal Submission Form

FIN-2 Summary of Costs

FIN-3 Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method

FIN-4 Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Assessement of Liveability Standards in selected 116 cities of India in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ______________________________

No.	Name	Position (as in TECH-6)	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	____________	______	[*Home*]	______	▨	▨	▨	
N-2			[*Field*]	______				
____	____________			______	▨	▨	▨	
____				______				
____				______				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

  (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

---

[4] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

[7] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$$R_i=R_0 \text{ x } (I_i/I_0)$$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:
   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;
   b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not

available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format discussed and finalized with NIUA;
   b. All raw data and data sheets (digital format);
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection

Report	Time line	Documents	Deliverables and Contents
			geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

***** Timelines for subsequent years will be as decided by NIUA.

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development

and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Veritas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

7.7 TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

7.7.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

STANDARD FORM OF CONTRACT

Section 8

Consultant's Services

Lump-Sum

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name: Capacity Building for Urban Development

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

[Credit #: 4997-IN

Contract No. CBUD/SD/17
between

National Institute of Urban Development, New Delhi
____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ______________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, **National Institute of Urban Affairs (NIUA)**(hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) The client is an autonomous body established by the Ministry of Urban Development, New Delhi (MoUD). MoUD hi has received a credit from the *International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

    (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
    (b) The Special Conditions of Contract;
    (c) Appendices:

    Appendix A: Terms of Reference
    Appendix B: Key Experts
    Appendix C: Breakdown of Contract Price

    In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

    (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
    (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated July 2016.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "CBUD" Means Capacity Building for Urban Development

(f) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(h) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(i) "Day" means a working day unless indicated otherwise.

(j) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

	(l) "Foreign Currency" means any currency other than the currency of the Client's country. (m) "GCC" means these General Conditions of Contract. (n) "Government" means the government of India. (o) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (p) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal. (q) "Local Currency" means the currency of the Client's country. (r) "MoUD" means ministry of Urban development (s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract. (t) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them. (u) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written. (v) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto. (w) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract. (x) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.
2. Relationship between the Parties	2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf

	hereunder.
3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must

	include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the “Effective Date”) of the Client’s notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not

	foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
b. No Breach of Contract	17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
c. Measures to be Taken	17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. 17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

	(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. 17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.
18. Suspension	18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.
19. Termination	19.1. This Contract may be terminated by either Party as per provisions set up below:
a. By the Client	19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f): (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to

	Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. 19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.
b. By the Consultant	19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause. (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue. (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days. (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1. (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.
c. Cessation of Rights and Obligations	19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and

	obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.
d. Cessation of Services	19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.
e. Payment upon Termination	19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: (a) payment for Services satisfactorily performed prior to the effective date of termination; and (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General	
a. Standard of Performance	20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties. 20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

	20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.
b. Law Applicable to Services	20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law. 20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country. 20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.
21. Conflict of Interests	21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
a. Consultant Not to Benefit from Commissions, Discounts, etc.	21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment. 21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any

	discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
b. Consultant and Affiliates Not to Engage in Certain Activities	21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.
c. Prohibition of Conflicting Activities	21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
d. Strict Duty to Disclose Conflicting Activities	21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
22. Confidentiality	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.
23. Liability of the Consultant	23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.
24. Insurance to be Taken out by the Consultant	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in

	Clause GCC 13.
25. Accounting, Inspection and Auditing	25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs. 25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)
26. Reporting Obligations	26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.
27. Proprietary Rights of the Client in Reports and Records	27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client. 27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.
28. Equipment, Vehicles and	28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the

Materials	Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value. 28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts	29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**
30. Replacement of Key Experts	30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.
31. Removal of Experts or Sub-consultants	31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

	31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions	32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.
33. Access to Project Site	33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client

	will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.
34. Change in the Applicable Law Related to Taxes and Duties	34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1
35. Services, Facilities and Property of the Client	35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**
36. Counterpart Personnel	36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**. 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
37. Payment Obligation	37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price	38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**. 38.2 Any change to the Contract price specified in Clause 38.1 can

	be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.
39. Taxes and Duties	39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**. 39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.
40. Currency of Payment	40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.
41. Mode of Billing and Payment	41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**. 41.2.1 *Advance payment:* No advance payment would be made to the consultant. 41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon

	promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**. 41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.
42. Interest on Delayed Payments	42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith	43.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement	44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.
45. Dispute Resolution	45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** the *land*
4.1	**The language is : English**.
6.1 and 6.2	**The addresses are:** Client: National Institute of Urban Affairs, New Delhi ______________________ Attention : ______________________ Facsimile : ______________________ E-mail (where permitted):______________________ Consultant : ______________________ ______________________ Attention : ______________________ Facsimile : ______________________ E-mail (where permitted) :______________________
8.1	*NA*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______________________ **For the Consultant:** *[name, title]*______________________
11.1	**The effectiveness conditions are the following**: Signing of the contract.
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days[insert date]**.

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 12 (twelve) Months which may be extended upto two times for 12 months each upon successful completion of their and at the discretion of the client.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3 :** Yes

23.1	**No additional provisions.**
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability insurance, with a minimum coverage of** equivalent of the contract amount; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage as per Motor Vehicle Act 1988.; (c) Third Party liability insurance, with a minimum coverage of one million.; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.2	**The Consultant shall not use these** *.**documents, database and software*** **for purposes unrelated to this Contract without the prior written approval of the Client**.
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates**

	provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	**The Client warrants that "the Client shall reimburse the Consultant indirect taxes i.e. Service Tax imposed, under the applicable law in the Client's country, on the Consultant.**
41.2	**The payment schedule:** **For the local currency ; [Insert the Amount]** 1. Payment of remuneration will be as follows ➢ Inception Report : Twenty percent (20 %) will be paid on acceptance/ approval of the inception report. ➢ Draft City Assessment Report : Fifty percent (50 %) will be paid on acceptance/ approval of Draft Final Report. ➢ Final City Assessment Report : Thirtypercent (30 %) will be paid on acceptance/ approval of Draft Final Report. **Note: The Consulting firm will submit the invoice in the name of Project Director, CBUD Project, Ministry of Urban Development, Nirman Bhawan, Maulana Azad Road, New Delhi- 110011 to the client. The client, after reviewing the invoice of the Consultant, shall recommend the payment along with the letter of acceptance/approval of the deliverable and any other information desired by the Project Director, CBUD to the Ministry of Urban Development (MoUD) for making the payment.**
41.2.1	***Not Applicable***
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to

	arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Council of Arbitrators, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi (b) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

	4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in New Delhi; (b) the *English* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

1. Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Appendix D), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$R_i=R_0 \ x \ (I_i/I_0)$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

2. Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

3. Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Appendix D). The study shall inter-alia include:
   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;
   b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection

methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format discussed and finalized with NIUA;
  b. All raw data and data sheets (digital format);
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

4. Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

5. Timelines and Deliverables for Year 1*

Report	**Time line**	**Documents**	**Deliverables and Contents**
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed

Report	Time line	Documents	Deliverables and Contents
			and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

6. ***** Timelines for subsequent years will be as decided by NIUA.

7. Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

8. TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

8.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.

c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

8.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - LIST OF CITIES

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788

Sl. No.	Name of State	Name of City	Population
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100

Sl. No.	Name of State	Name of City	Population
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358

Sl. No.	Name of State	Name of City	Population
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RFP on Liveability Index

2 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Thu, May 25, 2017 at 4:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Utpal Deka <utpal.deka@gmail.com>, nrajadhyaksha@ipeglobal.com

Dear Madam,

Please find enclosed herewith a RFP for shortlisting of firms for assessment of livability of selected cities out of 79 indicators. At present, 116 cities have been identified and the same may be varied.

As communicated earlier, the procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The REOI was already issued by NIUA. The RFP will be issued to the shortlisted firms. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

Regards,

G Vijay Kumar

Under Secretary the Government of India,
Ministry of Urban Development,
Smart Cities Division, Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Part I RFP Liveability Index draft V5.docx
269K

Vasudha Thawakar <vsarda@worldbank.org> Wed, May 31, 2017 at 1:50 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, "Raja@meghrajindia.com" <Raja@meghrajindia.com>, "nrajadhyaksha@ipeglobal.com"

<hrajadhyaksha@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>; Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr. Kumar:

Thank you for the below attached email for the selection of Consultant for Assessment of livability index, to be procured by NIUA (on behalf of MoUD), subject to following :

(i) The PMU provides hand holding support to NIUA for the procurement process

(ii) Bank's Guidelines for Selection of Consultants – January 2011, updated July 2014 is followed

(iii) Bank's standard format for REoI, RFP, TER and Contract Agreement is used

(iv) Use of STEP for the procurement process

From the below email, we observe that the REoI has already been advertised. Since this is a prior review contract, the REoI and subsequent steps, needs to be cleared by Bank (through STEP). You may kindly advise the Client to send the documents through STEP for Bank's review.

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

Begin forwarded message:

From: "Vijay Kumar" <g.vijaykumar.moud@gmail.com>
To: "Vasudha Thawakar" <vsarda@worldbank.org>, "Raja Dawn"

<Raja@meghrajindia.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>,
"utpal.deka@gmail.com" <utpal.deka@gmail.com>,
"nrajadhyaksha@ipeglobal.com" <nrajadhyaksha@ipeglobal.com>
Subject: RFP on Liveability Index

[Quoted text hidden]

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: www.worldbank.org/procure.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f)"CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provides the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

	(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant. (u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) “Services” means the work to be performed by the Consultant pursuant to the Contract. (x) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) “TORs” (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants’ expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. **Preparation of Proposals – Specific Considerations**	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

> 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member’s authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked “ORIGINAL”, and its copies marked “COPY” as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked “**TECHNICAL PROPOSAL**”, “[Name of the Assignment]“, reference number, name and address of the Consultant, and with a warning “**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**.”

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked “**FINANCIAL PROPOSAL**” followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning “**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**.”

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its “no objection”, if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client’s evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client’s evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant’s overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. ……………………………………… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:** ____21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* ______________________________ *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is:** **[insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

The opening shall take place at:
[Insert: "same as the Proposal submission address" *OR insert and fill in the following:*
Street Address: Maulana Azad Road
Floor, room number: Room No.____, ____Floor, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: *[insert time in 24h format, for example – "16:00 local time]*
[The time should be immediately after the time for the submission deadline stated in 17.7]

19.2 **In addition, the following information will be read aloud at the opening of the Technical Proposals NA**

21.1 (for FTP) Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –50 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* “We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope”

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: “of our letter of intent to form a joint venture” or, if a JV is already formed, “of the JV agreement”} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant’s Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables [1] (D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**								**Total time-input (in Months)**		
		Position		**D-1**	**D-2**	**D-3**	**........**	**D-...**		**Home**	**Field**	**Total**
KEY EXPERTS												
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]	[1.0]	[1.0]					▨	
			[Field]	[0.5 m]	[2.5]	[0]				▨		
K-2											▨	
										▨		
K-3											▨	
										▨		
											▨	
										▨		
n											▨	
										▨		
								Subtotal				
NON-KEY												
N-1			[Home]								▨	
			[Field]							▨		
N-2											▨	
										▨		
											▨	
										▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): _______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____________________

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	___	___	[*Home*]	___	▨	▨	▨	
N-2			[*Field*]	___				
___	___			___	▨	▨	▨	
___								
___				___				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

  (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

  (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

  (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the ‘Liveability Standards in Cities’ document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;

c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:

a. Database of aggregate data in the format attached at Annexure X;

b. All raw data and data sheets;

c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

3 messages

STEP Admin <noreply@worldbankgroup.org> Fri, Nov 3, 2017 at 5:39 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the following qualified consultants being included in the shortlist.

However, we observe that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement".

In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.

Name of Consultant/Firm	**Country**
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India

PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	**Country**
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Nov 13, 2017 at 3:25 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>, Abhijit Sankar Ray <aray3@worldbank.org>
Cc: jsupa-mhupa@gov.in, dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

We have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.

No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.

We have already submitted the Request for Proposal (RFP) and Standard Form of Contract in STEP on 10th November 2017 and awaiting the consent/approval from the World Bank for further uploading the same on www.eprocure.gov.in and thereby issuing the RFP to the 6 six shortlisted firms.

You are requested to give the concurrence/views at the earliest.

On Fri, Nov 3, 2017 at 5:39 PM, STEP Admin <noreply@worldbankgroup.org> wrote:

> Dear G. Vijay Kumar;
>
> India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS
>
> We have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the following qualified consultants being included in the shortlist.
>
> **However, we observe that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement".**
>
> **In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.**

Name of Consultant/Firm	Country
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India

M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	**Country**
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

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--

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),

Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Smart City
MISSION TRANSFORM-NATION
Ministry of Housing and Urban Affairs, Government of India

Vasudha Thawakar <vsarda@worldbank.org> Tue, Nov 14, 2017 at 6:26 AM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, "jsupa-mhupa@gov.in" <jsupa-mhupa@gov.in>, "dir-nulm@nic.in" <dir-nulm@nic.in>, Rakesh Gujral <rgujral@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr Kumar,

Please see below. We have already provided no objection with a request to issue RFP to the foreign firms (up to two) irrespective of their marks in addition to the six firms shortlisted.

Thanks and best
Vasudha Thawakar

On 13-Nov-2017, at 6:55 PM, Vijay Kumar <g.vijaykumar.moud@gmail.com> wrote:

> Dear Madam,
>
> We have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.
>
> No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.
>
> We have already submitted the Request for Proposal (RFP) and Standard Form of Contract in STEP on 10th November 2017 and awaiting the consent/approval from the World Bank for further uploading the same on www.eprocure.gov.in and thereby issuing the RFP to the 6 six shortlisted firms.

You are requested to give the concurrence/views at the earliest.

On Fri, Nov 3, 2017 at 5:39 PM, STEP Admin <noreply@worldbankgroup.org> wrote:

> Dear G. Vijay Kumar;
>
> India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS
>
> We have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the following qualified consultants being included in the shortlist.
>
> **However, we observe that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement".**
>
> **In view of above, MoUD is advised to include the 2 foreign firms along with the6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.**

Name of Consultant/Firm	Country
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India

THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	Country
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

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Ministry of Housing and Urban Affairs, Government of India

Gmail Vijay Kumar <g.vijaykumar.moud@gmail.com>

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

Vijay Kumar <g.vijaykumar.moud@gmail.com> Wed, Nov 15, 2017 at 7:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

Reference is invited to your email dated 14th November 2017.

In this regard, it is to inform you that the criteria for evaluation of applications as per approved REOI is given below. According to this, minimum of 75 marks were fixed for qualification of firms.

a) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4,5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

The REOI was issued with approval of the World Bank. Based on the Evaluation Criteria, only six firms have been qualified, all of which are registered/incorporated in India. Further, out of 28 responses, only one firm i.e. Ecorys Netherlands BV is registered out of India and could obtain only 65 marksand could not qualify as per evaluation criteria.

In view of the above, urgent response is requested from the World Bank through STEP on issuing RFP to the six shortlisted firms.

On Tue, Nov 14, 2017 at 6:26 AM, Vasudha Thawakar <vsarda@worldbank.org> wrote:

> Dear Mr Kumar,
>
> Please see below. We have already provided no objection with a request to issue RFP to the foreign firms (up to two) irrespective of their marks in addition to the six firms shortlisted.
>
> Thanks and best
> Vasudha Thawakar
>
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>
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>>
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>> No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.
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>> We have already submitted the Request for Proposal (RFP) and Standard Form of Contract in STEP on 10th November 2017 and awaiting the consent/approval from the World Bank for further uploading the same on www.eprocure.gov.in and thereby issuing the RFP to the 6 six shortlisted firms.
>>
>> You are requested to give the concurrence/views at the earliest.

On Fri, Nov 3, 2017 at 5:39 PM, STEP Admin <noreply@worldbankgroup.org> wrote:

> Dear G. Vijay Kumar;
>
> India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS
>
> We have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the following qualified consultants being included in the shortlist.
>
> **However, we observe that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement".**
>
> **In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.**

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INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India

ATENA INFONOMICS INDIA PRIVATE LIMITED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	**Country**
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Interim Response to Short List and Draft Request for Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

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STEP Admin <noreply@worldbankgroup.org> Tue, Nov 21, 2017 at 11:02 AM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Interim Response has been issued by Vasudha Thawakar for Short List and Draft Request for Proposals for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS

Dear Mr. Kumar,

Please find attached herewith comments on RFP.

Based on your recommendation that the foreign firm from The Netherlands is not qualified for the assignment, we are fine with the Shortlist.

Kindly incorporate the comments and resend the RFP for Bank's review and no objection. We note that MOUD would like to follow e-procurement and the RFP will need to be modified to suit the same.

Warm Regards,

Vasudha Thawakar

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Comments on the RFP for liveability index.docx
15K

Comments on the RFP for liveability index :

1) The contact details of the firms to whom the RFP is issued may be deleted.
2) Data Sheet : Please delete the Notes to Client at the beginning of the Data Sheet
3) Data Sheet 1 (c) : Shall be "Law of Republic of India"
4) Data Sheet 12.1 : Please enter the date at the time of issuing the RFP
5) Data Sheet 13.1 : Please change the date according to the date of issue of RFP. It should be mid way between date of issue of RFP and last date of proposal submission
6) Data Sheet 16.1 : Please include the list of reimbursable expenses as per standard RFP
7) Data Sheet 16.3 : Please replace service tax with GST and any other applicable tax
8) Data Sheet 17.1 : e-procurement clauses are not incorporated in ITC whereas in the Datasheet it is indicated that proposals shall be submitted on e-procurement portal. Further, in Data Sheet Clause 17.4 it is indicated that hard copy of original proposal shall be submitted which is not allowed in e-procurement. Please modify e-procurement provisions in line with Bank's modified RFP for e-procurement (sent separately in email), in case e-procurement is envisaged.
9) Data Sheet Clause 17.7 and 17.9 : Please change the date as per RFP issuance date. Proposals to be submitted manually or else the RFP needs to be substantially modified to incorporate all e-procurement provisions.
10) Data Sheet 19.1 Same as above
11) Data Sheet 21.1 : Criteria no. (ii) Adequacy of the proposal, methodology and work plan, the total marks may be reduced to 30 and for criteria no. (ii) the total marks may be increased to 60. Marks for individual key experts may be accordingly adjusted.
12) Data Sheet 23.1 : Please incorporate all e-procurement provisions.
13) Data Sheet 30.2 please insert approximate date, say 15 days from contract signing
14) ToR para 7.8 : For Bank funded CBUD project the IA is MoUD. Therefore, the contract shall be signed by MoUD
15) SCC Clause 45.1 5 (a) Please replace with the following : "The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.

SUMMARY DESCRIPTION

STANDARD REQUEST FOR PROPOSALS (for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India)

PART I – SELECTION PROCEDURES AND REQUIREMENTS

Section 1: Letter of Invitation (LOI)

This Section is a template of a letter from the Client addressed to a shortlisted consulting firm inviting it to submit a proposal for a consulting assignment. The LOI includes a list of all shortlisted firms to whom similar letters of invitation are sent, and a reference to the selection method and applicable guidelines or policies of the financing institution that govern the selection and award process.

Section 2: Instructions to Consultants and Data Sheet

This Section consists of two parts: “Instructions to Consultants” and “Data Sheet”. “Instructions to Consultants” contains provisions that are to be used without modifications. “Data Sheet” contains information specific to each selection and corresponds to the clauses in “Instructions to Consultants” that call for selection-specific information to be added. This Section provides information to help shortlisted consultants prepare their proposals. Information is also provided on the submission, opening and evaluation of proposals, contract negotiation and award of contract. Information in the Data Sheet indicates whether a Full Technical Proposal (FTP) or a Simplified Technical Proposal (STP) shall be used.

Section 3: Technical Proposal – Standard Forms

This Section includes the forms for FTP and STP that are to be completed by the shortlisted consultants and submitted in accordance with the requirements of Section 2.

Section 4: Financial Proposal – Standard Forms

This Section includes the financial forms that are to be completed by the shortlisted consultants, including the consultant’s costing of its technical proposal, which are to be submitted in accordance with the requirements of Section 2.

Section 5: Eligible Countries

This Section contains information regarding eligible countries.

Section 6: Bank’s Policy – Corrupt and Fraudulent Practices

This Section provides shortlisted consultants with the reference to the Bank’s policy in regard to corrupt and fraudulent practices applicable to the selection process. This Section is also incorporated in the standard forms of contract (Section 8) as Attachment 1.

Section 7: Terms of Reference (TORs)

This Section describes the scope of services, objectives, goals, specific tasks required to implement the assignment, and relevant background information; provides details on the required qualifications of the key experts; and lists the expected deliverables. This Section shall not be used to over-write provisions in Section 2.

PART II – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section 8: Standard Forms of Contract

This Section includes two types of standard contract forms for large or complex assignments: a Time-Based Contract and a Lump-Sum Contract. Each type includes General Conditions of Contract (“GCC”) that shall not be modified, and Special Conditions of Contract (“SCC”). The SCC include clauses specific to each contract to supplement the General Conditions.

Each standard form of contract incorporates “Bank’s Policy – Corrupt and Fraudulent Practices” (Section 6 of Part I) in a form of Attachment 1.

SELECTION OF CONSULTANTS

REQUEST FOR PROPOSALS

Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India

Client: Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI)

Country: India

Project: Capacity Building for Urban Development (CBUD)

Issued on: [22nd November, 2017]

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PART I

Section 1. Letter of Invitation

RFP No. …..; **Credit No**.- 4997-IN
[insert: India and Date*]*

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016	1. Athena Infonomics 2. The Economics Group Limited
2	PricewaterhouseCoopers		-
3	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028	-
4	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	Plot No. - 46, Sector - 44, Opposite Provident Fund Office Gurgaon - 122003, India	-

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has receive financing from the International Development Association (IDA)*]* (the “Bank”) in the form of a “credit” (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of

this credit to eligible payments under the contract for which this Request for Proposals is issued. The *[*Client/ Recipient*]* intends to apply the funds to eligible payments under the contract for which this Request for Proposals is issued.] Payments by the Bank will be made only at the request of the Ministry of Housing and Urban Affairs, GOI and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan agreement. The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the *[*Borrower/Client/Recipient*]* shall derive any rights from the loan agreement or have any claims to the proceeds of the loan.

2. The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): *Assessment of Liveability Indices for 116 cities in India*. More details on the Services are provided in the Terms of Reference (Section 7).

3. This electronic Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	Ipsos Public Affairs	801, 8th Floor, Vipul Square,Sushant Lok, B Block Gurgaon-122016	1. Athena Infonomics India Pvt Ltd. 2. The Economic Group Limited
2	PricewaterhouseCoopers		
3	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028	
4	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	Plot No. - 46, Sector - 44, Opposite Provident Fund Office	

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
		Gurgaon - 122003, India	

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under *QCBS* procedures and in a Full Technical Proposal (FTP) format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal (FTP) - Standard Forms
   Section 4 - Financial Proposal - Standard Forms
   Section 5 – Eligible Countries
   Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
   Section 7 - Terms of Reference
   Section 8 - Standard Forms of Contract (Lump-Sum)

7. The RFP is available online at https://eprocure.gov.in/cppp/ for the short-listed consultants only. The short-listed consultants are required to register on this website at no cost and prior to the submission of proposals. Consultant is also required to have a Digital Signature (DSC) from one of the Government of India authorized Certifying Authorities in order to submit a proposal on line at the web address indicated above. The list of the authorized Certifying Authorities can be found https://eprocure.gov.in/eprocure/app;jsessionid=F5C7CAFAAD521D191038BF8A4FD03B4F.eprocgep1?page=HelpForContractors&service=page

8. Please inform us by *1st December, 2017* by E-mail on : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com

   (a) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

9. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,
Under Secretary to the Government of India
on behalf of Project Director, CBUD, MoHUA, Nirman Bhavan, New Delhi.

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the loan agreement with the Bank.

(f) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(h) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(i) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(j) "Day" means a calendar day.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(l) "Government" means the government of the Client's country.

(m) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(n) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(o) "ITC" (this Section 2 of the e-RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(p) "LOI" (this Section 1 of the e-RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(r) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant.

(s) "RFP" means the Request for Proposals to be prepared by the Client for the electronic selection of Consultants, based on the SRFP.

(t) "SRFP" means the trial version of Standard Request for Proposals for the use in electronic procurement issued by the Bank, which must be used by the Client as the basis for the preparation of the RFP.

(u) "Services" means the work to be performed by the Consultant pursuant to the Contract.

(v) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract.

(w) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction

2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**.

2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant.

2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.

3. Conflict of Interest

3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work.

3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank.

3.2.1 Without limitation on the generality of the foregoing, and unless stated otherwise in the **Data Sheet**, the Consultant shall not be hired under the circumstances set forth below:

a. Conflicting activities

(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.

b. Conflicting assignments

(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.

c. Conflicting relationships

(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.

4. Unfair Competitive Advantage

4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this e-RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.

5. Corrupt and Fraudulent Practices

5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.

6. Eligibility

6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects.

6.2 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines.

6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:

a. Sanctions

6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.

b. Prohibitions

6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

c. Restrictions for Government-owned Enterprises

6.3.3 Government-owned enterprises or institutions in the Borrower’s country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.

d. Restrictions for public employees

6.3.4 Government officials and civil servants of the Borrower’s country are not eligible to be included as Experts in the Consultant’s Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower’s country, and they

(i) are on leave of absence without pay, or have resigned or retired;

(ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring

> (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower’s country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant’s Proposal.; and

(iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7.	**General Considerations**	7.1 In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8.	**Cost of Preparation of Proposal**	8.1 The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9.	**Language**	9.1 The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10.	**Documents Comprising the Proposal**	10.1 The Proposal shall comprise the documents and forms listed in the **Data Sheet**. 10.2 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). 10.3 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11.	**Only One Proposal**	11.1 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12.	**Proposal Validity**	12.1 **The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline.

12.2 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

12.3 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period

12.4 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, by notifying all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. Mode of notifications is specified in the **Data Sheet.**

12.5 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts.

12.6 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

b. Substitution of Key Experts at Validity Extension

12.7 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert.

12.8 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.

c. Sub-Contracting

12.9 The Consultant shall not subcontract the whole of the Services.

13. Clarification and Amendment of RFP

13.1 The Consultant may request an online clarification of any part of the RFP during the period and in accordance with the procedure indicated in the **Data Sheet** before the Proposals' submission deadline. The Client will respond online by uploading

the response on the portal (including an explanation of the query but without identifying its source) for information of all shortlisted Consultants. Should the Client deem it necessary to amend the e-RFP as a result of a clarification, it shall do so following the procedure described below:

13.1.1 At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment online in accordance with procedure described in Data Sheet The amendment shall be binding on all shortlisted Consultants.

13.1.2 If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals.

13.2 The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline, online, in accordance with the procedure described in the **Data Sheet**. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

14. Preparation of Proposals – Specific Considerations

14.1 While preparing the Proposal, the Consultant must give particular attention to the following:

14.1.1 If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member.

14.1.2 The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same.

14.1.3 If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts,

failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**.

14.1.4 For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.

15. Technical Proposal Format and Content

15.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.

15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive.

15.2 Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.

16. Financial Proposal

16.1 The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.

a. Price Adjustment

16.2 For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.

b. Taxes

16.3 The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.

c. Currency of Proposal

16.4 The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.

d. Currency of Payment

16.5 Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission of Proposals

11.1 The Consultant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done electronically through the website and in accordance with the procedures specified in the **Data Sheet.** Proposals submitted by any other means will be rejected.

11.1 An authorized representative of the Consultant shall digitally sign the submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Technical Proposal.

17.1.1 In the case of a Joint Venture, submission letters shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. The submission letters and the power of attorney shall then be scanned and uploaded together with the Technical Proposal.

17.2 Consultants should be aware that the electronic procurement system does not allow for any interlineations, erasures, or overwriting. Any modifications or revisions to the Proposal shall be done in accordance with Clause ITC 13.2.

17.3 The Proposal or its modifications must be uploaded on the portal no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline.

17.4 Once the Proposal is uploaded on the portal, the system will generate a unique identification number with the stamped submission time. The unique identification number with the time stamp represents an acknowledgement of the Proposal submission. Any other system's functionality requirements are specified in the **Data Sheet**.

18. Confidentiality

18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures.

18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.

19. Online Opening of Technical Proposals

19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals online immediately after the Proposals' submission deadline and following the procedure described in the Data Sheet. The folder with the Financial Proposal shall remain unopened, encrypted and shall be securely stored on the portal.

19.2 At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the Data Sheet.

20. Proposals Evaluation

20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable .

20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

21. Evaluation of Technical Proposals

21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.

22. Financial Proposals for QBS

22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract.

22.2 16.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.

23. Online Opening of Financial Proposals (for QCBS, FBS, and LCS methods)

17.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score by sending a notification through the means indicated in the **Data Sheet**. The notification shall also include information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion. Financial Proposals of those Consultants whose Technical Proposals did not meet the minimum qualifying score shall not be opened. In such case, a notification to that effect will be sent to the Consultant. The Client shall simultaneously notify those Consultants that have achieved the minimum overall technical score and inform them of the date, time and, if indicated in the **Data Sheet**, location for online opening of the Financial Proposals. The Consultant's attendance at the opening of the Financial Proposals (online, or in person, if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. If the Data Sheet provides an option of attending in person, the opening date should allow the Consultants sufficient time to make arrangements for attending the opening.

23.2 The Financial Proposals shall be opened online by the Client's evaluation committee as described in the Data Sheet. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud first and recorded online simultaneously. The Financial Proposals shall be then opened, the total prices read aloud and recorded online simultaneously. The records of the opening shall remain on the portal for the information of the Consultants who submitted Proposals and the Bank, unless the

Data Sheet provides for other means of sending notifications and the results of the financial opening.

24. Correction of Errors

24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

18.1.1 If a Time-Based contract form is included in the e-RFP, the e-procurement system automatically calculates the amount in words from the amount in figures and automatically calculates the total amount In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost. The evaluation committee will also adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal.

b. Lump-Sum Contracts

18.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.

25. Taxes

19.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.

26. Conversion to Single Currency

26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.

27. Combined Quality and Cost Evaluation

a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected.
	27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection

27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations

28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.

28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.

a. Availability of Key Experts

28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant.

28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.

b. Technical negotiations

28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.

c. Financial negotiations

28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract.

28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank.

The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.

29. Conclusion of Negotiations

29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative.

29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.

30. Award of Contract

30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; promptly notify the other shortlisted Consultants and publish the award as per the instructions in the **Data Sheet.**

30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

A. General	
ITC Clause Reference	
1 (c)	Law of Republic of India
2.1	**Name of the Client:** Ministry of Housing and Urban Affairs (MoHUA), Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
2.3	**A pre-proposal conference will be held**: Yes Date of pre-proposal conference:4th December, 2017 Time:15.00 (3.00 PM) Address: 202-C, Nirman Bhawan, Maulana Azad Road, New Delhi. Telephone: 011-23063217 E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com Contact person/conference coordinator *: G.Vijay Kumar, US*
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals:** NA
4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr

B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language.**] **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 OR **For SIMPLIFIED TECHNICAL PROPOSAL (STP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-4 (4) TECH-5 (5) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes

11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *and 90 days* calendar days after the proposal submission deadline (i.e., until: 15th March, 2018)
12.4	Validity of proposal will be intimated by e-mail to g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** **All requests for clarifications shall be made online through** mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by 1st December, 2017 **Clarifications sent through any other medium shall not be accepted.**
13.2	*[Describe the process for submitting modifications online.]*
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2 (do not use for Fixed Budget method)	**Estimated input of Key Experts' time-input: approx.. 22person-months.**
14.1.3 for time-based	*"Not applicable"*.

contracts only	
14.1.4 and 27.2 use for Fixed Budget method	**Not Applicable**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of items to be included in reimbursable expenses:* *(1) a per diem allowance, including hotel, for experts for every day of absence from the home office for the purposes of the Services;* *(2) cost of travel by the most appropriate means of transport and the most direct practicable route;* *(3) cost of office accommodation, including overheads and back-stop support;* *(4) communications costs;* *(5) cost of reports production (including printing) and delivering to the Client;*
16.2	**A price adjustment provision applies to remuneration rates:** No
16.3	***GST and other indirect and local taxes as applicable from time to time.***
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes

C. Submission, Opening and Evaluation	
17.1	**The Consultants shall submit their Proposals electronically by downloading them on the portal** https://eprocure.gov.in/cppp/. ***The electronic submission procedures is available at*** ***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
17.4	**The Proposals must be submitted online no later than:** **Date:** 15th December, 2017 **Time:** 15.00 Local Time (3.00 PM)
17.5	***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
19.1	**An online opening of the Technical Proposals will be conducted as defined in https://eprocure.gov.in** ***Consultants have an option to attend the opening of the Technical Proposals in person. The opening shall take place*** **at:** Street Address: : Maulana Azad Road Floor, room number: Room No.202 C, Nirman Bhawan City New Delhi 110001 Country: India **Date**: 15th December, 2017. **Time:** *15.00 Local Time (3.00 PM)*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals :** NA

21.1
(for FTP)

Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**30**
(a)	*Technical approach and Methodology*	15
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	5
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**30**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**60**

Position	**Total**
Team leader	20
Urban Management Specialist/ Planning Expert	15
Market Research Specialist	15
Statistician	10
Total	60

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) : 60%

	Total points for the three criteria*:* **100** **The minimum technical score (St) required to pass is***:75 (seventy five) points*
23.1	a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.
23.2	**The Financial Proposals shall be opened online as** *defined in ITB 23.2* **The procedure for notifying the Consultants on the results of the Financial opening shall be** *as in ITB 23.2*
25.1	For the purpose of the evaluation, the Client will exclude: (a) all local identifiable indirect taxes such GST, or similar taxes levied on the contract's invoices; and (b) all additional local indirect tax on the remuneration of services rendered by non-resident experts in the Client's country. If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is:** Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:**

	Sf = 100 x Fm/ F, in which “Sf” is the financial score, “Fm” is the lowest price, and “F” the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T =** 0.80, and **P =** 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations:** **Date**: 22nd December, 2017 **Address:** 202C, Nirman Bhawan, Maulana Azad Road, New Delhi.
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services:** **Date**:1st January, 2018

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
“√ “ If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
“√” If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant’s Organization and Experience.	
√		TECH-2A	A. Consultant’s Organization	
√		TECH-2B	B. Consultant’s Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: *[Name and address of Client]*

Dear Sirs:

We, the undersigned, offer to provide the consulting services for *[Insert title of assignment]* in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *[Select appropriate wording depending on the selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope" *or, if only a Technical Proposal is invited* "We hereby are submitting our Proposal, which includes this Technical Proposal only in a sealed envelope.*"]*.

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) *[Note to Client: Only if required in ITC10.2 (Data Sheet 10.2), include the following:* In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.*]*

(f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): _______________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY)

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1. List only previous similar assignments successfully completed in the last *[.....]* years.

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL)

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4 (FOR FULL TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the TORs in here.}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-4 (FOR SIMPLIFIED TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Form TECH-4: a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR and on counterpart staff and facilities)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

FORM TECH-5 (FOR FTP AND STP)

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:..............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

Form TECH-6 (for FTP and STP)

Team Composition, Assignment, and Key Experts' inputs

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

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[1] For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.

[2] Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

[3] “Home” means work in the office in the expert’s country of residence. “Field” work means work carried out in the Client’s country or any other country outside the expert’s country of residence.

▬ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): _______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Expert's contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Signature Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A "Financial Negotiations - Breakdown of Remuneration Rates" in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
______	______	______
______	______	______

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ______________________________

In the capacity of: ____
Address: ____
E-mail: _________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g., VAT or sales tax}				
(ii) {e.g., income tax on non-resident experts}				
(iii) {insert type of tax}				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2}*
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							
N-1			[*Home*]		▨	▨	▨	
N-2			[*Field*]		▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
	Total Costs							

Appendix A. Financial Negotiations - Breakdown of Remuneration Rates

1. **Review of Remuneration Rates**

1.1. The remuneration rates are made up of salary or a base fee, social costs, overheads, profit, and any premium or allowance that may be paid for assignments away from headquarters or a home office. An attached Sample Form can be used to provide a breakdown of rates.

1.2. If the RFP requests submission of a technical proposal only, the Sample Form is used by the selected Consultant to prepare for the negotiations of the Contract. If the RFP requests submission of the financial proposal, the Sample Form shall be completed and attached to the Financial Form-3. Agreed (at the negotiations) breakdown sheets shall form part of the negotiated Contract and included in its Appendix D or C.

1.3. At the negotiations the firm shall be prepared to disclose its audited financial statements for the last three years, to substantiate its rates, and accept that its proposed rates and other financial matters are subject to scrutiny. The Client is charged with the custody of government funds and is expected to exercise prudence in the expenditure of these funds.

1.4. Rate details are discussed below:

(i) Salary is the gross regular cash salary or fee paid to the individual in the firm's home office. It shall not contain any premium for work away from headquarters or bonus (except where these are included by law or government regulations).

(ii) Bonuses are normally paid out of profits. To avoid double counting, any bonuses shall not normally be included in the "Salary" and should be shown separately. Where the Consultant's accounting system is such that the percentages of social costs and overheads are based on total revenue, including bonuses, those percentages shall be adjusted downward accordingly. Where national policy requires that 13 months' pay be given for 12 months' work, the profit element need not be adjusted downward. Any discussions on bonuses shall be supported by audited documentation, which shall be treated as confidential.

(iii) Social Charges are the costs of non-monetary benefits and may include, inter alia, social security (including pension, medical, and life insurance costs) and the cost of a paid sick and/or annual leave. In this regard, a paid leave during public holidays or an annual leave taken during an assignment if no Expert's replacement has been provided is not considered social charges.

(iv) Cost of Leave. The principles of calculating the cost of total days leave per annum as a percentage of basic salary is normally calculated as follows:

$$\text{Leave cost as percentage of salary} = \frac{\text{total days leave x 100}}{[365 - w - ph - v - s]}$$

Where w = weekends, ph = public holidays, v = vacation, and s = sick leave.

Please note that leave can be considered as a social cost only if the Client is not charged for the leave taken.

(v) Overheads are the Consultant's business costs that are not directly related to the execution of the assignment and shall not be reimbursed as separate items under the Contract. Typical items are home office costs (non-billable time, time of senior Consultant's staff monitoring the project, rent of headquarters' office, support staff, research, staff training, marketing, etc.), the cost of Consultant's personnel not currently employed on revenue-earning projects, taxes on business activities, and business promotion costs. During negotiations, audited financial statements, certified as correct by an independent auditor and supporting the last three years' overheads, shall be available for discussion, together with detailed lists of items making up the overheads and the percentage by which each relates to basic salary. The Client does not accept an add-on margin for social charges, overhead expenses, etc. for Experts who are not permanent employees of the Consultant. In such case, the Consultant shall be entitled only to administrative costs and a fee on the monthly payments charged for sub-contracted Experts.

(vi) Profit is normally based on the sum of the Salary, Social costs, and Overheads. If any bonuses paid on a regular basis are listed, a corresponding reduction shall be made in the profit amount. Profit shall not be allowed on travel or any other reimbursable expenses.

(vii) Away from Home Office Allowance or Premium or Subsistence Allowances. Some Consultants pay allowances to Experts working away from headquarters or outside of the home office. Such allowances are calculated as a percentage of salary (or a fee) and shall not draw overheads or profit. Sometimes, by law, such allowances may draw social costs. In this case, the amount of this social cost shall still be shown under social costs, with the net allowance shown separately.

UNDP standard rates for the particular country may be used as reference to determine subsistence allowances.

Sample Form

Consultant:	Country:
Assignment:	Date:

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:

(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;

(b) attached are true copies of the latest pay slips of the Experts listed;

(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;

(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and

(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

____
[Name of Consultant]

Signature of Authorized Representative	Date

Name: __________________________________

Title: __________________________________

Consultant’s Representations Regarding Costs and Charges
(Model Form I)

(Expressed in {insert name of currency*})

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour	Proposed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Client’s Country									

{* If more than one currency is used, use additional table(s), one for each currency}

1. Expressed as percentage of 1
2. Expressed as percentage of 4

FORM FIN-4 BREAKDOWN OF REIMBURSABLE EXPENSES

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses

N°	**Type of Reimbursable Expenses**	**Unit**	**Unit Cost**	**Quantity**	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
	{e.g., Per diem allowances**}	{Day}						
	{e.g., International flights}	{Ticket}						
	{e.g., In/out airport transportation}	{Trip}						
	{e.g., Communication costs between Insert place and Insert place}							
	{ e.g., reproduction of reports}							
	{e.g., Office rent}							
	....							
	{Training of the Client's personnel – if required in TOR}							
				Total Costs				

Legend:

"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): ________________ [list country/countries following approval by the Bank to apply the restriction *or* state "none"]

Under the ITC 6.3.2 (b): ________________ [list country/countries *or* indicate "none"]

Section 6. Bank Policy – Corrupt and Fraudulent Practices

(this Section 6 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

---

[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

  b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

  c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:

  a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

  b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;

  c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format as mutually agreed
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed.b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post- graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

PART II

Section 8. Conditions of Contract and Contract Forms

Foreword

1. Part II includes two types of standard Contract forms for Consulting Services (a Time-Based Contract and a Lump-Sum Contract) that are based on the contract forms included in the harmonized Standard Request for Proposals (Master Document for Selection of Consultants prepared by participating Multilateral Development Banks (MDBs).

2. **Time-Based Contract**. This type of contract is appropriate when it is difficult to define or fix the scope and the duration of the services, either because they are related to activities carried out by others for which the completion period may vary, or because the input of the consultants required for attaining the objectives of the assignment is difficult to assess. In time-based contracts the Consultant provides services on a timed basis according to quality specifications, and Consultant's remuneration is determined on the basis of the time actually spent by the Consultant in carrying out the Services and is based on (i) agreed upon unit rates for the Consultant's experts multiplied by the actual time spent by the experts in executing the assignment, and (ii) reimbursable expenses using actual expenses and/or agreed unit prices. This type of contract requires the Client to closely supervise the Consultant and to be involved in the daily execution of the assignment.

3. **Lump-Sum Contract.** This type of contract is used mainly for assignments in which the scope and the duration of the Services and the required output of the Consultant are clearly defined. Payments are linked to outputs (deliverables) such as reports, drawings, bill of quantities, bidding documents, or software programs. Lump-sum contracts are easier to administer because they operate on the principle of a fixed price for a fixed scope, and payments are due on clearly specified outputs and milestones. Nevertheless, quality control of the Consultant's outputs by the Client is paramount.

4. The templates are designed for use in assignments with consulting firms and shall not be used for contracting of individual experts. These standard Contract forms are to be used for complex and/or large value assignments, and/or for contracts above US$300,000 equivalent or more unless otherwise approved by the Bank.

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971

Sl. No.	Name of State	Name of City	Population
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879

Sl. No.	Name of State	Name of City	Population
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544

Sl. No.	Name of State	Name of City	Population
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

STANDARD FORM OF CONTRACT

Consultant's Services

Time-Based

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not overwrite or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT’S SERVICES
Time-Based

Project Name ______________________________

***[Loan/Credit/Grant]* No.______________________**

Contract No. ______________________________

between

____

[Name of the Client]

and

____

[Name of the Consultant]

Dated: _________________________

I. Form of Contract

TIME-BASED

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the *[Insert as appropriate: International Bank for Reconstruction and Development (IBRD)* or *International Development Association (IDA)]* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Remuneration Cost Estimates
   Appendix D: Reimbursables Cost Estimates
   Appendix E: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C and Appendix D; Appendix E. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.]

For and on behalf of each of the members of the Consultant [insert the name of the Joint Venture]

[Name of the lead member]

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means the Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 ("Consultants' Guidelines").

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure

to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 48 & 49.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19. 1 This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1 The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 49.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2 Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3 The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clauses GCC 49.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 49.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4 Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5 Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6 Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) remuneration for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures for expenditures actually incurred prior to the effective date of termination; and pursuant to Clause 42;

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2 The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3 The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4 The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5 Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6 The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1 The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 41 through 46) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be as determined under the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services in such form and detail as will clearly identify relevant time changes and costs.

25.2. The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and time-input estimates to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

29.2 If required to comply with the provisions of Clause GCC 20a, adjustments with respect to the estimated time-input of Key Experts set forth in **Appendix B** may be made by the Consultant by a written notice to the Client, provided (i) that such adjustments shall not alter the original time-input estimates for any individual by more than 10% or one week, whichever is larger; and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GCC 41.2.

29.3 If additional work is required beyond the scope of the Services specified in **Appendix A**, the estimated time-input for the Key Experts may be increased by agreement in writing between the Client and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GCC 41.1, the Parties shall sign a Contract amendment.

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Approval of Additional Key Experts

31.1 If during execution of the Contract, additional Key Experts are required to carry out the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs). If the Client does not object in writing (stating the reasons for the objection) within twenty two (22) days from the date of receipt of such CVs, such additional Key Experts shall be deemed to have been approved by the Client.

The rate of remuneration payable to such new additional Key Experts shall be based on the rates for other Key Experts position which require similar qualifications and experience.

32. Removal of Experts or Sub-consultants

32.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant’s Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client’s written request, provide a replacement.

32.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

32.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

33. Replacement/ Removal of Experts – Impact on Payments

33.1 Except as the Client may otherwise agree, (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Experts provided as a replacement shall not exceed the remuneration which would have been payable to the Experts replaced or removed.

34. Working Hours, Overtime, Leave, etc.

34.1 Working hours and holidays for Experts are set forth in **Appendix B**. To account for travel time to/from the Client’s country, experts carrying out Services inside the Client’s country shall be deemed to have commenced or finished work in respect of the Services such number of days before their arrival in, or after their departure from, the Client’s country as is specified in **Appendix B**.

34.2 The Experts shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in **Appendix B**, and the Consultant’s remuneration shall be deemed to cover these items.

34.3 Any taking of leave by Key Experts shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and or impact adequate supervision of the Services.

E. OBLIGATIONS OF THE CLIENT

35. Assistance and Exemptions

35.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

36. Access to Project Site

36.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

37. Change in the Applicable Law Related to Taxes and Duties

37.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GCC 41.1

38. Services, Facilities and Property of the Client

38.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

38.2 In case that such services, facilities and property shall not be made available to the Consultant as and when specified in **Appendix A**, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultant for the performance of the Services, (ii) the manner in which the Consultant shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause GCC 41.3.

39. Counterpart Personnel

39.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

39.2 If counterpart personnel are not provided by the Client to the Consultant as and when specified in **Appendix A**, the Client and the Consultant shall agree on (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Client to the Consultant as a result thereof pursuant to Clause GCC 41.3.

39.3 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

40. Payment Obligation

40.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

41. Ceiling Amount

41.1 An estimate of the cost of the Services is set forth in **Appendix C** (Remuneration) and **Appendix D** (Reimbursable expenses).

41.2 Payments under this Contract shall not exceed the ceilings in foreign currency and in local currency specified in the **SCC**.

41.3 For any payments in excess of the ceilings specified in GCC41.2, an amendment to the Contract shall be signed by the Parties referring to the provision of this Contract that evokes such amendment.

42. Remuneration and Reimbursable Expenses

42.1 The Client shall pay to the Consultant (i) remuneration that shall be determined on the basis of time actually spent by each Expert in the performance of the Services after the date of commencing of Services or such other date as the Parties shall agree in writing; and (ii) reimbursable expenses that are actually and reasonably incurred by the Consultant in the performance of the Services.

42.2 All payments shall be at the rates set forth in **Appendix C** and **Appendix D**.

42.3 Unless the **SCC** provides for the price adjustment of the remuneration rates, said remuneration shall be fixed for the duration of the Contract.

42.4 The remuneration rates shall cover: (i) such salaries and allowances as the Consultant shall have agreed to pay to the Experts as well as factors for social charges and overheads (bonuses or other means of profit-sharing shall not be allowed as an element of overheads), (ii) the cost of backstopping by home office staff not included in the Experts' list in **Appendix B**, (iii) the Consultant's profit, and (iv) any other items as specified in the **SCC**.

42.5 Any rates specified for Experts not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable remuneration rates and allowances are known.

43. Taxes and Duties

43.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

43.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

44. Currency of Payment

44.1 Any payment under this Contract shall be made in the currency(ies) specified in the **SCC.**

45. Mode of Billing and Payment

45.1 Billings and payments in respect of the Services shall be made as follows:

(a) *Advance payment*. Within the number of days after the Effective Date, the Client shall pay to the Consultant an advance payment as specified in the **SCC**. Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix E**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal installments against the statements for the number of months of the Services specified in the **SCC** until said advance payments have been fully set off.

(b) *The Itemized Invoices.* As soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time interval otherwise indicated in the **SCC**, the Consultant shall submit to the Client, in duplicate, itemized invoices, accompanied by the receipts or other appropriate supporting documents, of the amounts payable pursuant to Clauses GCC 44 and GCC 45 for such interval, or any other period indicated in the **SCC**. Separate invoices shall be submitted for expenses incurred in foreign currency and in local currency. Each invoice shall show remuneration and reimbursable expenses separately.

(c) The Client shall pay the Consultant's invoices within sixty (60) days after the receipt by the Client of such itemized invoices with supporting documents. Only such portion of an invoice that is not satisfactorily supported may be withheld from payment.

Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Client may add or subtract the difference from any subsequent payments.

(d) *The Final Payment* .The final payment under this Clause shall be made only after the final report and a final invoice, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final invoice shall be deemed approved by the Client as satisfactory ninety (90) calendar days after receipt of the final report and final invoice by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final invoice. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount that the Client has paid or has caused to be paid in accordance with this Clause in excess of the amounts payable in accordance with the provisions of this Contract shall be reimbursed by the Consultant to the Client within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final invoice approved by the Client in accordance with the above.

(e) All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

(f) With the exception of the final payment under (d) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.

46. Interest on Delayed Payments

46.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 45.1 (c), interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

47. Good Faith

47.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

48. Amicable Settlement

48.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

48.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

49. Dispute Resolution

49.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[7];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[8];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[9];

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[7] *For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.*

[8] *For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.*

[9] *For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.*

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[10];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[11], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[12] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[10] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[11] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[12] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** *Republic of India.* *[Note: The Bank-financed contracts normally designate the law of the [Government's/Client's] country as the law governing the contract. However, the Parties may designate the law of another country, in which case the name of the respective country should be inserted, and the square brackets should be removed.]*
4.1	**The language is: English.**
6.1 and 6.2	**The addresses are:** Client : ______________________________ ______________________________ Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted):______________________________ Consultant : ______________________________ ______________________________ Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted) :______________________________
8.1	*[Note: If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ______________________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______________________________

	For the Consultant: *[name, title]*____________________________
11.1	*[Note: If there are no effectiveness conditions, state "N/A"]* *OR* *List here any conditions of effectiveness of the Contract, e.g., approval of the Contract by the Bank, effectiveness of the Bank [loan/credit/grant], receipt by the Consultant of an advance payment, and by the Client of an advance payment guarantee (see Clause SCC45.1(a)), etc.]* **The effectiveness conditions are the following**: *[insert "N/A" or list the conditions]*
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be** _________________________ *[insert time period, e.g.: four months]*.
13.1	**Commencement of Services:** **The number of days shall be**__________________ *[e.g.: ten]*. Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** __________________________ *[insert time period, e.g.: twelve months]*.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes______ No _____

23.1	**No additional provisions.** *[OR:* The following limitation of the Consultant's Liability towards the Client can be subject to the Contract's negotiations: **"Limitation of the Consultant's Liability towards the Client:** **(a) Except in the case of gross negligence or willful misconduct on the part of the Consultant or on the part of any person or a firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused by the Consultant to the Client's property, shall not be liable to the Client:** **(i) for any indirect or consequential loss or damage; and** **(ii) for any direct loss or damage that exceeds [insert a multiplier, e.g.: one, two, three] times the total value of the Contract;** **(b) This limitation of liability shall not** **(i) affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in carrying out the Services;** **(ii) be construed as providing the Consultant with any limitation or exclusion from liability which is prohibited by the** *[insert "***Applicable Law***", if it is the law of the Client's country, or insert "***applicable law in the Client's country***", if the Applicable Law stated in Clause SCC1.1 (b) is different from the law of the Client's country].* *[Notes to the Client and the Consultant: Any suggestions made by the Consultant in the Proposal to introduce exclusions/limitations of the Consultant's liability under the Contract should be carefully scrutinized by the Client and discussed with the Bank prior to accepting any changes to what was included in the issued RFP. In this regard, the Parties should be aware of the Bank's policy on this matter which is as follows:* *To be acceptable to the Bank, any limitation of the Consultant's liability should at the very least be reasonably related to (a) the damage the Consultant might potentially cause to the Client, and (b) the*

	Consultant's ability to pay compensation using its own assets and reasonably obtainable insurance coverage. The Consultant's liability shall not be limited to less than a multiplier of the total payments to the Consultant under the Contract for remuneration and reimbursable expenses. A statement to the effect that the Consultant is liable only for the re-performance of faulty Services is not acceptable to the Bank. Also, the Consultant's liability should never be limited for loss or damage caused by the Consultant's gross negligence or willful misconduct. *The Bank does not accept a provision to the effect that the Client shall indemnify and hold harmless the Consultant against Third Party claims, except, of course, if a claim is based on loss or damage caused by a default or wrongful act of the Client to the extent permissible by the law applicable in the Client's country.]*
24.1	**The insurance coverage against the risks shall be as follows:** *[Note: Delete what is not applicable except (a)].* **(a) Professional liability insurance, with a minimum coverage of** ______________________ *[insert amount and currency which should be not less than the total ceiling amount of the Contract]*; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (c) Third Party liability insurance, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.

27.1	*[If applicable, insert any exceptions to proprietary rights provision____]*
27.2	*[If there is to be no restriction on the future use of these documents by either Party, this Clause SCC 27.2 should be deleted. If the Parties wish to restrict such use, any of the following options, or any other option agreed to by the Parties, could be used:* *[***The Consultant shall not use these** *[insert what applies…… **documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the Client**.] *OR* [**The Client shall not use these** *[insert what applies…….**documents and software**……….*] **for purposes unrelated to this Contract without the prior written approval of the Consultant**.] *OR* ***[*Neither Party shall use these** *[insert what applies…….**documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the other Party**.*]*
35.1 (a) through (e)	*[List here any changes or additions to Clause GCC 35.1. If there are no such changes or additions, delete this Clause SCC 35.1.]*
35.1(f)	*[List here any other assistance to be provided by the Client. If there is no such other assistance, delete this Clause SCC 35.1(f).]*
41.2	**The ceiling in foreign currency or currencies is: _______________________** *[insert amount and currency for each currency] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **The ceiling in local currency is**: **______________________** *[insert amount and currency] [indicate:* **inclusive** *or* **exclusive**] **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.** **The amount of such taxes is _______________________** *[insert the amount as finalized at the Contract's negotiations on the basis of the*

	estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.]
42.3	**Price adjustment on the remuneration …………….** ***[insert "*****applies*****" or "*** **does not apply*****"]*** *[If the Contract is less than 18 months, price adjustment does not apply.* *If the Contract has duration of more than 18 months, a price adjustment provision on the remuneration for foreign and/or local inflation shall be included here. The adjustment should be made every 12 months after the date of the contract for remuneration in foreign currency and – except if there is very high inflation in the Client's country, in which case more frequent adjustments should be provided for – at the same intervals for remuneration in local currency. Remuneration in foreign currency should be adjusted by using the relevant index for salaries in the country of the respective foreign currency (which normally is the country of the Consultant) and remuneration in local currency by using the corresponding index for the Client's country. A sample provision is provided below for guidance:* Payments for remuneration made in [foreign *and/or* local] currency shall be adjusted as follows: (1) Remuneration paid in foreign currency on the basis of the rates set forth in **Appendix C** shall be adjusted every 12 months (and, the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract Effectiveness date) by applying the following formula: $R_f = R_{fo} \times \frac{I_f}{I_{fo}}$ {or $R_f = R_{fo} \times \left[\ 0.1 + 0.9 \frac{I_f}{I_{fo}}\ \right]$} where R_f is the adjusted remuneration; R_{fo} is the remuneration payable on the basis of the remuneration rates (**Appendix C**) in foreign currency; I_f is the official index for salaries in the country of the foreign currency for the first month for which the adjustment is supposed to have effect; and I_{fo} is the official index for salaries in the country of the foreign currency for the month of the date of the Contract. The Consultant shall state here the name, source institution, and any necessary identifying characteristics of the official index for salaries corresponding to I_f and I_{fo} in the adjustment formula for

	remuneration paid in foreign currency: [*Insert the name, source institution, and necessary identifying characteristics of the index for foreign currency, e.g. "Consumer Price Index for all Urban Consumers (CPI-U), not seasonally adjusted; U.S. Department of Labor, Bureau of Labor Statistics"*] (2) Remuneration paid in local currency pursuant to the rates set forth in **Appendix D** shall be adjusted every *[insert number]* months (and, for the first time, with effect for the remuneration earned in the *[insert number]*the calendar month after the date of the Contract) by applying the following formula: $R_l = R_{lo} \times \frac{I_l}{I_{lo}}$ {or $R_l = R_{lo} \times [\ 0.1 + 0.9 \frac{I_l}{I_{lo}}\ ]$} where R_l is the adjusted remuneration; R_{lo} is the remuneration payable on the basis of the remuneration rates (**Appendix D**) in local currency; I_l is the official index for salaries in the Client's country for the first month for which the adjustment is to have effect; and I_{lo} is the official index for salaries in the Client's country for the month of the date of the Contract. The Client shall state here the name, source institution, and any necessary identifying characteristics of the official index for salaries corresponding to I_l and I_{lo} in the adjustment formula for remuneration paid in local currency: [*Insert the name, source institution, and necessary identifying characteristics of the index for foreign currency*] (3) Any part of the remuneration that is paid in a currency different from the currency of the official index for salaries used in the adjustment formula, shall be adjusted by a correction factor X_0/X. X_0 is the number of units of currency of the country of the official index, equivalent to one unit of the currency of payment on the date of the contract. X is the number of units of currency of the country of the official index, equivalent to one unit of the currency of payment on the first day of the first month for which the adjustment is supposed to have effect.
43.1 and 43.2	*[The Bank leaves it to the Client to decide whether the Consultant (i) should be exempted from indirect local tax, or (ii) should be reimbursed by the Client for any such tax they might have to pay (or that the Client would pay such tax on behalf of the Consultant]*

The Client warrants that *[choose one applicable option consistent with the ITC 16.3 and the outcome of the Contract's negotiations (Form FIN-2, part B "Indirect Local Tax – Estimates"):*

If ITC16.3 indicates a tax exemption status, include the following: "**the Consultant, the Sub-consultants and the Experts shall be exempt from**"

OR

If ITC16.3 does not indicate the exemption and, depending on whether the Client shall pay the withholding tax or the Consultant has to pay, include the following:

*"***the Client shall pay on behalf of the Consultant, the Sub-consultants and the Experts,***" OR "***the Client shall reimburse the Consultant, the Sub-consultants and the Experts***"]*

any indirect taxes, duties, fees, levies and other impositions imposed, under the applicable law in the Client's country, on the Consultant, the Sub-consultants and the Experts in respect of:

(a) any payments whatsoever made to the Consultant, Sub-consultants and the Experts (other than nationals or permanent residents of the Client's country), in connection with the carrying out of the Services;

(b) any equipment, materials and supplies brought into the Client's country by the Consultant or Sub-consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn by them;

(c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client;

(d) any property brought into the Client's country by the Consultant, any Sub-consultants or the Experts (other than nationals or permanent residents of the Client's country), or the eligible dependents of such experts for their personal use and which will subsequently be withdrawn by them upon their respective departure from the Client's country, provided that:

   (i) the Consultant, Sub-consultants and experts shall follow the usual customs procedures of the Client's country in importing property into the Client's country; and

	(ii) **if the Consultant, Sub-consultants or Experts do not withdraw but dispose of any property in the Client's country upon which customs duties and taxes have been exempted, the Consultant, Sub-consultants or Experts, as the case may be, (a) shall bear such customs duties and taxes in conformity with the regulations of the Client's country, or (b) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Client's country.**
44.1	**The currency [currencies] of payment shall be the following:** *[list currency(ies) which should be the same as in the Financial Proposal, Form FIN-2]*
45.1(a)	*[The advance payment could be in either the foreign currency, or the local currency, or both; select the correct wording in the Clause here below. The advance bank payment guarantee should be in the same currency(ies)]* The following provisions shall apply to the advance payment and the advance bank payment guarantee: (1) An advance payment [of *[insert amount]* in foreign currency] [and of *[insert amount]* in local currency] shall be made within *[insert number]* days after the Effective Date. The advance payment will be set off by the Client in equal installments against the statements for the first *[insert number]* months of the Services until the advance payment has been fully set off. (2) The advance bank payment guarantee shall be in the amount and in the currency of the currency(ies) of the advance payment.
45.1(b)	*[Delete this Clause SCC 45.1(b) if the Consultant shall have to submit its itemized statements monthly. Otherwise, the following text can be used to indicate the required intervals:* **The Consultant shall submit to the Client itemized statements at time intervals of __________________** *[e.g. "every quarter", "every six months", "every two weeks", etc.]*.
45.1(e)	**The accounts are:**

	for foreign currency: *[insert account]*. for local currency: *[insert account]*.
46.1	**The interest rate is**: *[insert rate]*.
49.	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *[name an appropriate international professional body, e.g., the Federation Internationale des Ingenieurs-Conseil (FIDIC) of Lausanne, Switzerland]* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *[insert the name of the same professional body as above]* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *[name an appropriate international appointing authority, e.g., the Secretary General of the Permanent Court of Arbitration,*

	The Hague; the Secretary General of the International Centre for Settlement of Investment Disputes, Washington, D.C.; the International Chamber of Commerce, Paris; etc.]. (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *[name the same appointing authority as in said paragraph (b)]* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[**Note**: If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[**Note**: If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or

	(d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in *[select a country which is neither the Client's country nor the Consultant's country]*; (b) the *[type of language]* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 in the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

If the Services consist of or include the supervision of civil works, the following action that require prior approval of the Client shall be added to the "Reporting Requirements" section of the TORs: Taking any action under a civil works contract designating the Consultant as "Engineer", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required.**]**

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

[Specify Hours of Work for Key Experts: List here the hours of work for Key Experts; travel time to/ from the Client's country; entitlement, if any, to leave pay; public holidays in the Client's country that may affect Consultant's work; etc. Make sure there is consistency with Form TECH-6. In particular: one month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.]

APPENDIX C – REMUNERATION COST ESTIMATES

1. Monthly rates for the Experts:

[Insert the table with the remuneration rates. The table shall be based on [Form FIN-3] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if

any. The footnote shall list such changes made to [Form FIN-3] at the negotiations or state that none has been made.]

2. *[When the Consultant has been selected under Quality-Based Selection method, or the Client has requested the Consultant to clarify the breakdown of very high remuneration rates at the Contract's negotiations also add the following:*

"The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.

Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract."

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature _______________________ Date _______________________

Name and Title: _______________________

APPENDIX D – REIMBURSABLE EXPENSES COST ESTIMATES

1. *[Insert the table with the reimbursable expenses rates. The table shall be based on [Form FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-4] at the negotiations or state that none has been made.*

2. All reimbursable expenses shall be reimbursed at actual cost, unless otherwise explicitly provided in this Appendix, and in no event shall reimbursement be made in excess of the Contract amount.]

APPENDIX E - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 45.1 (a) and SCC 45.1(a)]

Bank Guarantee for Advance Payment

______________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

---

[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.

---

[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

STANDARD FORM OF CONTRACT

Consultant's Services

Lump-Sum

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including Attachment 1, shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name ______________________________

[Loan/Credit/Grant] **No.**______________________

Contract No. _______________________________

between

____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ________________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the “Contract”) is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the “Client”) and, on the other hand, *[name of Consultant]* (hereinafter called the “Consultant”).

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: “…(hereinafter called the “Client”) and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant’s obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the “Consultant”).]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the “Services”);

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the [*insert as relevant, International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price
   Appendix D: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) “Foreign Currency” means any currency other than the currency of the Client’s country.

(l) “GCC” means these General Conditions of Contract.

(m) “Government” means the government of the Client’s country.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.

(p) “Local Currency” means the currency of the Client’s country.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.

(s) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[13];

   (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[14];

   (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[15];

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[13] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[14] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[15] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[16];

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[17], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[18] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[16] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[17] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[18] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** *Republic of India.*
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** Client : Ministry of Housing and Urban Affairs (MoHUA) Attention : ______ Facsimile : ______ E-mail (where permitted):______ Consultant : ______ ______ Attention : ______ Facsimile : ______ E-mail (where permitted) :______
8.1	*[If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ______ ______ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______ **For the Consultant:** *[name, title]*______
11.1	*[Note: If there are no effectiveness conditions, state "N/A"]* *OR*

	List here any conditions of effectiveness of the Contract, e.g., approval of the Contract by the Bank, effectiveness of the Bank [loan/credit/grant], receipt by the Consultant of an advance payment, and by the Client of an advance payment guarantee (see Clause SCC45.1(a)), etc.] **The effectiveness conditions are the following**: *[insert "N/A" or list the conditions]*
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be ________________________** *[insert time period, e.g.: four months]*.
13.1	**Commencement of Services:** **The number of days shall be__________________** *[e.g.: ten]*. Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be _________________________** *[insert time period, e.g.: twelve months]*.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	**No additional provisions.** *[OR* The following limitation of the Consultant's Liability towards the Client can be subject to the Contract's negotiations: **"Limitation of the Consultant's Liability towards the Client:** **(a) Except in the case of gross negligence or willful misconduct on the part of the Consultant or on the part of any person or a firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused by the Consultant to the Client's property, shall not be liable to the Client:** **(i) for any indirect or consequential loss or damage; and** **(ii) for any direct loss or damage that exceeds [insert a multiplier, e.g.: one, two, three] times the total value of the Contract;** **(b) This limitation of liability shall not** **(i) affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in carrying out the Services;** **(ii) be construed as providing the Consultant with any limitation or exclusion from liability which is prohibited by the** *[insert "***Applicable Law***", if it is the law of the Client's country, or insert "***applicable law in the Client's country***", if the Applicable Law stated in Clause SCC1.1 (b) is different from the law of the Client's country].* *[Notes to the Client and the Consultant: Any suggestions made by the Consultant in the Proposal to introduce exclusions/limitations of the Consultant's liability under the Contract should be carefully scrutinized by the Client and discussed with the Bank prior to accepting any changes to what was included in the issued RFP. In this regard, the Parties should be aware of the Bank's policy on this matter which is as follows:* *To be acceptable to the Bank, any limitation of the Consultant's liability should at the very least be reasonably related to (a) the damage the Consultant might potentially cause to the Client, and (b) the*

	Consultant's ability to pay compensation using its own assets and reasonably obtainable insurance coverage. The Consultant's liability shall not be limited to less than a multiplier of the total payments to the Consultant under the Contract for remuneration and reimbursable expenses. A statement to the effect that the Consultant is liable only for the re-performance of faulty Services is not acceptable to the Bank. Also, the Consultant's liability should never be limited for loss or damage caused by the Consultant's gross negligence or willful misconduct. *The Bank does not accept a provision to the effect that the Client shall indemnify and hold harmless the Consultant against Third Party claims, except, of course, if a claim is based on loss or damage caused by a default or wrongful act of the Client to the extent permissible by the law applicable in the Client's country.]*
24.1	**The insurance coverage against the risks shall be as follows:** *[Delete what is not applicable except (a)].* **(a) Professional liability insurance, with a minimum coverage of** ______________________ *[insert amount and currency which should be not less than the total ceiling amount of the Contract]*; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (c) Third Party liability insurance, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.

27.1	*[If applicable, insert any exceptions to proprietary rights provision______________________________________]*
27.2	*[If there is to be no restriction on the future use of these documents by either Party, this Clause SCC 27.2 should be deleted. If the Parties wish to restrict such use, any of the following options, or any other option agreed to by the Parties, could be used:* [**The Consultant shall not use these** *[insert what applies…….**documents and software**……….]* **for purposes unrelated to this Contract without the prior written approval of the Client**.] *[OR]* [**The Client shall not use these** *[insert what applies…….**documents and software**……….]* **for purposes unrelated to this Contract without the prior written approval of the Consultant**.**]** *[OR]* **[Neither Party shall use these** *[insert what applies…….**documents and software**……….]* **for purposes unrelated to this Contract without the prior written approval of the other Party**.**]**
32.1 **(a) through (e)**	*[List here any changes or additions to Clause GCC 35.1. If there are no such changes or additions, delete this Clause SCC 35.1.]*
32.1(f)	*[List here any other assistance to be provided by the Client. If there is no such other assistance, delete this Clause SCC 35.1(f).]*
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.**

	The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	*[The Bank leaves it to the Client to decide whether the Consultant (i) should be exempted from indirect local tax, or (ii) should be reimbursed by the Client for any such tax they might have to pay (or that the Client would pay such tax on behalf of the Consultant]* **The Client warrants that** *[choose one applicable option consistent with the ITC 16.3 and the outcome of the Contract's negotiations (Form FIN-2, part B "Indirect Local Tax – Estimates"):* *If ITC16.3 indicates a tax exemption status, include the following:* "**the Consultant, the Sub-consultants and the Experts shall be exempt from**" *OR* *If ITC16.3 does not indicate the exemption and, depending on whether the Client shall pay the withholding tax or the Consultant has to pay, include the following:* "**the Client shall pay on behalf of the Consultant, the Sub-consultants and the Experts,**" *OR* "**the Client shall reimburse the Consultant, the Sub-consultants and the Experts**"*]* **any indirect taxes, duties, fees, levies and other impositions imposed, under the applicable law in the Client's country, on the Consultant, the Sub-consultants and the Experts in respect of:** **(a) any payments whatsoever made to the Consultant, Sub-consultants and the Experts (other than nationals or permanent residents of the Client's country), in connection with the carrying out of the Services;** **(b) any equipment, materials and supplies brought into the Client's country by the Consultant or Sub-consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn by them;** **(c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client;** **(d) any property brought into the Client's country by the Consultant, any Sub-consultants or the Experts (other than**

	nationals or permanent residents of the Client's country), or the eligible dependents of such experts for their personal use and which will subsequently be withdrawn by them upon their respective departure from the Client's country, provided that: **(i) the Consultant, Sub-consultants and experts shall follow the usual customs procedures of the Client's country in importing property into the Client's country; and** **(ii) if the Consultant, Sub-consultants or Experts do not withdraw but dispose of any property in the Client's country upon which customs duties and taxes have been exempted, the Consultant, Sub-consultants or Experts, as the case may be, (a) shall bear such customs duties and taxes in conformity with the regulations of the Client's country, or (b) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Client's country.**
41.2	**The payment schedule:** **For the Local Currency (Rs.____________)** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD),Project, Ministry of housing and Urban Affairs, Nirman hawan, Maulana Azad Road, New Delhi-110011.
41.2.1	*[*The following provisions shall apply to the advance payment and the advance bank payment guarantee: (1) An advance payment [of *[insert amount]* in foreign currency] [and of *[insert amount]* in local currency] shall be made within *[insert number]* days after the receipt of an advance bank payment guarantee by the Client. The advance payment will be set off by the Client in equal portions against [list the payments against which the advance is offset]. (2) The advance bank payment guarantee shall be in the amount and in the currency of the currency(ies) of the advance payment.

	(3) The bank guarantee will be released when the advance payment has been fully set off.
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi*

	(c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
A	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder:

	(a) proceedings shall, unless otherwise agreed by the Parties, be held in *[select a country which is neither the Client's country nor the Consultant's country]*; (b) the *[type of language]* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements and list of deliverables against which the payments to the Consultant will be made; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks or actions that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 of the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……………………………………………………………………………………………

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> "The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or

inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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* If more than one currency, add a table

Signature ______________________ Date ______________________

Name and Title: ______________________

APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 41.2.1 and SCC 41.2.1]

Bank Guarantee for Advance Payment

______________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

---

[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.

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[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Short List and Draft Request for Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

STEP Admin <noreply@worldbankgroup.org> Fri, Nov 24, 2017 at 3:07 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Draft Request for Proposals for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS.

We have reviewed the RFP based on your email dated November 23, 2017 that the package is a lump sum contract. We have no objection to the RFP subject to incorporation of the comments given below. Please note that the contract forms are almost blank which needs to be filled-in before issuing the same to the Consultants. Also, the Time Based contract forms along with Appendix-A needs to be deleted.

We have reviewed the draft Request for Proposals (including the shortlist) for the above-mentioned consulting services, submitted to the Bank on 2017/11/22 and based on the information provided the Bank has no objection to the Request for Proposals and to the following qualified consultants being included in the shortlist.

Name of Consultant/Firm	Country
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India

CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The RFP is cleared by Bank subject to incorporation of the following comments :

(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.

(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.

(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or reference to any procedure available on the portal may be indicated.

(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.

(5) Delete “Foreword” from Section-8 “Conditions of Contract and Contract Forms”.

(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.

(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.

(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.

(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.

(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.

(11) SCC 23.1 : Please insert relevant option

(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.

(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions

(14) SCC 27.2 : Insert relevant option

(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.

(16) SCC 39.1 & 39.2 : insert relevant option.

(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.

(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).

For payments in foreign currency, it should be LIBOR + 2%.

(19) SCC 45.1 Delete the instructions in brackets.

(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.

(21) SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. Please send the RFP to the qualified consultants ensuring they are given at least 28 days (4 weeks) for the submission of their proposals.

We look forward to receiving in due course the technical evaluation report for our review and no objection.

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Government electronic Procurement notification for the tender.

6 messages

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: vanshikha.bhat@in.pwc.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the tender**
eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender.
Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: sudha@idfc.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the**

tender
eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender.
Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: ravi.poddar@crisil.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the tender**
eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender.
Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: tripti.sharma@ipsos.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the tender**

eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender.
Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: simon.thomas@ap.jll.com
Cc: g.vijaykumar.moud@gmail.com

Attachment #82 Government electronic Procurement notification for the tender to the shortlisted firms.pdf

Government eProcurement System **Government electronic Procurement notification for the tender**

eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender. Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: vudgirkar@deloitte.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the tender**

eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender. Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**

Organisation Chain : **Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

SUMMARY DESCRIPTION

STANDARD REQUEST FOR PROPOSALS (for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India)

PART I – SELECTION PROCEDURES AND REQUIREMENTS

Section 1: Letter of Invitation (LOI)

This Section is a template of a letter from the Client addressed to a shortlisted consulting firm inviting it to submit a proposal for a consulting assignment. The LOI includes a list of all shortlisted firms to whom similar letters of invitation are sent, and a reference to the selection method and applicable guidelines or policies of the financing institution that govern the selection and award process.

Section 2: Instructions to Consultants and Data Sheet

This Section consists of two parts: “Instructions to Consultants” and “Data Sheet”. “Instructions to Consultants” contains provisions that are to be used without modifications. “Data Sheet” contains information specific to each selection and corresponds to the clauses in “Instructions to Consultants” that call for selection-specific information to be added. This Section provides information to help shortlisted consultants prepare their proposals. Information is also provided on the submission, opening and evaluation of proposals, contract negotiation and award of contract. Information in the Data Sheet indicates whether a Full Technical Proposal (FTP) or a Simplified Technical Proposal (STP) shall be used.

Section 3: Technical Proposal – Standard Forms

This Section includes the forms for FTP and STP that are to be completed by the shortlisted consultants and submitted in accordance with the requirements of Section 2.

Section 4: Financial Proposal – Standard Forms

This Section includes the financial forms that are to be completed by the shortlisted consultants, including the consultant’s costing of its technical proposal, which are to be submitted in accordance with the requirements of Section 2.

Section 5: Eligible Countries

This Section contains information regarding eligible countries.

Section 6: Bank’s Policy – Corrupt and Fraudulent Practices

This Section provides shortlisted consultants with the reference to the Bank's policy in regard to corrupt and fraudulent practices applicable to the selection process. This Section is also incorporated in the standard forms of contract (Section 8) as Attachment 1.

Section 7: Terms of Reference (TORs)

This Section describes the scope of services, objectives, goals, specific tasks required to implement the assignment, and relevant background information; provides details on the required qualifications of the key experts; and lists the expected deliverables. This Section shall not be used to over-write provisions in Section 2.

PART II – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section 8: Standard Forms of Contract

This Section includes two types of standard contract forms for large or complex assignments: a Time-Based Contract and a Lump-Sum Contract. Each type includes General Conditions of Contract ("GCC") that shall not be modified, and Special Conditions of Contract ("SCC"). The SCC include clauses specific to each contract to supplement the General Conditions.

Each standard form of contract incorporates "Bank's Policy – Corrupt and Fraudulent Practices" (Section 6 of Part I) in a form of Attachment 1.

SELECTION OF CONSULTANTS

REQUEST FOR PROPOSALS

Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India

**Client: Ministry of Housing and Urban Affairs (MoHUA),
Government of India (GoI)**

Country: India

Project: Capacity Building for Urban Development (CBUD)

Issued on: 27th November, 2017

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PART I

Section 1. Letter of Invitation

RFP No. E3136811 **Credit No**.- 4997-IN India and 27th November 2017

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has receive financing from the International Development Association (IDA)*]* (the “Bank”) in the form of a “credit” (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. The *[*Client/ Recipient*]* intends to apply the funds to eligible payments under the

contract for which this Request for Proposals is issued.] Payments by the Bank will be made only at the request of the Ministry of Housing and Urban Affairs, GOI and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan agreement. The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the *[*Borrower/Client/Recipient*]* shall derive any rights from the loan agreement or have any claims to the proceeds of the loan.

2. The Client now invites proposals to provide the following consulting services (hereinafter called “Services”): *Assessment of Liveability Indices for 116 cities in India.* More details on the Services are provided in the Terms of Reference (Section 7).

3. This electronic Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under *QCBS* procedures and in a Full Technical Proposal (FTP) format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:
   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal (FTP) - Standard Forms
   Section 4 - Financial Proposal - Standard Forms
   Section 5 – Eligible Countries
   Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
   Section 7 - Terms of Reference
   Section 8 - Standard Forms of Contract (Lump-Sum)

7. The RFP is available online at https://eprocure.gov.in/cppp/ for the short-listed consultants only. The short-listed consultants are required to register on this website at no cost and prior to the submission of proposals. Consultant is also required to have a Digital Signature (DSC) from one of the Government of India authorized Certifying Authorities in order to submit a proposal on line at the web address indicated above. The list of the authorized Certifying Authorities can be found https://eprocure.gov.in/eprocure/app;jsessionid=F5C7CAFAAD521D191038BF8A4FD03B4F.eprocgep1?page=HelpForContractors&service=page

8. Please inform us by 8th December, *2017 by 3.00 pm* by E-mail on : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com
   (a) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

9. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi. (Ph. 23063217)
on behalf of Project Director, CBUD, MoHUA, Nirman Bhavan, New Delhi.

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the loan agreement with the Bank.

(f) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(h) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(i) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(j) "Day" means a calendar day.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(l) “Government” means the government of the Client’s country.

(m) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(n) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(o) “ITC” (this Section 2 of the e-RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(p) “LOI” (this Section 1 of the e-RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(r) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(s) “RFP” means the Request for Proposals to be prepared by the Client for the electronic selection of Consultants, based on the SRFP.

(t) “SRFP” means the trial version of Standard Request for Proposals for the use in electronic procurement issued by the Bank, which must be used by the Client as the basis for the preparation of the RFP.

(u) “Services” means the work to be performed by the Consultant pursuant to the Contract.

(v) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while

remaining responsible to the Client during the performance of the Contract.

(w) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction

2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**.

2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant.

2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.

3. Conflict of Interest

3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work.

3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank.

3.2.1 Without limitation on the generality of the foregoing, and unless stated otherwise in the **Data Sheet**, the Consultant shall not be hired under the circumstances set forth below:

a. Conflicting activities

(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.

b. Conflicting assignments

(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.

c. Conflicting relationships

(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.

4. Unfair Competitive Advantage

4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this e-RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.

5. Corrupt and Fraudulent Practices

5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.

6. Eligibility

6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects.

6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines.

6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:

a. Sanctions

6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.

b. Prohibitions

6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

c. Restrictions for Government-owned Enterprises

6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii)

operate under commercial law, and (iii) that they are not dependent agencies of the Client

To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.

d. Restrictions for public employees

6.3.4 Government officials and civil servants of the Borrower’s country are not eligible to be included as Experts in the Consultant’s Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower’s country, and they

(i) are on leave of absence without pay, or have resigned or retired;

(ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring

> (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower’s country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant’s Proposal.; and

(iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7.	**General Considerations**	7.1 In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8.	**Cost of Preparation of Proposal**	8.1 The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9.	**Language**	9.1 The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10.	**Documents Comprising the Proposal**	10.1 The Proposal shall comprise the documents and forms listed in the **Data Sheet**. 10.2 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). 10.3 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11.	**Only One Proposal**	11.1 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12.	**Proposal Validity**	12.1 **The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline.

12.2 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

12.3 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period

12.4 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, by notifying all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. Mode of notifications is specified in the **Data Sheet.**

12.5 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts.

12.6 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

b. Substitution of Key Experts at Validity Extension

12.7 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert.

12.8 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.

c. Sub-Contracting

12.9 The Consultant shall not subcontract the whole of the Services.

13. Clarification and Amendment of RFP

13.1 The Consultant may request an online clarification of any part of the RFP during the period and in accordance with the procedure indicated in the **Data Sheet** before the Proposals' submission deadline. The Client will respond online by uploading

the response on the portal (including an explanation of the query but without identifying its source) for information of all shortlisted Consultants. Should the Client deem it necessary to amend the e-RFP as a result of a clarification, it shall do so following the procedure described below:

13.1.1 At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment online in accordance with procedure described in Data Sheet The amendment shall be binding on all shortlisted Consultants.

13.1.2 If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals.

13.2 The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline, online, in accordance with the procedure described in the **Data Sheet**. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

14. Preparation of Proposals – Specific Considerations

14.1 While preparing the Proposal, the Consultant must give particular attention to the following:

14.1.1 If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member.

14.1.2 The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same.

14.1.3 If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts,

failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**.

14.1.4 For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.

15. Technical Proposal Format and Content

15.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.

15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive.

15.2 Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.

16. Financial Proposal

16.1 The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.

a. Price Adjustment

16.2 For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.

b. Taxes

16.3 The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.

c. Currency of Proposal

16.4 The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.

d. Currency of Payment

16.5 Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission of Proposals

17.1 The Consultant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done electronically through the website and in accordance with the procedures specified in the **Data Sheet.** Proposals submitted by any other means will be rejected.

17.2 An authorized representative of the Consultant shall digitally sign the submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Technical Proposal.

17.2.1 In the case of a Joint Venture, submission letters shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. The submission letters and the power of attorney shall then be scanned and uploaded together with the Technical Proposal.

17.3 Consultants should be aware that the electronic procurement system does not allow for any interlineations, erasures, or overwriting. Any modifications or revisions to the Proposal shall be done in accordance with Clause ITC 13.2.

17.4 The Proposal or its modifications must be uploaded on the portal no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline.

17.5 Once the Proposal is uploaded on the portal, the system will generate a unique identification number with the stamped submission time. The unique identification number with the time stamp represents an acknowledgement of the Proposal submission. Any other system's functionality requirements are specified in the **Data Sheet**.

18. Confidentiality

18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award

recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures.

18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.

19. Online Opening of Technical Proposals

19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals online immediately after the Proposals' submission deadline and following the procedure described in the Data Sheet. The folder with the Financial Proposal shall remain unopened, encrypted and shall be securely stored on the portal.

19.2 At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the Data Sheet.

20. Proposals Evaluation

20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable .

20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

21. Evaluation of Technical Proposals

21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.

22. Financial Proposals for QBS

22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract.

22.2 16.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.

23. Online Opening of Financial Proposals (for QCBS, FBS, and LCS methods)

23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score by sending a notification through the means indicated in the **Data Sheet**. The notification shall also include information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion. Financial Proposals of those Consultants whose Technical Proposals did not meet the minimum qualifying score shall not be opened. In such case, a notification to that effect will be sent to the Consultant. The Client shall simultaneously notify those Consultants that have achieved the minimum overall technical score and inform them of the date, time and, if indicated in the **Data Sheet**, location for online opening of the Financial Proposals. The Consultant's attendance at the opening of the Financial Proposals (online, or in person, if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. If the Data Sheet provides an option of attending in person, the opening date should allow the Consultants sufficient time to make arrangements for attending the opening.

23.2 The Financial Proposals shall be opened online by the Client's evaluation committee as described in the Data Sheet. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud first and recorded online simultaneously. The Financial Proposals shall be then opened, the total prices read

aloud and recorded online simultaneously. The records of the opening shall remain on the portal for the information of the Consultants who submitted Proposals and the Bank, unless the **Data Sheet** provides for other means of sending notifications and the results of the financial opening.

24. Correction of Errors

24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

24.2 If a Time-Based contract form is included in the e-RFP, the e-procurement system automatically calculates the amount in words from the amount in figures and automatically calculates the total amount In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost. The evaluation committee will also adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal.

b. Lump-Sum Contracts

24.3 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.

25. Taxes

The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.

26. Conversion to Single Currency

26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.

27. Combined Quality and Cost Evaluation

a. Quality- and Cost-Based Selection (QCBS)

27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.

b. Fixed-Budget Selection (FBS)

27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected.

27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection

27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations

28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.

28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.

a. Availability of Key Experts

28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant.

28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.

b. Technical negotiations

28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.

c. Financial negotiations

28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract.

28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank.

The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.

29. Conclusion of Negotiations

29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative.

29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.

30. Award of Contract

30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; promptly notify the other shortlisted Consultants and publish the award as per the instructions in the **Data Sheet.**

30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

A. General	
ITC Clause Reference	
1 (c)	Law of Republic of India
2.1	**Name of the Client:** Ministry of Housing and Urban Affairs (MoHUA), Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
2.3	**A pre-proposal conference will be held**: Yes Date of pre-proposal conference: **12th December, 2017** Time:15.00 (3.00 PM) Address: 202-C, Nirman Bhawan, Maulana Azad Road, New Delhi. Telephone: 011-23063217 E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com Contact person/conference coordinator *: G.Vijay Kumar, Under Secretary*
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals:** NA
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
B. Preparation of Proposals	

9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language.** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 OR **For SIMPLIFIED TECHNICAL PROPOSAL (STP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-4 (4) TECH-5 (5) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes

11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *and 90 days* calendar days after the proposal submission deadline (i.e., until**: 27th March, 2018)**
12.4	Validity of proposal will be intimated by e-mail to g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** **All requests for clarifications shall be made online through** mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by **8th December 2017, 3.00 pm.** **Clarifications sent through any other medium shall not be accepted.**
13.2	The process for submitting modifications to the Proposal is as per e- procurement manual available at https://eprocure.gov.in/cppp/
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s): No** **or** **(b) other shortlisted Consultants: No**
14.1.2	**Estimated input of Key Experts' time-input: approx.. 22person-months.**
14.1.3	*"Not applicable".*
14.1.4 and 27.2	**Not Applicable**

15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of items to be included in reimbursable expenses:* *(1) a per diem allowance, including hotel, for experts for every day of absence from the home office for the purposes of the Services;* *(2) cost of travel by the most appropriate means of transport and the most direct practicable route;* *(3) cost of office accommodation, including overheads and back-stop support;* *(4) communications costs;* *(5) cost of reports production (including printing) and delivering to the Client;*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	***GST and other indirect and local taxes as applicable from time to time.***
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants shall submit their Proposals electronically by downloading them on the portal** https://eprocure.gov.in/cppp/. ***The electronic submission procedures is available at*** ***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
17.4	**The Proposals must be submitted online no later than:** **Date: 27th December, 2017**

	Time: 15.00 Local Time (3.00 PM)
17.5	As per https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page
19.1	An online opening of the Technical Proposals will be conducted as defined in https://eprocure.gov.in *Consultants have an option to attend the opening of the Technical Proposals in person. The opening shall take place* at*:* Street Address: : Maulana Azad Road Floor, room number: Room No.202 C, Nirman Bhawan City New Delhi 110001 Country: India Date: **28th December, 2017**. Time: *15.00 Local Time (3.00 PM)*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals :** NA
21.1	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10

	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) : 60%

Total points for the three criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.
23.2	**The Financial Proposals shall be opened online as** *defined in ITB 23.2* **The procedure for notifying the Consultants on the results of the Financial opening shall be** *as in ITB 23.2*

25.1	For the purpose of the evaluation, the Client will exclude: (a) all local identifiable indirect taxes such GST, or similar taxes levied on the contract's invoices; and (b) all additional local indirect tax on the remuneration of services rendered by non-resident experts in the Client's country. If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is:** Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T =** 0.80, and **P =** 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations:** **Date**: **10th January 2018** **Address:** 202C, Nirman Bhawan, Maulana Azad Road, New Delhi.
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done**

	as following: www. moud.gov.in The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services:** **Date**:**15th January, 2018**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: *[Name and address of Client]*

Dear Sirs:

We, the undersigned, offer to provide the consulting services for *[Insert title of assignment]* in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *[Select appropriate wording depending on the selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope" *or, if only a Technical Proposal is invited* "We hereby are submitting our Proposal, which includes this Technical Proposal only in a sealed envelope.*"].*

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) *[Note to Client: Only if required in ITC10.2 (Data Sheet 10.2), include the following:* In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.*]*

(f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY)

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1. List only previous similar assignments successfully completed in the last *[.....]* years.

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009– Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL)

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4 (FOR FULL TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the TORs in here.}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-4 (FOR SIMPLIFIED TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Form TECH-4: a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR and on counterpart staff and facilities)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

FORM TECH-5 (FOR FTP AND STP)

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client’s approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

Form TECH-6 (for FTP and STP)

Team Composition, Assignment, and Key Experts' inputs

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			*[Home]*													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

---

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.

2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

[3] "Home" means work in the office in the expert's country of residence. "Field" work means work carried out in the Client's country or any other country outside the expert's country of residence.

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): _______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Expert's contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Representative of the Consultant (the same who signs the Proposal) Signature Date

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Remboursable expanses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____

In the capacity of: ____
Address: ____
E-mail: ________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	Cost			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g., VAT or sales tax}				
(ii) {e.g., income tax on non-resident experts}				
(iii) {insert type of tax}				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	Name	Position (as in TECH-6)	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
____	**Key Experts**							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
____	**Non-Key Experts**							
N-1			*[Home]*		▨	▨	▨	
N-2			*[Field]*		▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
	Total Costs							

Appendix A. Financial Negotiations - Breakdown of Remuneration Rates

1. **Review of Remuneration Rates**

1.1. The remuneration rates are made up of salary or a base fee, social costs, overheads, profit, and any premium or allowance that may be paid for assignments away from headquarters or a home office. An attached Sample Form can be used to provide a breakdown of rates.

1.2. If the RFP requests submission of a technical proposal only, the Sample Form is used by the selected Consultant to prepare for the negotiations of the Contract. If the RFP requests submission of the financial proposal, the Sample Form shall be completed and attached to the Financial Form-3. Agreed (at the negotiations) breakdown sheets shall form part of the negotiated Contract and included in its Appendix D or C.

1.3. At the negotiations the firm shall be prepared to disclose its audited financial statements for the last three years, to substantiate its rates, and accept that its proposed rates and other financial matters are subject to scrutiny. The Client is charged with the custody of government funds and is expected to exercise prudence in the expenditure of these funds.

1.4. Rate details are discussed below:

(i) Salary is the gross regular cash salary or fee paid to the individual in the firm's home office. It shall not contain any premium for work away from headquarters or bonus (except where these are included by law or government regulations).

(ii) Bonuses are normally paid out of profits. To avoid double counting, any bonuses shall not normally be included in the "Salary" and should be shown separately. Where the Consultant's accounting system is such that the percentages of social costs and overheads are based on total revenue, including bonuses, those percentages shall be adjusted downward accordingly. Where national policy requires that 13 months' pay be given for 12 months' work, the profit element need not be adjusted downward. Any discussions on bonuses shall be supported by audited documentation, which shall be treated as confidential.

(iii) Social Charges are the costs of non-monetary benefits and may include, inter alia, social security (including pension, medical, and life insurance costs) and the cost of a paid sick and/or annual leave. In this regard, a paid leave during public holidays or an annual leave taken during an assignment if no Expert's replacement has been provided is not considered social charges.

(iv) Cost of Leave. The principles of calculating the cost of total days leave per annum as a percentage of basic salary is normally calculated as follows:

$$\text{Leave cost as percentage of salary} = \frac{\text{total days leave x 100}}{[365 - w - ph - v - s]}$$

Where w = weekends, ph = public holidays, v = vacation, and s = sick leave.

Please note that leave can be considered as a social cost only if the Client is not charged for the leave taken.

(v) Overheads are the Consultant's business costs that are not directly related to the execution of the assignment and shall not be reimbursed as separate items under the Contract. Typical items are home office costs (non-billable time, time of senior Consultant's staff monitoring the project, rent of headquarters' office, support staff, research, staff training, marketing, etc.), the cost of Consultant's personnel not currently employed on revenue-earning projects, taxes on business activities, and business promotion costs. During negotiations, audited financial statements, certified as correct by an independent auditor and supporting the last three years' overheads, shall be available for discussion, together with detailed lists of items making up the overheads and the percentage by which each relates to basic salary. The Client does not accept an add-on margin for social charges, overhead expenses, etc. for Experts who are not permanent employees of the Consultant. In such case, the Consultant shall be entitled only to administrative costs and a fee on the monthly payments charged for sub-contracted Experts.

(vi) Profit is normally based on the sum of the Salary, Social costs, and Overheads. If any bonuses paid on a regular basis are listed, a corresponding reduction shall be made in the profit amount. Profit shall not be allowed on travel or any other reimbursable expenses.

(vii) Away from Home Office Allowance or Premium or Subsistence Allowances. Some Consultants pay allowances to Experts working away from headquarters or outside of the home office. Such allowances are calculated as a percentage of salary (or a fee) and shall not draw overheads or profit. Sometimes, by law, such allowances may draw social costs. In this case, the amount of this social cost shall still be shown under social costs, with the net allowance shown separately.

UNDP standard rates for the particular country may be used as reference to determine subsistence allowances.

Sample Form

Consultant: Country:
Assignment: Date:

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:

(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;

(b) attached are true copies of the latest pay slips of the Experts listed;

(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;

(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and

(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

____
[Name of Consultant]

______________________________ ____________________
Signature of Authorized Representative Date

Name: ______________________________

Title: ______________________________

Consultant's Representations Regarding Costs and Charges
(Model Form I)

(Expressed in {insert name of currency*})

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour	Proposed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Client's Country									

{* If more than one currency is used, use additional table(s), one for each currency}

1. Expressed as percentage of 1
2. Expressed as percentage of 4

FORM FIN-4 BREAKDOWN OF REIMBURSABLE EXPENSES

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses____

N°	**Type of Reimbursable Expenses**	**Unit**	**Unit Cost**	**Quantity**	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
__	{e.g., Per diem allowances**}	{Day}		________				
__	{e.g., International flights}	{Ticket}		________				
__	{e.g., In/out airport transportation}	{Trip}						
	{e.g., Communication costs between Insert place and Insert place}				________			
	{ e.g., reproduction of reports}				________			
	{e.g., Office rent}				________			
	....				________			
	{Training of the Client's personnel – if required in TOR}				________			
				Total Costs				

Legend*:*

"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): ________________ [list country/countries following approval by the Bank to apply the restriction *or* state "none"]

Under the ITC 6.3.2 (b): ________________ [list country/countries *or* indicate "none"]

Section 6. Bank Policy – Corrupt and Fraudulent Practices

(this Section 6 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

---

[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

---

[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards in Cities’ as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in Cities’ across the various standards and develop a ‘City Liveability Index’ – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources,

preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format as mutually agreed

b. All raw data and data sheets;

c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

Sl. No.	Name of State	Name of City	Population
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886

Sl. No.	Name of State	Name of City	Population
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429

Sl. No.	Name of State	Name of City	Population
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

PART II

Section 8. Conditions of Contract and Contract Forms

1. Part II includes two types of standard Contract forms for Consulting Services (a Time-Based Contract and a Lump-Sum Contract) that are based on the contract forms included in the harmonized Standard Request for Proposals (Master Document for Selection of Consultants prepared by participating Multilateral Development Banks (MDBs).

2. **Time-Based Contract**. This type of contract is appropriate when it is difficult to define or fix the scope and the duration of the services, either because they are related to activities carried out by others for which the completion period may vary, or because the input of the consultants required for attaining the objectives of the assignment is difficult to assess. In time-based contracts the Consultant provides services on a timed basis according to quality specifications, and Consultant’s remuneration is determined on the basis of the time actually spent by the Consultant in carrying out the Services and is based on (i) agreed upon unit rates for the Consultant’s experts multiplied by the actual time spent by the experts in executing the assignment, and (ii) reimbursable expenses using actual expenses and/or agreed unit prices. This type of contract requires the Client to closely supervise the Consultant and to be involved in the daily execution of the assignment.

3. **Lump-Sum Contract.** This type of contract is used mainly for assignments in which the scope and the duration of the Services and the required output of the Consultant are clearly defined. Payments are linked to outputs (deliverables) such as reports, drawings, bill of quantities, bidding documents, or software programs. Lump-sum contracts are easier to administer because they operate on the principle of a fixed price for a fixed scope, and payments are due on clearly specified outputs and milestones. Nevertheless, quality control of the Consultant’s outputs by the Client is paramount.

4. The templates are designed for use in assignments with consulting firms and shall not be used for contracting of individual experts. These standard Contract forms are to be used for complex and/or large value assignments, and/or for contracts above US$300,000 equivalent or more unless otherwise approved by the Bank.

STANDARD FORM OF CONTRACT

Consultant's Services

Lump-Sum

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including Attachment 1, shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name ______________________________

[Loan/Credit/Grant] **No.**______________________

Contract No. ______________________________

between

____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ________________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the [*insert as relevant, International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price
   Appendix D: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) “Foreign Currency” means any currency other than the currency of the Client’s country.

(l) “GCC” means these General Conditions of Contract.

(m) “Government” means the government of the Client’s country.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.

(p) “Local Currency” means the currency of the Client’s country.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.

(s) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client’s country when

(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client’s interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant’s only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank’s Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[7];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[8];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[9];

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[7] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[8] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[9] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[10];

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[11], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[12] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[10] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[11] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[12] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** Client : Ministry of Housing and Urban Affairs (MoHUA) Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted):______________________________ Consultant : ______________________________ ______________________________ Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted) :______________________________
8.1	*[If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ______________________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______________________________ **For the Consultant:** *[name, title]*______________________________
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days**

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 20 Weeks
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency (Rs.____________)** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD),Project, Ministry of housing and Urban Affairs, Nirman hawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint,

	upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of:

	(a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements and list of deliverables against which the payments to the Consultant will be made; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks or actions that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 of the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……………………………………………………………………………………………

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> "The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or

inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 41.2.1 and SCC 41.2.1]

Bank Guarantee for Advance Payment

_____________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

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[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.

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[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

ATTENDANCE SHEET

Meeting on Pre-application conference on Assessment of Liveability in Selected Cities under CBUD on 12th December, 2017 in Room No. 120-G

Sl No.	Name of the Officers & Designation	Signature with Mob No.
1	Rakesh Gupta, PMU CBUD	
2	VASAVI. N, PMU, CBUD	
3	A. SHANKAR, JLL	
4	POONAM AGARWAL, JLL	
5	Siddharta Dutt, CRISIL	
6	Vaibhav Sharma, Deloitte	
7	Anubhav Jangra, IDCG	
8	Sunil Pillai, Kaduna International AVP.	
9	Ankita Singh, Deloitte	
10	Meena Pahwa, Sigma Research	Meena
11	Raja Venkataramaiah, IDECK	
12	Ashish Suri, PwC	
13	Sumit Srivastava, PwC	
14	Sachin Singhal, IPSOS	
15	Pramod Bhatt, IPSOS	

16 G. Vijay Kumar, Under Secretary CBUD

17. Yogendra Singh Awana, Deputy Secretary, CBUD

Clarification to the issues raised by the Consulting firms – RFO on Assessment of Liveability Index

Date:12th December 2017, Venue: 120G, NBO Building, NIRMAN BHAVAN

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
1.	**IDeck**	**Page No. 25 Clause 17.4**	**Data Sheet** The Proposals must be submitted online no later than: Date: 27th December, 2017	Kindly provided 2 weeks extension from the date of issue of pre bid clarification.	**The timelines given in the RFP document stand**
2.		**Page No. 52**	Sample Form: Consultant's Representation Regarding b. Attached True Copes of the latest Pay Slips of Experts Listed.	For any Organization it is not ethically possible to share the Pay Slips of the individuals. Hence requesting you to remove the clause.	**This is a Standard World Bank document.**
3.		**Page No. 61 Clause i**	**Initiation Activities** Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal.	It is practically time consuming activity to conduct workshops at each state level. Can consultant conduct workshops at zonal level (East, West, North and South)?	**As per RFP.**
4.		**Page No. 61 Clause iii**	**Initiation Activities** Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia.	Can Consultant submit combined Inception Report for all 116 Cities?	**As per RFP.**
5.		**Page No. 61**	**Data Collection and Field Surveys.**	• What should the common year of reference for data collection in all given sector be?	**Please refer to the methodology document available on the website of the Ministry.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				• What if, the year of reference is separate for each indicator within a ULB? • What if, across the same indicator the year of reference is different for each ULB?	**This should also be part of methodology to be submitted by the bidder.**
6.		**Page No. 62 Clause XI**	**Data Collection and Field Surveys** Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;	What is the minimum number of feedback (sample size) that has be collected in each city?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
7.		**Page No. 63 Clause 7.5**	**Timelines and Deliverables for Year 1** **Inception Report**- 8 weeks from start date as per contract **Draft City Assessment Report**- 12 weeks from start date as per contract **Final City Assessment Report**- 20 weeks from start date as per contract	We feel the time duration allocated for each activity are very less. Kindly change project duration as follows. **Inception Report**- 12 weeks from start date as per contract **Draft City Assessment Report**- 28 weeks from start date as per contract **Final City Assessment Report**- 52 weeks from start date as per contract	**Timelines as per RFP Stand**
8.		**Page No. 63 Clause 7.5**	**Deliverables and Contents**	Kindly specify the number of copies to be submitted in each delivery stage.	**Two hard copies and one Electronic Copy.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				RFP demands for separate reports for each city in Inception, Draft City Assessment and Final City Assessment report submission stages. As 116 cities are part of the scope, unless the copies are specified it is difficult to quantify the cost.	**As per RFP.**
9.		**Page No. 65 Clause 7.7**	**Core Team (CV to be evaluated)** **Statistician-**Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	Can the statistician (core team member) hold a PhD degree in Economics (Econometrician by profession) instead of a Master's Degree in Statistics?	**The personnel should have requisite qualification as per RFP.**
10.			General	Can the consortium subcontract some parts of the project work?	**The condition 14.1.1 of Data Sheet Stands.**
11.			General	In case the ULB is unable to provide the data, how long should the Field Assessor wait for?	**To be decided on merit of each case.**
12.			General	What has to be done in case of data gaps (non- availability, not a ULB functions etc.)?	**Please refer to the methodology document available on the web site.** **It should also be part of the methodology to be submitted by the consulting firms.**
13.			General	How does the Ministry assure cooperation from the ULBs? We have previously experienced that the city	**Ministry will provide support as defined in TOR.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				ULBs require letters from the respective State, instead the Centre, before agreeing to share data. Ministry needs to ensure that the survey teams get both the letters from the Centre and the respective states before going out to the field.	
14.	**IPSOS**	**7.2 (ii) Objective of the assignment**		Please clarify if MoUHA is looking for any specific structure / format like MIS dash board or a micro site or is it only an electronic database/raw data from the 1st round	**Please refer to the TOR.**
15.		**7.3 (i) Description of tasks -Initiation of activities**		Please provide an indicative count on the number of participants for state level workshops, if possible	**This should be decided by the Consulting firm in consultation with States. Ideally it should be designed to cover the broad areas.**
16.		**7.3 -Description of tasks**		Please let us know the extent of flexibility possible to incorporate any suggestions/ inputs from state/ city level stakeholders for a particular indice data collection and calculation of the indices	**As per methodology and TOR.**
17.		**7.3 -Description of tasks**		Is/ will MoHUA convey in advance to all cities of the assessment, methodology, and timelines vide a circular/ email etc or the inception meeting is to be considered as first intimation	**Ministry will send the communications.**
18.		**7.3 (xv) National workshop**		National level workshop costs to be included- participants from 116 cities should travel and stay expenses for participants also be included in the costs?	**Please refer to the TOR.** **Travel/Stay expenses will be be borne by States/Cities.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
19.		**7.3 (xiii)**		With respect to the time limit for initiating and completing the verification we assume this will be concurrently planned or within one month of completion of data collection. Please confirm our assumption	**This is for firm to decide as part of their work plan and methodology.**
20.		**7.7 Core Team**		As per our observation the Content for Minimum Qualifications & Skills for the Team Leader is not legible after the 11th row. Kindly provide with the detailed content for the same.	**Re produced as per RFP.** Qualification - **Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University** **In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects** **Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments**
21.		**7.6 & 7.7 (Team Composition)**		With s to Urban Specialist (Urban Planner/ Urban Economist) under section	**There is no ambiguity. The qualification for the Urban**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				7.6 the requirement is "with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis". But under section 7.7 the requirement is "At least 15 years of experience in the Urban Sector". Please clarify.	**Specialists at Field Teams for 10 years' experience and other qualification is for the Core Team.**
22.		**7.6 - Team Composition**		It is mentioned that each field team per city should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. Please clarify if we will have to provide profiles for 116 Urban Specialists with the specified criteria.	**This is for the firm to decide as part of the work plan and methodology to be submitted.**
23.		**7.5. Timelines & Deliverables**		We would like to request the extend the deadline of submission of Draft City Assessment Report to 15 weeks from start date of contract; to account for training of field staff, data validation of secondary data provided by cities (wherever required). Please let us know if this is possible.	**Time lines as per TOR stand.**
24.		**Section 8 - Conditions of contract**		We have reviewed the contract terms and conditions from legal point of view and would like to include proposed changes/ revisions to the draft contract document.	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				Please let us know to what extent there is scope to consider these suggestions	
25.		**II. General Conditions of the Contract - 41. Mode of billing & payment**		Since the first payment would be released only after inception report can we have relaxation in Bank Guarantee?	**No Bank Guarantee is required as no Advance payment is being made.**
26.		**III. Special Conditions of Contract. Clause: 27.2**		We assume MoUHA will provide the specific documents and type of softwares to be used for this study. Please confirm our assumption	**No software will be provided by the MoHUA.**
27.		**III. Special Conditions of Contract. Clause: 41.2**		Please let us know if we could propose a different invoice terms than proposed in the RFP that are linked to inputs and expenses incurred for each of the phases	**Payment conditions as per RFP stand.**
28.		**III. Special Conditions of Contract**		Since SCC does not mention about Bank Guarantee, we assume that this project does not attract a Bank Guarantee. Please confirm our assumption.	**Already replied at point 25.**
29.		**Form Tech-2**		For Form Tech-2, there is a requirement for a Board of Directors and beneficial ownership. Does the client require proof of this such as certification etc.	**The documentation should be as per Form Tech 2.**
30.		**All Form Tech**		For Form Tech-1, Tech-2 and Tech-6; we assume that there is no need for notarization and/or company letterhead like in the earlier stages. Please confirm our assumption	**As per requirement of RFP please.**
31.		**Financial proposal**		Is there any requirement for providing salary slips etc., as those are confidential and we assume that they are not required Please confirm our assumption	**Already replied at point 2.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
32.		**Form Tech-2 (Consultant's experience)**		As noted in the earlier stages, we can sometimes reveal either the client or the value of the project but contractual clauses mean that we do not list both. Please confirm if client names can be masked, else we will have to provide experiences which involves no contractual obligations from clients in disclosing the project details	**Documents as required under RFP shall be provided please.**
33.	**JLL**	**Clause 7.5**	For Draft City Assessment Report- duration is 12 weeks from the start date of the assignment	As majority of the scope covers data collection and conducting surveys in 116 cities, it will take more time to complete this task. We request you to kindly consider deliverable timeline of Draft Report as 12 weeks from date of approval of Inception Report instead of 12 weeks from date of issue of work order	**Timelines as per TOR Stand**
34.			Date of submission of the proposal	We request for an extension of submission of proposal for another 3 weeks preferably as 18thJan 2018	**The submission date as per RFP stands please.**
35.		**Clause 7.3**	Data Collection and Field Surveys	Request you to kindly elaborate the sample size to be covered in each city	**Please refer to the methodology available on the website of the Ministry. This should also be part of methodology to be submitted by the bidder.**
36.		**Clause 7.7**	Core team/ Statistician	Master's Degree in **Management**/ Statistics/Any other with relevant experience shall also be considered	**The qualification and experience as per TOR only.**
37.	**PWC**		PwC has the right experience (both within		**Please refer to section 14.1.1 of Data sheet.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			India & at Global level) and an extensive national level reach to execute the project successfully. We are still keen to substantiate our value proposition by partnering with relevant firm(s) to deliver higher value to the assignment. As per Section 1, Point 8 of the RFP document, we would thus like inform our keenness to explore suitable associate firm(s) as part of our value proposition to MoUHA. Should you have any queries on the same feel free to reach out to me.		
38.	**Deloitte**	**Section 2. Instructions to Consultants and Data Sheet; 3. Conflict of Interest; 3.2; Page #7**	The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract	We are assuming that MoHUA is the client for this assignment and 'Bank' should be replaced by 'MoHUA'.	**This is World Bank funded project, hence the condition stands.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			and/or sanctions by the Bank		
39.		**Data Sheet; 3.c - Conflicting relationships; Page #8**	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.	We request that this clause be made applicable to the core team members being proposed as part of the project. As, given the size and scale of operations of the firms, it may be difficult to confirm / adhere to the clause.	**The clause of Data sheet stands please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
40.		**Section 2. Instructions to Consultants and Data Sheet; Subsection E. Data Sheet Clause 17.4; Page #25**	The Proposals must be submitted online no later than: Date: 27th December, 2017 Time: 15.00 Local Time (3.00 PM)	We request the extension of the submission deadline to at least 3 weeks after the publishing of the responses to the pre-bid queries.	**The time lines defined in RFP stand**
41.		**Section 3. Technical Proposal – Standard Forms FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY) B - Consultant's Experience; Page #34**	1. List only previous similar assignments successfully completed in the last [.....] years	We are assuming that the citations mentioned in the EoI and the corresponding number of years shall be acceptable	**RFP is self-explanatory.**
42.		**Section 3. Technical Proposal – Standard Forms FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL) A – On the Terms of Reference; Page #36**	{improvements to the Terms of Reference, if any}	We assume that any comments we may have on 'Methodology for Collection and Computation of Liveability Standards in Cities' shall be a part of this sub-section	**The RFP is very clear in this regard.**
43.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of**	Non-Key Experts	Given that most of the non-key experts will be involved in survey activities, we would request that the requirement of providing person-month remuneration	**Please submit proposal as per RFP**

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		Remuneration; Page #49		rates for this category of resources be waived.	
44.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Consultant's Representation Regarding Costs and Charges (Model Form I); Page #53**	Basic Remuneration Rate per Working Month/Day/Year	We shall provide per month rates assuming 22 days in a month and 8 hours in a day.	**Refer to RFP.**
45.		**Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. i.; Page #60 Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. xv.; Page #62**	Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.	1. Given the tight timelines of the assignment, conducting state-level workshops separately for each individual state shall be difficult. We propose that region-level workshops having representation from multiple states be considered for this purpose. 2. We assume that for conducting the workshops, sending out invitations to stakeholders and other logistical issues shall be done by MoHUA. The consultant shall be responsible for conducting the technical aspects of the workshops. 3. It is being assumed that the workshop costs will be restricted to event related costs for venue, facilities, food and other related amenities infrastructure and will not include travel or other participant related costs.	**Already replied at point 18.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
46.		**Section 7. Terms of Reference Sub Section 7.3, Point No. iv; Page #61**	Convey the finalized schedule and Plan of Action to cities allowing them to mobilize support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys	We suggest that the 15 days of preparation time be provided from the date of state or region level workshops, and not from the submission of the inception report.	**Timelines given in the RFP stand.**
47.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Draft City Assessment Report 12 weeks from start date as per contract Final City Assessment Report 20 weeks from start date as per contract	We Propose the following: Report Timeline Draft City Assessment Report 16 weeks from start date as per contract Draft of Final City Assessment Report 20 weeks from start date as per contract Final City Assessment Report 24 weeks from start date as per contract	**Timelines given in RFP stand.**
48.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Timelines for subsequent years will be as decided by MoHUA	For budgeting purposes, we are considering the timelines suggested for Year 1 only.	**RFP is very clear.**
49.		**Section 7. Terms of Reference Sub Section 7.6 Team Composition and Qualification Requirement for key Experts, Point c; Page #64**	Field Teams per city: should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from	We propose that the minimum experience required for field team leader be reduced to 5 years.	**The requirements of RFP shall stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis.		
50.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Team Leader	We request that the minimum experience be reduced to at least 15 years of which at least last 10 years must have been for the Urban Sector	**The qualification and experience as per RFP only.**
51.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Urban Management Specialist/ Planning Expert	We request that the minimum experience be reduced to at least 10 years of experience in the Urban Sector	**The qualification and experience as per RFP only.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
52.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Market Research Specialist	1. We request that the minimum qualification requirement be change to Master's Degree in Management/Statistics from a recognized University 2. We request that the minimum experience be reduced to at least 10 years of which at least last 7 years must have been in the field of Market Research	**The qualification and experience as per RFP only.**
53.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Statistician	We would request that the position of Statistician be expanded to include Analytics Expert(s). The proposed qualification for this purpose should also be expanded to include Bachelors in Engineering or Masters in Management, with demonstrated experience in analytics based solutions. The requirement of specific experience in the urban sector may also be waived.	**The qualification and experience as per RFP only.**
54.		**Standard Form of Contract – II. General Conditions of Contract Clause 22. Confidentiality; Page #92**	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of,	We propose below language as last sentence of the paragraph The confidentiality obligations shall survive the termination of this Contract / completion of services for a period of one (1) year	**There cannot be any change in the clause.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			or as a result of, the Services.		
55.		**II. General Conditions of Contract Clause 24. Insurance to be Taken out by the Consultant; Page #92**	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.	While most advisory/consulting organizations would have adequate insurance coverage, these would be guided by the terms and conditions of the insurance companies. Hence, we would request that existing insurance policies be considered under this clause	**There cannot be any change in the clause**
56.		**II. General Conditions of Contract Clause 25. Accounting,**	25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to	The clause may be altered to say that the client can visit the Consultant's project office and audit the relevant documents, as visit to our premises and auditing our system is not acceptable considering the	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Inspection and Auditing; Page #93	inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)	confidential information of other clients and we are bound by Non-Disclosure Agreements.	
57.		**Standard Form of Contract – III. Special Conditions of Contract Clause 23.1; Page #103**	No additional provisions	We request the incorporation of the following clause: "Notwithstanding anything contained in the contract, Client agrees that the Vendor/ Bidder / Consultant shall not be liable to Client, for any losses, claims,	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				damages, liabilities, cost or expenses (“Losses”) of any nature whatsoever, for an aggregate amount in excess of the fee paid under the contract for the services provided under the contract, except where such Losses are finally judicially determined to have arisen primarily from fraud or bad faith of the Vendor/ Bidder / Consultant. In no event shall the Vendor/ Bidder / Consultant, be liable for any consequential (including loss of profit and loss of data), special indirect, incidental, punitive, or exemplary loss, damage, or expense relating to the services provided pursuant to this Contract.”	
58.	**CRISIL**	**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Data collection**: • Kindly clarify how we treat non-availability of data against particular indicators in certain cities/cases (especially small and medium towns). Do we consider data provided by department to be true in all aspects? Kindly clarify.	**As defined in methodology document available on web site**
59.			**Description of Tasks**	**Collection of data related to pollution**: • We understand as per the methodology prescribed by MoHUA that sample tests have to be conducted for air, water and noise pollution to arrive at data required for pollution indices. Pollution data have to be collected throughout the year and have to be averaged for a city to estimate the actual pollution level of the city. This data is	**As defined in methodology document available on web site.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				normally available at the pollution control board/departments of various states/cities. Further, given the time allowed for execution of the scope it would be difficult for selected consultant to conduct test samples and arrive at data, more so because it is a cyclical activity. Additionally it is difficult to preempt which cities will need to do monitoring (in case secondary data of same year is not available) and allocate a budget in the survey. Hence, we request that the selected consultant be allowed to collect only whatever data is available with the pollution control board/departments.	
60.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Sample field survey:** The scope mentions that field survey has to be conducted for statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. Can you kindly clarify for which parameters will these be applicable?	**It should be part of the methodology to be submitted by the Consulting firm.**
61.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Final Output**: What is the the kind of output expected from consultant? Is the consultant expected to submit data for individual city level indicators or we need to also arrive at city wise overall and thematic indices? Kindly clarify the same.	**All tasks as defined under clause 7.3 of the TOR.**
62.		**1Page Number 63; Section 7 – Terms of Reference; Clause 7.5**	**Timelines and Deliverables for Year**	**Extension of timeline for executing scope of the assignment** The time provided for execution is too short (20 weeks) considering the scope of the	**The timelines given in TOR stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				assignment. We request you to extend the time line by at least 2 months (please make total assignment duration 28 weeks) to allow for more time for city survey.	
63.		**Page 89; II-General Conditions of the contract; Clause 19 (c)**	**Cessation of Rights and Obligations**	**Contract clause related to termination:** • Kindly modify the by clause by adding the line highlighted below: "Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit, **for a period of one (1) year from the date of termination of this Contract**", and (iv) any right which a Party may have under the Applicable Law."	**As per RFP**
64.			**Replacement of Key Experts** Page 94; II-General Conditions of the contract; Clause 30.2 **Replacement of Key Experts** Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the	We request you to kindly add situations like resignation or separation from employment as additional situations as well	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			reasonable control of the Consultant, including **but not limited to death or medical incapacity**. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration		
65.		**Page 103; III-Special Conditions of the contract; Clause 23.1**	No additional provisions	Kindly mention the following clause: “"Notwithstanding anything to the contrary, the aggregate maximum liability of the consultant shall in no event exceed the fees paid to the consultant under this Contract."	As per RFP
		Page 104; III-Special Conditions of the contract; Clause 45.1	**Selection of Arbitrators.**	- We request you to modify the clause as follows: 1. “Selection of Arbitrators: Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator who would be mutually appointed by both parties for dispute resolution” Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.” 2. Rules of Procedure: For any dispute between a domestic consultants, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				the same manner as the original arbitrator. 4. Miscellaneous: In any arbitration proceeding hereunder: (a)_proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and • (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.	
		Page Number 104; III-Special Conditions of the Contract	**Payment Schedule**	As the scope of the assignment is primarily survey based and would involve intensive travel in the first two phase to cities/states, we propose the following payment schedule: ➢ On mobilization **Ten Percent (10%)** will be paid ➢ 1st payment: Inception report: **Forty Percent (40%)** will be paid on **submission** of the inception report ➢ Draft City Assessment Report: **Fifty Percent** (**30**%) will be paid on **submission** of Draft Final Report Final City Assessment Report: **Twenty percent (20%)** will be paid on submission of Final Report	As per RFP.

Clarification to the issues raised by the Consulting firms – RFP on Assessment of Liveability Index

Date: 12th December 2017, Venue: 120G, NBO Building, NIRMAN BHAVAN

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
1.	**IDeck**	**Page No. 25** **Clause 17.4**	**Data Sheet** The Proposals must be submitted online no later than: Date: 27th December, 2017	Kindly provided 2 weeks extension from the date of issue of pre bid clarification.	**The timelines given in the RFP document stand**
2.		**Page No. 52**	Sample Form: Consultant's Representation Regarding b. Attached True Copes of the latest Pay Slips of Experts Listed.	For any Organization it is not ethically possible to share the Pay Slips of the individuals. Hence requesting you to remove the clause.	**This is a Standard World Bank document.**
3.		**Page No. 61** **Clause i**	**Initiation Activities** Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal.	It is practically time consuming activity to conduct workshops at each state level. Can consultant conduct workshops at zonal level (East, West, North and South)?	**As per RFP.**
4.		**Page No. 61** **Clause iii**	**Initiation Activities** Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia.	Can Consultant submit combined Inception Report for all 116 Cities?	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
5.		**Page No. 61**	**Data Collection and Field Surveys.**	• What should the common year of reference for data collection in all given sector be? • What if, the year of reference is separate for each indicator within a ULB? • What if, across the same indicator the year of reference is different for each ULB?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
6.		**Page No. 62 Clause XI**	**Data Collection and Field Surveys** Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;	What is the minimum number of feedback (sample size) that has be collected in each city?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
7.		**Page No. 63** **Clause 7.5**	**Timelines and Deliverables for Year 1** **Inception Report**- 8 weeks from start date as per contract **Draft City Assessment Report**- 12 weeks from start date as per contract **Final City Assessment Report**- 20 weeks from start date as per contract	We feel the time duration allocated for each activity are very less. Kindly change project duration as follows. **Inception Report**- 12 weeks from start date as per contract **Draft City Assessment Report**- 28 weeks from start date as per contract **Final City Assessment Report**- 52 weeks from start date as per contract	**Timelines as per RFP Stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
8.		**Page No. 63 Clause 7.5**	**Deliverables and Contents**	Kindly specify the number of copies to be submitted in each delivery stage. RFP demands for separate reports for each city in Inception, Draft City Assessment and Final City Assessment report submission stages. As 116 cities are part of the scope, unless the copies are specified it is difficult to quantify the cost.	**Two hard copies and one Electronic Copy.** **As per RFP.**
9.		**Page No. 65 Clause 7.7**	**Core Team (CV to be evaluated)** **Statistician-**Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	Can the statistician (core team member) hold a PhD degree in Economics (Econometrician by profession) instead of a Master's Degree in Statistics?	**The personnel should have requisite qualification as per RFP.**
10.			General	Can the consortium subcontract some parts of the project work?	**The condition 14.1.1 of Data Sheet Stands.**
11.			General	In case the ULB is unable to provide the data, how long should the Field Assessor wait for?	**To be decided on merit of each case.**
12.			General	What has to be done in case of data gaps (non- availability, not a ULB functions etc.)?	**Please refer to the methodology document available on the web site.** **It should also be part of the methodology to be submitted by the consulting firms.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
13.			General	How does the Ministry assure cooperation from the ULBs? We have previously experienced that the city ULBs require letters from the respective State, instead the Centre, before agreeing to share data. Ministry needs to ensure that the survey teams get both the letters from the Centre and the respective states before going out to the field.	**Ministry will provide support as defined in TOR.**
14.	**IPSOS**	**7.2 (ii) Objective of the assignment**		Please clarify if MoUHA is looking for any specific structure / format like MIS dash board or a micro site or is it only an electronic database/raw data from the 1st round	**Please refer to the TOR.**
15.		**7.3 (i) Description of tasks -Initiation of activities**		Please provide an indicative count on the number of participants for state level workshops, if possible	**This should be decided by the Consulting firm in consultation with States. Ideally it should be designed to cover the broad areas.**
16.		**7.3 -Description of tasks**		Please let us know the extent of flexibility possible to incorporate any suggestions/ inputs from state/ city level stakeholders for a particular indice data collection and calculation of the indices	**As per methodology and TOR.**
17.		**7.3 -Description of tasks**		Is/ will MoHUA convey in advance to all cities of the assessment, methodology, and timelines vide a circular/ email etc or the inception meeting is to be considered as first intimation	**Ministry will send the communications.**
18.		**7.3 (xv) National workshop**		National level workshop costs to be included- participants from 116 cities should travel and stay expenses for participants also be included in the costs?	**Please refer to the TOR.** **Travel/Stay expenses will be be borne by States/Cities.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
19.		**7.3 (xiii)**		With respect to the time limit for initiating and completing the verification we assume this will be concurrently planned or within one month of completion of data collection. Please confirm our assumption	**This is for firm to decide as part of their work plan and methodology.**
20.		**7.7 Core Team**		As per our observation the Content for Minimum Qualifications & Skills for the Team Leader is not legible after the 11th row. Kindly provide with the detailed content for the same.	**Re produced as per RFP.** Qualification - **Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University** **In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects** **Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments**
21.		**7.6 & 7.7 (Team Composition)**		With s to Urban Specialist (Urban Planner/ Urban Economist) under section 7.6 the	**There is no ambiguity. The qualification for the Urban**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				requirement is "with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis". But under section 7.7 the requirement is "At least 15 years of experience in the Urban Sector". Please clarify.	**Specialists at Field Teams for 10 years' experience and other qualification is for the Core Team.**
22.		**7.6 - Team Composition**		It is mentioned that each field team per city should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. Please clarify if we will have to provide profiles for 116 Urban Specialists with the specified criteria.	**This is for the firm to decide as part of the work plan and methodology to be submitted.**
23.		**7.5. Timelines & Deliverables**		We would like to request the extend the deadline of submission of Draft City Assessment Report to 15 weeks from start date of contract; to account for training of field staff, data validation of secondary data provided by cities (wherever required). Please let us know if this is possible.	**Time lines as per TOR stand.**
24.		**Section 8 - Conditions of contract**		We have reviewed the contract terms and conditions from legal point of view and would like to include proposed changes/ revisions to the draft contract document. Please let us know to what extent there is scope to consider these suggestions	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
25.		**II. General Conditions of the Contract - 41. Mode of billing & payment**		Since the first payment would be released only after inception report can we have relaxation in Bank Guarantee?	**No Bank Guarantee is required as no Advance payment is being made.**
26.		**III. Special Conditions of Contract. Clause: 27.2**		We assume MoUHA will provide the specific documents and type of softwares to be used for this study. Please confirm our assumption	**No software will be provided by the MoHUA.**
27.		**III. Special Conditions of Contract. Clause: 41.2**		Please let us know if we could propose a different invoice terms than proposed in the RFP that are linked to inputs and expenses incurred for each of the phases	**Payment conditions as per RFP stand.**
28.		**III. Special Conditions of Contract**		Since SCC does not mention about Bank Guarantee, we assume that this project does not attract a Bank Guarantee. Please confirm our assumption.	**Already replied at point 25.**
29.		**Form Tech-2**		For Form Tech-2, there is a requirement for a Board of Directors and beneficial ownership. Does the client require proof of this such as certification etc.	**The documentation should be as per Form Tech 2.**
30.		**All Form Tech**		For Form Tech-1, Tech-2 and Tech-6; we assume that there is no need for notarization and/or company letterhead like in the earlier stages. Please confirm our assumption	**As per requirement of RFP please.**
31.		**Financial proposal**		Is there any requirement for providing salary slips etc., as those are confidential and we assume that they are not required Please confirm our assumption	**Already replied at point 2.**
32.		**Form Tech-2 (Consultant's experience)**		As noted in the earlier stages, we can sometimes reveal either the client or the value of the project but contractual clauses mean that we do not list both. Please confirm if	**Documents as required under RFP shall be provided please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				client names can be masked, else we will have to provide experiences which involves no contractual obligations from clients in disclosing the project details	
33.	**JLL**	**Clause 7.5**	For Draft City Assessment Report- duration is 12 weeks from the start date of the assignment	As majority of the scope covers data collection and conducting surveys in 116 cities, it will take more time to complete this task. We request you to kindly consider deliverable timeline of Draft Report as 12 weeks from date of approval of Inception Report instead of 12 weeks from date of issue of work order	**Timelines as per TOR Stand**
34.			Date of submission of the proposal	We request for an extension of submission of proposal for another 3 weeks preferably as 18thJan 2018	**The submission date as per RFP stands please.**
35.		**Clause 7.3**	Data Collection and Field Surveys	Request you to kindly elaborate the sample size to be covered in each city	**Please refer to the methodology available on the website of the Ministry. This should also be part of methodology to be submitted by the bidder.**
36.		**Clause 7.7**	Core team/ Statistician	Master's Degree in **Management**/ Statistics/Any other with relevant experience shall also be considered	**The qualification and experience as per TOR only.**
37.	**PWC**			PwC has the right experience (both within India & at Global level) and an extensive national level reach to execute the project successfully. We are still keen to substantiate our value proposition by partnering with relevant firm(s) to deliver higher value to the assignment. As per Section 1, Point 8 of the RFP document, we would thus like inform	**Please refer to section 14.1.1 of Data sheet.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				our keenness to explore suitable associate firm(s) as part of our value proposition to MoUHA. Should you have any queries on the same feel free to reach out to me.	
38.	**Deloitte**	**Section 2. Instructions to Consultants and Data Sheet; 3. Conflict of Interest; 3.2; Page #7**	The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank	We are assuming that MoHUA is the client for this assignment and 'Bank' should be replaced by 'MoHUA'.	**This is World Bank funded project, hence the condition stands.**
39.		**Data Sheet; 3.c - Conflicting relationships; Page #8**	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing)	We request that this clause be made applicable to the core team members being proposed as part of the project. As, given the size and scale of operations of the firms, it may be difficult to confirm / adhere to the clause.	**The clause of Data sheet stands please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.		
40.		**Section 2. Instructions to Consultants and Data Sheet; Subsection E. Data Sheet Clause 17.4; Page #25**	The Proposals must be submitted online no later than: Date: 27th December, 2017 Time: 15.00 Local Time (3.00 PM)	We request the extension of the submission deadline to at least 3 weeks after the publishing of the responses to the pre-bid queries.	**The time lines defined in RFP stand**
41.		**Section 3. Technical Proposal – Standard Forms FORM TECH-2 (FOR FULL**	1. List only previous similar assignments successfully completed in the last [.....] years	We are assuming that the citations mentioned in the EoI and the corresponding number of years shall be acceptable	**RFP is self-explanatory.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		TECHNICAL PROPOSAL ONLY) B - Consultant's Experience; Page #34			
42.		**Section 3. Technical Proposal – Standard Forms FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL) A – On the Terms of Reference; Page #36**	{improvements to the Terms of Reference, if any}	We assume that any comments we may have on 'Methodology for Collection and Computation of Liveability Standards in Cities' shall be a part of this sub-section	**The RFP is very clear in this regard.**
43.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Page #49**	Non-Key Experts	Given that most of the non-key experts will be involved in survey activities, we would request that the requirement of providing person-month remuneration rates for this category of resources be waived.	**Please submit proposal as per RFP**
44.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Consultant's Representation Regarding Costs and Charges (Model Form I); Page #53**	Basic Remuneration Rate per Working Month/Day/Year	We shall provide per month rates assuming 22 days in a month and 8 hours in a day.	**Refer to RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
45.		**Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. i.; Page #60 Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. xv.; Page #62**	Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.	1. Given the tight timelines of the assignment, conducting state-level workshops separately for each individual state shall be difficult. We propose that region-level workshops having representation from multiple states be considered for this purpose. 2. We assume that for conducting the workshops, sending out invitations to stakeholders and other logistical issues shall be done by MoHUA. The consultant shall be responsible for conducting the technical aspects of the workshops. 3. It is being assumed that the workshop costs will be restricted to event related costs for venue, facilities, food and other related amenities infrastructure and will not include travel or other participant related costs.	**Already replied at point 18.**
46.		**Section 7. Terms of Reference Sub Section 7.3, Point No. iv; Page #61**	Convey the finalized schedule and Plan of Action to cities allowing them to mobilize support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys	We suggest that the 15 days of preparation time be provided from the date of state or region level workshops, and not from the submission of the inception report.	**Timelines given in the RFP stand.**
47.		**Section 7. Terms of Reference Sub section 7.5 Timelines and**	Draft City Assessment Report 12 weeks from start date as per contract	We Propose the following: Report Timeline Draft City Assessment Report 16 weeks from start date as per contract	**Timelines given in RFP stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Deliverables for Year 1*; Page #63	Final City Assessment Report 20 weeks from start date as per contract	Draft of Final City Assessment Report 20 weeks from start date as per contract Final City Assessment Report 24 weeks from start date as per contract	
48.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Timelines for subsequent years will be as decided by MoHUA	For budgeting purposes, we are considering the timelines suggested for Year 1 only.	**Scope of the RFP is for the Year 1 only**
49.		**Section 7. Terms of Reference Sub Section 7.6 Team Composition and Qualification Requirement for key Experts, Point c; Page #64**	Field Teams per city: should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data	We propose that the minimum experience required for field team leader be reduced to 5 years.	**The requirements of RFP shall stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis.		
50.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Team Leader	We request that the minimum experience be reduced to at least 15 years of which at least last 10 years must have been for the Urban Sector	**The qualification and experience as per RFP only.**
51.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Urban Management Specialist/ Planning Expert	We request that the minimum experience be reduced to at least 10 years of experience in the Urban Sector	**The qualification and experience as per RFP only.**
52.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Market Research Specialist	1. We request that the minimum qualification requirement be change to Master’s Degree in Management/Statistics from a recognized University 2. We request that the minimum experience be reduced to at least 10 years of which at least last 7 years must have been in the field of Market Research	**The qualification and experience as per RFP only.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
53.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Statistician	We would request that the position of Statistician be expanded to include Analytics Expert(s). The proposed qualification for this purpose should also be expanded to include Bachelors in Engineering or Masters in Management, with demonstrated experience in analytics based solutions. The requirement of specific experience in the urban sector may also be waived.	**The qualification and experience as per RFP only.**
54.		**Standard Form of Contract – II. General Conditions of Contract Clause 22. Confidentiality; Page #92**	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.	We propose below language as last sentence of the paragraph The confidentiality obligations shall survive the termination of this Contract / completion of services for a period of one (1) year	**There cannot be any change in the clause.**
55.		**II. General Conditions of Contract Clause 24. Insurance to be Taken out by the**	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as	While most advisory/consulting organizations would have adequate insurance coverage, these would be guided by the terms and conditions of the insurance companies. Hence, we would request that existing insurance policies be considered under this clause	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Consultant; Page #92	the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.		
56.		**II. General Conditions of Contract Clause 25. Accounting, Inspection and Auditing; Page #93**	25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the	The clause may be altered to say that the client can visit the Consultant's project office and audit the relevant documents, as visit to our premises and auditing our system is not acceptable considering the confidential information of other clients and we are bound by Non-Disclosure Agreements.	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)		
57.		**Standard Form of Contract – III. Special Conditions of Contract Clause 23.1; Page #103**	No additional provisions	We request the incorporation of the following clause: "Notwithstanding anything contained in the contract, Client agrees that the Vendor/ Bidder / Consultant shall not be liable to Client, for any losses, claims, damages, liabilities, cost or expenses ("Losses") of any	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				nature whatsoever, for an aggregate amount in excess of the fee paid under the contract for the services provided under the contract, except where such Losses are finally judicially determined to have arisen primarily from fraud or bad faith of the Vendor/ Bidder / Consultant. In no event shall the Vendor/ Bidder / Consultant, be liable for any consequential (including loss of profit and loss of data), special indirect, incidental, punitive, or exemplary loss, damage, or expense relating to the services provided pursuant to this Contract."	
58.	**CRISIL**	**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Data collection**: • Kindly clarify how we treat non-availability of data against particular indicators in certain cities/cases (especially small and medium towns). Do we consider data provided by department to be true in all aspects? Kindly clarify.	**As defined in methodology document available on web site**
59.			**Description of Tasks**	**Collection of data related to pollution**: • We understand as per the methodology prescribed by MoHUA that sample tests have to be conducted for air, water and noise pollution to arrive at data required for pollution indices. Pollution data have to be collected throughout the year and have to be averaged for a city to estimate the actual pollution level of the city. This data is normally available at the pollution control board/departments of various states/cities.	**As defined in methodology document available on web site.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				Further, given the time allowed for execution of the scope it would be difficult for selected consultant to conduct test samples and arrive at data, more so because it is a cyclical activity. Additionally it is difficult to preempt which cities will need to do monitoring (in case secondary data of same year is not available) and allocate a budget in the survey. Hence, we request that the selected consultant be allowed to collect only whatever data is available with the pollution control board/departments.	
60.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Sample field survey:** The scope mentions that field survey has to be conducted for statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. Can you kindly clarify for which parameters will these be applicable?	**It should be part of the methodology to be submitted by the Consulting firm.**
61.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Final Output**: What is the the kind of output expected from consultant? Is the consultant expected to submit data for individual city level indicators or we need to also arrive at city wise overall and thematic indices? Kindly clarify the same.	**All tasks as defined under clause 7.3 of the TOR.**
62.		**1Page Number 63; Section 7 – Terms of Reference; Clause 7.5**	**Timelines and Deliverables for Year**	**Extension of timeline for executing scope of the assignment** The time provided for execution is too short (20 weeks) considering the scope of the assignment. We request you to extend the time line by at least 2 months (please make total assignment duration 28 weeks) to allow for more time for city survey.	**The timelines given in TOR stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
63.		**Page 89; II-General Conditions of the contract; Clause 19 (c)**	**Cessation of Rights and Obligations**	**Contract clause related to termination:** - Kindly modify the by clause by adding the line highlighted below: "Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit, **for a period of one (1) year from the date of termination of this Contract**", and (iv) any right which a Party may have under the Applicable Law."	**As per RFP**
64.			**Replacement of Key Experts** Page 94; II-General Conditions of the contract; Clause 30.2 **Replacement of Key Experts** Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including **but not limited to death or medical incapacity**. In	We request you to kindly add situations like resignation or separation from employment as additional situations as well	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration		
65.		**Page 103; III-Special Conditions of the contract; Clause 23.1**	No additional provisions	Kindly mention the following clause: “"Notwithstanding anything to the contrary, the aggregate maximum liability of the consultant shall in no event exceed the fees paid to the consultant under this Contract."	As per RFP
		Page 104; III-Special Conditions of the contract; Clause 45.1	**Selection of Arbitrators.**	• We request you to modify the clause as follows: 1. “Selection of Arbitrators: Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator who would be mutually appointed by both parties for dispute resolution” Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.” 2. Rules of Procedure: For any dispute between a domestic consultants, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Miscellaneous: In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				(b) the English language shall be the official language for all purposes; and • (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.	
		Page Number 104; III-Special Conditions of the Contract	**Payment Schedule**	As the scope of the assignment is primarily survey based and would involve intensive travel in the first two phase to cities/states, we propose the following payment schedule: ➢ On mobilization **Ten Percent (10%)** will be paid ➢ 1st payment: Inception report: **Forty Percent (40%)** will be paid on **submission** of the inception report ➢ Draft City Assessment Report: **Fifty Percent** (**30**%) will be paid on **submission** of Draft Final Report Final City Assessment Report: **Twenty percent (20%)** will be paid on submission of Final Report	As per RFP.

Minutes of the Meeting of Procurement Committee for evaluation of technical proposals for Assessment of Liveability Indices for 116 cities in India

The meetings of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for evaluation of technical proposals of firms for **Assessment of Liveability Indices for 116 cities in India** was held on 3rd January and 5th January, 2018 in the chamber of Economic Advisor, (room No. 232-C), Nirman Bhawan, New Delhi for the evaluation of the technical proposals.

The following were present:

- Mr. Sudhir Kumar Tiwari, Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD
- Mr. Sajeesh Kumar N., Director (SC)
- Mr Shiv Pal Singh, Director (AMRUT) only on 3rd January, 2018.
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM)
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Mr Amit Gupta, PMU, CBUD

The Final RFP with shortlist was forwarded to World Bank on 30th October, 2017 whose 'No Objection' was received on 24th November, 2017. The RFP was issued to shortlisted consultants on 27th November, 2017. A pre proposal meeting was held on 12th December, 2017 and minutes were issued on 14th December, 2018. No addendum was issued. The last date and time of submission of the proposal was 15.00 hours on 27th December, 2017. Till last date and time, following proposals were received from following shortlisted consultants:

1	Ipsos Public Affairs	• Athena Infonomics India Pvt Ltd. • The Economic Group Limited
2	PricewaterhouseCoopers	
3	Jones Lang LaSalle	
4	Delloite Touche Tohmatsu India LLP	• Insight Development Group Pvt Ltd • Stesalit Systems Limited • Kadence International Pvt Ltd • Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	• Institute for Social and Economic Change (ISEC) • Public Affairs Centre (PAC) • Sigma Research & Consulting Pvt. Ltd • Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	

The technical proposals received till deadline were opened by the Procurement Committee on 28th December, 2017. The Financial Proposals were securely stored. It was noted that as per clause 5.2 of RFP, "*The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet*". The evaluation criteria indicated at Data sheet of RFP is as follows:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –30 points *(Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts)*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	40

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The Committee evaluated the Technical Proposals on the basis of firm's responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and rating system as specified in the RFP. The Summary based on average score for shortlisted firms, which submitted the proposal, is at **Annexure 1**. The evaluation sheet of individual committee members is at **Annexure 2**.

As per the evaluation, the technical scores of each firm are as follows:

			Name of Bidder					
			Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6
			IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
		Max.Marks	Obtained Marks					
Criteria 1	SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT	10	10	6	2	2	10	10
Criteria 2	ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR							
a.	Approach & Methodology							
	Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
	Initiation Activities	5	4.8	3.0	3.0	3.0	3.5	2.0
	Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
		30	28.3	17.0	13.0	15.0	20.0	15.5
b.	Work Plan	10	9.5	7.0	5.0	7.0	7.0	6.0
c.	Organisation & Staffing	10	9.3	8.0	5.0	5.0	8.0	6.0
Criteria 3	KEY EXPERTS *							
	Positions							
	Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
	Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
	Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
	Statistician	8	8	7.0	3.0	7.3	5.7	7.3
		40	36.6	28.0	17.0	31.5	32.6	24.6
	Grand Total (Criteria 1+Criteria2+Criteria3)	100	93.7	66.0	42.0	60.5	77.6	62.1

As per RFP, minimum technical score required to qualify and eligible for opening of financial proposals is 75 out of maximum of 100 points. As such financial proposal of following firms is recommended to be opened:

1. M/s IPSOS Public Affairs in consortia with Athena Infonomics India Pvt Ltd. and The Economic Group Limited
2. Delloite Touche Tohmatsu India LLP in consortia with Insight Development Group,Pvt Ltd, Stesalit Systems Limited, Kadence International Pvt Ltd, Operations Research Guild (ORG) India Private Limited

Vasavi

Ms. Vasavi Narla,
PMU (CBUD)
(member 6)

Mr. Amit Gupta,
PMU, CBUD
(member 7)

Rakesh Gujral,
PMU,CBUD
(member 5)

Mr. Yogendra Singh Awana,
Dy. Secretary(NULM)
(member 1)

Mr. Sajeesh Kumar N
Director (SC)
(member 3)

Mr. Shailendra Vikram Singh
Director (IFD)
(member 4)

Mr. Sudhir Kumar Tiwari,
Economic Advisor
(member 2)

Selection of Bidders for Assessment of Liveability Index of 116 Citiesof India

Final Summary Sheet of Technical Evaluation

				Name of Bidder					
				Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6
				IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
			Max.Marks	Obtained Marks					
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	6	2	2	10	10
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**							
	a.	**Approach & Methodology**							
		Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
		Initiation Activites	5	4.8	3.0	3.0	3.0	3.5	2.0
		Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
			30	**28.3**	**17.0**	**13.0**	**15.0**	**20.0**	**15.5**
	b.	**Work Plan**	**10**	**9.5**	**7.0**	**5.0**	**7.0**	**7.0**	**6.0**
	c.	**Organisation & Staffing**	**10**	**9.3**	**8.0**	**5.0**	**5.0**	**8.0**	**6.0**
C	Criteria 3	**KEY EXPERTS ***							
		Positions							
		Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
		Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
		Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
		Statistician	8	8	7.0	3.0	7.3	5.7	7.3
			40	**36.6**	**28.0**	**17.0**	**31.5**	**32.6**	**24.6**
		Grand Total (Criteria 1+Criteria2+Criteria3)	**100**	**93.7**	**66.0**	**42.0**	**60.5**	**77.6**	**62.1**

*Detail evaluation sheet of each key expert is enclosed saperately

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.07.18
(Y.S.AWANA)

5/7/18
Sajeesh Kumar .N
(Member 3)

Evaluation of Technical Proposal of IPSOS
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	Avg. Marks Obtained
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	4.2	4.8	4.7	4.3	4.5	4.8	4.2	**4.5**
		Initiation Activites	5	4.6	4.9	4.5	4.7	4.9	4.9	4.9	**4.8**
		Data Collection field surveys and analysis	20	19.0	19.5	18.0	19.5	19.0	19.0	19.0	**19.0**
			30	**27.8**	**29.2**	**27.2**	**28.5**	**28.4**	**28.7**	**28.1**	**28.3**
	b.	**Work Plan**	**10**	**9.0**	**10.0**	**9.5**	**10.0**	**9.0**	**9.5**	**9.5**	**9.5**
	c.	**Organisation & Staffing***	**10**	**9.5**	**9.0**	**9.5**	**9.5**	**9.5**	**9.0**	**9.0**	**9.3**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	14.6	14.6	14.6	14.6	14.6	14.6	14.6	**14.6**
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	**6.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	8	8	8	8	8	8	8	**8.0**
			40	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**92.9** ✓	**94.8**	**92.8** ✓	**94.6**	**93.5**	**93.8**	**93.2**	**93.7**

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Omran
05.01.18
(Y.S. ANAND)

(SK Kum)
5/01/18
Sajeesh Kumar N
(Member: 3)

Evaluation of Technical Proposal of -PWC
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	Avg. Marks Obtained
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	10	6	6	6	6	6	6	6	6
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	2.5	3.0	2.5	2.5	3.0
		Initiation Activites	5	2.5	3.0	4.0	3.0	3.5	2.5	2.5	3.0
		Data Collection field surveys and analysis	20	10.0	12.0	10.0	12.0	10.0	12.0	11.0	11.0
			30	15.5	19.0	17.5	17.5	16.5	17.0	16.0	17.0
	b.	**Work Plan**	10	7.0	7.5	6.0	6.5	8.0	6.5	7.5	7.0
	c.	**Organisation & Staffing**⁴	10	9.0	7.0	8.0	7.0	9.0	9.0	7.0	8.0
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
		Market Research Specialist	8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
		Statistician	8	7	7	7	7	7	7	7	7.0
			40	28	28	28	28	28	28	28	28.0
		Total (Criteria 1+Criteria2+Criteria3)	100	65.5	67.5	65.5	65	67.5	66.5	64.5	66.0

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Omary
05.01.19
C.S. AWANA

5/01/18
Sajeesh Kumar N
(Member: 3)

Evaluation of Technical Proposal of - JLL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	Avg. Marks Obtained
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	10	2	2	2	2	2	2	2	2
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.0	2.0	2.0	2.0	2.0	1.5	2.0
		Initiation Activites	5	2.0	3.0	3.0	3.5	2.5	3.5	3.5	3.0
		Data Collection field surveys and analysis	20	5.0	10.0	5.0	10.0	10.0	8.0	8.0	8.0
			30	9.5	15.0	10.0	15.5	14.5	13.5	13.0	13.0
	b.	**Work Plan**	10	6.0	6.0	4.0	5.0	4.0	4.0	6.0	5.0
	c.	**Organisation & Staffing***	10	4.0	6.0	6.0	6.0	5.0	4.0	4.0	5.0
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
		Urban Management Specialist/Planning Expert	8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
		Market Research Specialist	8	7	7	7	7	7	7	7	7.0
		Statistician	8	3	3	3	3	3	3	3	3.0
			40	17	17	17	17	17	17	17	17.0
		Total (Criteria 1+Criteria2+Criteria3)	100	38.5	46	39	45.5	42.5	40.5	42	42.0

Member1 Member2 Member3 Member4 Member5 Member6 Member7

5/07/18

Imran
05.07.18
(Y.S. AWANA)

Sajeesh Kumar N
(Member-3)

Evaluation of Technical Proposal of - CRISIL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	Avg. Marks Obtained
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	2	2	2	2	2	2	2	**2**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.5	3.0	4.0	3.0	2.5	3.5	**3.0**
		Initiation Activites	5	3.0	2.5	3.5	3.5	3.0	2.5	3.0	**3.0**
		Data Collection field surveys and analysis	20	10.0	10.0	8.0	10.0	7.0	9.0	9.0	**9.0**
			30	**15.5**	**15.0**	**14.5**	**17.5**	**13.0**	**14.0**	**15.5**	**15.0**
	b.	**Work Plan**	**10**	**8.0**	**6.0**	**7.0**	**5.0**	**8.0**	**8.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**4.0**	**5.0**	**6.0**	**5.0**	**6.0**	**4.0**	**5.0**	**5.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	10.2	10.2	10.2	10.2	10.2	10.2	10.2	**10.2**
		Urban Management Specialist/Planning Expert	8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	**6.4**
		Market Research Specialist	8	7.6	7.6	7.6	7.6	7.6	7.6	7.6	**7.6**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**31.5** ✓	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**61**	**59.5** ✓	**61** ✓	**61** ✓	**60.5** ✓	**59.5** ✓	**61** ✓	**60.5** ✓

Signature

Member1
05.01.18
(Y.S. AWANA)

~~Member2~~

Member3
5/01/18
Sajeesh kumar. N
(Member 3)

~~Member4~~

~~Member5~~

Member6

~~Member7~~

Evaluation of Technical Proposal of - Deloitte
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : Deloitte

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	4.5	3.5	3.0	3.0	**3.5**
		Initiation Activites	5	4.0	3.0	3.0	4.5	3.5	3.0	3.5	**3.5**
		Data Collection field surveys and analysis	20	10.0	13.0	14.0	14.0	10.0	15.0	15.0	**13.0**
			30	**17.0**	**20.0**	**20.5**	**23.0**	**17.0**	**21.0**	**21.5**	**20.0**
	b.	**Work Plan**	**10**	**8.0**	**8.0**	**6.0**	**7.0**	**6.0**	**7.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**8.0**	**9.0**	**8.0**	**8.0**	**7.0**	**9.0**	**7.0**	**8.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	13.9	13.9	13.9	13.9	13.9	13.9	13.9	**13.9**
		Urban Management Specialist/Planning Expert	8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	**5.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	**5.7**
			40	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**75.6**	**79.6**	**77.1**	**80.6**	**72.6**	**79.6**	**78.1**	**77.6**

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Sajesh
5/7/18

05.07.18
(Y.S.AWANA)

Sajesh kumar.M
(Member 3).

Evaluation of Technical Proposal of - IDECK ✓
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : IDECK ✓

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	Avg. Marks Obtained
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.0	3.0	3.5	4.0	4.0	**3.5**
		Initiation Activites	5	2.0	2.0	2.0	2.0	1.5	2.0	2.5	**2.0**
		Data Collection field surveys and analysis	20	10.0	9.0	12.0	9.0	12.0	10.0	8.0	**10.0**
			30	**15.0**	**15.0**	**17.0**	**14.0**	**17.0**	**16.0**	**14.5**	**15.5**
	b.	**Work Plan**	**10**	**6.0**	**5.0**	**5.0**	**7.0**	**7.0**	**6.0**	**6.0**	**6.0**
	c.	**Organisation & Staffing***	**10**	**7.0**	**7.0**	**5.0**	**5.0**	**6.0**	**7.0**	**5.0**	**6.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5	5	5	5	5	5	5	**5.0**
		Urban Management Specialist/Planning Expert	8	6	6	6	6	6	6	6	**6.0**
		Market Research Specialist	8	6.3	6.3	6.3	6.3	6.3	6.3	6.3	**6.3**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**62.6** ✓	**61.6** ✓	**61.6** ✓	**60.6**	**64.6**	**63.6** ✓	**60.1**	**62.1** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

5/01/18

Sajith Kumar N
(Member 3)

No Objection to Evaluation of Technical Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

STEP Admin <noreply@worldbankgroup.org> Fri, Jan 12, 2018 at 8:54 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Technical Evaluation Report for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the Technical Evaluation Report for the above-mentioned consulting services, submitted to the Bank on 2018/01/09. Based on the information provided, including that sent by email on January 13, 2018 (as per format) the Bank has no objection to the outcome of the evaluation as follows:

Name of Consultant/Firm	Country	Points
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD STESALIT SYSTEMS LIMITED KADENCE INTERNATIONAL PVT. LTD. OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India India India India India	77.60
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India	66.00
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India	60.50
JONES LANG LASALLE PROPERTY CONSULTANTS	India	42.00
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK) NIELSON(INDIA) PRIVATE LIMITED PUBLIC AFFAIR CENTRE (PAC) INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India India India India	62.10

SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India	
IPSOS RESEARCH PRIVATE LIMITED ATENA INFONOMICS INDIA PRIVATE LIMTED THE ECONOMIST GROUP LIMITED	India India United Kingdom	93.70

Please inform those consultants that have received the minimum passing technical score of the date when financial proposals will be opened. Please ensure you leave sufficient time (at least 7 days) for those firms to make necessary arrangement to attend should they wish. The opening of financial proposals should be made in public.

Please also inform those consultants that failed to achieve the minimum passing technical score of their scores and that their financial proposals will be returned to them unopened after signature of the contract.

We note that there is a significant gap between the two technically qualified firms which is mainly on Approach and methodology scoring. Both qualified firms have issues with reliability of secondary data and for Deloitte even the primary survey is very restricted. This weaknesses could be resolved at the negotiation without any cost implications or quality of deliverables. Subject to this, the evaluation is cleared.

We look forward to receiving the Combined Technical and Financial Evaluation a draft initialed negotiated contract for our review and no objection in due course.

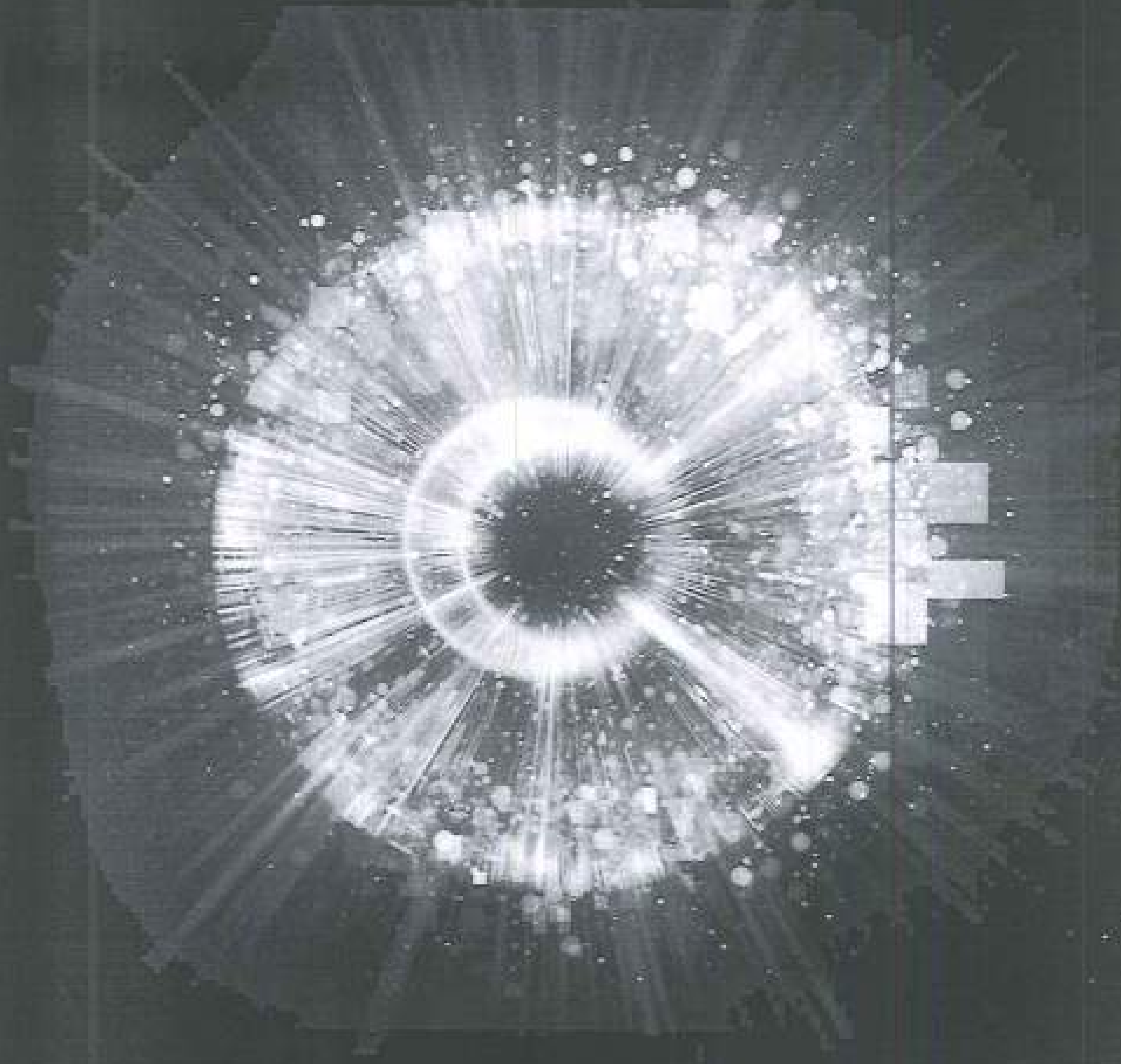
Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Deloitte.



Assessment of Liveability Indices for 116 cities in India
Ministry of Housing and Urban Affairs (MoHUA)

RFP No. E3136811

Part 2: Financial proposal
Private and confidential
December 2017

15.01.18

15/01/2018

Meghna Aggarwal
(Deloitte)

Introduction

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FORM FIN-3: Breakdown of Remuneration 4
FORM FIN-4: Breakdown of Reimbursable expenses 5

Meghna Aggarwal

Form FIN-1: Financial Proposal Submission form

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Meghna Aggarwal
(Deloitte)

Anindya Mallick

2017 Deloitte Touche Tohmatsu India LLP

Deloitte.

Deloitte Touche Tohmatsu
India LLP
7th Floor, Building 10, Tower B
DLF Cyber City Complex
DLF City, Phase II
Gurgaon-122002
Haryana
India
Tel.: +91 (124) 6792000
Fax: +91 (124) 6792012

Gurgaon, 27th December 2017

To: G, Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi.
Phone numer: +91 (11) 2306 3217

Dear Sirs:

We, the undersigned, offer to provide the consulting services for "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India", in accordance with your Request for Proposal dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for the amount of Rupees Thirteen Crores Forty Lakhs Five Hundred and Forty Nine (INR 13,40,00,549), excluding all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is Rupees Two Crores Forty One Lakhs Twenty Thousand and Ninety Nine (INR 2,41,20,099) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Anindya Mallick

Authorized Signature {In full and initials}:

Name and Title of Signatory: **Anindya Mallick, Partner, Deloitte Touche Tohmatsu India LLP (DTTI LLP)**

In the capacity of Authorized Signatory

Address: DLF Cyber City Complex,
Tower B, DLF City Phase II,
7th Floor, Building 10,
Gurgaon (New Delhi) 122 002

E-mail: [redacted]

15·01·18

Meghna Aggarwal (Deloitte)

FORM FIN-2: Summary of costs

FORM FIN-2: Summary of Costs	
Item	**Cost (INR)**
Cost of the Financial Proposal	
Including:	
(1) Remuneration	5,68,05,293
(2) Reimbursables	7,71,95,256
Total Cost of the Financial Proposal:	**13,40,00,549**
Indirect Local Tax Estimates- to be discussed and finalized at the negotiation if the Contract is awarded	
GST (@18%)	2,41,20,099
Total Estimate for Indirect Local Tax	2,41,20,099

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Anindya Mallick

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Meghna Aggarwal

FORM FIN-3: Breakdown of Remuneration

FORM FIN-3: Breakdown of Remuneration						
A. Remuneration						
No.	Name	Position (as in TECH-6)	Location (C)	Person-month Remuneration Rate	Time Input in Person/ Month (from Tech-6)	Total Remuneration (INR)
	Key Experts					
K-1	Ravi Anand	Team Leader	[Home]	577500	2.5	14,43,750
			[Field]	577500	2.5	14,43,750
K-2	Shubham Gupta	Urban Management Specialist/ Planning Expert	[Home]	697394	2.5	17,43,486
			[Field]	697394	2.5	17,43,486
K-3	Sunil Pillai	Market Research Specialist	[Home]	462000	2.5	11,55,000
			[Field]	462000	2.5	11,55,000
K-4	Dr. Ramachandran	Statistician	[Home]	462000	2.5	11,55,000
			[Field]	462000	2.5	11,55,000
	Non- Key Experts					
N-1 - N-10	Zonal Team Leader (10 number)	Zonal Team Leader (10 number)	[Home]			0
			[Field]	519211	30	1,55,76,334
N-11 - N-20	Zonal Project Manager (10 number)	Zonal Project Manager (10 number)	[Home]			0
			[Field]	348790	30	1,04,63,687
N-21 - N-30	Zonal Field Support Senior (10 number)	Zonal Field Support Senior (10 number)	[Home]			0
			[Field]	295000	30	88,50,000
N-31 - N-40	Zonal Field Support Junior (10 number)	Zonal Field Support Junior (10 number)	[Home]			0
			[Field]	210000	30	63,00,000
N 41	IT/ Analytics Team Leader	IT/ Analytics Team Leader	[Home]	519211	3.62	18,79,544
			[Field]	519211	1	5,19,211
N 42	IT/ Analytics Senior Consultant	IT/ Analytics Senior Consultant	[Home]	268023	3.62	9,70,243
			[Field]	268023	1	2,68,023
N 43	IT/ Analytics Consultant	IT/ Analytics Consultant	[Home]	212939	3.62	7,70,839
			[Field]	212939	1	2,12,939
					TOTAL	5,68,05,293

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Meghna Aggarwal

FORM FIN-4: Breakdown of Reimbursable expenses

FORM FIN-4: Breakdown of Reimbursable Expenses

B. Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Amount in INR
1	Survey of the Cities	{per City}	4,35,000	116	5,04,60,000
2	Development of IT Portal	{lumpsum}			83,53,256
3	National, State, City Workshops/ Interactions/ Engagements/ Discussions	{lumpsum}			69,00,000
4	Airfare	{Trip}	12,000	400	48,00,000
5	Train fare	{Trip}	3,000	150	4,50,000
6	Per diem allowances	{per day}	2,500	2400	60,00,000
7	Reproduction of Reports	{per Reports}	1000	232	2,32,000
				Total Cost	**7,71,95,256**

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Anindya Mallick

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15/01/2018

Meghna Aggarwal

Deloitte.

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TENDER REF. NO.: K14012/101 (11)/2017-SCM-III (V)

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Financial Proposal

Umang 17/01

18/01/2018

Parijat Chakraborti - IPSOS

Meghna Aggarwal (Deloitte)

Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos

Ipsos Public Affairs
A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1,
Gurgaon – 122016, Haryana,

And

ATHENA
INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited
#15, Arcot Street, T Nagar, Chennai 600017, Tamil
Nadu, India

The Economist Intelligence Unit

The Economist Group Limited
(Sub-Consultant)

15/1

15/1/2018

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Meghna Aggarwal

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16/1/2026

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Chakraborti

Meghna Aggarwal

FIN 1:

Financial Proposal Submission Form

15/01 Umang

Meghna Aggarwal

Fin-1: Financial Proposal Submission Form

(New Delhi, 26th December 2017)

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi,
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for **INR 10,94,28,200 (INR Ten Crores Ninety-Four Lakhs Twenty-Eight Thousand and Two Hundred Only)**, excluding of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is INR 1,96,97,076 (INR One Crore Ninety-Six Lakhs Ninety-Seven Thousand & Seventy-Six Only) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution
We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Authorized Signature (In full and initials): Parijat Chakraborty
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist
In the capacity of: Authorised signatory for the consortia
Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

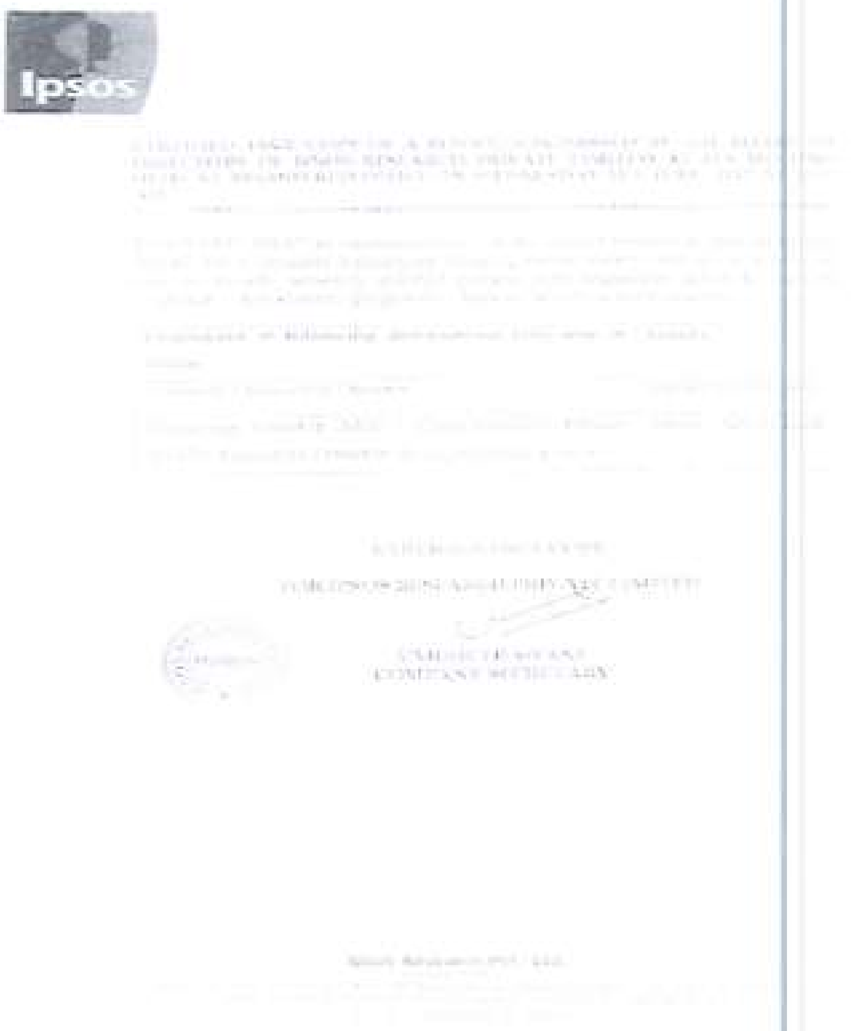
15/01

Umang - Meghna Aggarwal

Ipsos Authorisation

Power of Attorney

The proposal has been signed by Executive Director – head of public affairs authorized by board resolution shown below



Meghna Aggarwal

एक सौ रुपये Rs. 100
रु. 100 ONE HUNDRED RUPEES
भारत INDIA
INDIA NON JUDICIAL

तमिलनाडु TAMIL NADU

Power of Attorney

Whereas Ministry of Housing and Urban Affairs [illegible] Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 Urban Areas (the "Project");

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the [illegible] [illegible] [illegible] [illegible] power and authority to do all acts, deeds [illegible] on behalf of the [illegible]

Meghna Aggarwal

NOW THIS POWER OF ATTORNEY WITNESSES THAT:

Athena Infonomics India Private Limited having its registered office at 15 Anna Street, T. Nagar, Chennai 600017, India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, A Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MoHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV.

Dated this the 27th Day of December 2017

On behalf of the Athena Infonomics India Private Limited

Authorized Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

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Meghna Aggarwal

FORM FIN 2:
Summary of Costs

Meghna Aggarwal

Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

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13/01/2018

Meghna Aggarwal
(Deloitte)

FORM FIN 3:
Breakdown of Remuneration

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Meghna Aggarwal

Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

Meghna Aggarwal

N-15	Tripti Sharma	Project Coordinator	Field	1122000	0.5	561000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	682000	4	2728000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	550000	10	5500000
Data Collection			Home	154000	30	4620000
N-18	Field Executives - 116 Nos	Field Executives				
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	33000	290	9570000
N-20	Enumerators - 232 Nos	Enumerators	Home	22000	348	7656000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	11000	348	3828000
			Home	16500	232	3828000
Total Costs						7,20,33,500

Meghna Aggarwal

Sample Form

Consultant: Ipsos Research Pvt. Ltd. in Joint Venture with Athena Infonomics India Pvt. Ltd, and The Economist Intelligence Unit as the Sub-consultant
Country: India

Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Date: 27th December 2017

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:
(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;
(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;
(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and
(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

Ipsos Research Pvt. Ltd.
[Name of Consultant]

Signature of Authorized Representative Date

Name: Parijat Chakraborty

Title: Executive Director and Head of Public Affairs

Meghna Aggarwal

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

meghna Aggarwal

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FORM FIN 4:
Breakdown of Reimbursable Expenses

Meghna Aggarwal

Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

Umang. Meghna Aggarwal

	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
		State Level Workshops			
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
		National Level Workshop			
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
		City Level Meetings			
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**

Meghna Aggarwal

	Total B				4790000
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

Meghna Aggarwal

STATEMENT OF UNDERTAKING

We confirm to observe, in competing for and executing a contract, the Client country's (India) laws against fraud and corruption (including bribery).

Authorized Signature (In full and initials): Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. in consortium with Athena Infonomics Pvt. Ltd. and The Economist

In the capacity of: Authorised signatory for the consortia

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Meghna Aggarwal

Minutes of the Meeting of Procurement Committee for opening of Financial Bids and final evaluation of bids for Assessment of Liveability Indices for 116 cities in India

The meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for opening of financial proposals and final combined technical and financial evaluation for the assignment of **Assessment of Liveability Indices for 116 cities in India** was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi. The technical evaluation by the procurement committee has been reviewed and approved by the World Bank as communicated vide email dated 12th January, 2018.

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD

The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	93.70
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	77.60
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes)

Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS

The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-
T=0.80, and P=0.20

Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ' P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score.							
	Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)							

S(t) = Technical Scores of the bidder
S(f) = Financial Score of the bidder

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

Vasavi
(Vasavi Narla)
PMU (CBUD)

Umang
(Umang H Raina,)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

2 messages

STEP Admin <noreply@worldbankgroup.org> Tue, Jan 16, 2018 at 5:08 PM
Reply-To: noreply@worldbankgroup.org
To: "vsarda@worldbank.org" <vsarda@worldbank.org>
Cc: "pmmadan@worldbank.org" <pmmadan@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

G. Vijay Kumar - PMU CBUD Ministry of Urban Development has submitted Opening of Financial Proposals/Minutes for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS to the Bank for notification. Review is not required.

Dear Madam,

Please find attached herewith the minutes of meeting for opening of financial proposals and Form Fin 2 from two technically qualified bidders for your approval.

Best Regards..

G. Vijay Kumar

STEP System Users - Click here

Bank Users - Click here

Vasudha Thawakar <vsarda@worldbank.org> Wed, Jan 17, 2018 at 11:53 AM
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>

Cc: Payal Malik Madan <pmmadan@worldbank.org>, Radha Narayan <rnarayan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>, Debabrata Chakraborti <debu.chakraborti@gmail.com>, Jyoti Sriram <jsriram@worldbank.org>, "rgujral@ipeglobal.com" <rgujral@ipeglobal.com>, Ketan Kumar Vora <kkvora@ipeglobal.com>

Dear Mr. Kumar,

Please proceed with the negotiations and submit us the draft negotiated contract (DNC) for review. We shall review the DNC along with the financial proposal.

Thanks and Best,

Vasudha Thawakar

Senior Urban Development Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: STEP Admin [mailto:noreply@worldbankgroup.org]
Sent: Tuesday, January 16, 2018 5:09 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: Payal Malik Madan <pmmadan@worldbank.org>; Radha Narayan <rnarayan@worldbank.org>; g.vijaykumar.moud@gmail.com; Swayamsiddha Mohanty <smohanty1@worldbank.org>; pankaj.sinha88@nic.in
Subject: Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

[Quoted text hidden]

Minutes of the Meeting of Procurement Committee for opening of Financial Bids and final evaluation of bids for Assessment of Liveability Indices for 116 cities in India

The meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for opening of financial proposals and final combined technical and financial evaluation for the assignment of **Assessment of Liveability Indices for 116 cities in India** was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi. The technical evaluation by the procurement committee has been reviewed and approved by the World Bank as communicated vide email dated 12th January, 2018.

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD

The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	93.70
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	77.60
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Umang

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives: Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

- **Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes)**
- **Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)**

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS

The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-
T=0.80, and P=0.20

Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ' P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score. **Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)**							
S(t) = Technical Scores of the bidder								
S(f) = Financial Score of the bidder								

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

(Vasavi Narla)
PMU (CBUD)

(Umang H Raina.)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Smart City Division

***

Subject:- REOI for shortlisting of agencies for assessment of liveability index in selected cities.

***

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

02. The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework. The proposal has already been approved by IFD in another file.

03. An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains .

04. The selection of the agency shall be made through two tier procurement process of the World Bank. In first step REOI will be issued and based on the qualification criteria, as per World Bank procurement process, 6 consulting firms will be shortlisted. In the second step, RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

05. The budget for the assignment is estimated at Rs. 16.41 crore. World Bank has also given in principle approval for this assignment *(may be seen at correspondence side)*. IFD has given approval to the assignment in a separate file.

REOI is attached below for concurrence of the IFD please.

26/04/2017 2:42 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

May kindly be concurred please.

SS

26/04/2017 2:53 PM

SAMEER SHARMA
(AS (SC))

26/04/2017 5:02 PM

Jhanja Tripathy
(JS &FA)
Digitally Signed

26/04/2017 5:43 PM

Yashodhara Vijayan
(DS(FINANCE))

The general principle for shortlisting firms through EoI is that more weightage is to be given to past experience of the firms (60%), Experience of Key personnel(25%) and financial strength of Consulting firm 15%. In the REoI no weightage has been given to financial strength of the firm and weightage given to experience of key personnel is only 10.Appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

28/04/2017 6:58 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 1:06 PM

Jhanja Tripathy
(JS &FA)

03/05/2017 1:28 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 2:49 PM

Pankaj Kumar
(US(IFD-II))

As advised by IFD , the evaluation criteria has been modified. The revised REOI may be seen below. File may be sent to IFD for their concurrence.

03/05/2017 5:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Approved. Let us consult IFD.

SS

03/05/2017 5:27 PM

SAMEER SHARMA
(AS (SC))

03/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/05/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding REoI for shortlisting of agencies for assessment of liveability index in selected cities.

The draft REoI was examined in IFD at pg.2/N. and it was suggested that appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

Accordingly, the Programme division has provided weightage as under:

Experience of Key personnel	25%
Experience of Firm	60%
Financial strength of the firm	15%

We may now concur to the proposal.

04/05/2017 11:23 AM

Pankaj Kumar
(US(IFD-II))

The weightages given to each component are as were discussed with F.A. earlier and in accordance with instructions of M/o Finance.

REoI may issue as proposed.

05/05/2017 11:00 AM

Yashodhara Vijayan
(DS(FINANCE))

05/05/2017 12:46 PM

Pankaj Kumar
(US(IFD-II))

08/05/2017 10:24 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Smart Cities-III Division

*****

Subject:- Request for Proposal (RFP) for shortlisting of agencies for assessment of Liveability Index in selected cities.

After getting the concurrence by IFD, MoUD, the National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment for procurement of Agency. Accordingly, **REOI was floated on 9th May 2017** with the l**ast date of 30th May 2017**(**PUC1**)

2. Meanwhile , RFP has been prepared and sent the World Bank for their comments/no objection. It may be mentioned that the **World Bank have already conveyed that technically the package meets their principal** approval vide their mail dated 13th April 2017.

3 . **The approximate cost for hiring the Agency is Rs. 16.41 cr.**(p. 9/ PUC2). RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

4. **We may send the file to IF for their concurrence for RFP for Liveability Index** (PUC3) and **Standard Form of Contract** (PUC4).

29/05/2017 3:40 PM

G Vijay Kumar
(US SC-III)

29/05/2017 5:24 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

As proposed, let us send to IFD.

SS

29/05/2017 5:25 PM

SAMEER SHARMA
(AS (SC))

29/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

30/05/2017 10:29 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding hiring of a consultant by NIUA for the consultancy services for " assessment of Liveability Index in selected cities".

2. After concurrence of IFD, NIUA floated REoI for which the last date was 30th May, 2017. It is not known whether the firms have been shortlisted. Meanwhile, due to urgency, the draft RfP has been prepared by the Programme Division (pg.60-122/c.) and sent it to IFD for vetting.

3. The draft RfP has been prepared as per the World Bank's guidelines on Selection and Employment of Consultants. The draft RfP seems to be in order. We may, therefore, concur to the proposal subject to vetting the same from the World Bank.

06/06/2017 12:24 PM

Pankaj Kumar
(US(IFD-II))

The Division may confirm that the firms to whom RfP has to be issued have been cleared by World Bank.

07/06/2017 11:09 AM

Yashodhara Vijayan
(DS(FINANCE))

07/06/2017 11:13 AM

Pankaj Kumar
(US(IFD-II))

We have already got the concurrence from bank. May kindly attach their remarks.

07/06/2017 12:11 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

The **Request for Proposal (RFP)** for the selection of Consultant for Assessment of **livability index**, to be procured by NIUA (on behalf of MoUD) **was cleared by the World Bank** vide email dated 31st May 2017. **(PUC3)**

07/06/2017 1:08 PM

G Vijay Kumar
(US SC-III)

With reference to RfP, the following clarifications may be furnished by the Division:-

1.Under the heading Instructions to Consultants – E. Data Sheet clause No. 16.2 it has been mentioned that price adjustment provision applies to remuneration rates.It has been mentioned in ToR that reimbursement will be adjusted every twelve months based on a formula. However, this is not normally done and remuneration is fixed for the entire period of contract. This may be revised.

2.Clause 25.1 only the basic contract price and service tax are to be included in the financial bill and not all taxes payable by the Consultants.

3.As per section-7.1(iv) of ToR, 116 cities will be covered in 1st year and the coverage of cities may be extended in subsequent years. As the number of Smart Cities is 100 (number of AMRUT cities 500, what is the criteria for selection of cities for liveability index).

09/06/2017 4:29 PM

Yashodhara Vijayan
(DS(FINANCE))

While I appreciate the observations, the matter is between NIUA and WB. Why is IFD in picture?

10/06/2017 1:38 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

12/06/2017 10:30 AM

Yashodhara Vijayan

(DS(FINANCE))

12/06/2017 10:39 AM

Pankaj Kumar
(US(IFD-II))

As per the observations of IFD, it has been decided that there will be no adjustment in the price. Appropriate modification has also been made in the updated RFP in the TOR Clause 7.1 (v),(vi),(vii) attached herewith to reflect the same.

2. The Basic Contract Price along with applicable GST will be payable by the client. Appropriate modification has been made to clause 25.1 in the updated RFP attached herewith.

3. The list of 116 Smart Cities represent shortlisted Smart Cities and other million plus cities which may not have been shortlisted. The number of million plus cities may increase in subsequent years and hence the statement that “the number of cities may be extended” has been included. In any case fresh procurement will be undertaken every year for the appointment of an agency(s) for undertaking the study with a fresh list of cities and fresh scope of work.

4. The REOI was issued by MoUD and the evaluation is under process. In a similar way, the RFP is also be issued by MoUD and the necessary modifications have been carried out in the revised RFP. The file may be sent to IFD for their concurrence.

03/07/2017 1:16 PM

G Vijay Kumar
(US SC-III)

03/07/2017 4:05 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/07/2017 6:01 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Observations of IFD have been incorporated in RfP. We may concur.

05/07/2017 12:58 PM

Yashodhara Vijayan
(DS(FINANCE))

Ministry of Urban Development has already developed a set of 79 standards across 15 categories to assess the liveability standards in cities. However, the need to assess the 'Liveability Index' from budgetary support without any defined outcome is not clear. There is already a service level benchmark for the schemes that are being implemented by the Ministry. The entire scheme of AMRUT rests on the outcome parameters that have been fixed on the foundation of these service level benchmark which has been carried out for 500 Urban Agglomerations by the states. This was an unique exercise in capacity building.

Secondly, MoUD also undertook a massive exercise of competition for Smart Cities which helped the cities spell out, in clear-cut terms, the scale and kind of development they wish for their cities to achieve. Towards this, we had empanelled a large number of consultancy firms to do the hand-holding for the cities, wherein a basic exercise was carried out by the cities along with its citizens and the consultants which realised the inherent lacunae in their cities and determine projects which will make their city 'Smart'. Accordingly, a number of cities and States changed policies to strengthen and enable their existing municipalities and parastatals.

Thirdly, there are also a list of urban reforms which determines the quantum of reform funds and funds of devolution of Finance Commission that the city will receive.

In view of the preceding scenario, wherein the cities already have a number of parameters to achieve with clearly defined measurable outcomes linked directly to funds disbursal and which has third-party verification (Bloomberg and MoUD through objective parameters), it is not prudent to clutter the area with another index which is not linked to any outcome. However, NIUA may carry out its own activity if it so desires.

I am unable to concur to the proposal under MoUD's budget.

12/07/2017 10:42 AM

Jhanja Tripathy
(JS &FA)
Digitally Signed

12/07/2017 11:40 AM

Yashodhara Vijayan
(DS(FINANCE))

12/07/2017 12:12 PM

Pankaj Kumar
(US(IFD-II))

12/07/2017 4:56 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

13/07/2017 10:31 AM

G Vijay Kumar
(US SC-III)

The 'Liveability Standards in Cities' is a unique effort initiated by the MoUD for assessing the standards of living in Indian cities. This is the first attempt by any country to systematically identify, track and improve upon critical parameters that define urban quality of life.

02. The framework touches upon all institutional, social, economic and physical aspects that impact the lives of citizens, captured through a detailed set of 79 indicators spread across hitherto unmapped aspects like safety, mixed land use and compactness, availability of open spaces, identity and culture, pollution etc. The framework also covers various traditionally non-urban aspects (not covered under urban missions) which are crucial for making cities more liveable such as health, education, availability of power etc.

03. On the other hand, the indicators adopted under AMRUT and other missions are limited and are meant to be specific milestones for measuring mission progress rather than assess the overall liveability.

04. The Standards have thus been envisioned both as a reference framework as well as a planning tool for cities. The 'City Liveability Index' developed will result in a ranking framework, thereby fostering a competitive environment amongst cities for improving their Liveability. The standards are also strongly linked to the Sustainable Development Goals and successful achievement of standards will contribute to the achievement of such SDGs.

05. The 'Annual Assessment of Liveability Standards' is an ambitious national project that will involve yearly survey (including field surveys) and compilation of a large number of datasets across the various indicators, analysis of such datasets, development of indexes and ranking of cities. This will require extensive human resources and field survey experience, which can be brought in through third party agencies. NIUA will coordinate and provide knowledge support on behalf of the MoUD.

06. The Liveability Standards document (conceptual framework) and the REOI for 'Selection of Consulting firms for assessment of Liveability in 116 cities in India' have both been approved by the IFD earlier.

07. The REOI was issued after concurrence of the IFD and in response, 21 applications were received. Procurement committee duly represented by IFD has shortlisted 6 firms based on their techno-financial capabilities to undertake the assignment. The RfP is in continuation of this process, which has already been concurred by the IFD.

08. It is expected that the implementation of this framework will help cities understand their baseline and pursue tangible outcomes over time,

and result in systematic transformation of Indian Cities over time. The assessment of liveability index was launched by Hon'ble UDM in the National Workshop on Urban Transformation held on 23.06.2017 at Vigyan Bhavan.

09. In light of the above, IFD is requested to reconsider and concur the RfP please.

(Sajeesh Kumar N)
Director (Smart Cities)
17.7.2017

AS (SC)

17/07/2017 4:00 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

17/07/2017 4:39 PM

SAMEER SHARMA
(AS (SC))

17/07/2017 5:10 PM

Jhanja Tripathy
(JS &FA)

It has already been pointed out in note#35 that concept of livability standards should have been part of the Smart City proposals. The proposals were prepared by professional agencies keeping in mind the standards of Smart living and Sustainability. It was expected that application of these concepts would improve the livability of these cities. Moreover, the cities are already competing for Smart City ranking, Swachh Sarvekshan ranking, Reforms incentives etc. As noted earlier, it would not be prudent to introduce another index which is not related to any outcome.

It is also not clear as to how the expenditure of Rs. 16.41 crore for this activity could be met out of CBUD funds since the entire amount of Rs 268.4 crores has already been either spent or committed as per the budget allocation of CBUD funds circulated by Smart City Division in May 2015.

25/07/2017 5:32 PM

Yashodhara Vijayan
(DS(FINANCE))

It has been indicated in Para-5 in preceding pages that this "is an ambitious project that will involve yearly survey (including field survey) and compilation of a large member of datasets, development of indexes and ranking of cities".

As stated by SCM Division, it will require large scale investment to engage human resources for carrying out field survey, data mining and data interpretation.

Before initiating a permanent ongoing yearly exercise of this scale, which tantamounts in its structure, ambition and expenditure , as a new scheme , it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC . The proposal, is its present format , cannot be considered for concurrence.

31/07/2017 2:17 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

01/08/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

01/08/2017 12:15 PM

Pankaj Kumar
(US(IFD-II))

For information pl.

01/08/2017 2:47 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

01/08/2017 2:49 PM

SAMEER SHARMA
(AS (SC))

02/08/2017 10:25 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/08/2017 12:20 PM

G Vijay Kumar
(US SC-III)

The concept of Liveability and the design of the annual assessment of Liveability has been vetted and approved at all levels before initiation of the REOI for the project. The approval of the Hon'ble UDM was received on 10th April 2017, after which the roll out design and modalities were duly vetted and approved by the IFD on 25th April 2017. Based on this the project was publicly launched by hon'ble UDM on 23rd June 2017.

Funding of the assignment under CBUD has been approved by IFD and the project has been acknowledged as one of the items for funding during the last PMB meeting of the CBUD Project. The procurement plan and budget of CBUD have also been duly realigned for this purpose. The REOI for procurement of consultants was also issued after concurrence of the IFD, and 6 firms have been shortlisted by the Procurement Committee. The RfP is in continuation of this process.

This RfP for assessment of Liveability Standards is only for 1 year. The assessment may be repeated in subsequent years on the basis of the outcomes achieved. It is pertinent to note that Swachh Sarvekshan (on similar lines) has been implemented as an initiative of the Ministry, but not as a separate scheme. This is also an annual exercise, which is now being repeated in the second year.

In light of the above, IFD is requested to reconsider and concur the RfP please.

03/08/2017 12:31 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

There are two other facts, (1) the Swacch Sarvekshan is similar (not a scheme), and (2) the idea of competition to rank cities based on revenue generation and service levels was also sent in a meeting held on PMO. Please get from Ravinder (CPHEO) and link up.

SS

03/08/2017 2:02 PM

SAMEER SHARMA
(AS (SC))

Reference remarks of AS (UA) above.

As brought out in the above note, *'Swachh Survekshan'* has been rolled out on similar lines as proposed liveability index (not as a scheme).

Moreover, the RoD of the meeting chaired by the Hon'ble PM to discuss the progress of 'Clean Ganga Mission' on 18th May 2017 may also kindly be perused at Annexure *(attached below)*. As per point No.XV of the RoD, it is observed that "*the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.*"

The Liveability Index is an effort in this direction. The Index aims to assess the performance of cities across four pillars such as institutional, social, economic and physical. The comprehensive assessment will also involve 79 indicators which include data on tax collection, capital expenditure, performance of utilities such as water supply, transportation, power supply, sewerage etc. The assessment of such liveability indicators and ranking of cities is thus, directly linked to the outcome being targeted under the various urban Missions. This kind of ranking will create a competitive

environment among cities to improve their overall performance and quality of life of citizens.

04/08/2017 2:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Notes on pre-pages may please be seen

This is not a new scheme, but a contract similar to what SBM has done in the Swacch Sarvekshan Survey. We have also completed the empanelment of six agencies and now the RfP has to be issued to them. Moreover, the Liveability standards are largely impact indicators which the Niti Aayog is monitoring through the IFD.

Most important, based on the approval of IFD, the Hon'ble Minister has announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications. After going forward so much retreat will cause great embarrassment to the government and loss of face for all of us.

In view of the above JS&FA may kindly concur.

SS

08/08/2017 7:04 PM

SAMEER SHARMA
(AS (SC))

09/08/2017 9:31 AM

Jhanja Tripathy
(JS &FA)

09/08/2017 9:47 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Integrated Finance Division

This is regarding concurrence of draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that the proposal is a permanent ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has informed that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. Further, it is in advanced stage and the Hon'ble Minister has already announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications.

4. Initially the Programme Division had stated that the World Bank had given their 'in-principle' approval to the REoI. Now it is understood that the World Bank has advised the Division to re-issue the EoI as proper procedure according to the WB guidelines was not followed while issuing /evaluating the EoI.

5. In view of above, there is no need to take any action at present.

18/08/2017 12:41 PM

Pankaj Kumar
(US(IFD-II))

18/08/2017 4:06 PM

Yashodhara Vijayan
(DS(FINANCE))

please discuss.

21/08/2017 3:39 PM

Jhanja Tripathy
(JS &FA)

23/08/2017 4:18 PM

Yashodhara Vijayan
(DS(FINANCE))

Ref. Discussion with JS&FA

This is regarding draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that since the proposal is an ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has stated that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. It may be mentioned that basic structures of SCM and SBM are very different.While a gap analysis and a Service Level Benchmark is already inbuilt in the Smart City Proposals prepared by various empanelled agencies and cities were selected after comprehensive analysis of the proposals, no such exercise was undertaken for SBM. Swachh Sarvekshan was carried out to gauge the progress of the Mission from the baseline.

4. However, the Division has referred to a meeting chaired by Hon'ble PM, wherein it was noted that the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of performance of key utilities. The Liveability Index is an effort in this direction.

5. In view of para 4 above and preceding notes of Programme Division , we may concur to the proposal for assessing the Livability Standards of proposed 116 cities for one year. This would also give a fairly good idea of the progress of the Scheme. The estimates may be pruned accordingly.

25/08/2017 2:53 PM

Jhanja Tripathy
(JS &FA)

25/08/2017 2:55 PM

Yashodhara Vijayan
(DS(FINANCE))

25/08/2017 3:21 PM

Pankaj Kumar
(US(IFD-II))

For information sir.

25/08/2017 4:09 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

26/08/2017 11:09 AM

SAMEER SHARMA
(AS (SC))

28/08/2017 9:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/09/2017 5:35 PM

G Vijay Kumar

Note No. #108 Attachment:Liveability REOI and RFP file -Concurrence of IFD (Noting Protion).pdf

(US SC-III)

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:42 PM

Parmod Kumar
(Dir(UD))

06/09/2017 11:07 AM

SHIV DAS MEENA
(JS (AMRUT))

The file is returned as per notes on the other file in this matter.

07/09/2017 3:04 PM

Shiv Pal Singh
(DIR (AMRUT))

Is it part of CBUD?

08/09/2017 4:04 PM

Sanjay Kumar
(JOINT SECRETARY)

08/09/2017 4:23 PM

Parmod Kumar
(Dir(UD))

REQUEST FOR EXPRESSIONS OF INTEREST (CONSULTING SERVICES – FIRMS SELECTION)

[*India*]
[*Capacity Building of Urban Development (CBUD)*]
Loan No./Credit No./ Grant No.: 4997-IN

Assignment Title: Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities
Reference No. (as per Procurement Plan): ___________________

The *Ministry of Urban Development, Government of India has received* financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include Assessment of Liveability in 116 cities. The assignment is for a period of 7 months.
The National Institute of Urban Affairs (NIUA) on behalf of Ministry of Urban Development now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	10
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	20
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	30

S.No.	Parameter	Maximum Marks
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	30
	Total	100

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers* July, 2016 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a consortium and joint venture to enhance their qualifications.

A Consultant will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours [*Director, National Institute of Urban Affairs, Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road New Delhi 11003.0900 to 1700 hours*].

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [____________].

[*National Institute of Urban Affairs*]
Attn: [*insert name of officer & title*]
[*Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road*]
[*110028, New Delhi, India*]
Tel: [*include the country and city code*]
Fax: [*include the country and city code*]
E-mail: *[include e-mail address]*

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

_____, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA.

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________ and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:____________________ with copy to ________ and _________. The submission shall be electronically on the portal ___________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: ______________.

b) Any Addendum thus issued will also be posted on the website: ________.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: ___________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal _______. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7 and 7A

	assessment of data related to governance, transportation, environment, housing and sanitation.	
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
c. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
d. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection

bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

e. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**10**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**20**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**30**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of .... (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from .... (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we .... (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms...................... .... (name and residential address) who is presently employed with us and holding the position of .... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____

(Signature)

(Name, Title and Address)

Accepted

.... (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT:

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. …………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

……………………………………

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date

Name ______________________________

Place

Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)....**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)............**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	Criteria[1]	Number and Name of Cities
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only[2])(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)..........**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. .... (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ....Day of ...., 201....

Name of the Applicant

....

Signature of the Authorised Person

....

Name of the Authorised Person

Note:

To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of _________ 2015 at __________ among ________ and having its registered office at _______, (hereinafter referred as"_________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"_________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

______, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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DISCLAIMER **1**

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context Ministry of Urban Development has developed a set of ‘Liveability Standards of Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards’ are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in the various standards and develop a ‘City Liveability Index’ of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link__________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:______________________ with copy to _________ and __________. The submission shall be electronically on the portal ____________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7

	assessment of data related to governance, transportation, environment, housing and sanitation.	and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams

consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………. ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we ………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **. (Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

---

1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	

4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)……….**	

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Description of actual services provided by your staff within the assignment:

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA

72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544

110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has received financing from the International Development Association (IDA) (the “Bank”) in the form of a credit (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called “Services”): “Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India”. More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants’ Guidelines which can be found at the following website: www.worldbank.org/procure.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f)"CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

	(g) “Client” means the implementing agency that signs the Contract for the Services with the selected Consultant. (h) “Consultant” means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract. (i) “Contract” means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices). (j) “Data Sheet” means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC. (k) “Day” means a calendar day. (l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s). (m) “Government” means Government of India. (n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal. (p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provides the shortlisted Consultants with all information needed to prepare their Proposals. (q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants. (r) “MoUD” means Ministry of Urban Development

	(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant. (u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) "Services" means the work to be performed by the Consultant pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its “no objection”, if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client’s evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client’s evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant’s overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:** ____21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

	The opening shall take place at: *[Insert: "*same as the Proposal submission address*" OR insert and fill in the following:* Street Address: Maulana Azad Road Floor, room number: Room No.____, ____Floor, Nirman Bhawan City: New Delhi 110001 Country: India **Date**: same as the submission deadline indicated in 17.7. **Time:** *[insert time in 24h format, for example – "16:00 local time]* *[The time should be immediately after the time for the submission deadline stated in 17.7]*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals NA**
21.1 (for FTP)	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –50 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

……

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which “Sf” is the financial score, “Fm” is the lowest price, and “F” the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: __________________________________
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ______________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

▬ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	Cost			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] *Currency # 1}*	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1			[*Home*]	___________	▨	▨	▨	
N-2	______________________________	__________	[*Field*]	___________	▨	▨	▨	
____				___________	▨	▨	▨	
____	______________________________				▨	▨	▨	
____				___________	▨	▨	▨	
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

  (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

  (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

  (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

---

[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;

   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format attached at Annexure X;

   b. All raw data and data sheets;

   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

13|6|2017
Out Today

PRIME MINISTER'S OFFICE

******

964
13/6/17

South Block,
New Delhi – 110 011

Please find enclosed, for information and further necessary action, copy of Record of Discussions (RoD) of the meeting chaired by the Prime Minister on 18.05.2017 to discuss the progress of 'Clean Ganga Mission'.

(Dr. Shrikar Pardeshi)
Director
Tel. No. 2301 8040

CEO, NITI Aayog
Secretary, M/o Water Resources, River Development & Ganga Rejuvenation
Secretary, M/o Environment, Forests and Climate Change
Secretary, M/o Urban Development
Secretary, M/o Drinking Water & Sanitation
DG, National Mission for Clean Ganga
Chairman, Central Pollution Control Board

PMO ID no. 4638569/PMO/2017-ES-2 Dated: 08.06.2017

2|3451390

Record of Discussions of the Meeting chaired by Hon. PM to discuss the progress of 'Clean Ganga Mission', 18th May 2017, 7 pm, South Block

Prime Minister chaired a meeting to discuss the progress of 'Clean Ganga Mission'. The list of the participants is attached.

2. Secretary, M/o Water Resources, River Development and Ganga Rejuvenation made a brief presentation on the concept. Following decisions were taken after detailed deliberations:

i. The voluntary organizations like that of Mata Amritanandmayee, who have made huge donations towards the cause of cleaning of Ganga, may be appropriately involved in the community awareness programmes.

(Action: NMCG)

ii. A system should be put in place to regularly cross-verify the performance of the Real Time Water Quality Monitoring Stations.

(Action: CPCB)

iii. Amongst the Grossly Polluting Industries (GPIs), those which are complying with the pollution control norms should be publicly felicitated, while names of those which are not complying with the pollution control norms may be prominently displayed at public places.

(Action: NMCG, CPCB)

iv. An effort be made to explore whether different eco-friendly technology could be used for the process of tanning by the tanneries, so as to reduce the pollution load in the Ganga.

(Action:MoWR, NMCG)

v. The big temple trusts in the country could be appealed to participate in the process of cleaning of ghats and banks of Ganga. An appropriate plan be made to allocate defined stretches of Ganga, across its length, to these temple trusts for cleaning.

(Action: NMCG)

vi. The possibility deploying of solar operated trash skimmers for river surface cleaning may be explored.

(Action: NMCG)

vii. The possibility of banning usage of plastic within certain zone from the banks of Ganga may be explored.

(Action:MoEF, NMCG)

viii. The works of construction of ghats and crematoria as well as that of cleaning of ghats etc. should be left to the local municipal / village administration and the State Governments. The NMCG should mainly focus on controlling and reducing the pollution of the river Ganga due to sewage and industrial effluents.

(Action: NMCG)

ix. An attempt be made to organize competition in the 5 States on the parameter of Swachhata in the villages located on the banks of the Ganga.

(Action: MoDWS)

x. Regarding the upcoming turtle sanctuary at Varanasi, a holistic view be taken about the location.

(Action: MoEF, NMCG)

xi. For increasing awareness amongst the citizens visiting Ganga, hoardings containing appropriate messages be put up at suitable places near the banks of the river.

(Action: NMCG)

xii. The administrative capacity of local self-governments along the banks of Ganga needs to be augmented. The Ministry should prepare a proposal on comprehensive reforms in UP Jal Nigam with technical assistance of experts.

(Action:MoWR, NMCG)

xiii. The mission should ensure dissemination of information about the works done and about the ongoing activities.

(Action: NMCG)

xiv. M/o Railways may be appealed to buy the treated and recycled water from the STPs.

(Action:M/oRailways, NMCG)

xv. The municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.

(Action: MoUD)

Annexure

LIST OF PARTICIPANTS

1. Shri. Amitabh Kant, CEO, NITI Aayog
2. Dr. Amarjit Singh, Secretary, Water Resources, RD & GR
3. Shri. Parameswaran Iyer, Secretary, Drinking Water & Sanitation
4. Shri. U.P. Singh, Addl. Secretary and DG, NMCG
5. Shri. S.P. Singh Parihar, Chairman, CPCB

Prime Minister's Office

1. Shri. Nripendra Misra, Principal Secretary to PM
2. Dr. P.K. Mishra, Addl. Principal Secretary to PM
3. Shri. A.K. Sharma, Joint Secretary to PM
4. Ms. Debashree Mukherjee, Joint Secretary to PM
5. Dr. Shrikar Pardeshi, Director

Rakesh Gujral

From: Utpal Deka <utpal.deka@gmail.com>
Sent: 13 April 2017 11:49
To: Raja Dawn
Cc: Rakesh Gujral
Subject: REOI-Consulting-English-October2011.docx
Attachments: REOI-Consulting-English-October2011.docx

Sent from myMail for iOS

-------- Forwarded message --------
From: Vasudha Thawakar <vsarda@worldbank.org>
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, sajeesh.kr@gov.in <sajeesh.kr@gov.in>, utpal.deka@gmail.com <utpal.deka@gmail.com>
Date: Thursday, 13 April 2017, 11:16 +0530
Subject: RE: REOI_Liveability

Dear Mr. Kumar:

Technically, the package meets our principal approval. However, to begin procurement please:

- Send the REOI in Bank format, attached for reference
- Please include cost estimate
- Please update activity in STEP as all no objections will be online through STEP and not email

Please check the above parameters for the innovations package also.

Thanks and Best

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

+91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: Vijay Kumar [mailto:g.vijaykumar.moud@gmail.com]
Sent: Wednesday, April 05, 2017 6:30 PM
To: Vasudha Thawakar
Cc: sajeesh.kr@gov.in; utpal.deka@gmail.com; Rakesh Gujral
Subject: Fwd: REOI_Liveability

Dear Madam,

Please find enclosed herewith a REOI for shortlisting of firms for assessment of livability of selected cities out of 79 indicators (may be varied). At present, 114 cities have been identified and the same may be varied.

The procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

--

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Urban Development,

Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217

M. 9582576758

Justification for the Liveability Index Assessment Proposal

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework.

An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains (e.g. solid waste management, transport) and accredited with or belonging to inspection bodies (such as **Bureau Vertitas** (India) Pvt. Ltd., **TUV SUD South Asia** Pvt. Ltd. etc.) having extensive experience in doing such kind of surveys and assessments.

Regional breakup of 116 cities is given as Annexure below – where it emerges that 9 Regional clusters having 13 cities each are formed, based on which city assessment costs are derived. Suggested indicators that require surveys are also described in Table 2. About 15 indicators are assumed to need surveys and/or laboratory tests which are costed tentatively, as survey sample size and need would vary as per indicator and the city. The agency estimates are based on charge-out rates (manpower + expenses + profits) as have been deployed in Project Management Unit (PMU) teams hired by the Ministry till date. Travel and other cost estimates are based on similar costs in other current projects, market trends and contracts given by the Ministry.

NIUA will deploy a team of 5 professionals to monitor the overall project, maintain quality & integrity of data & standards across cities, and capture lessons from the assessment exercise. This will include development of a standard methodology and software to be used by all the teams, so that the assessment is uniform and indexation is possible. The NIUA team is considered for 9 months (May 2017 to January 2018, inclusive) with the first 3 months given for internal team setup, agency procurement process and a universal software development for the Assessment. The next 6 months will be working in tandem with the different teams. The last month is kept for wrapping up the process for 2017 after the results are announced.

The NIUA team will consist of human resources as given in Table 1 below.

Table 1

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Specialist (cross sectoral)	Post Graduate degree in Planning from a recognised university/institution. Experience of planning projects or city development aspects across planning sectors of transport, environment, services, etc.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
IT Specialist/Software Developer	Post Graduate in Software development from a recognized university/institution. Experience in developing software for Database Management System and data analysis	10 years' experience in the field. Developed at least 2 software for similar nature.

NIUA team will also have an Administrative Officer / Office Manager (qualifications and experience to suit the requirement) to manage the above project and its related matters.

Professionals deployed by Agency at the National level

The National level team to be located at NIUA is considered for 7 months (July 2017 to January 2018, inclusive), of which 6 months are common with the regional teams who will do the assessment of the cities. There are 12 workshops planned overall to be attended by the qualified members of the national level team: 1 each at National level for pre-bid, launch with selected agencies and at closing; and 1 each at each of the 9 Regional Centres midway to ascertain progress. The national team will consist of human resources as given in Table 2 below.

Table 2

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

The national team will also have Data Entry Operators (4 Nos.).

The national level team will be responsible for aggregating data received from the teams, etc . An important function of the National level team will be quality control to ensure the authenticity of the data collected through surveys. The authenticity of data shall be ensured through visual backup like photographs etc. and using geo-tagging technology through hand held devices. A useful precedence is the *Swacch Sarvekshan*.

Teams for City level assessment aggregated at Regional Cluster levels

The data collection and ground surveys of all the cities will be carried out by teams deployed by the Agency at Regional levels and travelling to the cities in the cluster. Each City team will carry out the assessment of indicators across in 15 categories through verification of secondary data and deployment of necessary surveyors for each city, and the laboratory tests as required in some

indicators. About 15 indicators are assumed to need surveys and/or laboratory tests. Table 2 gives the details.

Table 2

Standard Category	No. of category	Expected expertise of Assessment Team members
Governance	1	Governance
Social	2	Identity and Cultural
	3	Education
	4	Health
	5	Safety and Security
Economic	6	Economic and Employment
Physical	7	Housing and Inclusive
	8	Public Open Spaces
	9	Mixed Land use & Compactness
	10	Power Supply
	11	Transport and Mobility
	12	Assured water supply
	13	Waste water management
	14	Solid Waste Management
	15	Reduced pollution management

Requirement of Funds:

Liveability Index Assessment - Estimated Budget				
1	**Agency Costs**			
A	**National level team costs**			
a	**Human Resource for 7 months (Jul 2017 - Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.50	7	31.50
2	Survey and Sampling Specialist	3.00	7	21.00
3	Data Analytics and Indexing Specialist	3.00	7	21.00
4	Urban Transport Specialist	3.00	7	21.00
5	Environment Specialist	3.00	7	21.00
6	GIS Specialist	3.00	7	21.00
7	Data Entry Operators (4 nos.)	0.50	28	14.00
	Human Resource Costs		**Sub Total**	**150.50**
b	**Travel & related costs**	**Rate**	**Units**	**Amount (Lakh)**
	Team Lead+5 members airfare to 9 regional nodes once	0.15	54	8.10
	Accommodation for above for 2 days per trip	0.05	108	5.40
	Local Travel costs for 2 days each trip	0.03	54	1.62
	Miscellaneous and out of pocket expenses		lumpsum	0.50
	Travel & related costs		**Sub Total**	**15.62**
c	**Other Costs (reimbursible)**	**Rate**	**Units**	**Amount (Lakh)**
	Hardware & basic software requirements	1.5	10	15.00
	Workshops (9 at regional nodes and 3 at National level)	as per CCBP	12	42.00
	Report Editing & Printing (200 copies)	0.05	200	10.00
	Other Costs		**Sub Total**	**67.00**
	TOTAL National Team Costs for one year assessment (a+b+c)			**233.12**
B	**Assessment Costs for Cities aggregated at Regional level**			
a	**Remuneration**	**Rate/PM**	**No. of Months**	**Amount**
	Assessment Teams for Cities at Regional level	6.00	6	36.00
	Hardware & basic software requirements	1.50	6	9.00
			Sub Total	**45.00**
b	**Assessment costs (assuming avg. 13 cities per region)**	**Rate**	**Unit**	**Amount**
1	Travel airfare by 4 members to cities in region	0.15	52	7.80
2	Lodging Boarding for 2 days on shared basis in region	0.05	52	2.60
4	Local Travel per day	0.03	52	1.56

6	Survey & Lab Test Costs (assuming 15 indicators needing same)	0.50	195	97.50
7	Documentation & Misc. communciation costs		lumpsum	2.00
	Total Cost per region		**Sub Total**	**111.46**
	TOTAL Cost of City Assessment per region (a+b)			**156.46**
	Total Cost for City Level Assessment for 9 regions (covering all 116 cities)			**1408.14**
	Total Agency Cost (National + City assessment Teams) for 116 cities (A+B)			**1641.26**
2	**Monitoring & Project Management Team at NIUA**			
A	**Human Resource for 9 months (May 2017 Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.00	9	36.00
2	Urban Specialist (cross-sectoral)	2.50	9	22.50
3	Data Analytics, Statistics and Indexing Specialist	2.50	9	22.50
4	IT Prof/Software Engineer	2.50	9	22.50
5	Administrative Officer/Office Manager	1.50	9	13.50
	Total Human Resource Costs		**Sub Total**	**117.00**
B	**Other Costs (reimbursible)**			
1	Server & Software Licenses (incl. GIS)		lumpsum	20.00
2	Standard methodology & software development		lumpsum	100.00
3	Training on Software for National & Assessment Teams		lumpsum	130.00
4	Miscellaneous running costs of PMU team at NIUA	1.00	9	9.00
	Total Other Costs		**Sub Total**	**259.00**
	TOTAL Costs of Monitoring & Project Management Team at NIUA			**376.00**
	Total Cost of Assessment (Agency + NIUA) (1+2 above)			**2017.26**

Payment Schedule:

For NIUA:

30% advance

30% at the end of 3rd month,

30% at the end of 6th month,

10% at the end of the 9 months and releasing of the index

The payments will be based on Utilization certificates

For Agency: As per the terms set in the Terms of Reference (TOR) of the Request for Proposal

List of Cities:

Cluster Classiciation of Cities			
Sl. No.	Name of State	Name of City	Population
CLUSTER 1			
1	Uttar Pradesh	Lucknow	2,817,105
2	Uttar Pradesh	Agra	1,585,704
3	Uttar Pradesh	Moradabad	887,871
4	Uttar Pradesh	Aligarh	874,408
5	Uttar Pradesh	Rampur	325,313
6	Uttar Pradesh	Rae Bareli	191,316
7	Uttar Pradesh	Bareilly	903,668
8	Uttar Pradesh	Jhansi	505,693
9	Uttar Pradesh	Saharanpur	705,478
10	Uttar Pradesh	Kanpur	2,765,348
11	Uttar Pradesh	Varanasi	1,198,491
12	Uttar Pradesh	Ghaziabad	1,648,643
13	Uttar Pradesh	Meerut	1,305,429
14	Uttar Pradesh	Allahabad	1,112,544
	TOTAL	**14**	**16,827,011**
CLUSTER 2			
15	Puducherry	Puducherry	244,377
16	Tamil Nadu	Salem	829,267
17	Tamil Nadu	Thanjavur	222,943
18	Tamil Nadu	Vellore	185,803
19	Tamil Nadu	Dindigul	207,327
20	Tamil Nadu	Erode	157,101
21	Tamil Nadu	Tiruchirappalli	847,387
22	Tamil Nadu	Thoothukkudi	237,830
23	Tamil Nadu	Tiruppur	444,352
24	Tamil Nadu	Tirunelveli	473,637
25	Tamil Nadu	Chennai	4,646,732
26	Tamil Nadu	Coimbatore	1,050,721
27	Tamil Nadu	Madurai	1,017,865
	TOTAL	**13**	**10,565,342**
CLUSTER 3			
28	Maharashtra	Solapur	951,558
29	Maharashtra	Pune	5,057,709
30	Maharashtra	Aurangabad	1,175,116
31	Maharashtra	Kalyan-Dombivali	1,247,327
32	Maharashtra	Nagpur	2,405,665
33	Maharashtra	Amravati	647,057
34	Maharashtra	Nashik	1,486,053
35	Maharashtra	Thane	1,841,488
36	Maharashtra	Greater Mumbai	12,442,373
37	Maharashtra	Navi Mumbai	1,120,547
38	Maharashtra	Pimpri Chinchwad	1,727,692
39	Maharashtra	Vasai-Virar City	1,222,390

	TOTAL	12	31,324,975
CLUSTER 4			
40	Dadar & Nagar Haveli	Silvassa	98,265
41	Daman & Diu	Diu	23,991
42	Gujarat	Ahmadabad	5,577,940
43	Gujarat	Surat	4,467,797
44	Gujarat	Vadodara	1,670,806
45	Gujarat	Gandhinagar	202,776
46	Gujarat	Dahod	791,685
47	Gujarat	Rajkot	1,286,678
48	Rajasthan	Udaipur	451,100
49	Rajasthan	Ajmer	542,321
50	Rajasthan	Jaipur	3,046,163
51	Rajasthan	Kota	1,001,694
52	Rajasthan	Jodhpur	1,033,756
	TOTAL	13	20,194,972
CLUSTER 5			
53	Bihar	Bhagalpur	410,210
54	Bihar	Muzaffarpur	354,462
55	Bihar	Biharsharif	297,268
56	Bihar	Patna	1,684,222
57	Chattishgarh	Bilaspur	331,030
58	Chhattisgarh	Naya Raipur	150,000
59	Chhattisgarh	Raipur	1,047,389
60	Jharkhand	Ranchi	1,073,427
61	Jharkhand	Dhanbad	1,162,472
62	Madhya Pradesh	Indore	1,964,086
63	Madhya Pradesh	Bhopal	1,798,218
64	Madhya Pradesh	Ujjain	515,215
65	Madhya Pradesh	Satna	280,222
66	Madhya Pradesh	Sagar	273,296
67	Madhya Pradesh	Jabalpur	1,055,525
68	Madhya Pradesh	Gwalior	1,069,276
	TOTAL	16	13,466,318
CLUSTER 6			
69	Chandigarh	Chandigarh	961,587
70	Haryana	Karnal	286,827
71	Haryana	Faridabad	1,414,050
72	Himachal Pradesh	Dharamshala	22,580
73	Himachal Pradesh	Shimla	169,578
74	Jammu & Kashmir	Jammu	502,197
75	Jammu & Kashmir	Srinagar	1,180,570
76	NCT of Delhi	NDMC	257,803
77	Punjab	Jalandhar	862,886
78	Punjab	Ludhiana	1,618,879
79	Punjab	Amritsar	1,132,383

80	Uttarakhand	Dehradun	569,578
	TOTAL	**12**	**8,978,918**
CLUSTER 7			
81	Goa	Panaji	40,017
82	Karnataka	Davanagere	434,971
83	Karnataka	Belagavi	488,157
84	Karnataka	Hubbali-Dharwad	943,788
85	Karnataka	Mangaluru	488,968
86	Karnataka	Shivamogga	322,505
87	Karnataka	Tumakuru	302,143
88	Karnataka	Bangalore	8,443,675
89	Kerala	Kochi	602,046
90	Kerala	Thiruvananthapuram	743,691
91	Lakshadweep	Kavaratti	11,210
	TOTAL	**11**	**12,821,171**
CLUSTER 8			
92	Arunachal Pradesh	Itanagar	59,490
93	Arunachal Pradesh	Pasighat	24,656
94	Assam	Guwahati	957,352
95	Manipur	Imphal	268,243
96	Meghalaya	Shillong	143,229
97	Mizoram	Aizawl	293,416
98	Nagaland	Kohima	99,039
99	Sikkim	Namchi	12,194
100	Tripura	Agartala	400,004
101	West Bengal	New Town Kolkata	36,541
102	West Bengal	Durgapur	566,517
103	West Bengal	Bidhan Nagar	618,358
104	West Bengal	Haldia	200,827
105	West Bengal	Kolkata	4,496,694
106	West Bengal	Haora	1,077,075
	TOTAL	**15**	**9,253,635**
CLUSTER 9			
107	Andaman Nicobar	Portblair	140,572
108	Andhra Pradesh	Kakinada	312,538
109	Andhra Pradesh	Visakhapatnam	1,728,128
110	Andhra Pradesh	Tirupati	287,482
111	Andhra Pradesh	Amaravati	103,000
112	Andhra Pradesh	Vijayawada	1,034,358
113	Odisha	Bhubaneswar	840,834
114	Odisha	Rourkela	320,000
115	Telengana	Warangal	819,406
116	Telengana	Karimnagar	261,185
	TOTAL	**10**	**5847503**
TOTAL Cities selected		**116**	**252712187**
Average Cities per cluster		**12.9**	**14364427.2**

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

9th May, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.
f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.
g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.
h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website
https://eprocure.gov.in/cppp,
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	9th May 2017
2.	Pre Application Conference	16th May, 2017 2.00 PM
3.	Last Date for receiving queries	19nd May 2017
4.	NIUA's response to queries latest by	23th May 2017
5.	**Last Date of Submission of EOI**	**30th May 2017 3.00PM**

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date: 16th May, 2017
Time: 2.00 PM
Venue: Conference Hall, National Institute of Urban Affairs, Core 4- B, Ist Floor, India Habitat Centre, Lodhi Road, New Delhi 110003

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website:
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email:niua@niua.org Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India)	Refer Appendix 6 and 6A

	Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
Total		**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for “**Assessment of Liveability in Selected Cities”**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. …………….. (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REOI FOR SHORTLISTING OF CONSULTING FIRMS FOR ASSESSMENT OF LIVEABILITY IN SELECTED CITIES

RESPONSE TO PRE-BID QUERIES

S.NO	QUERY	RESPONSE
	REGARDING ELIGIBILITY	
	'A business entity' - Government entities, formed by cabinet decisions are not incorporated in companies Act/LLP Act. There should be a provision for such entities.	Explained in Clause 2.2 (b) page 7. As per procurement guidelines, State-owned enterprises are eligible to compete if they are: i. Legally and financially autonomous ii. Operate under commercial law iii. Are not under supervision by the agency contracting them In any case, such entities can participate as a consortium partner
	EMD processing fee required in EOI phase or not?	No
	REGARDING FINANCIAL QUALIFICATION CRITERIA	
	How do you define 'financial strength of the organization'? (What secures full marks?)	Information needs to be provided as per Annexure 4 of the REOI. The Procurement Committee will decide the same.
	Financial strength of the firm (Pg. no. 15, 3.1 b) Vague statement: Is there any lower limit?	
	Elucidation required for 'Financial strength evaluation'.	
	Is there any limit of turnover to apply for this bid?	No
	Valuation of consortium to be for 'lead partner' or consortium as a whole?	Technical criteria valuation will be for all consortium partners. For financial strength Lead partner shall only be evaluated.

	REGARDING SCOPE	
	You give assignment in a single company for PAN India. (Can someone apply for few cities only?)	Single selected agency has to carry out the entire assignment for 116 cities.
	There are 116 cities given in Annexure - 1, whether NIUA is going to split this assignment among many organizations or will it be given to one agency?	
	Would single or multiple agencies be deployed to conduct the research? If multiple, what would be min/max size of deliverables(state wise/zone wise)?	
	Please clarify if this is a single project or how would the cities be packaged if multiple projects.	
	Will you select one agency for 116 cities or there will be multiple agencies?	
	Will the complete assignment be taken by a single firm?	
	In case the number of firms are to be engaged, how would the lot be divided?	
	How many bidders will be considered for contract award for all 130 cities/towns.	
	How many firms are to be selected?	
	Can a consultant bid for few states or it has to bid for all the 116 cities?	
	In the background, 114 cities is mentioned whereas Annexure A has names of 116 cities in the list. So what is the exact number?	116 cities

	Standard of Liveability is defined or it has to be redefined by the consultant?	Please refer to the "Liveability Standards in Cities" along with "Methodology for Collection and Computation of Liveability Standards in Cities " which may be downloaded at http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Is the methodology and related indices confirmed or are under development?	
	Do you expect us to contribute to development of indices and calculations?	No
	Once the data is submitted, does the research agency gets a role in policy defining?	No
	What all does city inspection report contains?	In case this refers to 'Inception Reports': Refer 1.2.1.b for details on City wise Inception Report
	What is the definition of a city - Municipality area or UA?	Municipal area
	Will there be separate reports for each city?	Yes
	REGARDING TECHNICAL QUALIFICATION CRITERIA	
	What is the type of expertise required for the assignment?	Refer Clause 3.1 of REOI
	Why is accreditation with B.V. or UV SUD or equivalent necessary?	To ensure quality
	Can 'equivalent' in the above query be elucidated?	Please follow the terms of reference.
	Why specific certification required when we have more experiences of Market Research/Field surveys urban slums surveys/socio- economic surveys?	
	Teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (india) pvt. Ltd., UV SUD South Asia pvt. or of equivalent status and	

	repute (Pg. no. 15, 3.1b) Which all bodies do include under this head? However, it is very difficult to get investigators/team for such a huge assignment	
	Section 3.1(e): Will ISO certifications quality? If yes, please specify how many projects or people to get 30 marks. If no, please specify the kind of accreditation.	
	Consideration of 30 marks in evaluation criteria for accreditation with Bureau veritas / UV SUD is too high. This criterion needs to be dropped to allow wider participation by industry in the project.	No change
	With respect to section 3 (b) of REOI on evaluation parameters, We have significant experience in undertaking field surveys and research and analysis in urban areas including household surveys, property survey and mapping etc. We have well laid out processes for data collection and quality assurance and are ISO 9001-2015 certified. As we mostly use in house survey designers, supervisors and data collectors, we have not worked with external terms specifically accredited by the specific organizations listed in REOI. The specific reference to inspection bodies may be removed in favour of generic quality assurance processes or certification or process demonstration.	
	From 3.1 Evaluation: Within each evaluation parameter, how will the marking be done? Is there any breakup of marks based on no. of assignments?	This will be decided by the Procurement Committee

	From 3.1 - Experience of staff- 25 marks: For how many similar assignments, maximum 25 marks will be awarded?	
	Point 3: Criteria for evaluation 3.1: Evaluation of applications a. What is the min number of experience for general experience? b. What is the minimum of staff having experience for similar assignment c. What is the minimum number of assignments related to market research and field survey in urban areas? d. What is the minimum number of assignments for experience of the firm in implementing assignments for analysis and assessment of data related to governance, transportation etc.	
	What is the score given to each assignment	
	The query is for the 'criteria for evaluation' marked at section 3. Under section 3.1 sub-point b, 4 parameters are grouped in 2 and marked as (3) and (4). The parameters include experience of the firm and the related assignments. The collective staff experience defines the firm's experience thus in that view the pointers are same except the expectations raised for the data collectors to be accredited with inspection bodies. Suggestion: In order to get more reliable data, one pointer should be added or weightage should be given to the consultants who are conducting the field work digitally.	

	Geotag information gives you more accuracy in terms of relying on data collected from that city itself.	
	On evaluation criteria what would be treated as Gold standard for each parameter i.e. what credential will make one eligible for full marks under each? What financial strength criteria will ensure 15 marks? How many projects as reference/experience?	
	Is the surveys held as large scale urban planning assignments will be counted or not?	Eligibility based on project details to be evaluated by the Procurement Committee
	Can we obtain global experience?	Yes
	Can study conducted in domain like governance, transportation, environment, conducted globally be shown in the experience?	Yes
	Is our global experience in similar studies relevant here?	Yes
	Reference Appendix 6 - Pg 28 ; Specific experience of the firm in implementing……….lead firm. Please clarify why pvt. Companies are mentioned and what kind of affiliation/equivalent status needed.	Self-Explanatory
	Reference Appendix 5,7 - Pg 26 and 30; A copy of the work order/agreement.........as per clause 2.19 Work order may not mention the survey work in most of the cases. But projects like PMAY are totally based on ground level survey as per the SOW mentioned by MOHUPA. Please consider these projects as under survey related work.	Project details to be submitted as per REOI

	REGARDING METHODOLOGY	
	Is primary data collection expected or the data needs to be collected from the ULB officials?	Both
	From 1.2 Brief TOR: What should be the methodology for data collection? Is this fixed or we have flexibility to opt for digital or other solutions?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Research mode : physical surveys, government data, online research about the city. These need to be defined (for accuracy) and how to submit data (pre defined formats)	
	Please elaborate on secondary data availability from different line departments and primary data collection requirements in the project.	
	Data collection and field survey- What would be the universe/TG selection process?	
	REOI refers to a detailed methodology already developed for this experience. Will the selected consultant be allowed to improvise it?	
	Will usage of 'lateral' or 'proxy' data sources such as satellite imagery to access traffic patterns, built density, green cover, water bodies, open spaces etc, telephone data on mobility patterns etc be supported or encouraged?	
	What does identification of data resources and submission of resources of data mean?	This will be part of the detailed Terms of Reference as part of the Request for Proposal

	Has there been a baseline study conducted on the availability of administrative data across all the indicators mentioned in REOI? If so, will that be made available to the consultants at RFP stage?	No.
	Will data collected previously under other mission and programs viz. Swachh Survekshan etc. be made available for Liveability Index? (Can be very useful and avoid duplication of efforts)	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Will the government agencies provide support? To what extent? How?	
	Can data collection be a 'computer assisted personal interview' using CAPI devices (hand handled). REOI does mention that 'maintain and submit raw data and data collection forms to NIUA'.	
	Are you okay with digital form of data collection as you mentioned to submit raw data and data collection forms?	
	How is data to be submitted? Digitally or manually?	
	REGARDING DURATION OF ASSIGNMENT	
	What is the duration of this assignment?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	What would be the expected duration of the project(s)?	
	Once the purpose is defined then the research will make more sense. Also regarding the research - What is the time frame?	
	How much time is available for the actual execution of the project?	

	OTHER QUERIES	
	Define the purpose of research.	Please refer to the "Liveability Standards in Cities" and the "Methodology for Collection and Computation of Liveability Standards in Cities " documents, which can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Assuming [that] in data collection for the government, [it is necessary] to identify the core areas which need to be addressed in the city, then the research need to be divided into three main parts - a. Physical structure - infrastructure b. social structure - occupation/education c. governance structure - how are things managed for a common man's life	
	Existing city infrastructure is required? Mapping the existing infrastructure in terms of connectivity, utilities, garbage management, education, employment opportunities and air quality.	
	Social structure : Liveability? What is the basic parameter which needs to be defined?	
	Governance structure : How is a common man's basic life and need governed? Who is accountable and answerable? Does the existing structure meets a common man's need?	
	Please provide the link for accessing liveability standards. Current link redirects to a page where it asks for EOI for Kakinada KMPs.	

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: *National Institute of Urban Affairs*
(An autonomous body under Ministry of Urban Affairs)

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

Issued on: [date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The National Institute of Urban affairs, (an autonomous body under Ministry of Urban Development), the implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Assessment of Liveability in 116 Cities cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposal (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank’s Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Form of Contract (Time Based)

6. Please inform us by *[insert date]*, in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal’s submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant*[1]*]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development (g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant. (h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract. (i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices). (j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

over-write, the provisions of the ITC.

(k) “Day” means a calendar day.

(l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) “Government” means Government of India.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) “MoUD” means Ministry of Urban Development

(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP.

(v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP.

(w) “Services” means the work to be performed by the Consultant

	pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense. 2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth

	below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

	services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and: (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

	To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of	**8.1.** The Consultant shall bear all costs associated with the

Preparation of Proposal	preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with

	Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and Amendment of RFP	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of

	all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial

Content	information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client’s country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.
C. Submission, Opening and Evaluation	
17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form

of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]".

17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal.

17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any

	extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC. 19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable.

	20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall

	technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	

a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a

	Lump-Sum contract shall not be negotiated. 28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: National Institute of Urban Affairs (Autonomous body under** Government of India) under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated 2016 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:_____________________________ Time: ____ Address: Telephone: ____ Facsimile: ____ E-mail: ______________________ Contact person/conference coordinator:*[insert name and title]* ______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

3	Not used
4.1	*NA*
5	Not used
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* http://web.worldbank.org/external/default/main?theSitePK=84266&contentMDK=64069844&menuPK=116730&pagePK=64148989&piPK=64148984&sort_on=SUPP_CTRY_NAME&sort_order=ascending&sort_data=text
7	Not used
8	Not used
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND

	2d Inner Envelope with the Financial Proposal (if applicable): (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input: 30 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.

16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates:** Yes
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes -reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **Floor** **Place**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____** 2017 *[for example, 15 June 2017]*

	Time: 15:00 IST *[insert time in 24h format, for example, “16:00 local time”]* *[If appropriate, add translation of the warning marking [“Do not open....”] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insert the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered: Yes**/No **The opening shall take place at:** *[Insert: “*same as the Proposal submission address*” OR insert and fill in the following:* Street Address: Floor, room number: Room No.____, ____Floor, City: New Delhi Country: India **Date**: same as the submission deadline indicated in 17.7. **Time:** *[insert time in 24h format, for example – “16:00 local time]* *[The time should be immediately after the time for the submission deadline stated in 17.7]*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals NA**
20	Not used
21.1 (for FTP)	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**

(a)	*Technical approach and Methodology* *{Notes to Consultant:* *Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from* http://smartcities.gov.in/content/innerpage/otherstoolkit.php. *As part of their methodology, Consultants should indicate* o *A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same* o *The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.* o *The Methodology should also indicate the technology to be used for data collection and ensuring data veracity* The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing* *{Notes to Consultant:* *Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).* *Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.* *The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are*	10

	accredited must also be provided. *Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}*	
	Total points for criterion (ii) –50 points *{Notes to Consultant: The Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts.}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	10
Survey and Sampling Specialist	6
Data Analytics and Indexing Specialist	6
Urban Transport Specialist	6
Environment Specialist	6
GIS Specialist	6
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following two sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the two criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

22 Not used

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
24	Not used
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse the Service Tax to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the

	weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, ___________, New Delhi -1100
29	Not used
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: _________________** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
“√ “ If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
“√” If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant’s Organization and Experience.	
√		TECH-2A	A. Consultant’s Organization	
√		TECH-2B	B. Consultant’s Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to National Institute of Urban Affairs in Carrying out surveys in 116 cities of India in order to assess Liveability Standards for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years. (Please give details of not more than 10 assignments)**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report or equivalent deliverable. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of..............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.

Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php.

As part of their methodology, Consultants should indicate

o A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same

o The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.

o The Methodology should also indicate the technology to be used for data collection and ensuring data veracity

The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.}

d) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff

Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).

Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.

The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are accredited must also be provided.

Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}

FORM TECH-5

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Assessement of Liveability Standards in selected 116 cities of India in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	Cost			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	Name	Position (as in TECH-6)	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	____________	______	[*Home*]	______				
N-2			[*Field*]	______				
___	____________			______				
___								
___				______				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

   (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

   (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

   (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$$R_i = R_0 \text{ x } (I_i/I_0)$$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;

   b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;

   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not

available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:
    a. Database of aggregate data in the format discussed and finalized with NIUA;
    b. All raw data and data sheets (digital format);
    c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection

Report	Time line	Documents	Deliverables and Contents
			geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

***** Timelines for subsequent years will be as decided by NIUA.

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development

and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

7.6.1 Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

7.7 TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

7.7.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

STANDARD FORM OF CONTRACT

Section 8

Consultant's Services

Lump-Sum

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name: Capacity Building for Urban Development

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

[Credit #: 4997-IN

Contract No. CBUD/SD/17
between

National Institute of Urban Development, New Delhi
____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ______________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, **National Institute of Urban Affairs (NIUA)**(hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) The client is an autonomous body established by the Ministry of Urban Development, New Delhi (MoUD). MoUD hi has received a credit from the *International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

    (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
    (b) The Special Conditions of Contract;
    (c) Appendices:

    Appendix A: Terms of Reference
    Appendix B: Key Experts
    Appendix C: Breakdown of Contract Price

    In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

    (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
    (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated July 2016.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "CBUD" Means Capacity Building for Urban Development

(f) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(h) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(i) "Day" means a working day unless indicated otherwise.

(j) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

	(l) "Foreign Currency" means any currency other than the currency of the Client's country. (m) "GCC" means these General Conditions of Contract. (n) "Government" means the government of India. (o) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (p) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal. (q) "Local Currency" means the currency of the Client's country. (r) "MoUD" means ministry of Urban development (s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract. (t) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them. (u) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written. (v) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto. (w) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract. (x) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.
2. Relationship between the Parties	2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf

	hereunder.
3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must

	include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the “Effective Date”) of the Client’s notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not

	foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
b. No Breach of Contract	17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
c. Measures to be Taken	17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. 17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

	(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. 17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.
18. Suspension	18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.
19. Termination	19.1. This Contract may be terminated by either Party as per provisions set up below:
a. By the Client	19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f): (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to

	Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. 19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.
b. By the Consultant	19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause. (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue. (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days. (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1. (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.
c. Cessation of Rights and Obligations	19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and

	obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.
d. Cessation of Services	19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.
e. Payment upon Termination	19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: (a) payment for Services satisfactorily performed prior to the effective date of termination; and (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General	
a. Standard of Performance	20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties. 20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

	20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.
b. Law Applicable to Services	20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law. 20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country. 20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.
21. Conflict of Interests	21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
a. Consultant Not to Benefit from Commissions, Discounts, etc.	21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment. 21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any

	discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
b. Consultant and Affiliates Not to Engage in Certain Activities	21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.
c. Prohibition of Conflicting Activities	21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
d. Strict Duty to Disclose Conflicting Activities	21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
22. Confidentiality	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.
23. Liability of the Consultant	23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.
24. Insurance to be Taken out by the Consultant	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in

	Clause GCC 13.
25. Accounting, Inspection and Auditing	25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs. 25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)
26. Reporting Obligations	26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.
27. Proprietary Rights of the Client in Reports and Records	27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client. 27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.
28. Equipment, Vehicles and	28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the

Materials	Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value. 28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts	29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**
30. Replacement of Key Experts	30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.
31. Removal of Experts or Sub-consultants	31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

	31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions	32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.
33. Access to Project Site	33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client

	will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.
34. Change in the Applicable Law Related to Taxes and Duties	34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1
35. Services, Facilities and Property of the Client	35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**
36. Counterpart Personnel	36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**. 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
37. Payment Obligation	37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price	38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**. 38.2 Any change to the Contract price specified in Clause 38.1 can

	be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.
39. Taxes and Duties	39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**. 39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.
40. Currency of Payment	40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.
41. Mode of Billing and Payment	41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**. 41.2.1 *Advance payment:* No advance payment would be made to the consultant. 41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon

	promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**. 41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.
42. Interest on Delayed Payments	42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith	43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement	44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.
45. Dispute Resolution	45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank’s Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

  (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

  (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

  (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

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[1] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** the *land*
4.1	**The language is : English**.
6.1 and 6.2	**The addresses are:** Client: National Institute of Urban Affairs, New Delhi ____________________ Attention : ____________________ Facsimile : ____________________ E-mail (where permitted):____________________ Consultant : ____________________ ____________________ Attention : ____________________ Facsimile : ____________________ E-mail (where permitted) :____________________
8.1	*NA*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*____________________ **For the Consultant:** *[name, title]*____________________
11.1	**The effectiveness conditions are the following**: Signing of the contract.
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days[insert date]**.

	Confirmation of Key Experts’ availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 12 (twelve) Months which may be extended upto two times for 12 months each upon successful completion of their and at the discretion of the client.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3 :** Yes

23.1	**No additional provisions.**
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability insurance, with a minimum coverage of** equivalent of the contract amount; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage as per Motor Vehicle Act 1988.; (c) Third Party liability insurance, with a minimum coverage of one million.; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.2	**The Consultant shall not use these** *.**documents, database and software*** **for purposes unrelated to this Contract without the prior written approval of the Client**.
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates**

	provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	**The Client warrants that "the Client shall reimburse the Consultant indirect taxes i.e. Service Tax imposed, under the applicable law in the Client's country, on the Consultant.**
41.2	**The payment schedule:** **For the local currency ; [Insert the Amount]** 1. Payment of remuneration will be as follows ➢ Inception Report : Twenty percent (20 %) will be paid on acceptance/ approval of the inception report. ➢ Draft City Assessment Report : Fifty percent (50 %) will be paid on acceptance/ approval of Draft Final Report. ➢ Final City Assessment Report : Thirtypercent (30 %) will be paid on acceptance/ approval of Draft Final Report. **Note: The Consulting firm will submit the invoice in the name of Project Director, CBUD Project, Ministry of Urban Development, Nirman Bhawan, Maulana Azad Road, New Delhi- 110011 to the client. The client, after reviewing the invoice of the Consultant, shall recommend the payment along with the letter of acceptance/approval of the deliverable and any other information desired by the Project Director, CBUD to the Ministry of Urban Development (MoUD) for making the payment.**
41.2.1	***Not Applicable***
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to

	arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Council of Arbitrators, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi (b) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

	4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in New Delhi; (b) the *English* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

1. Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The 'Liveability Standards in Cities' document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability Standards in Cities' and develop a 'City Liveability Index'. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Appendix D), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$$R_i = R_0 \times (I_i / I_0)$$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

2. Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

3. Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Appendix D). The study shall inter-alia include:
    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;
    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
    c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:
    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;
    b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;
    c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection

methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format discussed and finalized with NIUA;
  b. All raw data and data sheets (digital format);
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

4. Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

5. Timelines and Deliverables for Year 1*

Report	**Time line**	**Documents**	**Deliverables and Contents**
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed

Report	Time line	Documents	Deliverables and Contents
			and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

6. ***** Timelines for subsequent years will be as decided by NIUA.

7. Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

8. TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

8.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.

c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

8.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

……

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - LIST OF CITIES

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788

Sl. No.	Name of State	Name of City	Population
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100

Sl. No.	Name of State	Name of City	Population
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358

Sl. No.	Name of State	Name of City	Population
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RFP on Liveability Index

2 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Thu, May 25, 2017 at 4:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Utpal Deka <utpal.deka@gmail.com>, nrajadhyaksha@ipeglobal.com

Dear Madam,

Please find enclosed herewith a RFP for shortlisting of firms for assessment of livability of selected cities out of 79 indicators. At present, 116 cities have been identified and the same may be varied.

As communicated earlier, the procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The REOI was already issued by NIUA. The RFP will be issued to the shortlisted firms. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

Regards,

G Vijay Kumar

Under Secretary the Government of India,
Ministry of Urban Development,
Smart Cities Division, Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Part I RFP Liveability Index draft V5.docx
269K

Vasudha Thawakar <vsarda@worldbank.org> Wed, May 31, 2017 at 1:50 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, "Raja@meghrajindia.com" <Raja@meghrajindia.com>, "nrajadhyaksha@ipeglobal.com"

<nrajadhyaksha@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr. Kumar:

Thank you for the below attached email for the selection of Consultant for Assessment of livability index, to be procured by NIUA (on behalf of MoUD), subject to following :

(i) The PMU provides hand holding support to NIUA for the procurement process

(ii) Bank's Guidelines for Selection of Consultants – January 2011, updated July 2014 is followed

(iii) Bank's standard format for REoI, RFP, TER and Contract Agreement is used

(iv) Use of STEP for the procurement process

From the below email, we observe that the REoI has already been advertised. Since this is a prior review contract, the REoI and subsequent steps, needs to be cleared by Bank (through STEP). You may kindly advise the Client to send the documents through STEP for Bank's review.

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

Begin forwarded message:

From: "Vijay Kumar" <g.vijaykumar.moud@gmail.com>
To: "Vasudha Thawakar" <vsarda@worldbank.org>, "Raja Dawn"

<Raja@meghrajindia.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>,
"utpal.deka@gmail.com" <utpal.deka@gmail.com>,
"nrajadhyaksha@ipeglobal.com" <nrajadhyaksha@ipeglobal.com>
Subject: RFP on Liveability Index

[Quoted text hidden]

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

	(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant. (u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) “Services” means the work to be performed by the Consultant pursuant to the Contract. (x) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) “TORs” (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants’ expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant’s Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client’s interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client’s staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank’s financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

> 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____**21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

<table>
<tr><td></td><td>The opening shall take place at:
<i>[Insert: “</i>same as the Proposal submission address<i>” OR insert and fill in the following:</i>
Street Address: Maulana Azad Road
Floor, room number: Room No.____, ____Floor, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – “16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:
<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
<tr><td>(a)</td><td><i>Technical approach and Methodology</i></td><td>30</td></tr>
<tr><td>(b)</td><td><i>Work Plan</i></td><td>10</td></tr>
<tr><td>(c)</td><td><i>Organisation and staffing</i></td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (ii) –50 points
<i>{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}</i></td><td>50</td></tr>
</table>
</td></tr>
</table>

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

▪▪▪

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ______________________________________
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ______________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of..............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 "Home" means work in any place other than Client's working place mentioned in the RfP.
4. 'Field" means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

▬ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	Name	Position (as in TECH-6)	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1___	___	___	[*Home*]	___	▨	▨	▨	
N-2___			[*Field*]	___				
___	___			___	▨	▨	▨	
___				___				
___				___				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];
- (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

---

[4] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

[7] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

---

[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards in Cities’ are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in Cities’ across the various standards and develop a ‘City Liveability Index’ – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **‘Assignment’**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;

c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:

a. Database of aggregate data in the format attached at Annexure X;

b. All raw data and data sheets;

c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ____________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and M/s The Economist Group Limited.

Dated: ______________________

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ……..……….. day of the month of *January,2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar,
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days’ written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days’ written notice in case of the event referred to in (e); and at least five (5) calendar days’ written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** ***Mr. G.Vijay Kumar*** ***Under Secretary to the Government of India,*** ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
12.1	**Termination of Contract for Failure to Become Effective:**

	The time period shall be One Month
13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining

	nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of

	the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards in Cities’ as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in Cities’ across the various standards and develop a ‘City Liveability Index’ – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
    a. Database of aggregate data in the format as mutually agreed
    b. All raw data and data sheets;
    c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

Note: During Negotiation the above mentioned list of the cities is mutually agreed.

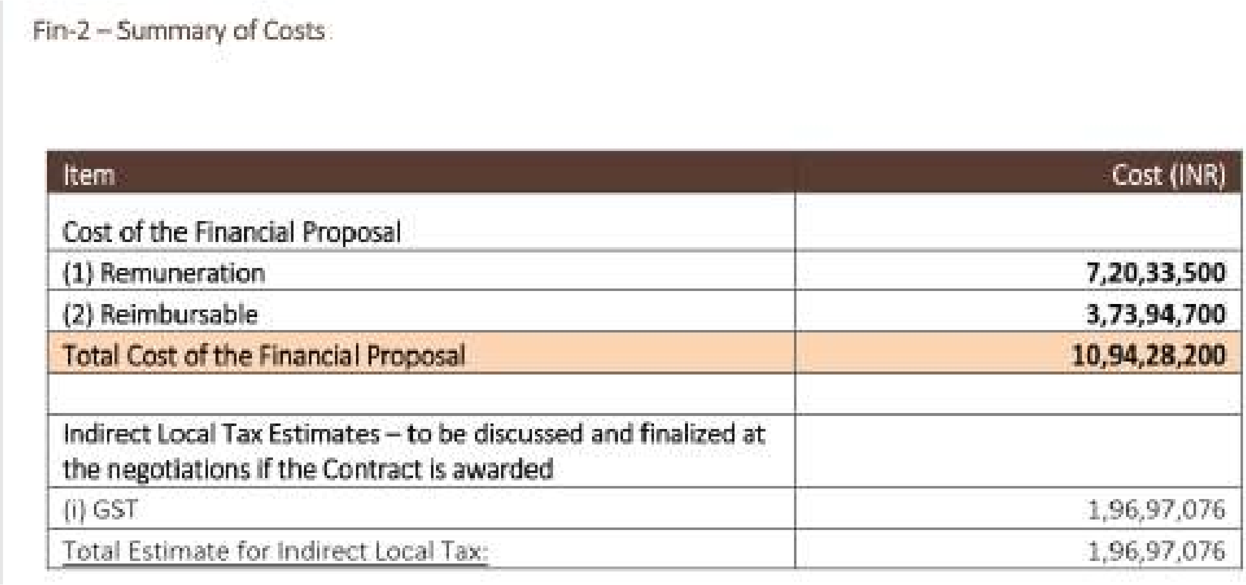
APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

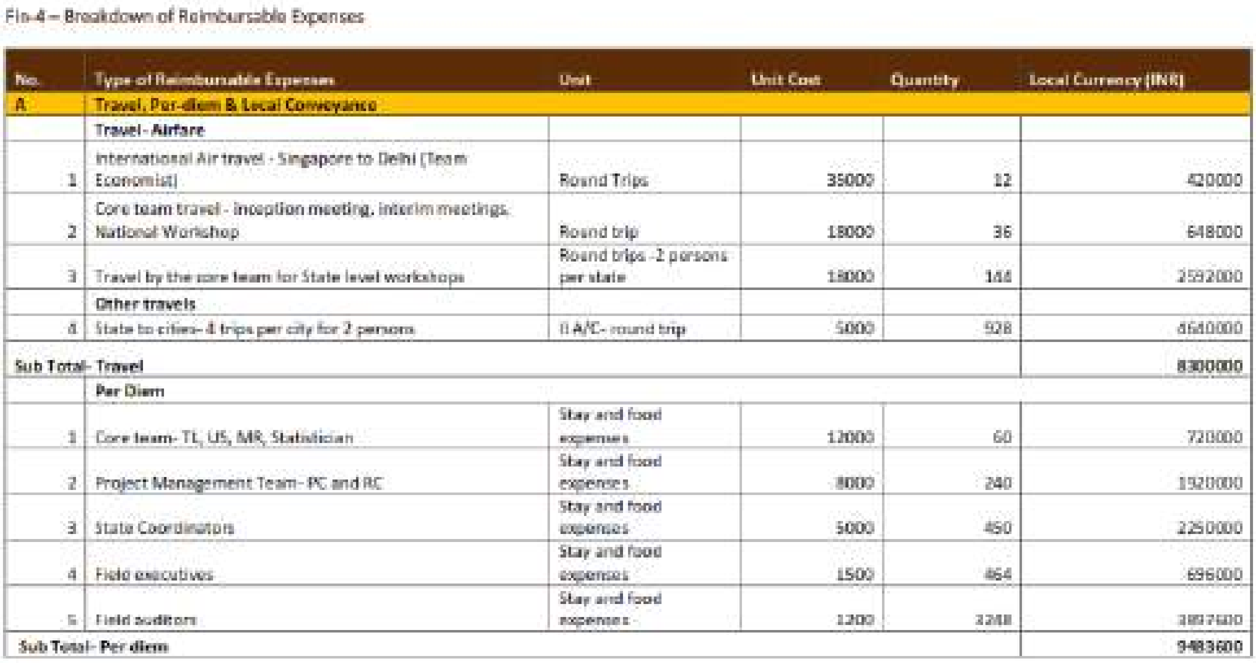


Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

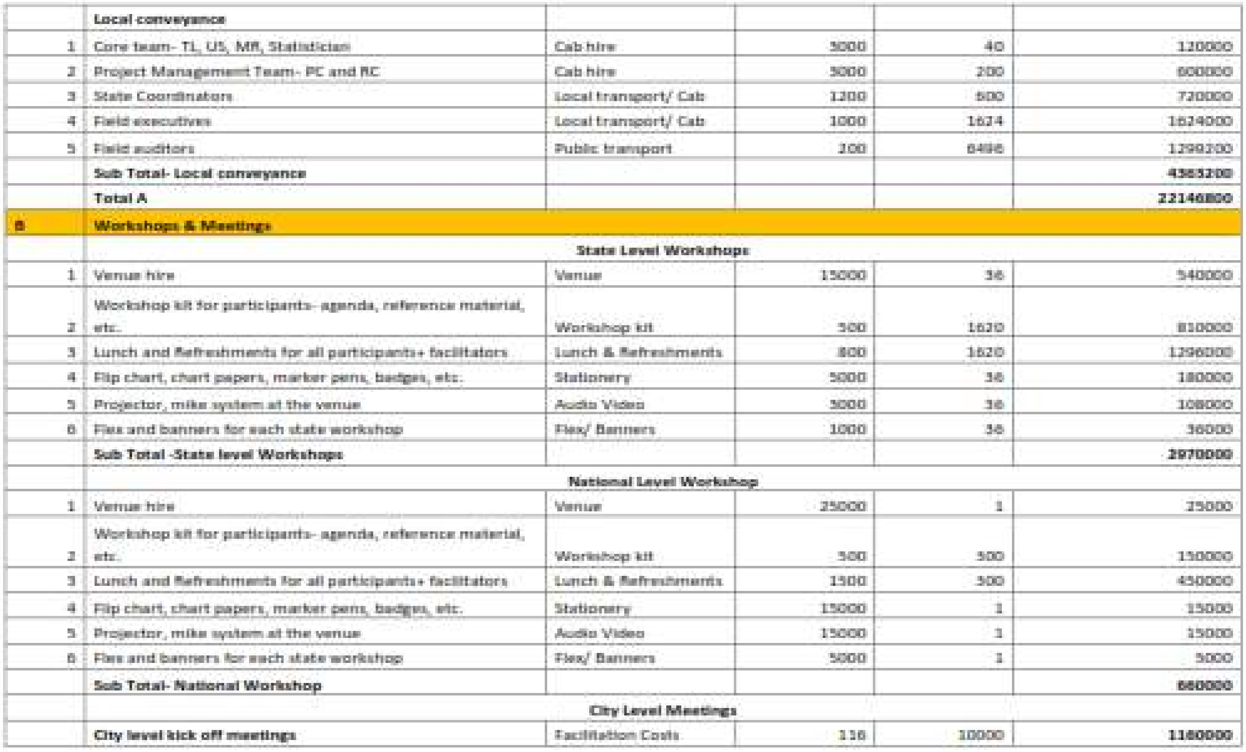
Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-15	Tripti Sharma	Project Coordinator	Home	682000	4	2728000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	550000	10	5500000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

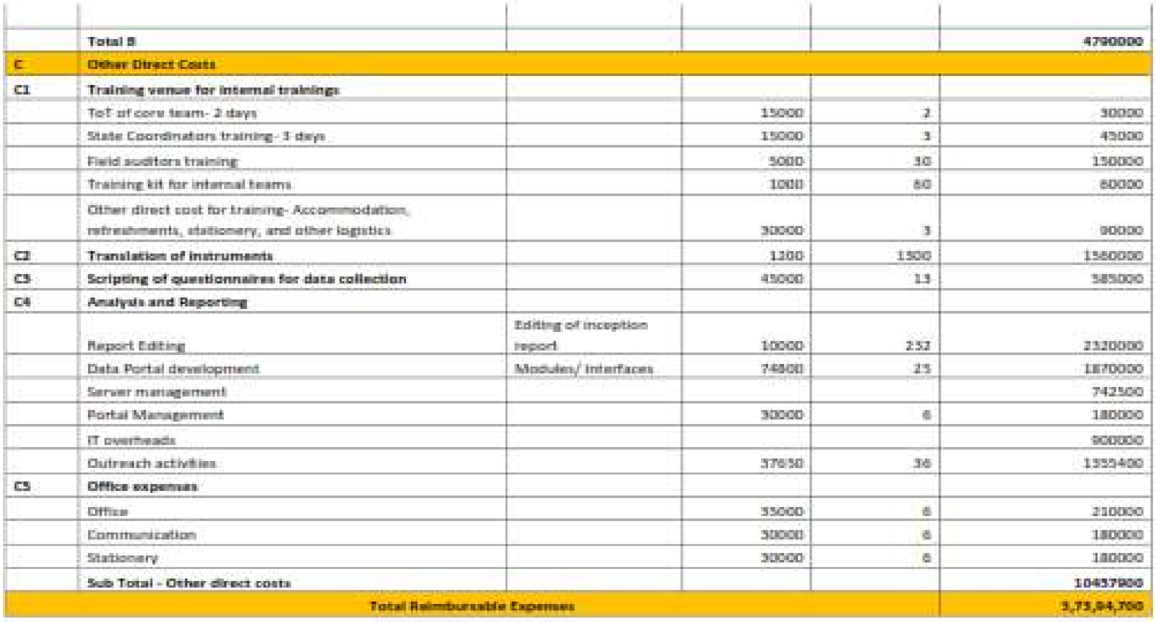


Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	Travel, Per-diem & Local Conveyance				
	Travel - Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**



	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
	State Level Workshops				
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
	National Level Workshop				
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
	City Level Meetings				
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**



	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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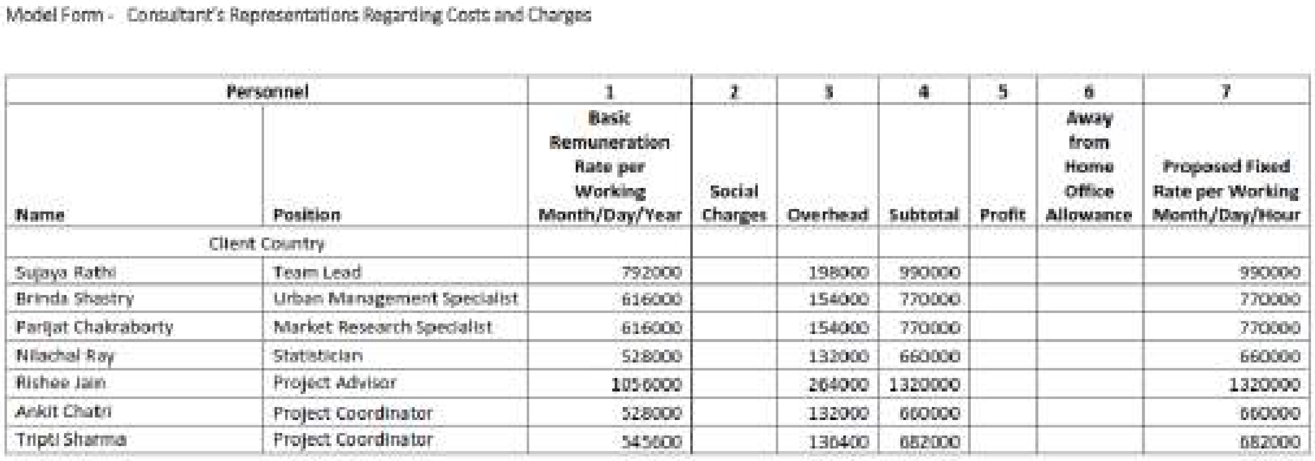
* If more than one currency, add a table

Signature

Date

Name and Title:



Model Form - Consultant's Representations Regarding Costs and Charges

Personnel		1	2	3	4	5	6	7
Name	**Position**	**Basic Remuneration Rate per Working Month/Day/Year**	**Social Charges**	**Overhead**	**Subtotal**	**Profit**	**Away from Home Office Allowance**	**Proposed Fixed Rate per Working Month/Day/Hour**
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ______________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and The Economist Group Limited.

Dated: 13th February 2018

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ………………. day of the month of *February, 2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium with M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** ***Republic of India***.
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention: Mr. G.Vijay Kumar** Under Secretary,Ministry of Housing and Urban Affairs **Facsimili:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** *Mr. G.Vijay Kumar* *Under Secretary,* ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
11.1	No additional provisions
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**

13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**
39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.

41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each

	appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or

	(c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
    c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
    b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
    c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;
vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;
vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);
viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format as mutually agreed
  b. All raw data and data sheets;
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

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Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Combined Evaluation Report and Draft Negotiated Contract submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

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STEP Admin <noreply@worldbankgroup.org> Thu, Feb 8, 2018 at 5:26 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "pmmadan@worldbank.org" <pmmadan@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "vsarda@worldbank.org" <vsarda@worldbank.org>, "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Combined Evaluation Report and Draft Negotiated Contract for Selection of Consulting Services for Assessment of Liveability indeax for 116 cities in India – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the combined technical and financial evaluation report and the draft negotiated contract for the above-mentioned consultancy service received on 2018/01/19. Subsequently, Bank had raised certain queries on the draft contract through email dated 23rd Jan. 2018 which were clarified through email dated 6th February, 2018. Based on the clarifications and information provided through email dated 6th Feb. 2018 and 7th Feb. 2018, the Bank has no objection to your signing the draft negotiated contract, **subject to Bank's INT teams clearance on The Economist Group**, as follows:

Contract Description	Name of Consultant/Firm	Country	Currency	Amount
Selection of Consulting Services for Assessment of Liveability indeax for 116 cities in India	ATENA INFONOMICS INDIA PRIVATE LIMTED	India	INR	109,428,200.00
	IPSOS RESEARCH PRIVATE LIMITED	India		
	THE ECONOMIST GROUP LIMITED	United Kingdom		

Please forward a copy of the signed contract to the Bank prior to requesting or making any payments under this contract.

In accordance with the requirements in the applicable Regulations please publish the contract award information within the two weeks. For instructions on the specific publishing requirements, you may refer to the Bank’s Procurement Notices webpage.

Contract award notices will be automatically published in UNDB Online and the World Bank’s external website

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

FW: About The Economist Group

Rakesh Gujral <rgujral@ipeglobal.com> Thu, Feb 15, 2018 at 6:13 PM
To: "g.vijaykumar@nic.in" <g.vijaykumar@nic.in>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>, Vijay Kumar <g.vijaykumar.moud@gmail.com>

Fyi pl.

With warm regards,

Rakesh Gujral

IPE GLOBAL
Expanding Horizons. Enriching Lives.

Financial Management Expert, World Bank Funded CBUD project,

Ministry of Housing and Urban Affairs

Nirman Bhawan, New Delhi.

Associate Director,IPE Global Limited,IPE Global House,B-84, Defence Colony,

Bhishm Pitamah Marg, New Delhi-110024

Mob: +91 9958002856

India Offices ~ New Delhi | Bhopal | Bhubaneshwar | Kolkata | Lucknow | Patna

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From: Parijat Chakraborty [mailto:Parijat.Chakraborty@ipsos.com]
Sent: 07 February 2018 17:14
To: dir-nulm@nic.in
Cc: Rakesh Gujral <rgujral@ipeglobal.com>
Subject: About The Economist Group

Dear sir,

Please refer to our discussions.

The Economist Intelligence Unit (EIU) is a business within The Economist Group. It is a highly reputed organization and working with many esteemed organizations in the world. More information about the organization can be accessed at www.eiu.com. The attached affidavit also confirms that they are not blacklisted anywhere.

We are not aware of organizations named Economic Consulting Group, UK or Economic Consultancy Associates, UK. These appear to be different organizations and not connected to our partner EIU.

Thanks and regards,

Parijat Chakraborty| *Executive Director - Ipsos Public Affairs and Loyalty*

Ipsos

801, 8th Floor, Vipul Square

B-Block, Sushant Lok, Part-1

Gurgaon – 122016, Haryana.

Tel.: + 91 0124 4692400
Direct : +91 0124 4692515
Mobile : +91 98104 96838
parijat.chakraborty@ipsos.com

www.ipsos.com

IT'S TIME TO
CHANGE THE GAME

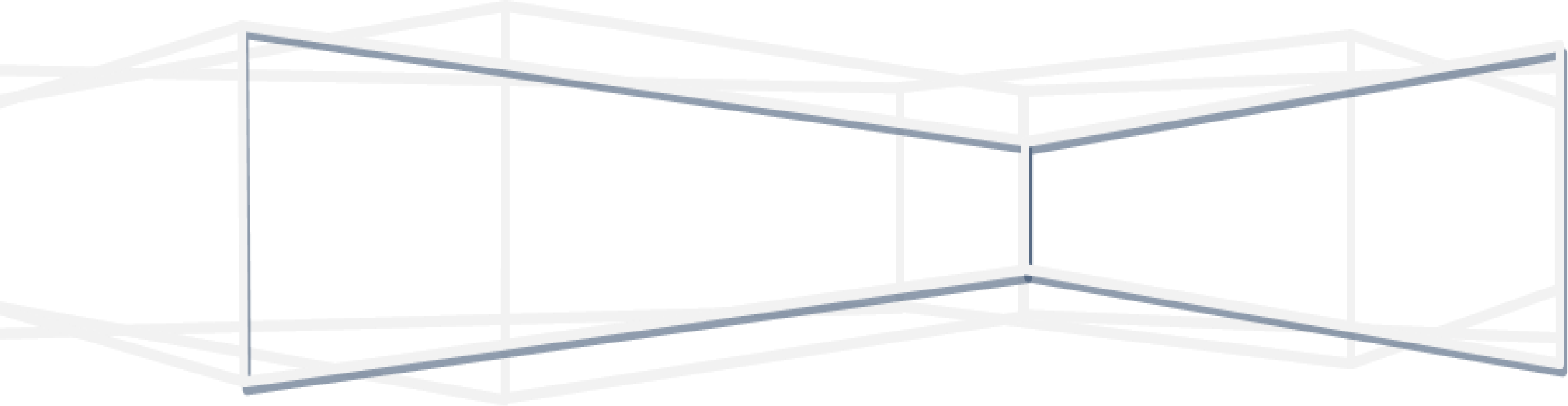
GAME CHANGERS Ipsos

MoHUA- EIU Affidavit.docx
283K

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Technical Proposal



Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos

Ipsos Public Affairs

A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,

And

ATHENA
INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited

#15, Arcot Street, T Nagar, Chennai 600017, Tamil
Nadu, India

The Economist Intelligence Unit

The Economist Group Limited (Sub-Consultant)

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FORM TECH 1:

Technical Submission Proposal Form

TECH-1: TECHNICAL PROPOSAL SUBMISSION FORM

New Delhi, 26th December 2017

To:

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

We, the undersigned, offer to provide the consulting services for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Proposal.

We are submitting our Proposal a joint venture with: Ipsos Public Affairs with legal address at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India as lead member and Athena Infonomics India Private limited with legal address at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, India as Associate Member. We have attached a copy of our letter of intent to form a joint venture signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

And

We are submitting our Proposal with the following firms as Sub-consultants: The Economist Group Limited having its registered office at 20 Cabot Square, London, E14 4QW, United Kingdom

We hereby declare that:

a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.
b) Our Proposal shall be valid and remain binding upon us for 90 days (the period of time specified in the Data Sheet, Clause 12.1).
c) We have no conflict of interest in accordance with ITC 3.
d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.
e) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.]
f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than

those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than 15th January (the date indicated in Clause 30.2 of the Data Sheet).

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: Parijat Chakraborty

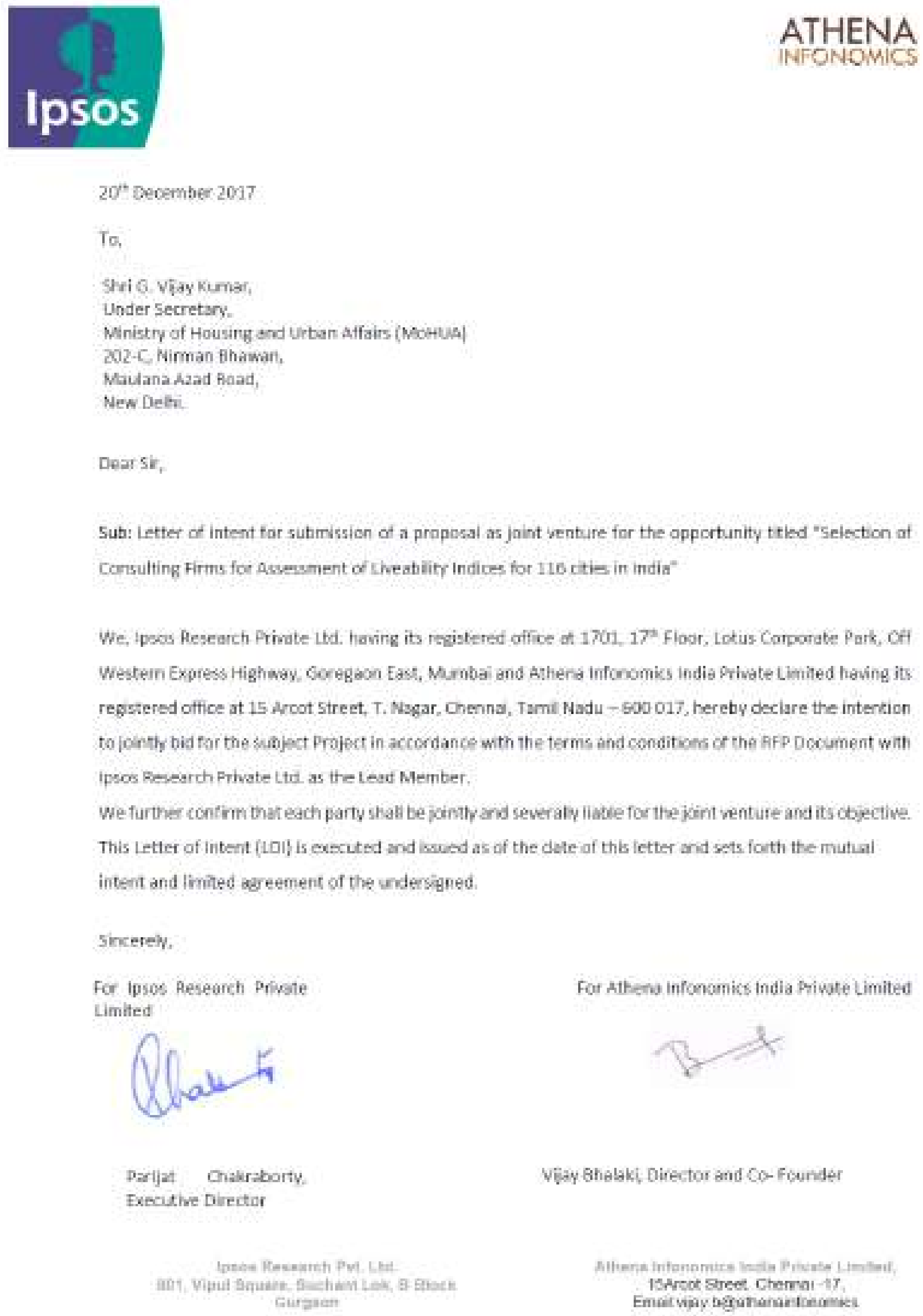
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

Letter of Intent to form a Joint Venture



Ipsos

ATHENA
INFONOMICS

20th December 2017

To,

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.

Dear Sir,

Sub: Letter of intent for submission of a proposal as joint venture for the opportunity titled "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India"

We, Ipsos Research Private Ltd. having its registered office at 1701, 17th Floor, Lotus Corporate Park, Off Western Express Highway, Goregaon East, Mumbai and Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, hereby declare the intention to jointly bid for the subject Project in accordance with the terms and conditions of the RFP Document with Ipsos Research Private Ltd. as the Lead Member.

We further confirm that each party shall be jointly and severally liable for the joint venture and its objective.

This Letter of Intent (LOI) is executed and issued as of the date of this letter and sets forth the mutual intent and limited agreement of the undersigned.

Sincerely,

For Ipsos Research Private Limited	For Athena Infonomics India Private Limited
Parijat Chakraborty, Executive Director	Vijay Bhalaki, Director and Co- Founder

Ipsos Research Pvt. Ltd.
801, Vipul Square, Sushant Lok, B Block
Gurgaon

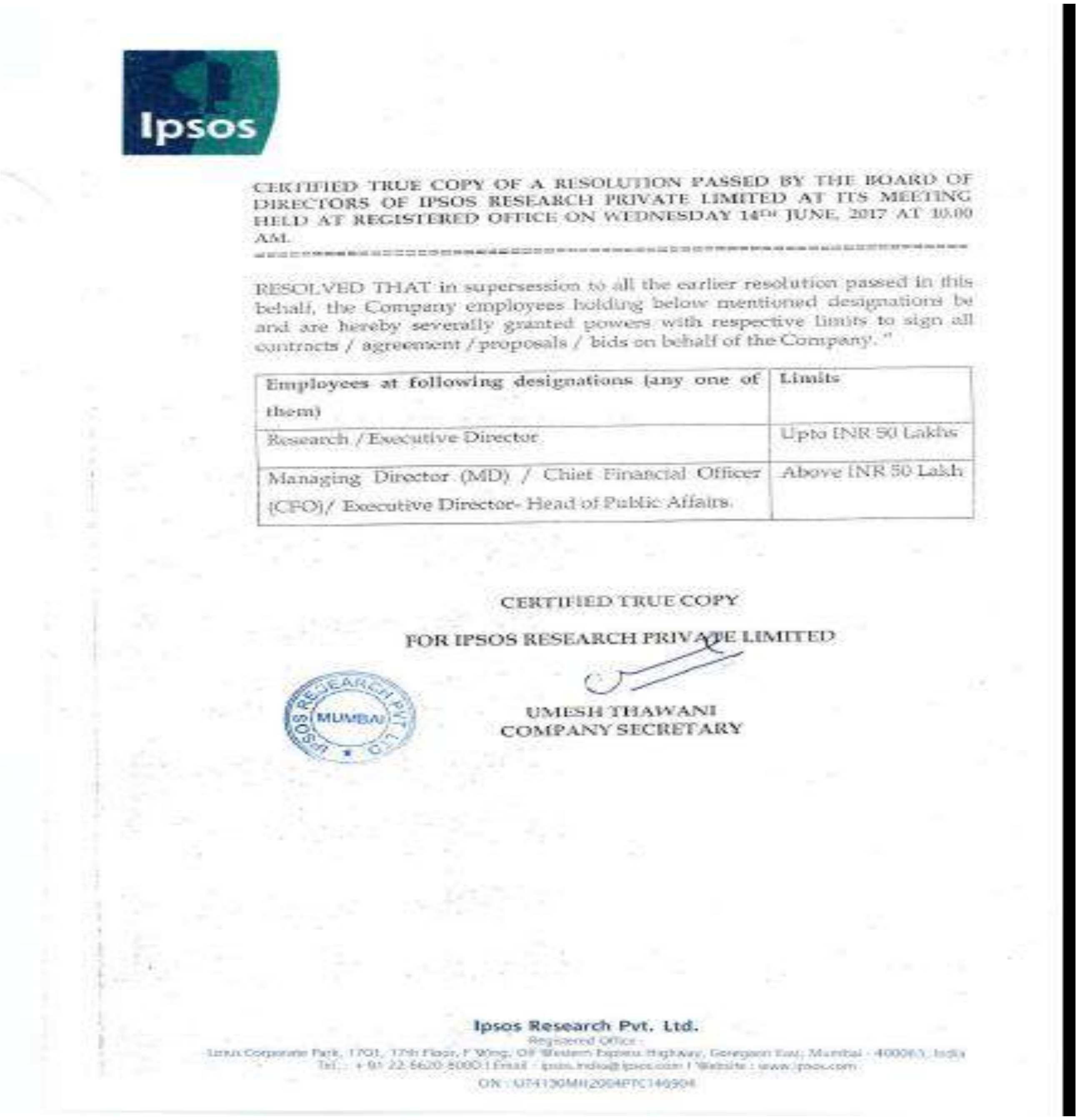
Athena Infonomics India Private Limited,
15Arcot Street, Chennai -17,
Email vijay.b@athenainfonomics

Power of Attorney to sign the Proposal

Ipsos authorisation

Power of Attorney

The proposal has been signed by Executive Director – Head of Public Affairs authorized by Board Resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY 14TH JUNE, 2017 AT 10.00 AM.

RESOLVED THAT in supersession to all the earlier resolution passed in this behalf, the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreement / proposals / bids on behalf of the Company."

Employees at following designations (any one of them)	Limits
Research / Executive Director	Upto INR 50 Lakhs
Managing Director (MD) / Chief Financial Officer (CFO)/ Executive Director- Head of Public Affairs	Above INR 50 Lakh

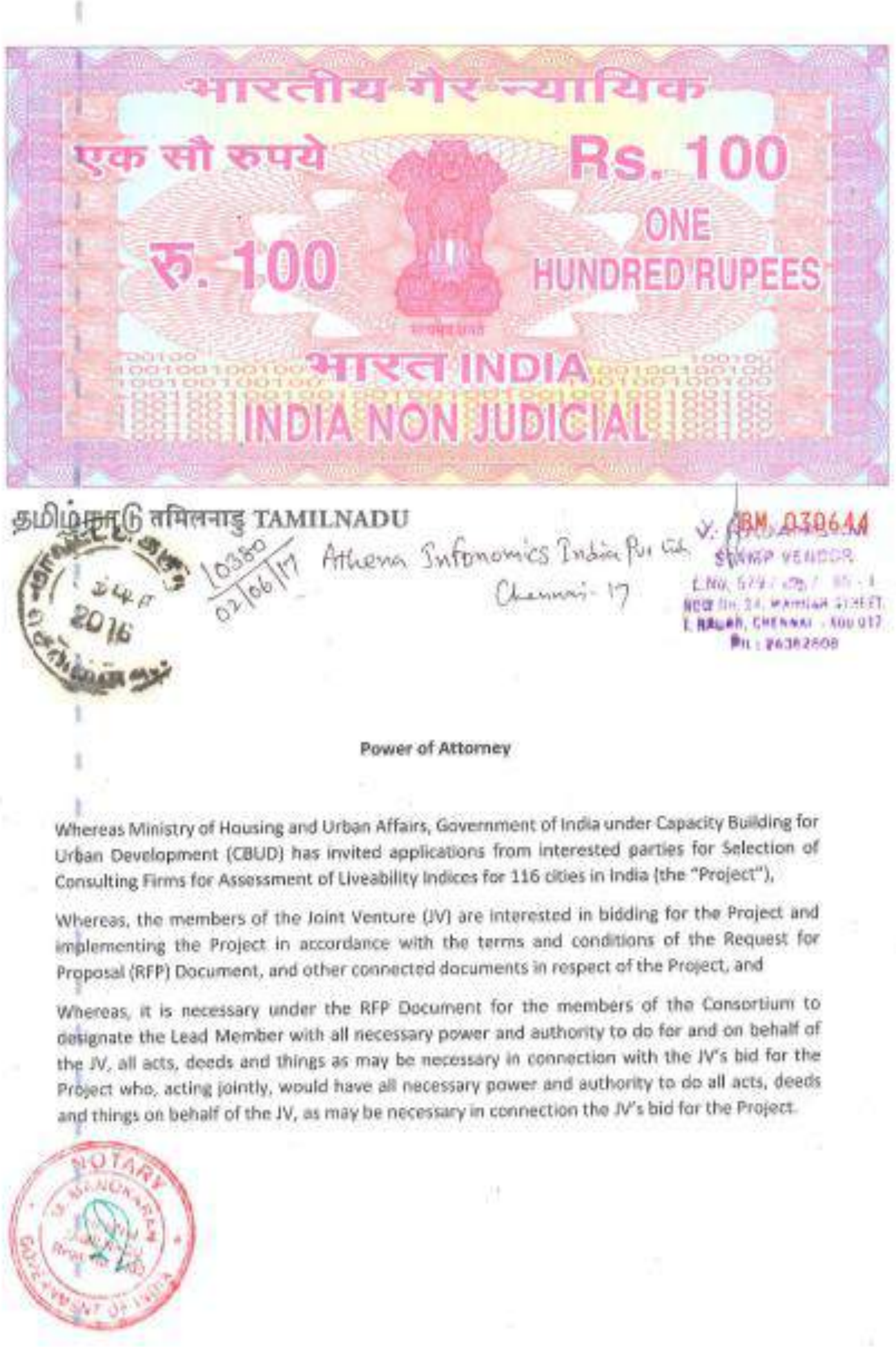
CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

UMESH THAWANI
COMPANY SECRETARY

Ipsos Research Pvt. Ltd.
Registered Office :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
Tel. : + 91 22 6620 8000 | Email : ipsos.india@ipsos.com | Website : www.ipsos.com
CIN : U74130MH2004PTC146904

JV partner Athena Infonomics POA authorising IPSOS Public Affairs as Authorised Signatory – First Page



भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

BM 030644

10380
02/06/17 Athena Infonomics India Pvt Ltd
Chennai - 17

STAMP VENDOR

2016

Power of Attorney

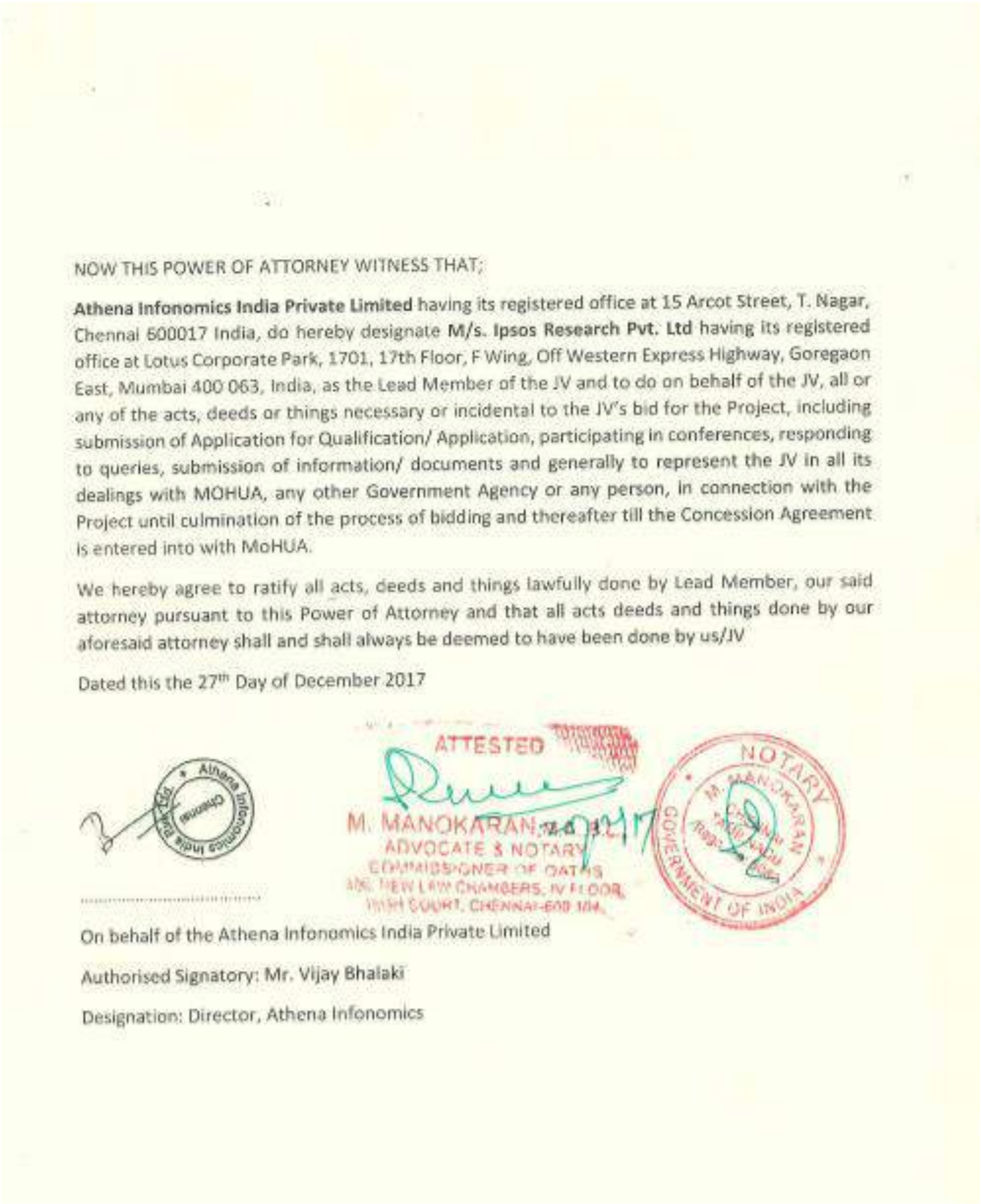
Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project"),

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project.

NOTARY

JV partner Athena Infonomics POA authorising Ipsos Public Affairs as Authorised Signatory – Last Page



NOW THIS POWER OF ATTORNEY WITNESS THAT;

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED

M. MANOKARAN, B.A., B.L.
ADVOCATE & NOTARY
COMMISSIONER OF OATHS
406, NEW LAW CHAMBERS, IV FLOOR,
HIGH COURT, CHENNAI-600 104.

29/12/17

M. MANOKARAN

Athena Infonomics India Pvt. Ltd. Chennai

……………………………………

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

FORM TECH 2:

Consultant's Organisation and Experience

TECH-2: CONSULTANT'S ORGANIZATION AND EXPERIENCE

A - Consultant's Organisation

About the Joint Venture and Sub Consultant

Ipsos India's Public Affairs team, together with Athena Infonomics India Private Limited, and Sub Consultant The Economist Intelligence Unit Limited are pleased to submit their request for proposal for providing consulting services for Assessment of Liveability Indices for 116 cities in India by the Ministry of Housing and Urban Affairs. As a consortium, we possess a comprehensive understanding of national and global learnings from liveability studies. Collectively, we have carried out over 10,000+ studies in urban areas on a range of subjects, including: Infrastructure and Public Services (showcasing a blend of global and national perspectives on Urban Development and Governance), Data Analytics, Indices creation, Monitoring and Evaluation and undertaking large scale quantitative and qualitative surveys. The consortium possesses vast knowledge and experience of using a wide range of data collection and analysis, both primary and secondary data. Our data collection methods range from PAPI (Pen and Paper Interview), CATI (Computer Assisted Telephonic Interview), CAPI (Computer Assisted Personal Interview), rapid ethnographies, mobile based surveys, stakeholder consultations, third party audits of infrastructure, participatory assessment methods, and workshops:

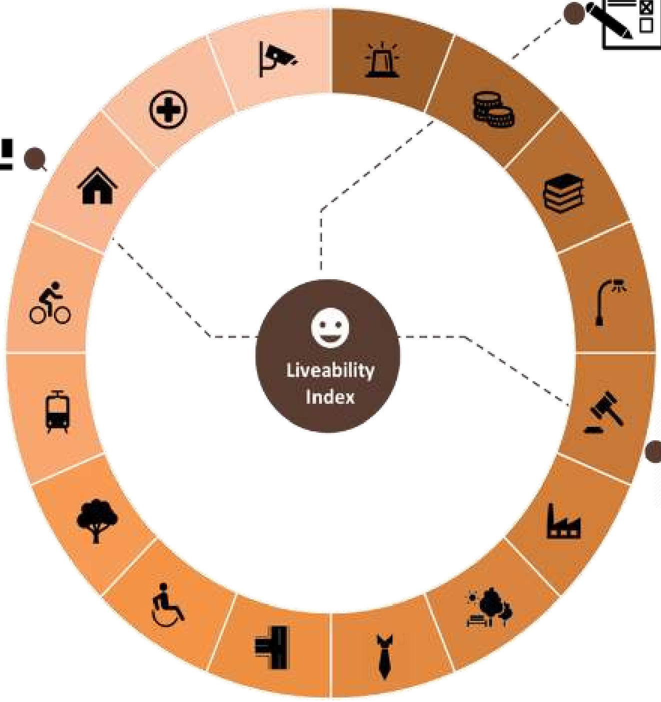
- Ipsos (Lead Member): Ipsos has a long-held reputation of carrying out surveys that capture citizen perceptions. It has a pan India presence (22 offices in strategic locations), accompanying infrastructure (2800+ tablets for digital data collection), human resource (3500 investigators familiar with language, geography, and experienced in data collection), and the technical and managerial capability (presence of a strong analytics team of 30+ staff, 300+ researchers) in India to deliver this assessment according to global standards. Their technical expertise includes research design, probability sampling procedures, survey instrument, design survey management, qualitative methodologies and using technological innovations to ensure timeliness, efficiency and quality of the data collected.

- Athena Infonomics (Associate Member): Athena Infonomics employs rigorous quantitative and qualitative assessments applying state of-the-art tools and methodologies from social science and statistics to answer urban governance challenges. Its portfolio of tools and methods include: qualitative comparative assessment, cost benefit and cost effectiveness analysis, experimental methods, participatory impact assessments, systems assessment tools, social impact measurement tools, spatial data analysis, Computer Assisted Personal Interviewing (CAPI), online and offline survey implementation among others.

- **The Economist Intelligence Unit (Sub Consultant):** The Economist Intelligence Unit possesses technical expertise in economic, political and social demographic forecasting, bespoke modelling and scenario analysis, country and city forecasting and location benchmarking.

The key strengths of our submission as partners are summarised in the table below.

Knowledge of Thematic area	Ipsos	AIIPL	EIU
Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	🟨	🟨	🟨
Large scale projects for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	🟨	🟨	🟨
Experience in implementing urban studies in the areas of water, health, education, transportation etc.	🟨	🟨	🟨
Data Interoperability & Policy Convergence		🟨	🟨
Experience of Applicant in development of indices, preparation of national/international reports		🟨	🟨
Strong Market Research Infrastructure & Resource Network	🟨		
Digital data collection- use of tablets and mini laptops	🟨	🟨	
In house team of statisticians and analysis managers and executives	🟨	🟨	🟨
Quality Assurance processes	🟨	🟨	🟨
Global Outreach	🟨		🟨
Strategic Branding			🟨



Data analysis and Management

- *Athena Infonomics* has the technical expertise in quantitative and qualitative data analysis, data management
- *Athena Infonomics* also bring in the capacity to deliver integrated services all through a project value chain, including data collection, information analysis, capacity building and evaluation
- *IPSOS* specialises in CAPI, CATI. Rapid ethnographies, mobile based surveys, etc.

Dissemination through Media

- **EIU** has developed dissemination platform called "The Hub" @ Economist
- Engage with international and national media

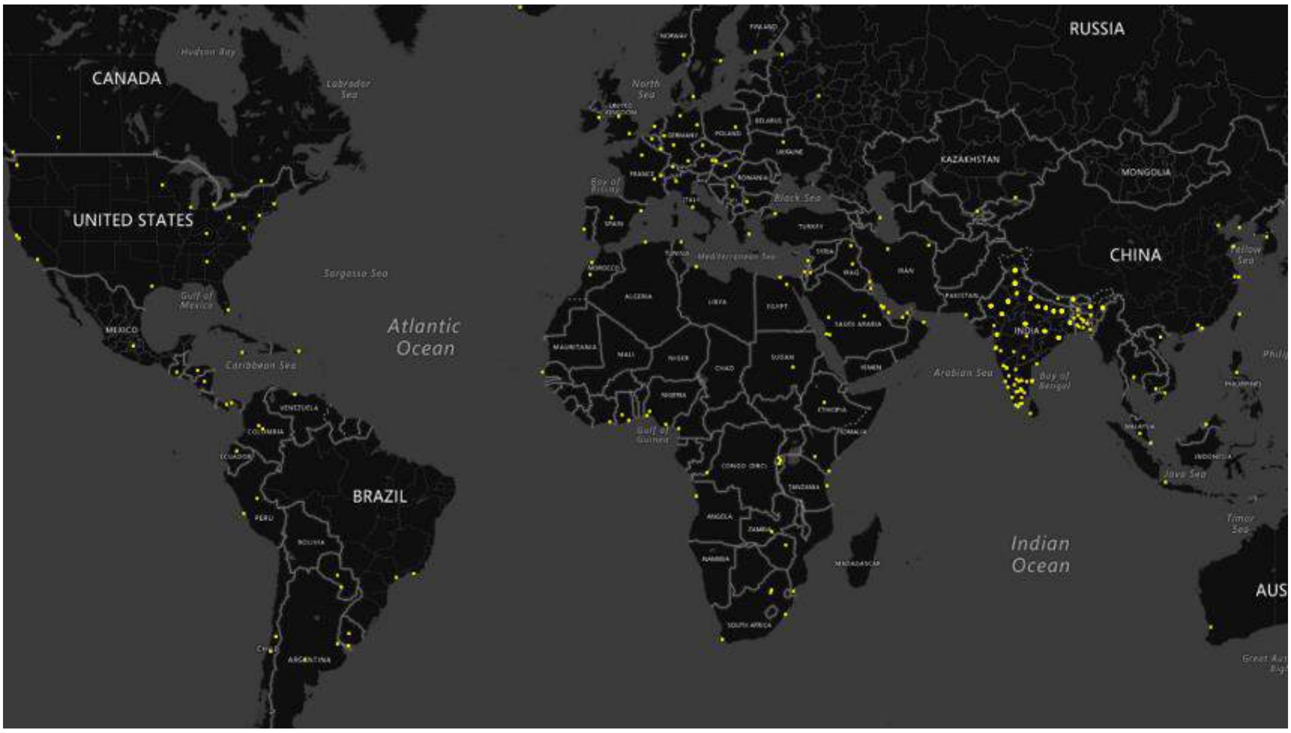
Data generation

- *IPSOS* has vast experience undertaking large scale surveys (both quantitative and qualitative) across multiple sectors
- *IPSOS* also has expertise in advanced survey design, data collection and data management
- *Athena Infonomics* also specializes in large data collection including behavioural aspects such as satisfaction, perception attitudes etc.

Indicator development

- *EIU* has proprietary methodologies for benchmarking and indexing
- *EIU* also has strong expertise in qualitative and quantitative data, and weighting it together to conduct multi-dimensional comparisons
- *Athena Infonomics* specializes in developing indicators using a minimalistic data approach

The global footprint of the consortium (Joint Venture and Sub Consultant) is presented below:


RUSSIA
CANADA
Hudson Bay
Labrador Sea
North Sea
NORWAY
FINLAND
UNITED KINGDOM
GERMANY
POLAND
BELARUS
UKRAINE
FRANCE
ROMANIA
Bay of Biscay
ITALY
SPAIN
Black Sea
TURKEY
KAZAKHSTAN
MONGOLIA
UNITED STATES
CHINA
Yellow Sea
Sargasso Sea
Gulf of Mexico
MOROCCO
TUNISIA
Mediterranean Sea
SYRIA
IRAQ
IRAN
PAKISTAN
ALGERIA
LIBYA
EGYPT
SAUDI ARABIA
INDIA
MEXICO
Atlantic Ocean
MAURITANIA
MALI
NIGER
CHAD
SUDAN
YEMEN
Arabian Sea
Bay of Bengal
Caribbean Sea
VENEZUELA
NIGERIA
ETHIOPIA
SOMALIA
PHILIPPINES
COLOMBIA
Gulf of Guinea
MALAYSIA
ECUADOR
CONGO (DRC)
TANZANIA
INDONESIA
Java Sea
BRAZIL
PERU
ANGOLA
ZAMBIA
Timor Sea
BOLIVIA
NAMIBIA
MADAGASCAR
Indian Ocean
AUS
SOUTH AFRICA
CHILE
ARGENTINA
Great Aus Big

Ipsos Research Private Limited – Lead Member

Ipsos is the third largest survey-based market research company in the world. Ipsos Public Affairs is a specialized unit (WSBL) of Ipsos and focuses exclusively on social and development research. Ipsos is also rated as the second most innovative market research company per the GRIT Report 2017.

Ipsos Public Affairs teams around the world conduct research on public policy issues and on the attitudes and behaviors of citizens and consumers. Ipsos Public Affairs in India is organized around the two major disciplines: Social and Developmental Research and Corporate Reputation. As part of their social research and evaluation specialization, they have undertaken more than 300+ research studies in India, including quantitative, qualitative, and participatory research over 17 + years of their operations in India. Generating new hypotheses and exploring landscapes with a relevant lens is key to any exploratory exercise and program's success. Thus, with its strong and experienced team, Ipsos Public Affairs India have delivered high quality outputs to its clients in various domains. These outputs not only validated the true situation on ground but helped client build and test various hypothesis which they were unaware of at the designing stage. Ipsos Public Affairs India's technical expertise in Baseline, Midline and End Line Studies, Participatory Rural Research, Mind Mapping, in–Depth Interviews, ethnographies, Exploratory and Formative Research, Communication Designing and Evaluation studies etc. have been use in different contexts to bring out actionable insights. Thematic areas of its experience include Public Health, Water, Sanitation & Hygiene (WASH), Education, Gender etc.

Ipsos Public Affairs India has extensive experience of working with the central and state ministries, government departments and national and international non-governmental organizations in the social and international development sector.

Ipsos Public Affairs India provides clients with information that helps them understand how they can build efficient and effective policies, programs, communications strategies, and marketing initiatives. In India, Ipsos Public Affairs has worked on a range of social policy issues that includes public health, WASH, education, gender, governance, micro finance, using quantitative survey methods, qualitative and participative approaches, and mixed methods. Ipsos is an ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISO 20252:2012[1]

We have invested significantly in digital data collection mode and have transitioned from pen and paper mode to CAPI. Over 90% of our data collection is CAPI (Computer Aided Telephonic Interviews). The

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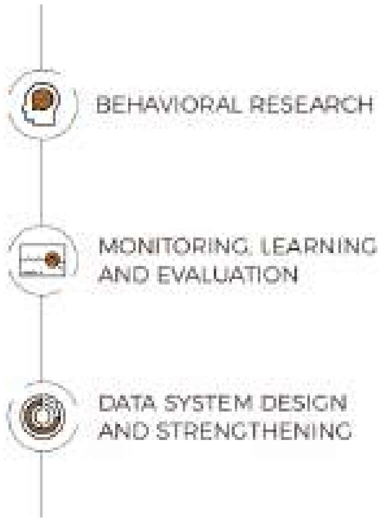
[1] Please refer Annexure 1.

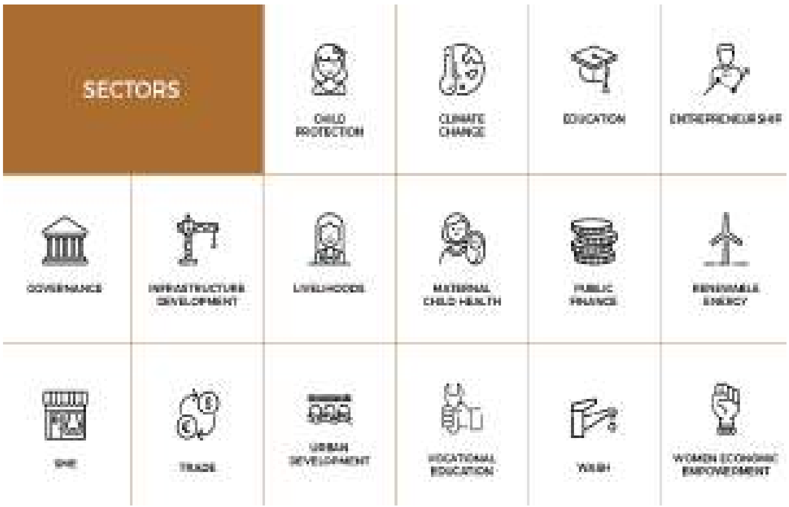
GPS and voice recording facility supplemented with an independent Quality Assurance team which optimises the quality assurance checks on every survey.

Athena Infonomics India Private Limited – Associate Member

Athena Infonomics is a research and consultancy firm with a strong focus on bringing an analytical approach to solving development and inclusive growth issues. Athena lies at the intersection of the public and private sector, seeking to catalyse multi-stakeholder approaches for solving some of the most challenging problems of developing nations.

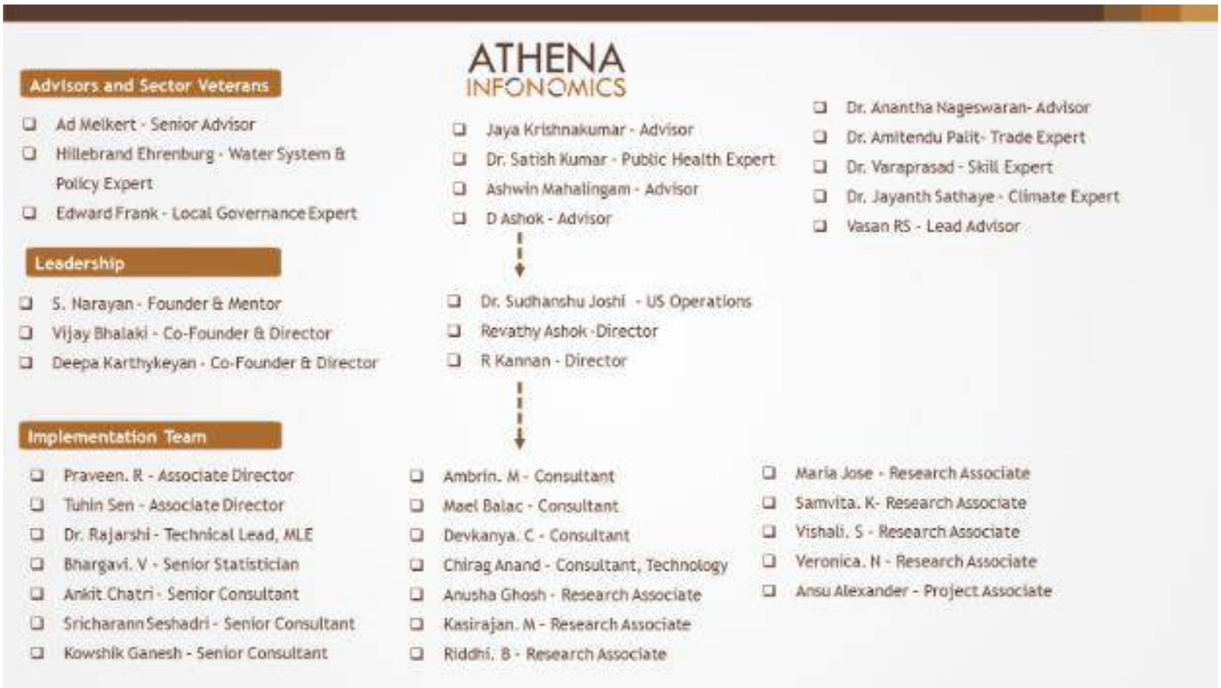
Athena distinguishes itself through an unflinching dedication to leveraging cutting-edge research methods and tools for modelling phenomenon and deriving solutions. Conceptual depth, analytical rigor and holistic multidisciplinary approaches characterize its solutions. Proactively engaging across the expansive and complex stakeholder's platforms of Public, Corporate and Community in delivering solutions for robust policies, strengthening institutions, enhancing market linkages, optimizing stakeholder capacity and fostering innovative partnerships


BEHAVIORAL RESEARCH
MONITORING, LEARNING AND EVALUATION
DATA SYSTEM DESIGN AND STRENGTHENING


SECTORS
CHILD PROTECTION
CLIMATE CHANGE
EDUCATION
ENTREPRENEURSHIP
GOVERNANCE
INFRASTRUCTURE DEVELOPMENT
LIVELIHOODS
MATERNAL CHILD HEALTH
PUBLIC FINANCE
RENEWABLE ENERGY
SME
TRADE
URBAN DEVELOPMENT
VOCATIONAL EDUCATION
WASH
WOMEN ECONOMIC EMPOWERMENT

Urban Experience: Athena's strength lies in its ability to use a combination of analytical tools and sustainable approaches to unlock patterns from data assets to drive improvements in urban design and sustainable delivery of services. Athena's expertise is in developing inter-disciplinary analytical tools and solution pathways for multi-dimensional challenges, across stakeholder groups, towards providing sustainable and implementable solutions. Its approach is designed to enable planners and administrators to quickly comprehend what needs to be done to advance urban and sustainable design and service quality for their citizens.

Athena's Organisational structure is represented Senior Advisors and Sector Veterans, followed by its Leadership and supported by a research and solution driven implementation team.



ATHENA
INFONOMICS

Advisors and Sector Veterans

- ☐ Ad Melkert - Senior Advisor
- ☐ Hillebrand Ehrenburg - Water System & Policy Expert
- ☐ Edward Frank - Local Governance Expert
- ☐ Jaya Krishnakumar - Advisor
- ☐ Dr. Satish Kumar - Public Health Expert
- ☐ Ashwin Mahalingam - Advisor
- ☐ D Ashok - Advisor
- ☐ Dr. Anantha Nageswaran- Advisor
- ☐ Dr. Amitendu Palit- Trade Expert
- ☐ Dr. Varaprasad - Skill Expert
- ☐ Dr. Jayanth Sathaye - Climate Expert
- ☐ Vasan RS - Lead Advisor

Leadership

- ☐ S. Narayan - Founder & Mentor
- ☐ Vijay Bhalaki - Co-Founder & Director
- ☐ Deepa Karthykeyan - Co-Founder & Director
- ☐ Dr. Sudhanshu Joshi - US Operations
- ☐ Revathy Ashok -Director
- ☐ R Kannan - Director

Implementation Team

- ☐ Praveen. R - Associate Director
- ☐ Tuhin Sen - Associate Director
- ☐ Dr. Rajarshi - Technical Lead, MLE
- ☐ Bhargavi. V - Senior Statistician
- ☐ Ankit Chatri - Senior Consultant
- ☐ Sricharann Seshadri - Senior Consultant
- ☐ Kowshik Ganesh - Senior Consultant
- ☐ Ambrin. M - Consultant
- ☐ Mael Balac - Consultant
- ☐ Devkanya. C - Consultant
- ☐ Chirag Anand - Consultant, Technology
- ☐ Anusha Ghosh - Research Associate
- ☐ Kasirajan. M - Research Associate
- ☐ Riddhi. B - Research Associate
- ☐ Maria Jose - Research Associate
- ☐ Samvita. K- Research Associate
- ☐ Vishali. S - Research Associate
- ☐ Veronica. N - Research Associate
- ☐ Ansu Alexander - Project Associate

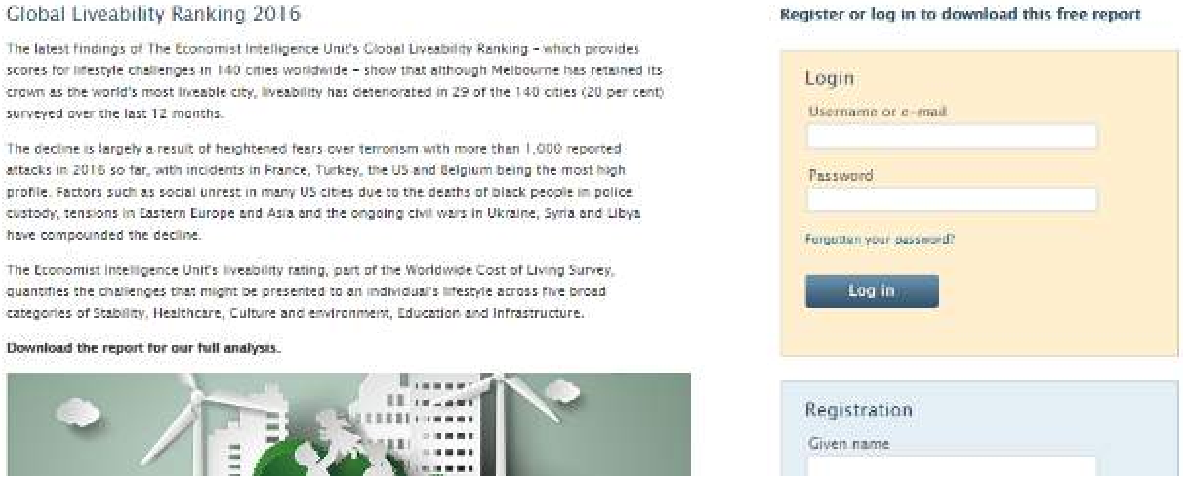
The Economist Group Limited – Sub Consultant

The Economist Group is the leading source of analysis on international business and world affairs. They deliver information through a range of formats, from newspapers and magazines to conferences and electronic services.

What ties Economist together is the objectivity of their opinion, the originality of their insight and their advocacy of economic and political freedom around the world.

The Economist Intelligence Unit (EIU) is the research and analysis division of The Economist Group and the world leader in global business intelligence. Its extensive international reach and unfettered independence make it the most trusted and valuable resource for international business throughout the world. To meet the changing needs of today's organisation, the Economist Intelligence Unit is uniquely able to deliver its analysis online or in print, via webcast or face-to-face, through subscription services or custom research. EIU has pioneered the design and development of the Worldwide Cost of Living Index and the Global Liveability Index. A snap shot of the EIU Global Liveability index is presented below:

EIU's Global Liveability Ranking



Global Liveability Ranking 2016

The latest findings of The Economist Intelligence Unit's Global Liveability Ranking – which provides scores for lifestyle challenges in 140 cities worldwide – show that although Melbourne has retained its crown as the world's most liveable city, liveability has deteriorated in 29 of the 140 cities (20 per cent) surveyed over the last 12 months.

The decline is largely a result of heightened fears over terrorism with more than 1,000 reported attacks in 2016 so far, with incidents in France, Turkey, the US and Belgium being the most high profile. Factors such as social unrest in many US cities due to the deaths of black people in police custody, tensions in Eastern Europe and Asia and the ongoing civil wars in Ukraine, Syria and Libya have compounded the decline.

The Economist Intelligence Unit's liveability rating, part of the Worldwide Cost of Living Survey, quantifies the challenges that might be presented to an individual's lifestyle across five broad categories of Stability, Healthcare, Culture and environment, Education and Infrastructure.

Download the report for our full analysis.

EIU's research capabilities range from economics to gender, and from finance to energy and technology. They conduct research through interviews, regulatory analysis, quantitative modelling and forecasting, and display the results via interactive data visualisation tools.

B - Consultant's Experience

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
Ipsos Market Research				
February 2016 - December 2016 (Wave 1)	Assignment name: Implementation of the EIB Group survey of investment and investment finance (Wave 1) Brief description of main deliverables: The EIB Group survey on investment and investment finance is an EIB Group initiative with the purpose of collecting data on the corporate investment environment in the countries of the EU-28 by means of an annual representative and a scientifically sound survey with the senior management of non-financial corporates in the EU. Output: Ipsos has delivered the first wave of the 3-year longitudinal survey. As part of the contract, Ipsos delivered a mixed-mode data collection design in that 12 300 NFCs undergo a 15-minute telephone (CATI) interview on their general investment attitudes and behaviour, and if they plan to undertake investment activities in the coming year they are invited to participate in an online follow-up survey. If the company consents, they are emailed a link to a 10-minute discrete choice online survey where they are asked to	Name of Client: The European Investment Bank Country of Assignment: 28 European Union Countries	12.29,997USD / 12,29,997USD	Lead and Sole Member

	choose between eight pairs of hypothetical finance offers.			
March 2012 - December 2013	Assignment name: District Level Household and Facility Survey (DLHS)-IV in Tamil Nadu and Puducherry Brief description of main deliverables: Over 5,75,000 HHs were listed by a team of 300 mappers and listers and this list that formed the sampling frame. Following this we recruited a team of 450 field investigators with profile of post graduates and paramedic to conduct the main survey including the Clinical and Anthropometric measurements. We have covered 950 urban local bodies across all districts of Tamil Nadu. All data was collected using mini laptops and data uploaded during fieldwork. Output: Ipsos delivered this survey in 36 districts of Tamil Nadu and Puducherry. The survey covered a sample size of 49500 HHs across 1965 Primary Sampling Units (PSUs)- rural and urban (950). Covered a total of 1400+ health facilities- district hospital, taluk and non-taluk hospitals, CHC, PHCs, and SHCs were also surveyed to ascertain service delivery, infrastructure, documentation, and other aspects of reporting	Name of Client: Ministry of Health & Family Welfare (MoHFW) and International Institute for Population Sciences (IIPS) Country of Assignment: India	6,44,280 USD/ 6,44,280 USD	Lead and Sole Member
March 2009	Assignment name: Conducting Survey work for GATS (Global Adult Tobacco Survey) in Manipur and Nagaland	Name of Client: IIPS on behalf of Ministry of	40,769 USD/ 40,769 USD	Lead and Sole Member

- December 2009	Brief description of main deliverables: Summary of key tasks delivered by us included drawing village lay out maps, sampling, recruitment and training of field team, canvassing of schedules in 2 states using iPAQs, uploading data periodically and providing data for fact sheets. Output: Conducted a quantitative household survey done in state of Manipur and Nagaland. In each state 30 urban and 30 rural clusters were selected, A Post listing of all HHs that provided the sampling frame, total 3000 households were selected where interviews were completed. In each HHs adult members were surveyed. It was the first time, IIPS has introduced digital data collection and IPAQ were used for data collection	Health & Family Welfare Country of Assignment: India		
May 2014 - Mar 2015	Assignment name: Endline survey on quality of care, Patient Satisfaction Survey and utilisation of services in secondary hospitals of Tamil Nadu Brief description of main deliverables: Overall design of the endline surveys, developing of data collection tools, recruitment and training of qualified staff for data collection, data collection at hospital, analysis and submission of an analytical report Output: Conducted in all districts of Tamil Nadu, except Chennai. In each district of the state, 1 district head quarter hospital, 2 taluk Hospitals and 1 Non-Taluk hospital were covered, designed as a quantitative study that	Name of Client: Tamil Nadu Health Systems Project (TNHSP) Country of Assignment: India	30,923 USD/ 30,923 USD	Lead and Sole Member

	included structured interviews with the patients (in patients and out patients) at the facility as well as with the health functionaries, Interviewed a total of 4500 patients and community members.			
	Assignment name: Investment Region Assessment Brief description of main deliverables: Conducted an in-depth analysis of industries which should be a part of a 200 sq.km smart city, Assessed regional and location strengths and constraints and analyze the investment climate with respect to existing resources and industry sectors. Output: Industry index was prepared to arrive at the top industries for the investment region, From the analysis of key strengths of the investment region, existing and future high growth industries, discussions with domestic and multinational companies and benchmarking with global hubs following focus industry mix was suggested for the investment region.	Name of Client: Delhi Mumbai Industrial Corridor in collaboration with Halcrow Country of Assignment: India	3,09,230 USD/ 3,09,230 USD	Lead and Sole Member
December 2011 - November 2012	Assignment name: EU-wide survey on women's well-being and safety in Europe Brief description of main deliverables: Carried out the first EU-wide survey on women's well-being and safety in Europe - involving interviews with 42,000 women. The FRA survey filled the gap by interviewing 40,000	Name of Client: European Union Agency for Fundamental Rights (FRA)	26,39,230 USD/ 26,39,230 USD	Lead and Sole Member

	women across the 27 EU Member States. Output: The results of the project were presented in 2013, through a range of various products and channels, to inform FRA stakeholders and the general public about the outcomes of the full-scale survey in the EU27 and Croatia.	Country of Assignment: EU28 countries		
January 2014 August 2014	Assignment name: EU-MIDIS II Brief description of main deliverables: Collected comparable data in all 28 EU Member States to support the EU in protecting the fundamental rights of people with an immigrant or ethnic minority background, including Roma. It also aimed to populate core indicators for measuring progress in the implementation of the EU Framework for National Roma Integration Strategies as well as selected indicators on immigrant integration. The survey covered topics such as experiences of discrimination in different areas of life (labour market, education, housing, health and other services), criminal victimisation (including hate crime), social inclusion and societal participation Output: Ipsos coordinated and delivered this survey covering a sample 25515 interviews that were completed in 28 counties among target groups that	Name of Client: European Union Agency for Fundamental Rights Country of Assignment: EU 28 countries	32,12,459 USD/ 32,12,459 USD	Lead and Sole Member

	included Immigrants from North Africa and their descendants (North African), Immigrants from Asia and their descendants (Asian), Immigrants from South Asia and their descendants (South Asian), Immigrants from Turkey and their descendants (Turkish), Sub-Saharans and persons of African descent (Sub-Saharan African), Recent Immigrants, Roma, and Russian minorities.			
September 2009 - November 2009	Assignment name: Citizen satisfaction survey - municipal development - South West Serbia Brief description of main deliverables: Ipsos Strategic Marketing conducted F2F survey, on a representative sample of citizens of 8 municipalities in South West Serbia (N= 1770 in total). Specific tasks of Ipsos included conceptualisation of the analysis framework, tool development, recruitment and training of team, data collection, analysis and report submission. Output: The specific purpose of the project is to develop capacities of local stakeholders and local governments so that municipalities in South West Serbia, individually and jointly, plan and take strategic action to achieve the sustainable economic and social development of the region and to fulfil their obligations to citizens.	Name of Client: UNDP Country of Assignment: Serbia	11,630 USD/ 11,630 USD	Lead and Sole Member

April 2013 - June 2014	Assignment name: Implementation of an employer survey on skills needs in Europe Brief description of main deliverables: Surveyed on skills needs which will help to better understand the labour market and contribute towards the further development of vocational education and training policies across Europe. The Phase 1 of the study involved an extensive testing and piloting. Output: Using a random probability sampling technique which helped to access a representative sample of employers in local establishments across the whole economy.	Name of Client: CEDEFOP Country of Assignment: EU28	2,98,496 USD/ 2,98,496 USD	Lead and Sole Member
1/09/2015 1/05/2016	Assignment name: Urban Citizen Dialogue Brief description of main deliverables: Ipsos MORI carried out three face-to-face day-long public dialogue workshops which focused on possible future outcomes of six urban systems (energy, food, health, transport, waste and water) to understand citizen preferences. Output: All participants were then invited to a central reconvened summit where we brought together all six systems into integrated future scenarios. Experts in futures, urban integration or the specific systems actively participated in these events. Before and after the summit, we ran an online community including all	Name of Client: Innovate UK Country of Assignment: UK	13,26,89USD/ 13,26,89USD	Lead and Sole Member

	workshop participants, and 350 members of the public. The community activities covered system outcomes, integrated scenarios, technologies, and their future hopes for the UK's cities.			
June 2016 December 2016	Assignment name: Community Attitudes to Melbourne's Suburbs Brief description of main deliverables: Undertook a research project into Community Attitudes to Suburbs across Melbourne with the aim of furthering understanding of the pressures facing citizens and families within specific suburban areas. Output: Computer Assisted Telephone Interviewing (CATI) was used to administer the survey to n=1,000 Melburnians across 12 clusters of similar, and similarly located suburbs. A dual frame approach of Random Digit Dialling (RDD) landline and mobile phones was used (50% RDD; 50% mobile) Of the n=1,000 Melburnians who completed the survey, 68% were open to being re-contacted. Ipsos re-contacted 40 of these Melburnians (a mixture of young and older Victorians, parents and single people, those from high and low growth suburbs) to engage in bottom-up stories about what it was like to live in their suburb. These stories – populated throughout the report – often directly reference the	Name of Client: State Department of Environment, Land, Water and Planning Country of Assignment: Australia	77,084 USD/ 77,084 USD	Lead and Sole Member

	items of most importance identified through the quantitative research.			
Athena Infonomics India Private Limited				
September 2015 - October 2016	Assignment name: Market Potential Study: Mapping the Opportunity and Providing Recommendations in Facilitating Finance for Women Entrepreneurs in Bangladesh Brief description of main deliverables: Mapped the potential opportunity in facilitating finance to women SMEs in Bangladesh and estimate the current financing gap, developed comprehensive sectoral knowledge of the ecosystem, Identified the major challenges faced by women SME entrepreneurs in availing finance from financial institutions, identified key areas of focus, which could improve financing for women SME entrepreneurs Output: Extensive Literature Reviewed, Women Enterprise Survey carried out with 500 women SME entrepreneurs sampled from Bangladesh's seven administrative selections (and 12 cities)- Dhaka, Tangail, Gazipur, Rajshahi, Bogra, Rangpur, Chittagong, Comilla, Khulna, Jessore, Barisal and Sylhet., In-depth interviews were conducted with financial institutions and various stakeholders engaged in SME financing, Estimated the Finance Gap	Name of Client: International Financial Corporation, World Bank Country of Assignment: Bangladesh	45,525 USD/ 25,000 USD	Lead Member: Athena Infonomics Partner Member: NARI & Matrix Business Development

January 2015 -June 2015	Assignment name: Sustainability oriented financial services and products – Analysis of current loan products and government financing schemes for women entrepreneurs in the MSME sector Brief description of main deliverables: A systemic understanding of current lending patterns to women owned MS, get provider perspectives on the efficacy of support schemes and the issues in administration of loans to women entrepreneurs, Understand the issues faced by women who own MSMEs, in accessing credit and their awareness of support schemes Output: Extensive Literature Reviewed, Assessed Demand Side Constraints by surveying 110 women entrepreneurs across six key cities in the country - Delhi, Mumbai, Chennai, Bangalore, Ahmadabad and Hyderabad. The business survey focused on understanding the characteristics, growth potential, financial requirements and sources of finance and supply of credit for women led MSMEs., The evidence generated by the survey was used to draft policy and strategic recommendations to increase credit access for women entrepreneurs	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ Country of Assignment: India	27,600 USD/ 27,600 USD	Lead and Sole Member
September 2015 - January 2016	Assignment name: Preparation of Proposals for assisting Tirunelveli Municipal Corporation and Vellore Municipal Corporation to participate in the Smart Cities challenge	Name of Client: Tirunelveli City Municipal Corporation,	45,000 USD/ 22,500 USD	Lead Member: Shah Technical Consultants Associate Member: Athena Infonomics

	Brief description of main deliverables: As cities compete in the SCM, consulting support was envisaged to hand-hold cities in identification of innovative and viable smart solutions following a bottoms-up approach with citizens at the centre of the solutions. Output: Collected city level data on GDP, industry composition, ULB service delivery, infrastructure availability among others , Developed a people-driven participatory research framework that calls for active participation of Residents Welfare Associations, Tax Payers Associations, Senior Citizens, Chamber of Commerce and Industries, Slum Dwellers Associations and other groups,Developed research instruments and conducted citizen satisfaction survey for the identification of issues, needs and priorities in line with the smart cities vision. A three-layered engagement strategy (Capture-Investigate-Validate & Disseminate) was deployed to ensure that citizens are meaningfully engaged to provide inputs on the city's vision and goals. Over 3.8 lakh citizens with a focus on low-income groups were engaged as part of the smart cities planning process in Vellore alone. A combination of online google forms, direct interviews using a mobile app, WhatsApp and social media channels were deployed for the outreach activities.	Vellore Municipal Corporation and Ministry of Urban Development Country of Assignment: India		

February 2014 - Sept 2015	Assignment name: Consultancy Services to develop methodology for ranking urban local bodies (ULBs) based on their quality of service deliveries and conduct Quarterly Performance assessment of services delivered by 665 ULBs in Tamil Nadu Brief description of main deliverables: Develop and implement a comprehensive performance assessment framework to enable the Government to evaluate and rank 664 Municipalities, Municipal Corporations and Town Panchayats on a range of urban infrastructure and governance themes such as poverty levels, public health, sanitation, SWM, urban water supply etc Output: Designed a detailed data driven methodology to assess ULB performance, identified a comprehensive set of parameters - 110 quantitative and qualitative metrics (KPIs) covering the main functions (devolved to the ULBs in Tamil Nadu from the 12th Schedule of the Constitution) to design the assessment framework. The parameters considered are: Financial Management, Water Supply, Solid Waste Management, Sanitation, Public Health, Street Lights, Poverty Alleviation and Special Initiatives, designed a detailed survey tool and developed a comprehensive analytical framework to score the 665 ULBs both quantitatively and qualitatively, Developed an automated dashboard	Name of Client: Commissionerate of Municipal Administration, Government of Tamil Nadu Country of Assignment: India	76,675 USD/ 76,675 USD	Lead and Sole Member

	– tool that processes the data, calculates the score and visually represents the results			
April, 2015 December, 2015	Assignment name: Consumer Research in Sanitation in the State of Uttar Pradesh Brief description of main deliverables: Identify factors that influence sanitation behaviors (such as open defecation), and identify the most trusted and appropriate channels of communication. The study will inform the Government of Uttar Pradesh in designing its state sanitation marketing and communication strategy. Output: Developed a comprehensive sampling plan for qualitative (600 Focus Group Discussions and In-Depth Interview in 15 districts) and quantitative research (5400 quantitative interviews in 18 districts spread across the State) taking into account agro-climatic aspects, distance from state capital and backwardness of the districts, Designed field guides across 16 cohorts based on socio-economic classification, age, gender etc. ,Conducted training of the moderators and surveyors to implement the qualitative and quantitative research on domain knowledge, technical knowledge, research ethics using audio-visual aids and interactive tools including	Name of Client: World Bank Country of Assignment: India	1,02,965 USD/ 51,482 USD	Lead Member: Athena Infonomics India Private Limited Associate Member: Gorakhpur Environmental Action Group (GEAG)

	screening and evaluation of field staff, Data monitoring and analysis			
July 2013 - March 2015	Assignment name: Post Award Governance strategies for PPPs in India Brief description of main deliverables: Evaluate the factors impacting project performance 'post-award' of a PPP project and develop a framework to enhance sustainability. Output: Developed a 'Post-Award' Governance framework through in-depth research of 9 PPP projects in India across sectors of urban water supply, municipal solid waste management and urban transport, prepared of a National Report which was released by the Niti Aayog at a national conference that had representation from the Ministry of Urban Development, Department of Economic Affairs and British High Commission	Name of Client: British High Commission Country of Assignment: India	1,68,390 USD/ 1,68,390 USD	Lead and Sole Member
July 2016- 2016	Assignment name: Hiring Firm Strengthening Municipal and National Government Capacity to Deliver Pro-poor, Climate Sensitive Urban Development Brief description of main deliverables: Carried out investigation into current practices under four themes namely i) Policy and Legislation ii) Institutional Roles & Capacities (with special emphasis on data capture and utilization maturity) iii) Municipal Financing and iv) Community	Name of Client: UNDP Bangladesh Country of Assignment: Bangladesh	72,820 USD/ 72,820 USD	Lead and Sole Member

	Participation structures in Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps; Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps Output: Prepared a National Report on "Strengthening Municipal & National Government Capacity to deliver pro-poor climate sensitive urban development that detailed key drivers of urban poverty in Bangladesh, solution pathways to address them and a potential set of indicators (spatial and non-spatial) that could be integrated into the overall monitoring, learning and evaluation module of the Programme			
Phase I: August 2013 - November 2013 Phase II: December 2013 - May 2014	Assignment name: Accelerating Women Entrepreneurship in Karnataka: A Roadmap to 2020 Brief description of main deliverables: Evaluated the entrepreneurial ecosystem and identify major challenges being faced by women entrepreneurs, to formulate a roadmap, outlining the various programs and policies required to facilitate women's entrepreneurship Output: Phase I: 200 face to face structured surveys with Women Business Enterprises in Bangalore ,50 qualitative interviews with male entrepreneurs, government agencies,	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) Country of Assignment: India	55,000 USD/ 22000 USD	Lead Member: Athena Infonomics Associate Member: Phase I: WE Connect International and Quantum Leaps Phase II: e-MERG

	business associations, financial institutions and investors; Phase II: 250 structured interviews with women entrepreneurs across 9 cities in Karnataka ,25 qualitative interviews with Government, business associations, NGOs and other stakeholders, Multi-stakeholder conference in Hubli and Mysore. Constructed a Women Entrepreneurial Environment Index (WEEI) in bot Phase I and II			
April 2013 - July 2013	Assignment name: The National Customer Satisfaction Survey-Rwanda Brief description of main deliverables: Carried out a customer satisfaction survey with an aim to track the progress of national customer service from the previous survey that was carried out by OTF, to serve as a common basis for customer care improvement in Rwanda and develop a strategic policy and assess the initiatives to promote excellence. Output: Survey was carried out across three urban centers – Kigali, Huye and Musanze covering national of Rwanda, and EAC – Burundi, Kenya, Uganda and Tanzania, produced a robust data set and carried out statistical analysis of data collected through Chronbach's alpha	Name of Client: Rwanda Development Board Country of Assignment: Rwanda	90,000 USD/ 40,000 USD	Lead Member: RUMA CPA Associate Member: Athena Infonomics
August 2012 - April 2013	Assignment name: Tamil Nadu Skill Gap Assessment Brief description of main deliverables: Undertook a detailed district-level skill	Name of Client:	29,230 USD/ 29,230 USD	Lead and Sole Member

	gap analysis for the state of Tamil Nadu Output: On identification of the skills gaps and opportunities, recommendations were presented for each key stakeholder including government, industries, skill training institutes and NSDC to bridge the gap, Policy actions were proposed based on detailed analysis of current policies and the findings of the study.	National Skill Development Corporation Country of Assignment: India		
Economist Intelligence Unit (Sub Consultant)				
2009 - Current	Assignment name: EIU Global Liveability Ranking Brief description of main deliverables: The Economist Intelligence Unit's Global Liveability Ranking scores a range of qualitative and quantitative indicators to provide a robust and global benchmarking study of 140 cities globally. The product uses over 40 indicators in 30 subcategories across five broad lifestyle categories (stability, healthcare, culture, education and infrastructure) to create an overall liveability score. The product takes three forms: Global Liveability Ranking and overview, which is a short ranking report summarising key findings and supplying an overall ranking of 140 cities; the Global Liveability Survey, a full report with 140 city profiles broken down by sub-category (which can be sold separately); and lastly the Global Liveability Matrix, an interactive excel	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

	tool to compare all scores in all locations. Output: Data gathering (quantitative and qualitative indicators by country) & quality control Desktop research (vetting and triangulation of data; supplementary analysis of overall survey findings) ; Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) ; Benchmarking (design of an interactive benchmarking-index, scoring and weighting of indicators), Report writing and Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			
2009 - Current	Assignment name: EIU Worldwide Cost of Living Brief description of main deliverables: Worldwide Cost of Living is a biannual interactive tool which allows users to compare the cost of living between approximately 145 cities globally. As well as delivering simple city to city comparisons, the tool can be customised and recalculated according to user needs with a variety of add-on features.	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

	Output: Survey of price data (price data is vetted and weighted individually before again being weighted and compared across categories to form an index) ,Data gathering (quantitative and qualitative indicators by country) and Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy), Benchmarking (design of an interactive benchmarking-index; tracking of aggregate movement of prices against national or city-level inflation), Report writing and editing (ranking report summarising the findings of the survey)			
6/2014- 3/ 2015	Assignment name: Safe City Index Brief description of main deliverables: The Safe Cities Index 2015 is an Economist Intelligence Unit report, sponsored by NEC. The report is based on an index composed of more than 40 quantitative and qualitative indicators. These indicators are split across four thematic categories: digital security; health security; infrastructure safety; and personal safety. Every city in the Index is scored across these four categories. Each category, represented throughout the report by the icons shown in the key, comprises between three and eight sub-indicators. These indicators are divided between inputs, such as policy measures and levels of spending, and outputs, such as the frequency of	Name of Client: NEC Country of Assignment: North America, Latin America, Europe, Middle East & Africa, Asia-Pacific	N/A/ N/A	Lead and Sole Member

	vehicular accidents. The Index focuses on 50 cities selected by The Economist Intelligence Unit, based on factors such as regional representation and availability of data. Output: Data gathering (quantitative and qualitative indicators by city) and Data cleaning and dataset completion Data verification and validation Data analysis Benchmarking/Modelling Report writing and Data Visualization			
1/2014-6/2015	Assignment name: MENA Cities Brief description of main deliverables: Provided demographic and economic data (with a selection of 5-year forecasts) for 26 Middle East cities, using a combination of secondary and primary research. The EIU produced a workbook which included the following features: map navigation through clickable markers on a map of the region to call up data for relevant cities; population pyramids displaying population breakdowns by age group and gender; customisable rankings of cities by income and population for comparison purposes; access to all indicators included in the workbook. Output: Data gathering (quantitative and qualitative indicators by city)	Name of Client: A multinational conglomerate Country of Assignment: UAE, Egypt, Algeria, Jordan, Iraq, Lebanon, Morocco, Saudi Arabia, Qatar, Iraqi-Kurdistan, Turkey, Kuwait, Bahrain, Iran, Oman, Libya, Tunisia	2,30,769 USD/ 2,30,769 USD	Lead and Sole Member

	Data cleaning and dataset completion (developing custom estimation models, and/or conducting primary research, and in some cases applying statistical data imputation methods) Data verification and validation (developing documents that present the data to experts and practitioners to review and critique) Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			

FORM TECH 3:
Comments and suggestions on the Terms of Reference, counterpart staff, and facilities to be provided by the client

TECH-3: COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

A - On the Terms of Reference

Comments on the Terms of Reference

At the outset, we commend the efforts of the Ministry to embark on such a timely and relevant exercise and the detailed methodology document, which serves as a guidance note for the same. We are excited to be given an opportunity to participate in developing a framework for rolling out such an exercise. Based on our experience of developing a technical response to this bid, our observations are summarized below.

Our review of the methodology document confirms need for some form of physical assessment- sample survey or validation required for 24 of these indicators Phase 1 of our proposal. These 24 indicators vary from non-motorized transport, hotels and schools among others. The TOR does not clearly specify what a consultant must do if the data is not available for these indicators. Several of them (for example modal share of transport) are technical outputs that demand detailed studies and cannot be determined through a random physical audit

Given the timelines available, a critical assumption made is that the physical validation will be performed on only those data parameters submitted by the city government, through a random audit/physical inspection

Also our approach categorizes the data sub groups into a) Indicators where secondary data will be provided by city/ report 'as is' and no validation required b) Indicators where secondary data is available and will require validation through field visits/ sample survey/ citizen feedback c) indicators where secondary data is missing but can be collected d) indicators where secondary data is not available and will be excluded.

Our technical proposal and financial proposal is built on this categorisation We would be very keen to discuss and receive your feedback during proposal discussion stage to finetune this categorisation as well as discuss implication of this approach for both the timelines and costs.

B - On Counterpart Staff and Facilities

A summary of the key support areas where we look forward for support for MoHUA is outlined below:

- City officials are informed of the assignment vide a circular of the proposed assessment
- A state nodal officer will be appointed in every state to co-ordinate with the consultants to facilitate the implementation of the entire process
- A clear reporting structure is established for approval and sign off on all the key milestones and deliverables
- A clear process for reconciliation of differences between self-reported and audited data outputs to be identified and put in place early on.
- Facilitation of secondary datasets available across different flagship schemes within the ministry to ensure effective delivery of the ‘pre-filled’ data templates for each city

FORM TECH 4:
Description of Approach, Methodology, and Work Plan in responding to the Terms of Reference

TECH-4: DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

A. Technical Approach and Methodology

Liveability – Ranking and Beyond

Urban expansion in India is anticipated to grow at a pace unlike anything the country or the world has seen before, with much of the population likely to be concentrated in cities with a population of a 1 million plus. This trend brings with it several opportunities and challenges and clearly a trend of intensified competition among cities to attract talent and resources, with 'liveability' occupying centre stage in much of the new discourse.

Livability rankings are a common feature in several countries and is an opportunity to systematically quantify the challenges that may be presented to an individual's lifestyle and offers itself as an instrument for policy reform, resource mobilization, investment prioritization and management of services.

It is heartening to note that India, under the leadership of MoHUA, has embarked on measuring the 'liveability' of its cities and we are excited to draw from our collective experience to summarize our appreciation/understanding of what such an exercise can offer.

First, are a set of highlights of our approach to the data collection and the ranking exercise:

1. **Indicator development:** While the guidelines define a set of indicator areas, for the exercise to be objective and consistent, bespoke guiding questions for data collection that is aligned with the '**language of data**' used by city governments and aligned with global best-practices needs to be developed. This aim here is to minimise comparability issues – e.g. the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, (mapping what qualifies as access to digital education) Here the team seeks to leverage the experience of the Economist's step by step approach in developing such frameworks and the experience of IPSOS and Athena Infonomics in creating and scaling up similar large scale ranking exercises in India. (Refer Phase 1 of our detailed A&M for a detailed description of this approach)

2. **A pilot for city GDP:** The ability to measure a city's output and use that as a baseline to track its growth can be invaluable particularly in the context of the large capex investments that the identified smart cities are expected to attract. Given the opportunity to interact with a large number of cities, with varying data ecosystems, an attempt will be made to pilot test as part of the data collection exercise an approach to systematically map and calculate the city's GDP, which can be further refined in the subsequent rounds.

3. **Innovations in sampling and audit using spatial data:** A unique system of auditing indicators using publicly available open source spatial data sets will be deployed and a geo-spatial

sampling strategy to ensure that the citizen surveys are well diversified across the city will be deployed

4. **An online portal for real-time tracking of progress and outcomes:** Through the creation of an online portal right at the start of the assessment and real-time tracking of the progress of the liveability ranking exercise across phases (training workshops, data collection, validation and ranking) we hope to induce and leverage the competitive spirit that has driven the smart city process.

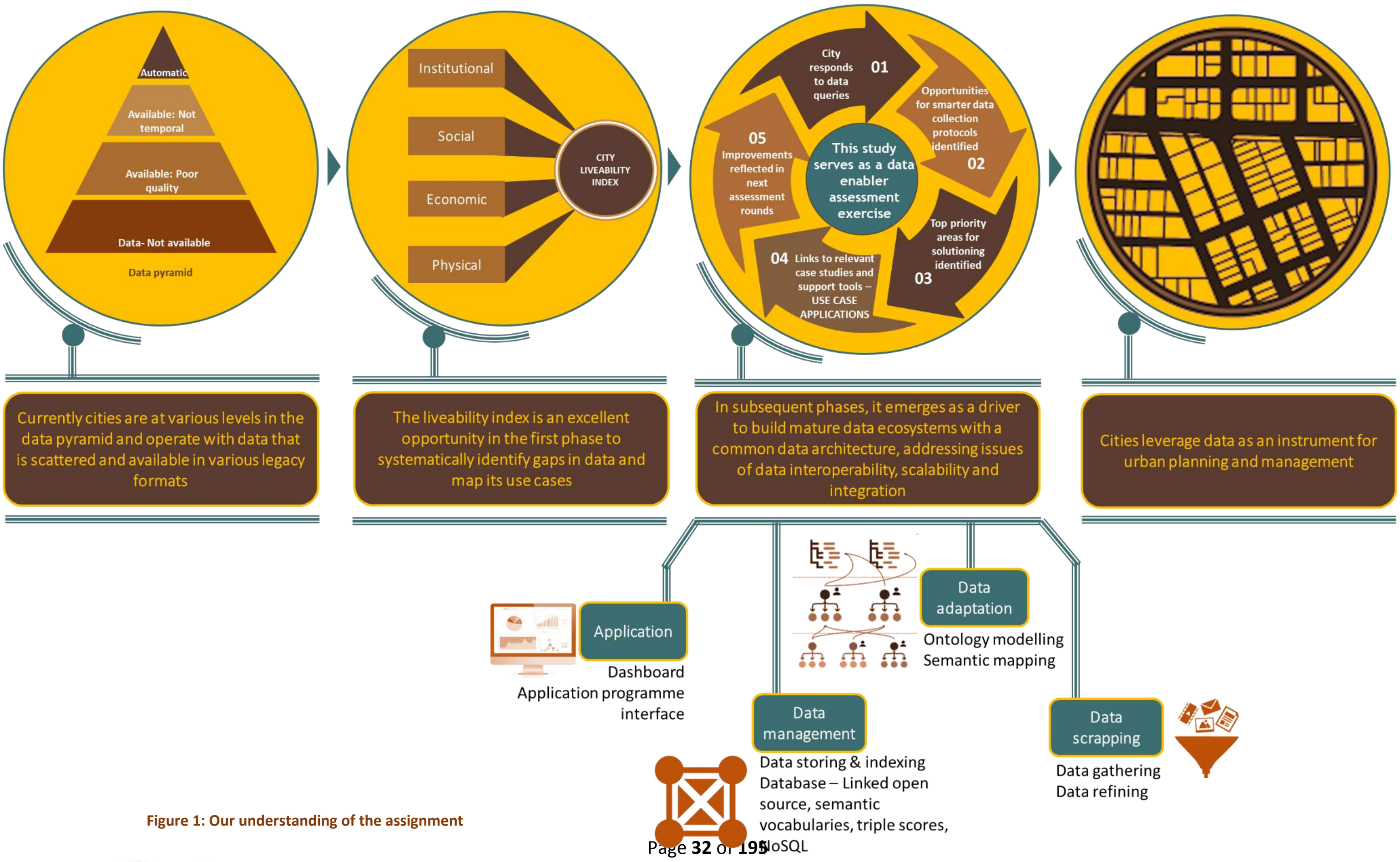
5. **Economist Hub- Effective national and global dissemination:** The Economist Intelligence Unit is a global leader in data intelligence and as a key intellectual partner to this JV will lead the development of a dedicated 'economist hub' with interactive workbooks and dashboards to present the findings of the liveability rankings.

While there are numerous positive spill overs to the liveability ranking, there are three key strands that we hope to get a dialogue initiated on. The team will submit at the end of the exercise a white paper on the potential the liveability ranking exercise has in moving the needle of various policy and programmatic goals of the nation, with a detailed analysis on the following:

- **Data availability, access and quality:** A framework to systematically evaluate the key gaps in data availability and quality will be developed and deployed and suggestions on smart data collection protocols developed to inform future data collection strategies and strengthen the data ecosystem. This approach It segregates "available data" from "quality data". In areas like water and sanitation, which carry with them a number of citizen sensitivities, there is a conflict of interest between data reporting and service delivery functions, which are usually vested in the same agency. By looking at data quality through a standardized process view (representativeness, third party validation etc.), it is possible to identify datasets which are more likely to be error prone than others

- **City-centric use cases- Interoperability and convergence with domestic policy and programme levers:** MoHUA under the smart city mission has already launched an initiative to set up integrated digital platforms which will provide the infrastructure backbone to host and run citizen and other e-government applications. The newly created datasets when generated can be linked to the platform and opportunities for use-cases by overcoming interoperability concerns may be explored. The ranking exercise (once the data maturity improved) may also serve as a planning tool or soft collateral for attracting investments and raising resources as illustrated in the figure below. Some of the key convergence and use-case applications between this exercise and the key goals set out by the MoHUA will be explored and documented

Our understanding of the assignment



Automatic

Available: Not temporal

Available: Poor quality

Data- Not available

Data pyramid

Institutional

Social

Economic

Physical

CITY LIVEABILITY INDEX

01 City responds to data queries

02 Opportunities for smarter data collection protocols identified

03 Top priority areas for solutioning identified

04 Links to relevant case studies and support tools – USE CASE APPLICATIONS

05 Improvements reflected in next assessment rounds

This study serves as a data enabler assessment exercise

Currently cities are at various levels in the data pyramid and operate with data that is scattered and available in various legacy formats

The liveability index is an excellent opportunity in the first phase to systematically identify gaps in data and map its use cases

In subsequent phases, it emerges as a driver to build mature data ecosystems with a common data architecture, addressing issues of data interoperability, scalability and integration

Cities leverage data as an instrument for urban planning and management

Application

Dashboard
Application programme interface

Data management

Data storing & indexing
Database – Linked open source, semantic vocabularies, triple scores, NoSQL

Data adaptation

Ontology modelling
Semantic mapping

Data scrapping

Data gathering
Data refining

Figure 1: Our understanding of the assignment

- **Global use-cases- Alignment with global data reporting requirements:** The newly generated data sets may also serve as an opportunity to systematically explore convergence between the data being generated by cities and global development standards like the SDGs and provides for an opportunity to explore what it means to achieve some of those goals at the local level and generate data at the level of local governments to better track progress on development goals.

Summary of our approach & methodology

Phase 1 Preparatory phase

Duration
W1-W5

Literature review of existing studies and data sources (Smart City Reports, AMRUT reports, Data.gov, etc.) to prepare baselines for each city

Data availability/gap assessment to assess a) Data points to be collected through primaries b) Metrics that would merit smart proxies

Indicator development

Finalization of stakeholder participation lists

Development of workshop structure and content

Finalisation of workshop dates for the state workshops

Development of data entry application /interface

Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation

Draft report templates- City Assessment

Preparation of research Instrument for primaries and physical validation

Data entry and quality control template

Data administration protocols and data collection monitoring framework

Summary of our approach & methodology

Phase 1 Preparatory phase (Continued…) Duration W1-W5

Framework to estimate city GDP

Formulation of media strategy

Approach note for data interoperability

Media dissemination through photo journals, national portal to be an on-going exercise

Phase 2 State/City level engagement Duration W5-W8

Organisation of State-level Workshops

Launch and updation of nation-wide tracker

Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official

City level Reconnaissance meetings

Final list of indicators (with details on collection protocols), incorporating comments from the workshop; and Inception Report preparation

Media dissemination through photo journals, national portal to be an on-going exercise

Summary of our approach & methodology

Phase 3 Data collection

Duration W8-W12

Finalisation of secondary data collection interface/application

Secondary data collection

Setting up a region/state level help-desks for near-real-time troubleshooting)

Final data availability/gap assessment

Household/Citizen Surveys

Physical audit of secondary data provided by cities (all relevant indicators)

GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors

Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC

Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

Summary of our approach & methodology

Phase 4 Data collation and finalisation

Duration
W13-W14

Preparation of Draft data sets circulation with cities for validation

City level discussions for addressing queries and incorporating revisions, modifications etc.

Sign-off on final list of data points/ indicators

Media dissemination through photo journals, national portal to be an on-going exercise

Phase 5 Report preparation and national workshop

Duration
W15-W20

Indices development and visualisation

Preparation of draft assessment report

Preparation of final assessment report

The Economist
FILMS
THE
Hub

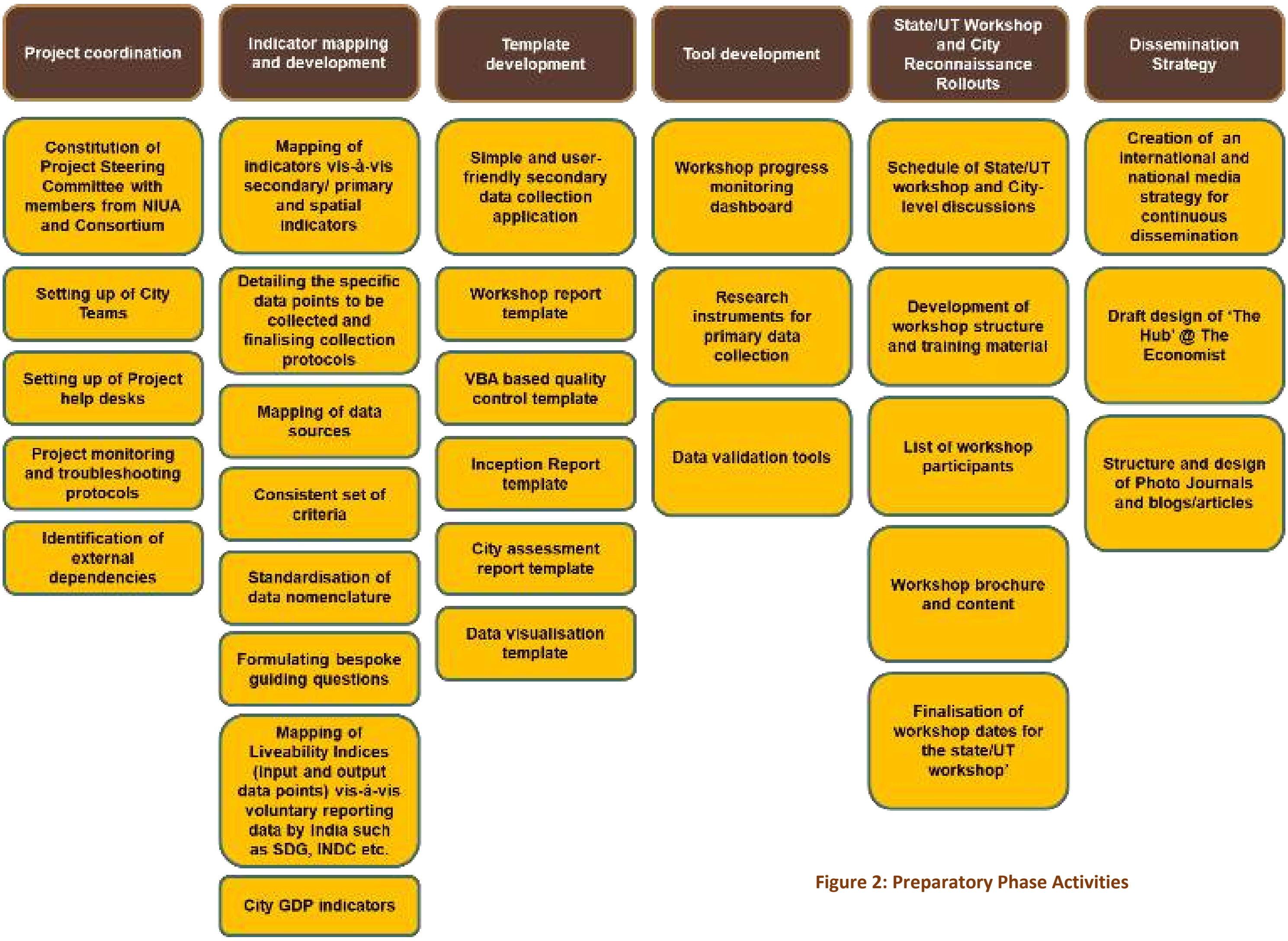
Launch of 'The Hub' @ The Economist

National-level Workshop

Media dissemination through photo journals, national portal to be an on-going exercise

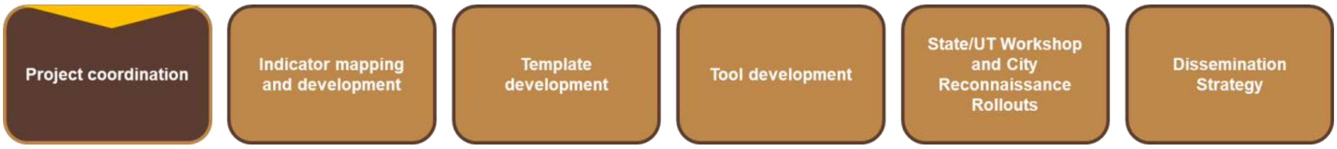
Phase 1: Preparatory phase: [Week 1 – W8]

The first four weeks are extremely crucial for this assignment as it would entail completion of preparatory steps for the short-term project milestones such as state level workshops and city reconnaissance discussions and gain momentum on the mid-term project milestones involving secondary and primary data collection including validation and report preparation. This phase will involve activities on the following areas:



Project coordination	Indicator mapping and development	Template development	Tool development	State/UT Workshop and City Reconnaissance Rollouts	Dissemination Strategy
Constitution of Project Steering Committee with members from NIUA and Consortium	Mapping of indicators vis-à-vis secondary/ primary and spatial indicators	Simple and user-friendly secondary data collection application	Workshop progress monitoring dashboard	Schedule of State/UT workshop and City-level discussions	Creation of an international and national media strategy for continuous dissemination
Setting up of City Teams	Detailing the specific data points to be collected and finalising collection protocols	Workshop report template	Research instruments for primary data collection	Development of workshop structure and training material	Draft design of 'The Hub' @ The Economist
Setting up of Project help desks	Mapping of data sources	VBA based quality control template	Data validation tools	List of workshop participants	Structure and design of Photo Journals and blogs/articles
Project monitoring and troubleshooting protocols	Consistent set of criteria	Inception Report template		Workshop brochure and content	
Identification of external dependencies	Standardisation of data nomenclature	City assessment report template		Finalisation of workshop dates for the state/UT workshop'	
	Formulating bespoke guiding questions	Data visualisation template			
	Mapping of Liveability Indices (input and output data points) vis-à-vis voluntary reporting data by India such as SDG, INDC etc.				
	City GDP indicators				

Figure 2: Preparatory Phase Activities


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

Given the short and intense nature of the assignment we propose to have a human resources structure in place to enable seamless effective and timely coordination. A four-tier project team is proposed comprising a Project Steering Committee (PSC), Key Experts (Full time Core Team) and Support Teams shortly after commencement of the assignment.

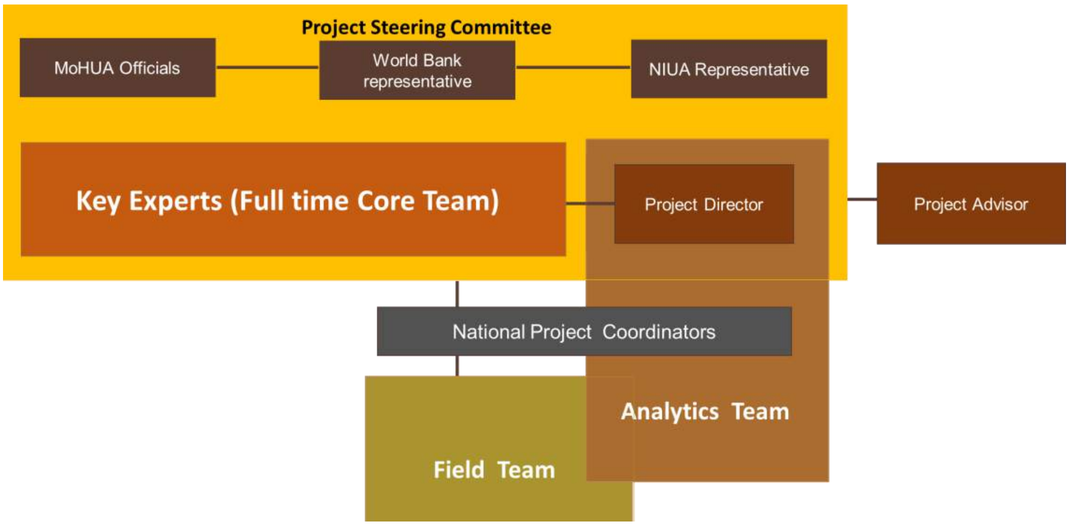
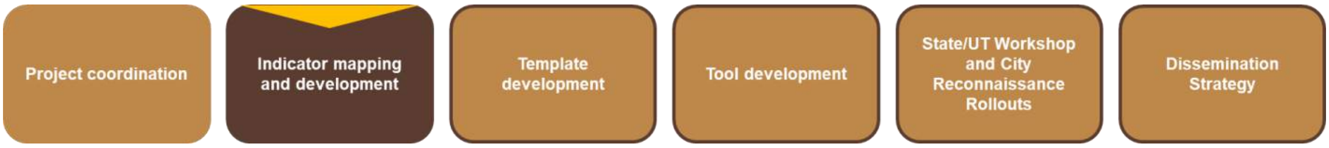

Project Steering Committee
MoHUA Officials
World Bank representative
NIUA Representative
Key Experts (Full time Core Team)
Project Director
Project Advisor
National Project Coordinators
Analytics Team
Field Team

Figure 3: Project Governance and Management Structure

The PSC will have representative from the MoHUA, NIUA, the World Bank and Key Experts. A Project Command Centre with video conferencing facilities would be set up to monitor the entire project including state workshops, secondary and primary data collection. The PSC will have access to dashboards for monitoring the progress of a) state level workshops b) secondary and primary data collection c) Queries and troubleshooting at state/UT-level Help Desks. The PSC will be the final point of approval on protocols for data collection, training content, project reporting, issue escalation and, troubleshooting for various aspects of the project such as support from state/UT/City Governments, data availability/gaps or lags etc.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

While most of the 79 indicators comprising the Liveability Indices can be computed based on secondary data available with the City Government, some of them require primary and/or spatial data inputs/validation. The 'Methodology for Collection and Computation of Liveability Standards in Cities' document has detailed the input data points required for computation of each indicator and has also specified the type (secondary/ primary/ spatial) of data points required. The figure below maps and categorises indicators based on different data collection interfaces.

CITY LIVEABILITY INDEX

79 Indicators

Category A

Secondary data collection

- 2.3 | Hotel occupancy

Category B

Secondary data collection + GIS validation

- 8.1 | Per capita availability of green spaces
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 9.1 | Share of mixed land use area in overall city land use
- 9.2 | Net Density

Category C

Secondary data collection + Physical validation

- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 14.3 | Extent of municipal solid waste recovered through reuse
- 11.7 | Availability of Passenger Information System
- 11.8 | Extent of signal synchronization
- 11.9 | Availability of paid parking spaces
- 11.10 | Percentage coverage of footpaths – wider than 1.2 m
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

Category D

Data unavailable but collected through HH level sample survey

- 7.2 | Percentage of slum areas covered through basic services
- 11.3 | Mode share of public transport
- 11.6 | Mode share of non-motorized transport
- 14.1 | Household level coverage of municipal solid waste collection

Category E

Data unavailable but collected through HH^{++} sample survey

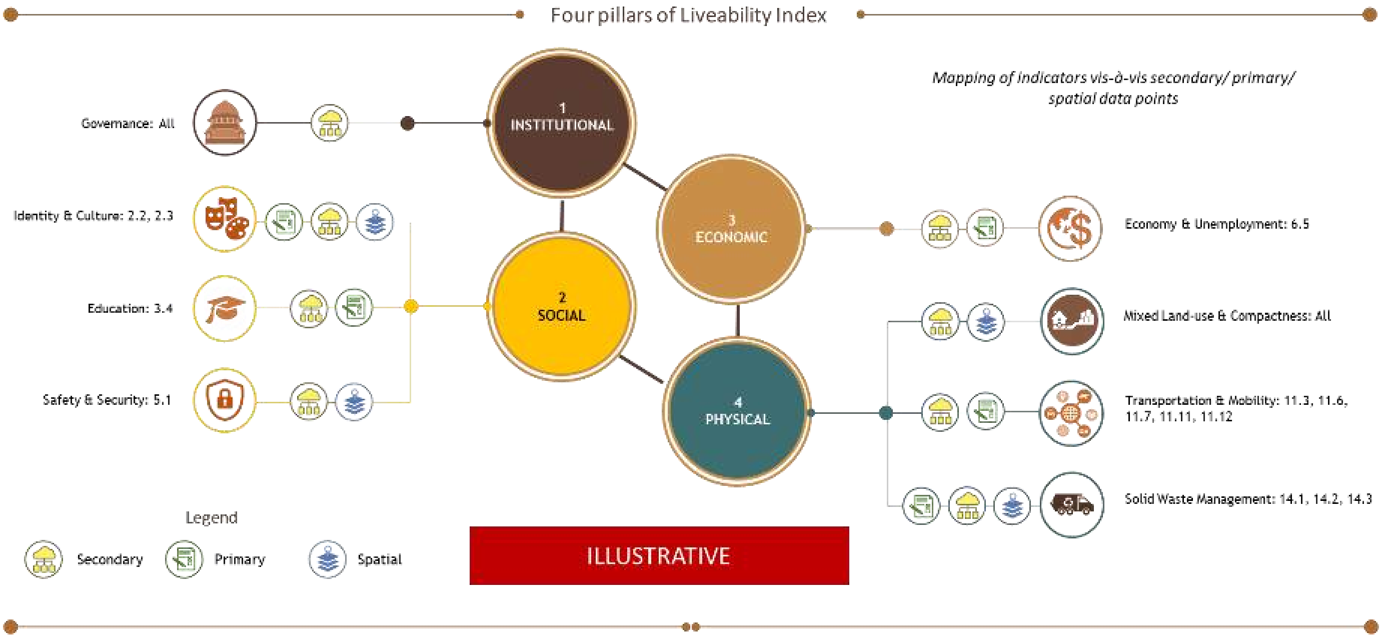
- 13.1 | Coverage of toilets

Category F

Data unavailable

- To be identified based on city responses

To be excluded from computation of index if data is absolutely no data could be obtained despite all measures to collect it.



Four pillars of Liveability Index

Mapping of indicators vis-à-vis secondary/ primary/ spatial data points
Governance: All
Identity & Culture: 2.2, 2.3
Education: 3.4
Safety & Security: 5.1
1 INSTITUTIONAL
2 SOCIAL
3 ECONOMIC
4 PHYSICAL
Economy & Unemployment: 6.5
Mixed Land-use & Compactness: All
Transportation & Mobility: 11.3, 11.6, 11.7, 11.11, 11.12
Solid Waste Management: 14.1, 14.2, 14.3
Legend
Secondary
Primary
Spatial
ILLUSTRATIVE

It will also involve building a consistent set of criteria for computation of the indicators – for instance method for estimation of city population (estimating city population based on 2011 Census or estimates provided by City Governments), approach for testing air/water quality etc. that could be used across cities. Our team will deploy a systematic approach to define clearly every indicators and collection protocols to ensure comparability (E.g., what could be construed as a Command Centre? Are there a minimum number of services that should be integrated under the Command Centre?) What is the standard definition of a 'smart meter?' etc. Here, the aim is to provide guidance for cities and analysts, with good tracking mechanisms.

Some of the indicators such as 'percentage of citizen services available online', 'percentage of services integrated through Command Centre,' etc. have been detailed for some of the ULB functions (e.g., property tax functions) and sub-services (e.g., city transport) but the rest needs to be further developed. Please refer figure below for an illustration of our overall approach

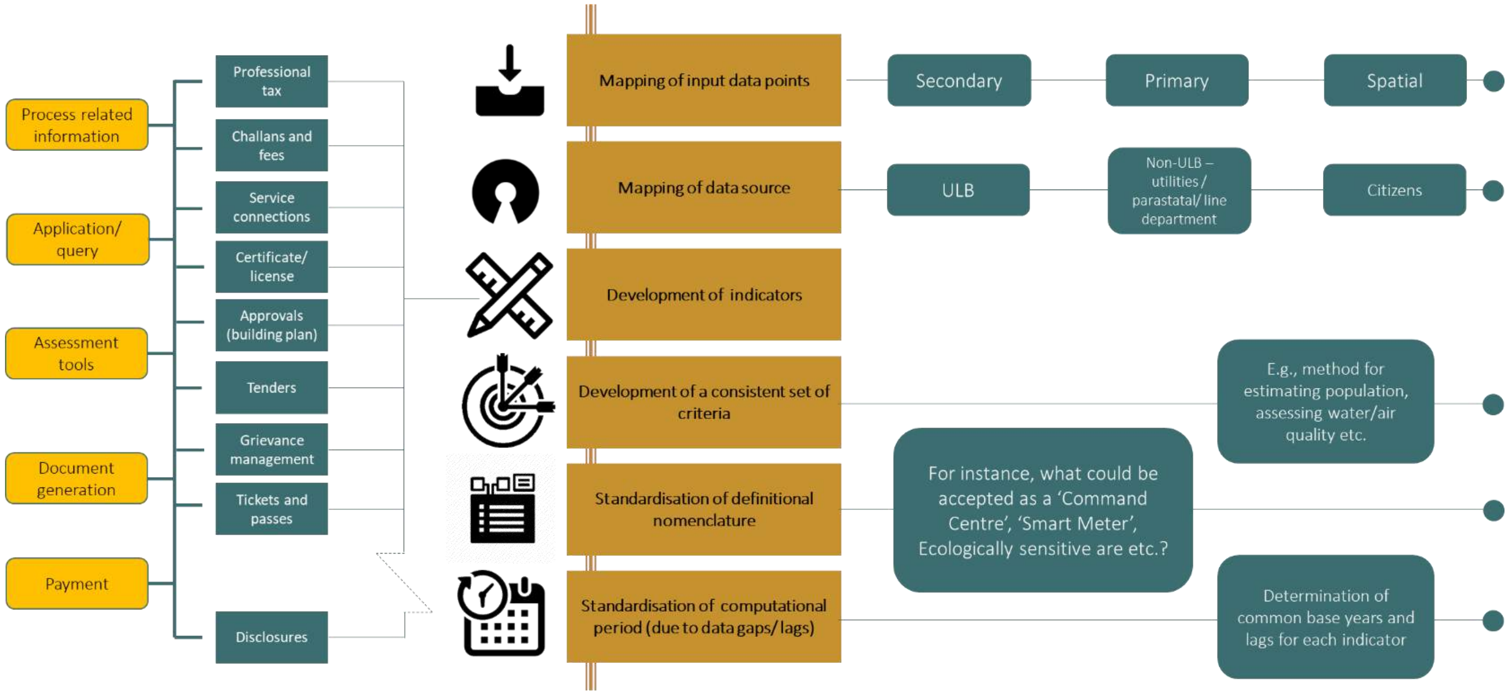

Process related information
Application/ query
Assessment tools
Document generation
Payment
Professional tax
Challans and fees
Service connections
Certificate/ license
Approvals (building plan)
Tenders
Grievance management
Tickets and passes
Disclosures
Mapping of input data points
Mapping of data source
Development of indicators
Development of a consistent set of criteria
Standardisation of definitional nomenclature
Standardisation of computational period (due to data gaps/ lags)
Secondary
Primary
Spatial
ULB
Non-ULB – utilities / parastatal/ line department
Citizens
E.g., method for estimating population, assessing water/air quality etc.
For instance, what could be accepted as a 'Command Centre', 'Smart Meter', Ecologically sensitive are etc.?
Determination of common base years and lags for each indicator

Figure 4: Indicator development approach

Our approach aims to minimise comparability issues – e.g., the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, which covers the type of digital infrastructure available as well as various ways to access digital learning networks.

A detailed guidance document capturing suggestive list of items/key words would be prepared based on secondary research as well as global best practices for key definitions and provided to Cities for reference. The draft detailed indicator list will subsequently be validated in Phase 2.

Scoring indicators requires a robust methodology. To add robustness and objectivity to the scoring, we propose developing bespoke guiding questions (in a manner consistent with local body nomenclature and jargon) for the indicator. This will greatly enhance the robustness of the framework. An example of our step by step approach is shown below, for an existing index namely percentage of population covered under Ward Committees/ Area Sabhas.

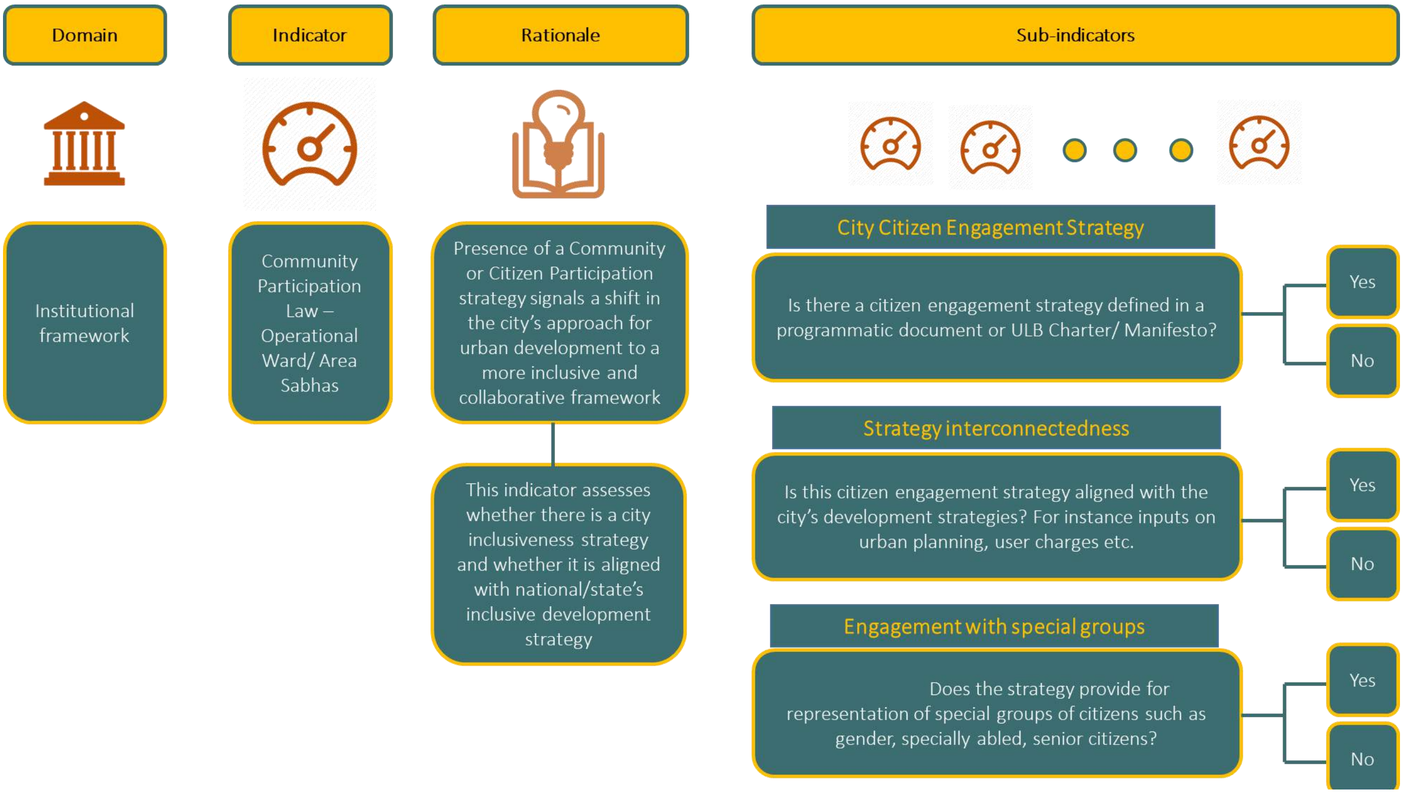

Domain
Indicator
Rationale
Sub-indicators
Institutional framework
Community Participation Law – Operational Ward/ Area Sabhas
Presence of a Community or Citizen Participation strategy signals a shift in the city's approach for urban development to a more inclusive and collaborative framework
This indicator assesses whether there is a city inclusiveness strategy and whether it is aligned with national/state's inclusive development strategy
City Citizen Engagement Strategy
Is there a citizen engagement strategy defined in a programmatic document or ULB Charter/ Manifesto?
Yes
No
Strategy interconnectedness
Is this citizen engagement strategy aligned with the city's development strategies? For instance inputs on urban planning, user charges etc.
Yes
No
Engagement with special groups
Does the strategy provide for representation of special groups of citizens such as gender, specially abled, senior citizens?
Yes
No

Figure 5: Approach for developing bespoke questions

Framework for Measuring City GDP

As part of this exercise, we are keen to explore the feasibility of estimating the economic output of the identified smart cities and explore if a baseline on the same can be created with publicly available data sets/information provided by cities. This is perhaps particularly credible given the kind of capex investments these cities are expected to attract. As part of this exercise we will develop and integrate the data requirements associated with the process of measuring the city's GDP in the overall data collection exercise and explore the quality of the data ecosystem to support such an exercise

EIU is currently carrying out a similar exercise in China.

Context

The prosperity and welfare of cities around depend on the capacity of cities to take advantage of opportunities for sustained employment growth and minimise the challenges of national and global economic integration and urban population growth. Therefore, the quality of economic development planning and city management is extremely important. Developing sound local economic development strategies at the city level is critical to both good city management and economic performance.

The purpose of the city economic rankings is to augur a health sense of competition between cities to attract investments and high-quality jobs. These rankings will also help smart city managers identify fast-growing economic opportunities in their cities and further propel their growth. As such, growth indicators, rather than those reflecting absolute size or wealth, will be chosen. However, to ensure that the ranked cities have a critical mass attractive to investors and new businesses, a minimum population cut-off point of will be determined and used. A nuanced methodology will be developed after a detailed review of the data ecosystem available. Ex: The metropolitan population will be a measured as the true urban population of a city; it includes the population only in the contiguously built city area.

Proposed Methodology

A comprehensive methodology for assessment of City level economic performance will be developed and tested for top twenty cities as part of the project. The methodology will be akin Economist Intelligence Unit's China Emerging city rankings is to identify where new business opportunities in urban China are likely to emerge because of rapid growth in population and incomes.

Growth over the next five-year period of 2018-2023 in infrastructure and property, economic output (GDP per head), consumption, job creation and population will form the core of the ranking framework. Consumer markets are included in the form of household incomes and spending. For population and GDP per head, five-year forecasts derived from the EIU's demographic and regional forecasting models will be used so that the index reflects expectations for the future.

We will supplement these indicators, wherever possible with historic city-level data that assess changes in infrastructure and property (fixed-asset investment and the urban built area), public finances (fiscal revenue) and the external environment (foreign direct investment and goods exports). Although these indicators are historic, the effects they bring to the real economy will be lagged and last for years. The CAGRs will be normalized and benchmarked to produce rankings across each indicator. The nine indicators are weighted equally in the overall index.

Disaggregation of data at the city level using a combination of official statistics and smart proxies will be attempted. Data parameters will be collected and studied at the city level. Inter alia, these include population, real estate market trends, tax receipts, infrastructure investments and demand, transportation, energy consumption, night-time light data (radiance and saturated light emissions) etc.,

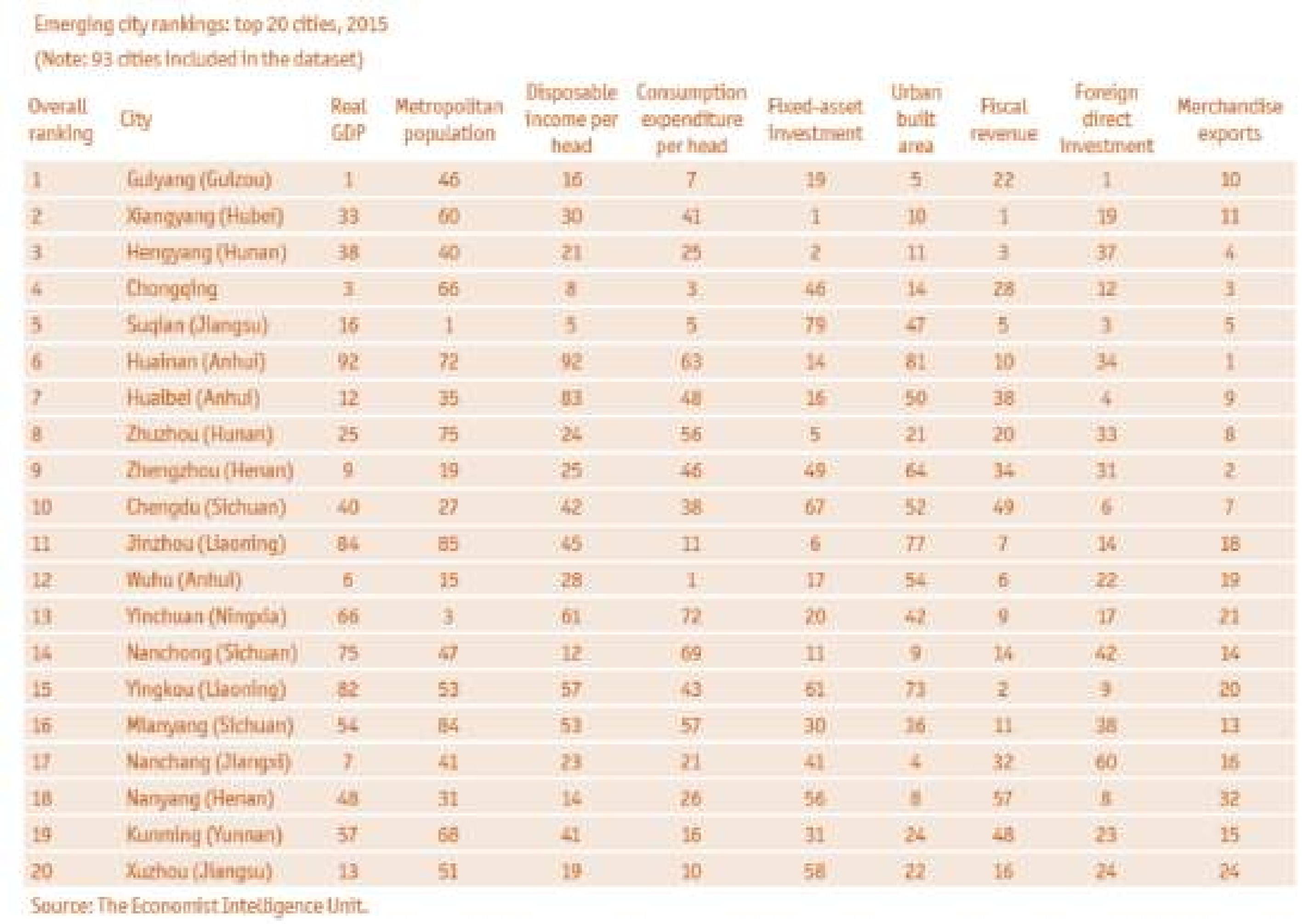
Illustrations

These illustrations are largely drawn from the China Emerging City Rankings (2010-15) which has been developed in collaboration with the Chinese authorities to analyse and present a city level picture of economic resilience and performance. These Rankings are prepared and disseminated by EIU widely and are highly referenced by analysts and business leaders globally. Significant decisions on job-propelling investments are made with the help if unique and highly nuanced insights provided by this data.

China Emerging City Rankings 2015 - Illustrations

Overall ranking
Mongolia
China
Overall ranking
Guiyang
Xiangyang
Hengyang
Chongqing
Suqian
Economic indicators
Guiyang

Hot spots
China's top ten emerging cities*
Ranking
Population
Disposable income per person, $'000
BEIJING
Zhengzhou
Suqian
Huaibei
Huainan
SHANGHAI
Xiangyang
Chengdu
Chongqing
Zhuzhou
Guiyang
Hengyang
Source: The Economist Intelligence Unit

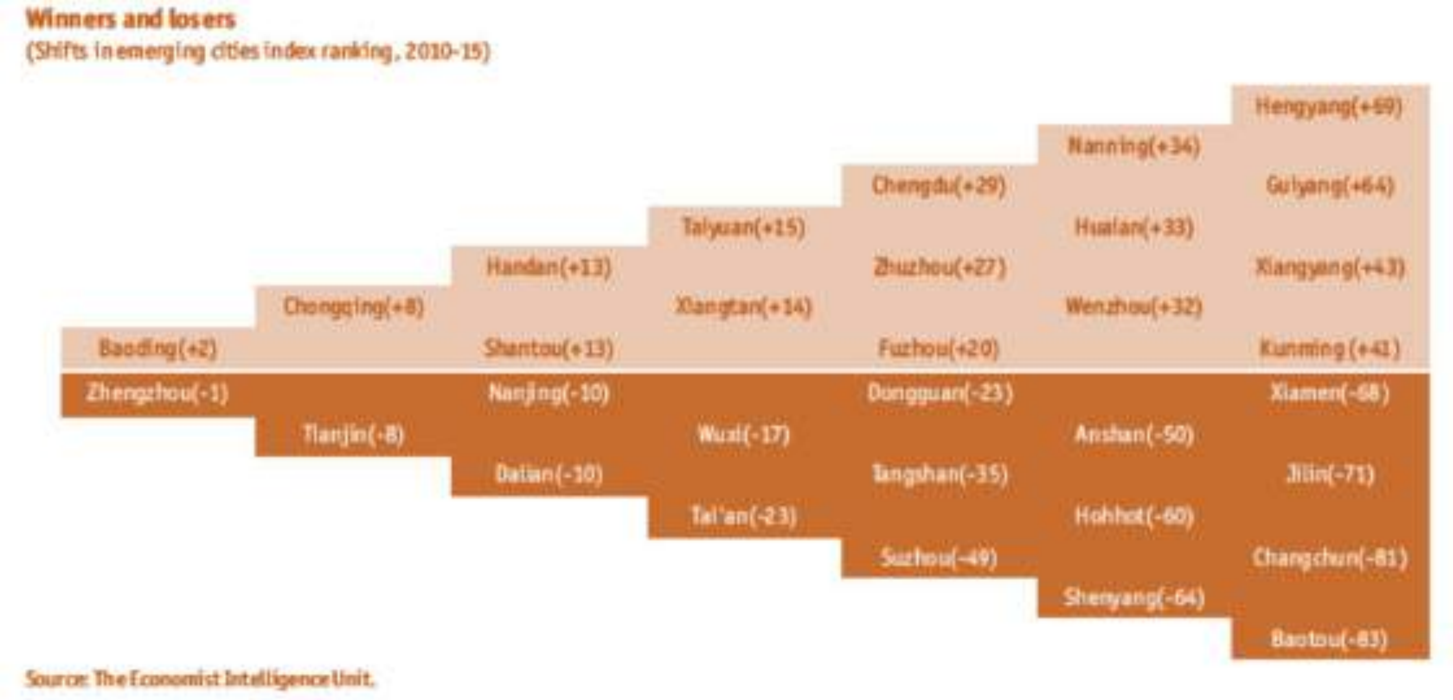


Emerging city rankings: top 20 cities, 2015

(Note: 93 cities included in the dataset)

Overall ranking	City	Real GDP	Metropolitan population	Disposable income per head	Consumption expenditure per head	Fixed-asset investment	Urban built area	Fiscal revenue	Foreign direct investment	Merchandise exports
1	Guiyang (Guizou)	1	46	16	7	19	5	22	1	10
2	Xiangyang (Hubei)	33	60	30	41	1	10	1	19	11
3	Hengyang (Hunan)	38	40	21	25	2	11	3	37	4
4	Chongqing	3	66	8	3	46	14	28	12	3
5	Suqian (Jiangsu)	16	1	5	5	79	47	5	3	5
6	Huainan (Anhui)	92	72	92	63	14	81	10	34	1
7	Huaibei (Anhui)	12	35	83	48	16	50	38	4	9
8	Zhuzhou (Hunan)	25	75	24	56	5	21	20	33	8
9	Zhengzhou (Henan)	9	19	25	46	49	64	34	31	2
10	Chengdu (Sichuan)	40	27	42	38	67	52	49	6	7
11	Jinzhou (Liaoning)	84	85	45	11	6	77	7	14	18
12	Wuhu (Anhui)	6	15	28	1	17	54	6	22	19
13	Yinchuan (Ningxia)	66	3	61	72	20	42	9	17	21
14	Nanchong (Sichuan)	75	47	12	69	11	9	14	42	14
15	Yingkou (Liaoning)	82	53	57	43	61	73	2	9	20
16	Mianyang (Sichuan)	54	84	53	57	30	36	11	38	13
17	Nanchang (Jiangxi)	7	41	23	21	41	4	32	60	16
18	Nanyang (Henan)	48	31	14	26	56	8	57	8	32
19	Kunming (Yunnan)	37	68	41	16	31	24	48	23	15
20	Xuzhou (Jiangsu)	13	51	19	10	58	22	16	24	24

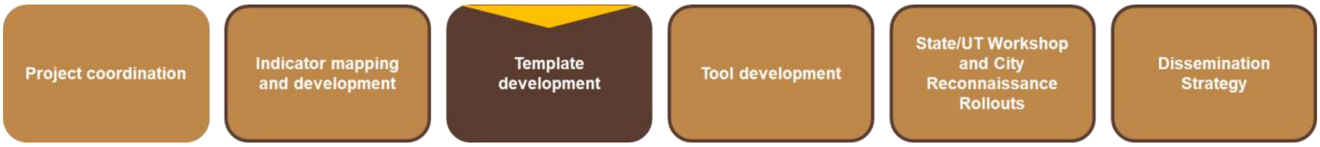
Source: The Economist Intelligence Unit.



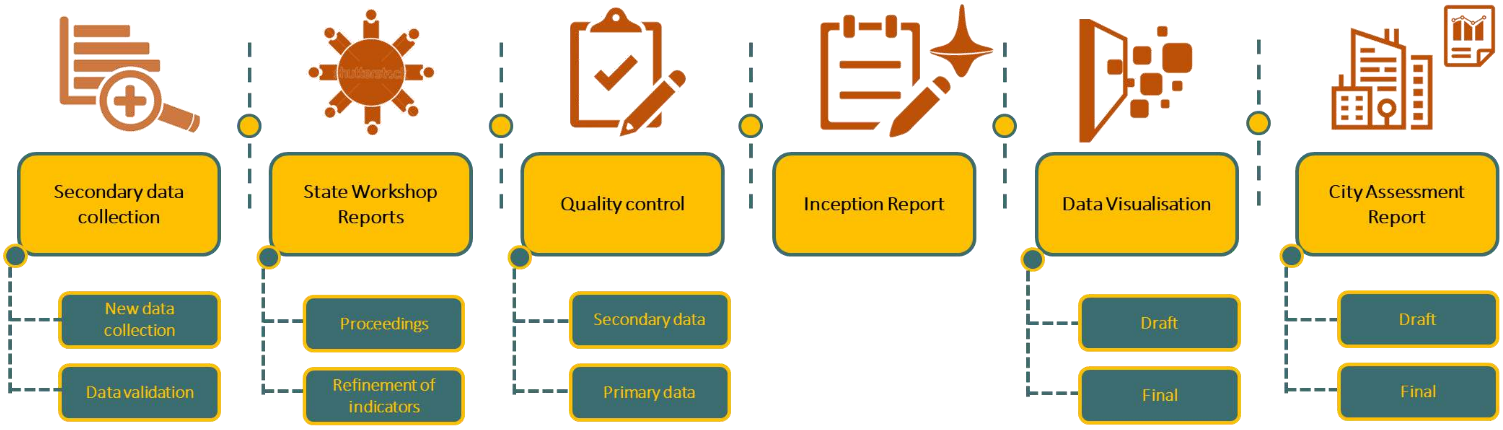
Winners and losers

(Shifts in emerging cities index ranking, 2010-15)

Source: The Economist Intelligence Unit.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

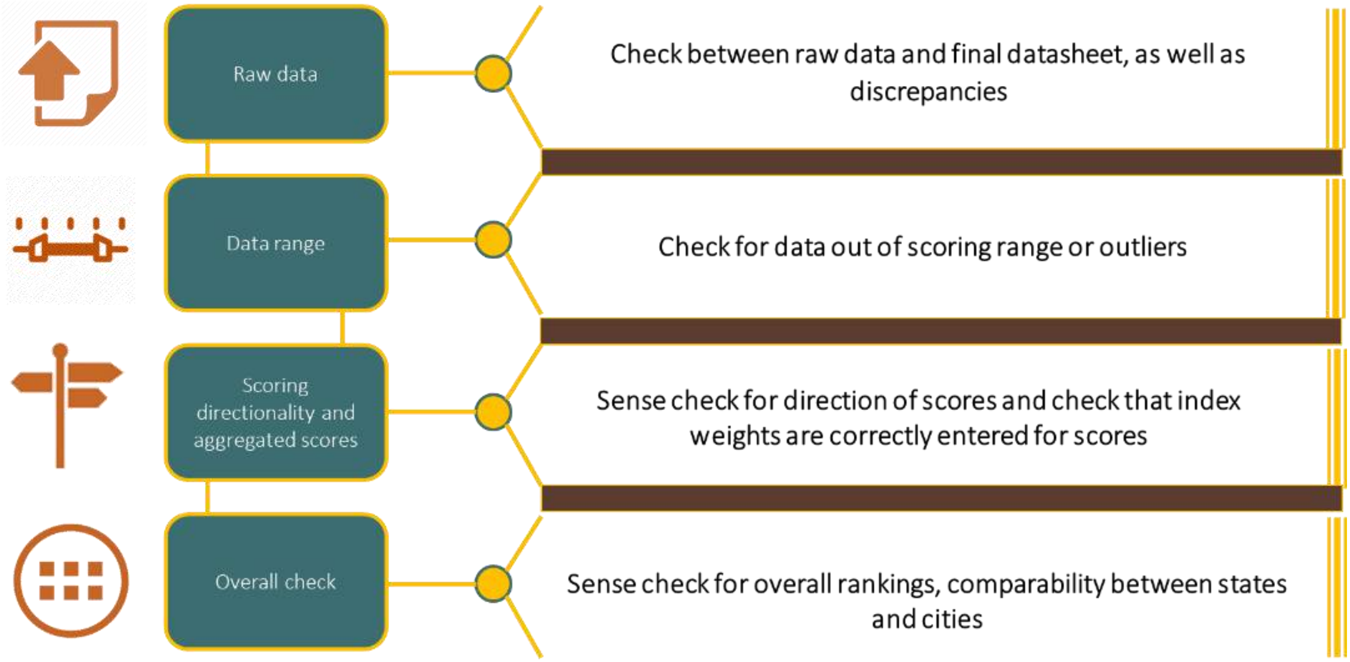
To ensure readiness for the subsequent phases, our team will develop templates ranging from secondary data collection to city assessment reports and collect inputs from the MoHUA early on. The following templates shall be prepared during the preparatory phase.


Secondary data collection
New data collection
Data validation
State Workshop Reports
Proceedings
Refinement of indicators
Quality control
Secondary data
Primary data
Inception Report
Data Visualisation
Draft
Final
City Assessment Report
Draft
Final

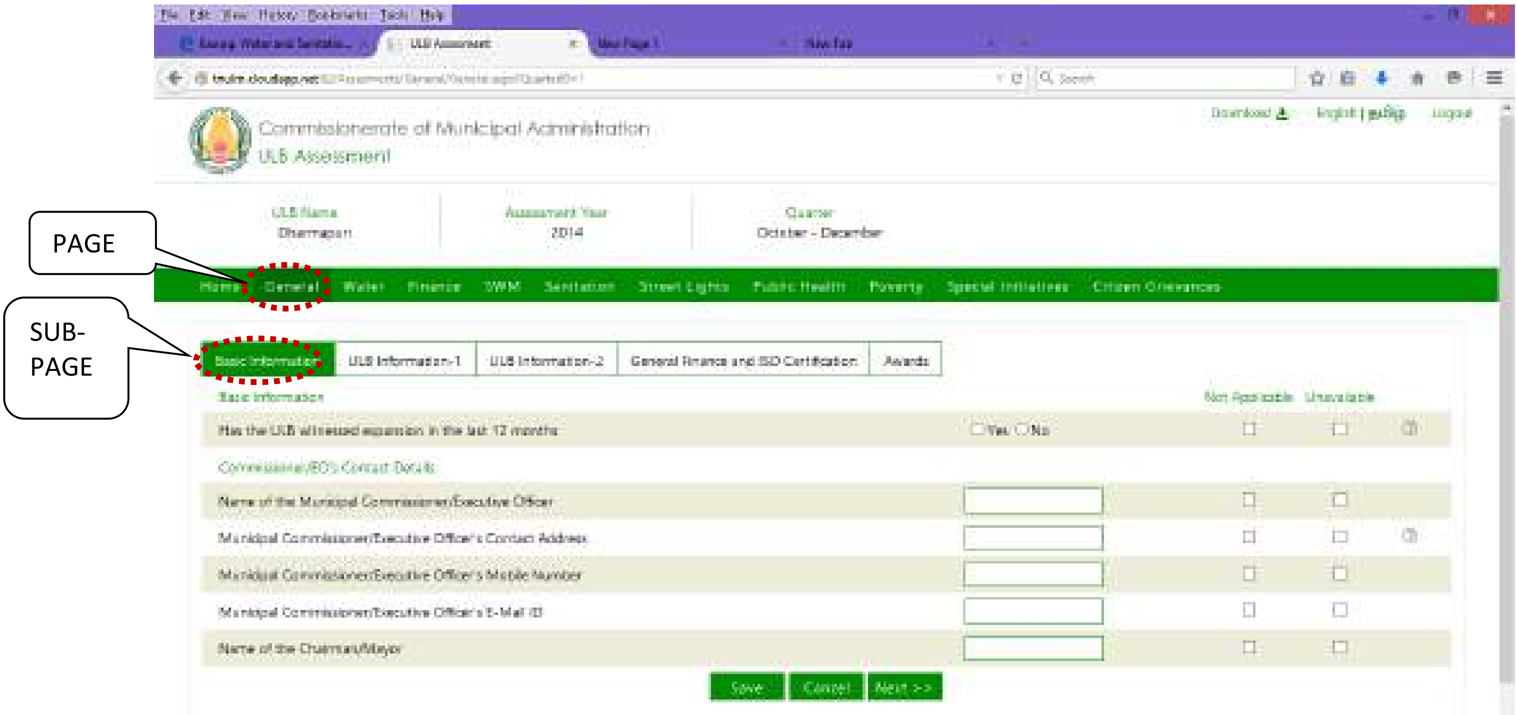
Customised secondary data template shall be prepared in advance for each city. The data template would comprise two categories of data fields, namely"

- New data fields
- Validation data fields

While the new data field will require cities to fill the data points afresh, the validation data field would comprise collation of real data from existing sources such as Census 2011, data.gov.in, *Swacch Bharat Mission* (Urban), Smart Cities Mission, *Swacch Sarvekshan*, HRIDAY, AMRUT and other programmes/schemes that could be either validated or revised by the cities. The data collection template will be an online tool e.g., *sharepoint* with in-built functions including drop-down menus for ease of access; this tool can be used without internet and cities could save draft versions and upload post finalisation. It is our standard practice to have a set of robust quality assurance procedures to be performed on every Excel index to minimise errors and oversight.


Raw data
Check between raw data and final datasheet, as well as discrepancies
Data range
Check for data out of scoring range or outliers
Scoring directionality and aggregated scores
Sense check for direction of scores and check that index weights are correctly entered for scores
Overall check
Sense check for overall rankings, comparability between states and cities

As stated earlier a simple and user-friendly online data entry portal will be developed on Sharepoint/VB and shared with the cities. Each city will be provided a customized login user name and password. Categories of data will be generated along the thematic heads identified under the Liveability programme guidelines and the user can easily navigate across pages and fill out those data points that are available at hand first. (an illustration of a sharepoint portal developed for Tamil Nadu is provided below)


PAGE
SUB-PAGE
File Edit View History Bookmarks Tools Help
ULB Assessment
New Page 1
New Tab
Commissionerate of Municipal Administration
ULB Assessment
Download
English | தமிழ்
Logout
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next >>

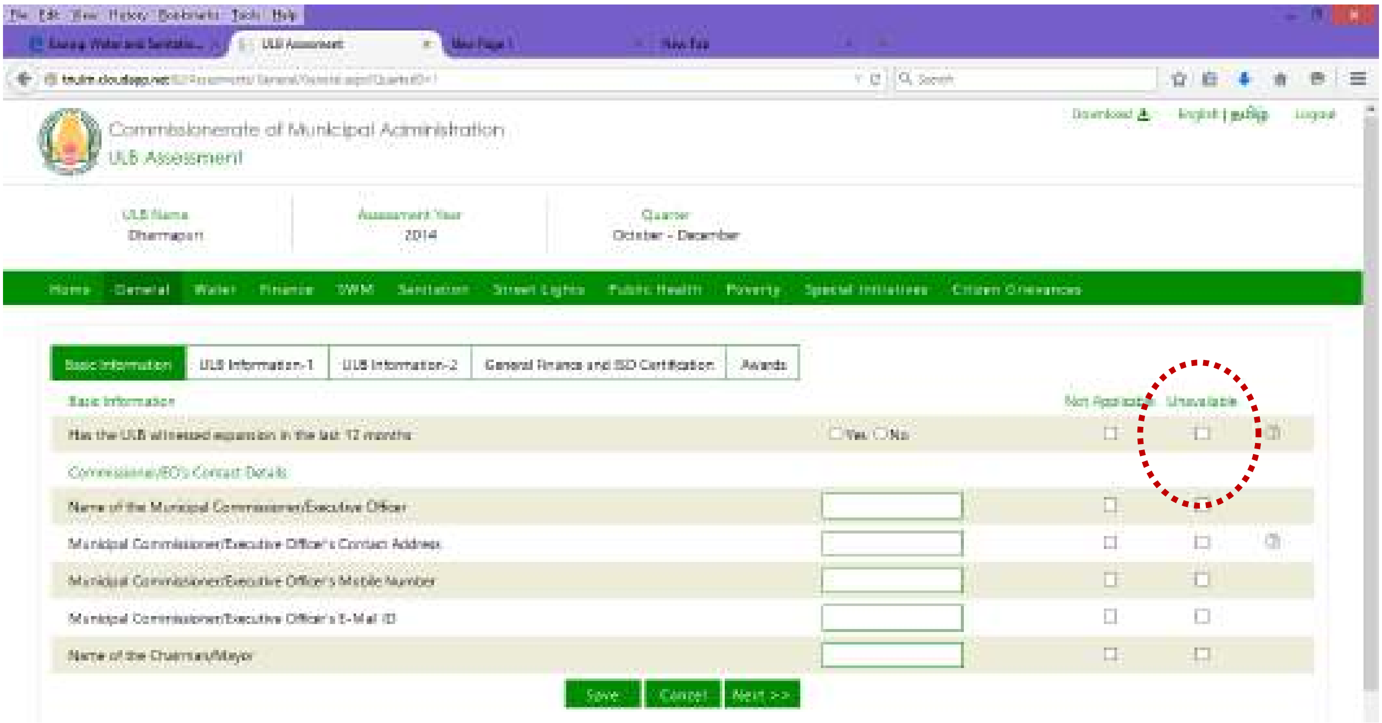
ULB Name: Dharmapuri
Assessment Year: 2014
Quarter: October - December

Basic Information

		Not Applicable	Unavailable
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐
Commissioner/EO's Contact Details			
Name of the Municipal Commissioner/Executive Officer		☐	☐
Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

The user will be given an option to save their work mid-way and resume at any time. For every data indicator, options such as 'not available' and 'not applicable' (for example: some cities may not have a centralized treatment plant and thus the data may not be applicable at all to that city) will be provided.

Once completed, the city will submit the data, no changes can be made to the data that is filled in once the data file is submitted.


File Edit View History Bookmarks Tools Help
ULB Assessment
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Citizen Grievances
Basic Information
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ULB Information-2
General Finance and ISO Certification
Awards
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Cancel
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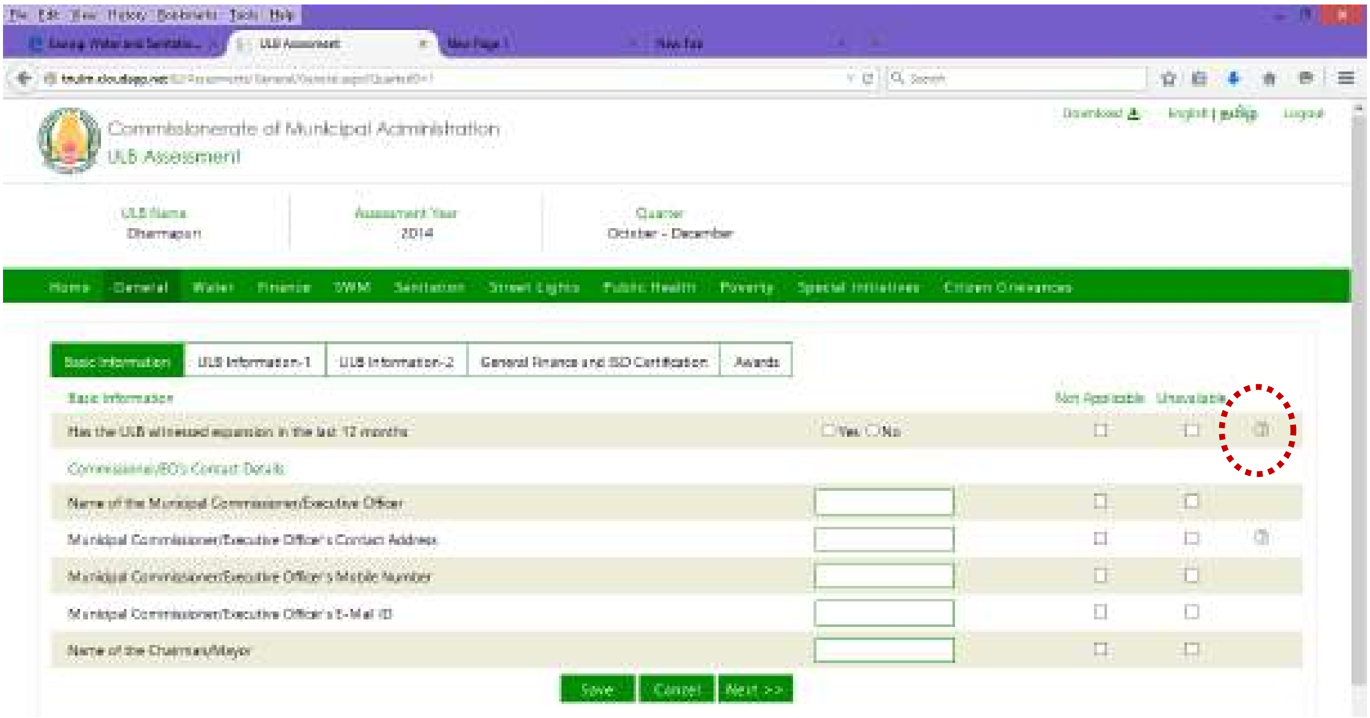
Commissionerate of Municipal Administration
ULB Assessment

ULB Name: Dharmapuri
Assessment Year: 2014
Quarter: October - December

Basic Information

		Not Applicable	Unavailable
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐
Commissioner/EO's Contact Details			
Name of the Municipal Commissioner/Executive Officer		☐	☐
Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

Also for every question, a help function will be embedded in the data entry tool to guide the city on the source of data. Efforts will be made to keep the data entry process to filling out raw data and the calculation of ratios and second tier analytics will be done at the back-end


Commissionerate of Municipal Administration
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Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

The cleaned and checked data will be fed into the model data analysis and visualisation template. Our consortium has the experience and expertise of building stunning data representation, interactive maps and digital story telling. For this assignment, we would develop a draft Excel model[2] which uses an interactive dashboard to visualise the data and benchmarking process; this can include:

Interactive heat map

Adjustable weightings to allow for customisation

A list of city scores by category and/or indicator

Custom scatterplots and correlation analysis

Ability to compare multiple cities simultaneously

Geography profile page with key data, along with strengths and weaknesses

The draft data visualisation template will be presented to the state and city officials during the state/UT-level engagements and shared with MoHUA for review and feedback. At the same time, the template will be revisited by our analysts as part of a quality-control procedure and to ensure city comparability. An example of the EIU's interactive workbooks and dashboards can be seen below

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[2] Examples of the Excel index workbooks developed by the Economist Intelligence Unit can be found for the Safe Cities Index, for the Food Sustainability Index and for the Path to Zero thought leadership

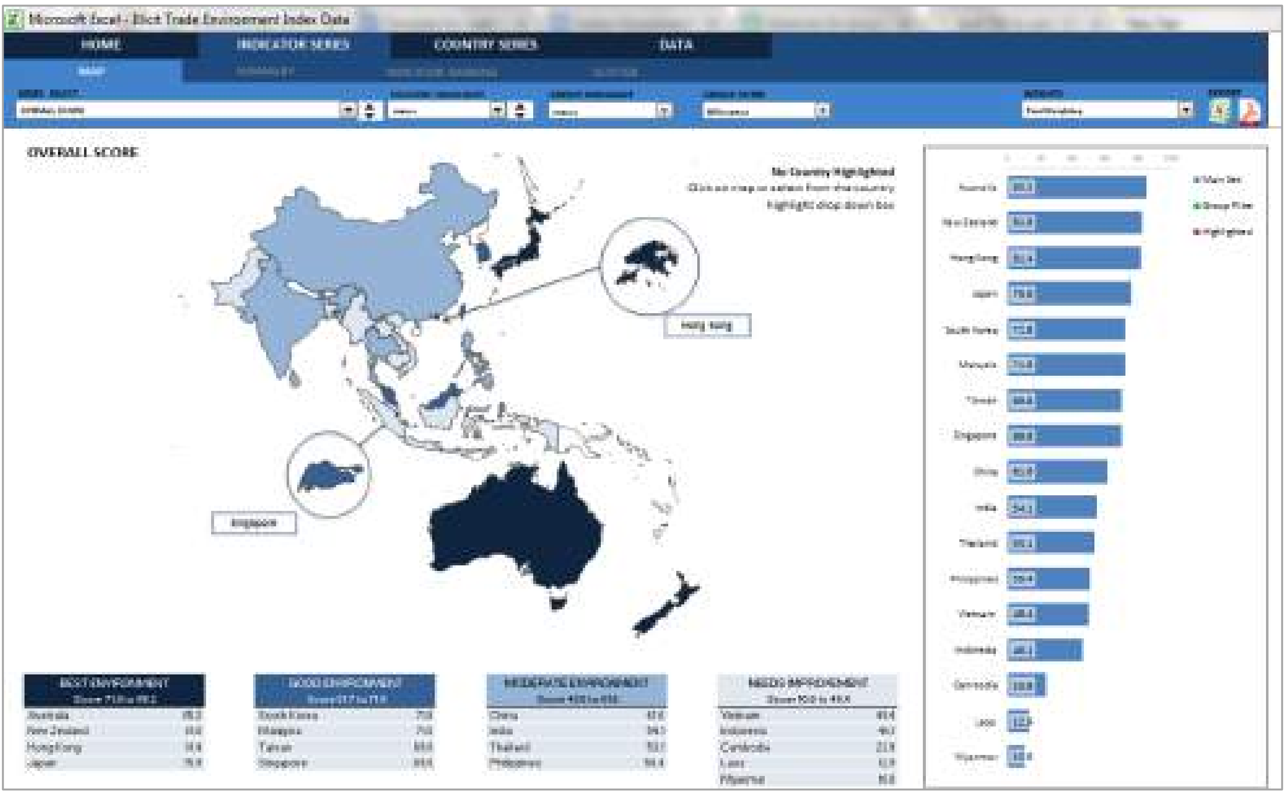

Microsoft Excel - Illicit Trade Environment Index Data
HOME
INDICATOR SERIES
COUNTRY SERIES
DATA
MAP
OVERALL SCORE
No Country Highlighted
Click on map or select from the country highlight drop down box
Hong Kong
Singapore
BEST ENVIRONMENT
GOOD ENVIRONMENT
MODERATE ENVIRONMENT
NEEDS IMPROVEMENT
Australia
New Zealand
Hong Kong
Japan
South Korea
Malaysia
Taiwan
Singapore
China
India
Thailand
Philippines
Vietnam
Indonesia
Cambodia
Laos
Myanmar

Illustration of EIU's Liveability Index visualisation

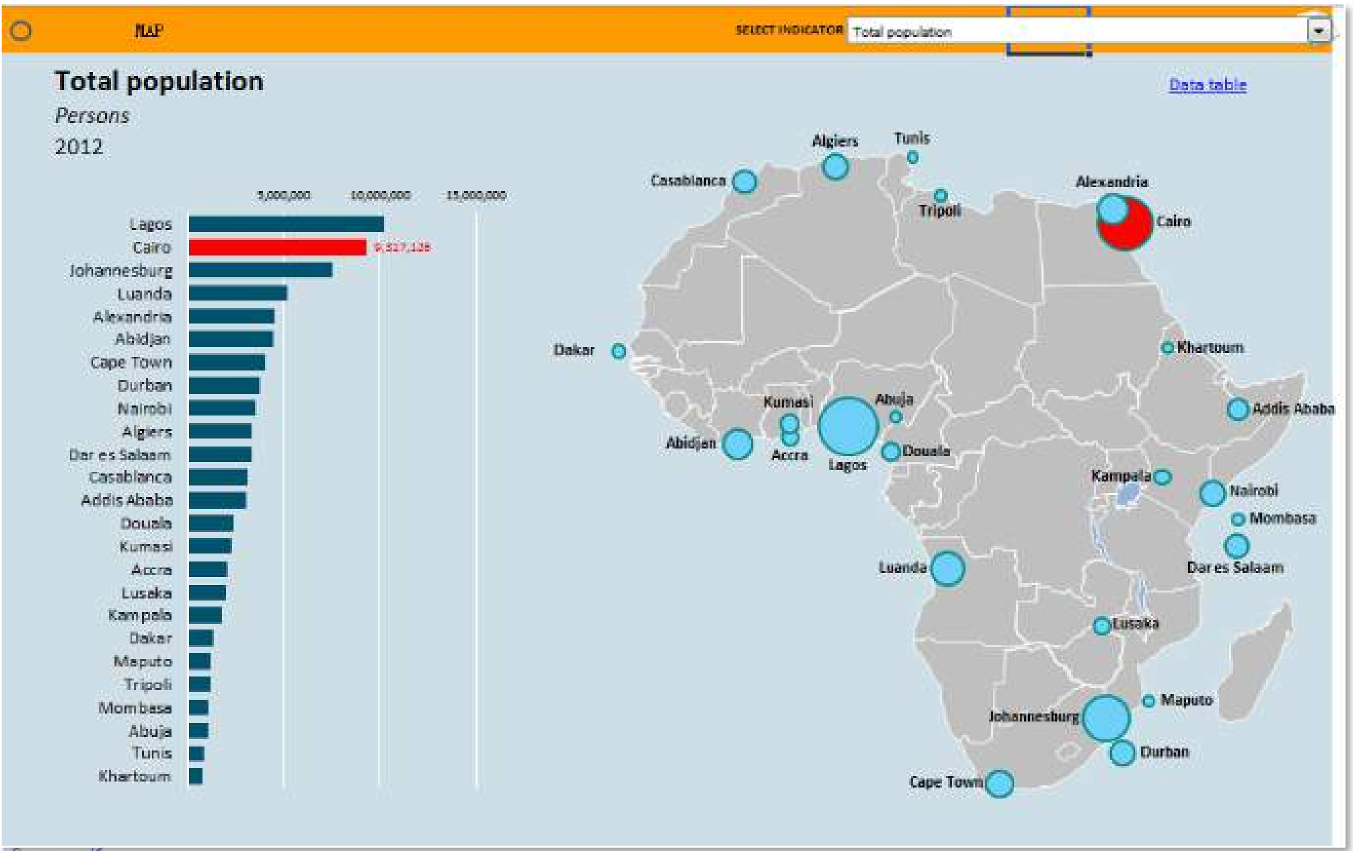
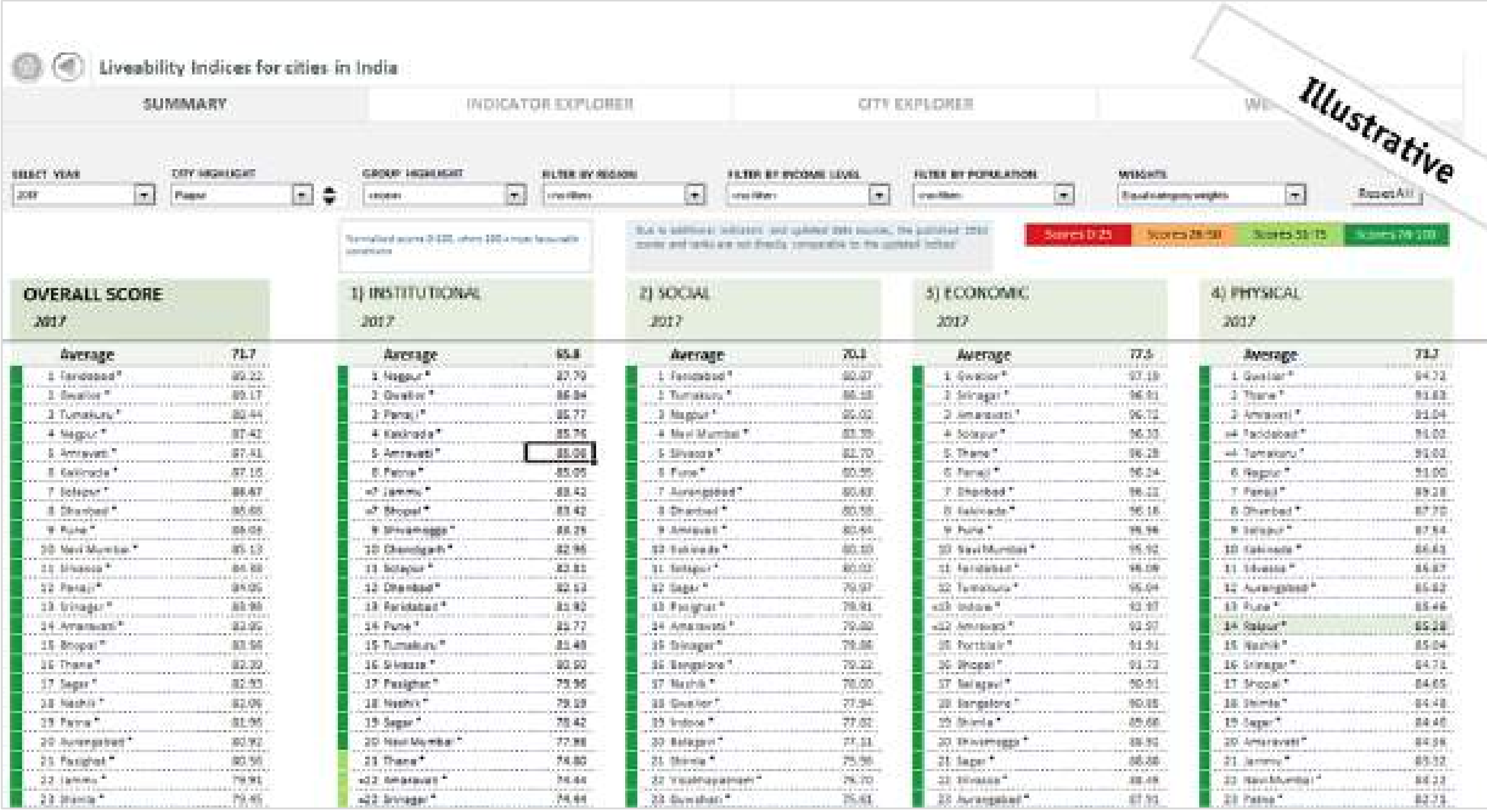
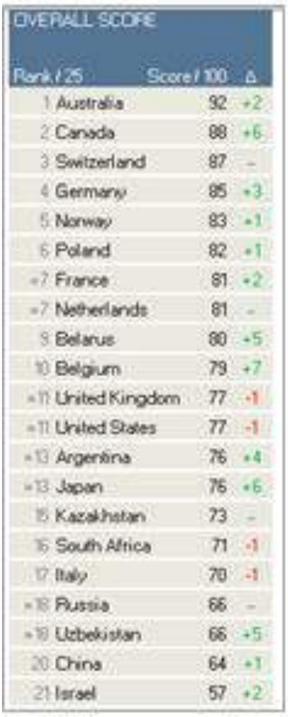

MAP
SELECT INDICATOR
Total population
Total population
Persons
2012
Data table
5,000,000
10,000,000
15,000,000
Lagos
Cairo
9,317,128
Johannesburg
Luanda
Alexandria
Abidjan
Cape Town
Durban
Nairobi
Algiers
Dar es Salaam
Casablanca
Addis Ababa
Douala
Kumasi
Accra
Lusaka
Kampala
Dakar
Maputo
Tripoli
Mombasa
Abuja
Tunis
Khartoum
Algiers
Tunis
Casablanca
Tripoli
Alexandria
Cairo
Dakar
Khartoum
Addis Ababa
Kumasi
Abuja
Abidjan
Accra
Lagos
Douala
Kampala
Nairobi
Mombasa
Luanda
Dar es Salaam
Lusaka
Maputo
Johannesburg
Durban
Cape Town

Illustration of EIU's Liveability Index visualisation

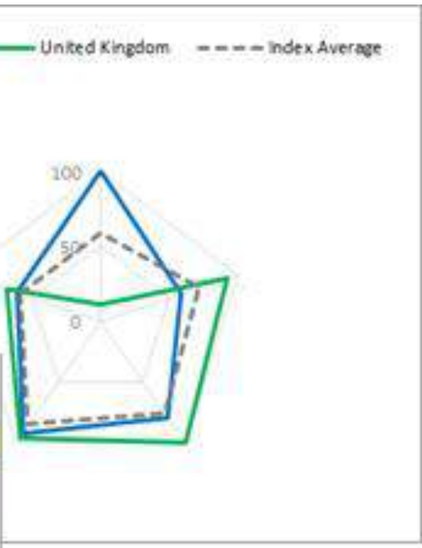
Illustration of EIU's Liveability Index visualisation

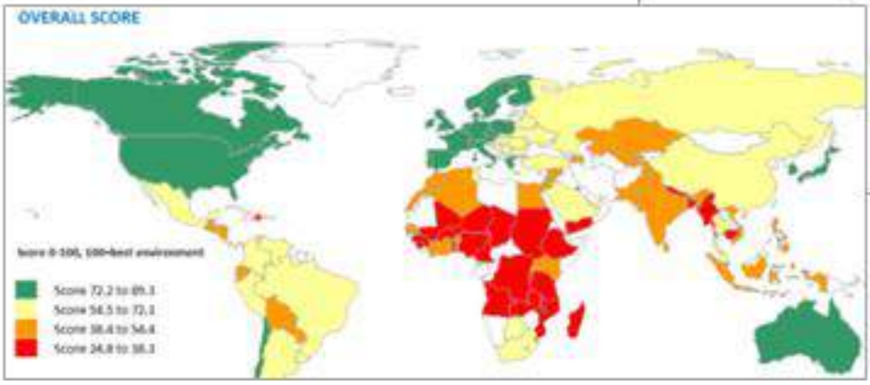

Illustrative
Liveability Indices for cities in India
SUMMARY
INDICATOR EXPLORER
CITY EXPLORER
SELECT YEAR
CITY HIGHLIGHT
GROUP HIGHLIGHT
FILTER BY REGION
FILTER BY INCOME LEVEL
FILTER BY POPULATION
WEIGHTS
Reset All
OVERALL SCORE
2017
Average
71.7
1) INSTITUTIONAL
2017
Average
2) SOCIAL
2017
Average
3) ECONOMIC
2017
Average
4) PHYSICAL
2017
Average



OVERALL SCORE

Rank / 25	Score / 100	Δ
1 Australia	92	+2
2 Canada	88	+6
3 Switzerland	87	–
4 Germany	85	+3
5 Norway	83	+1
6 Poland	82	+1
=7 France	81	+2
=7 Netherlands	81	–
9 Belarus	80	+5
10 Belgium	79	+7
=11 United Kingdom	77	-1
=11 United States	77	-1
=13 Argentina	76	+4
=13 Japan	76	+6
15 Kazakhstan	73	–
16 South Africa	71	-1
17 Italy	70	-1
=18 Russia	66	–
=18 Uzbekistan	66	+5
20 China	64	+1
21 Israel	57	+2

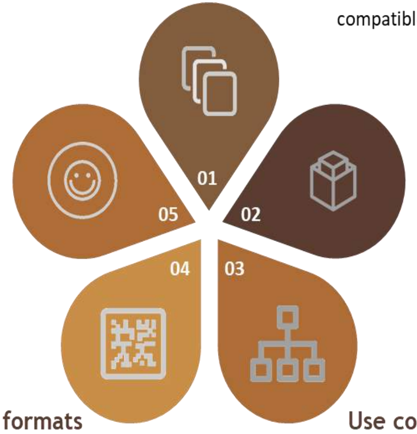



OVERALL SCORE
Score 0-100, 100=best environment
🟩 Score 72.2 to 89.3
🟨 Score 54.5 to 72.1
🟧 Score 38.4 to 54.4
🟥 Score 24.8 to 38.3

Data interoperability considerations

Global efforts are underway to integrate the increasing gamut of urban data for monitoring understanding, decision making, steering and control of urban landscape. However, the design of urban data is still on-going. with measures to standardise it can be seen even in India through game changing initiatives such as the Smart Cities Mission. We believe that the value of data multiplies when it is easily grasped by key stakeholders e.g., city administrators, citizens, etc. analysed and shared. The multiplicity of sources and formats poses a challenge to addressing queries raised by city stakeholders. These queries could be from city administrators or citizens, for instance, 'where is the greatest risk of mosquito-borne illness?' Or from citizens 'Which parts of the cities have the highest chances of receiving flash floods in the next few days?' The Smart Cities concept globally seeks to move towards this by addressing the issue of interoperability of urban data by defining an overarching framework of concepts and relationships that can be used to describe data from any sector and any source (BSI, 2016).

The liveability assessment exercise provides a platform to leverage the value of data by making it *interoperable*, open yet secure and *use case* applications. We see this assignment as opportunity to move the needle on data interoperability by developing a framework for urban data interoperability based on the principles of interoperability consolidated in the Cape Town Global Action Plan for Sustainable Development (2017). The key guiding principles are presented in figure below:



Use and re-use existing standards

- No new standards should be created in areas they already exist unless absolutely necessary.
- When new standards are created, they must be compatible with existing standards

Do not overlook metadata

- Metadata includes information on origin, authors/producers, date of production/version, etc.
- It is crucial for discoverability, accessibility and fostering trust and understanding of the context in which the data was produced.

Use common classifications wherever possible

- As more and more data is produced, we need to ensure that to the extent possible, the language used to define and classify that data is the same.

Publish data in machine-readable formats

- publishing data in machine readable formats is crucial to interoperability.
- It enables a computer to access, identify and filter data in an automated way.

Ensure that standards are user driven

- For data to be usable, it has to be driven by the needs of users themselves.
- The process of ensuring that data is usable can be complex and require trial and error, but is crucial to long-term success and impact.

Source: The frontiers of data interoperability for sustainable development, Development Initiatives, November 2017

Our framework will also examine the political economy framework for urban data (Edwards et. Al., 2016) that calls for a shift the focus of data driven governance policies and practices from capacity and supply to incentivising service delivery, transparency and accountability. The recent initiative of the MoHUA to provide INR 10,000 crore for municipal reform ushers this spirit in governance of cities in India. The political economy framework calls for provisioning and usage of urban data should be about the solution to concrete problems in urban environments, not just about the pure quantities of urban data.

At the end, urban data is simply a means to do urban monitoring, steering and development more effectively, efficiently and reliably. We also propose to outline some of the use case applications based on the consultations with state/UTs and cities considering the data that will be generated from this assessment exercise. Some of the operation enhancing questions or use case applications could be the following:

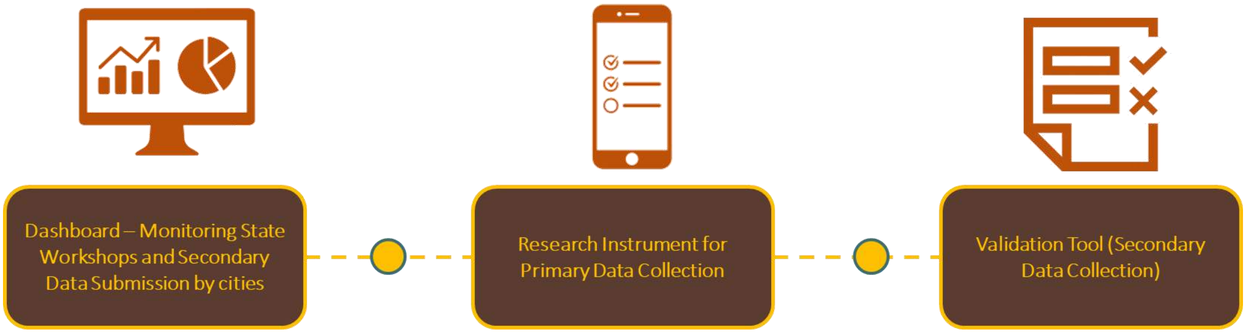
- When citizens apply for / obtain multiple services, which service do they typically apply for first?
- Is there a correlation between energy consumption and tenement structures?

ILLUSTRATIVE

- Where is there the greatest risk of mosquito borne illness?
- Is there a correlation between service delivery efficiencies in SWM and settlement type?

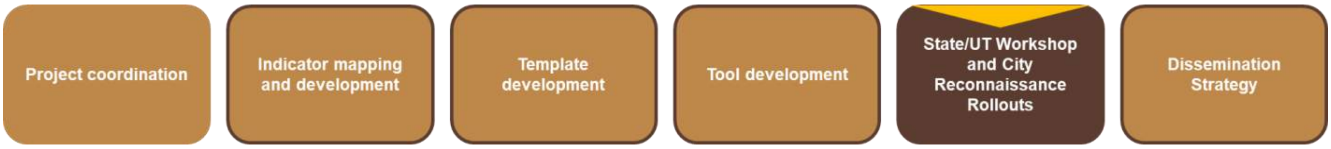
Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

Three tools would be developed to assist with tracking consultations with state government and cities, primary data collection and for validation of secondary data points


Dashboard – Monitoring State Workshops and Secondary Data Submission by cities
Research Instrument for Primary Data Collection
Validation Tool (Secondary Data Collection)

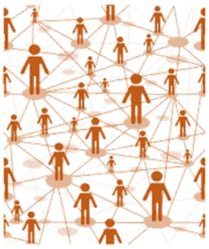
The first tool i.e., for tracking State/UT/City level consultations will monitor the progress of 36 State/UT level workshops and 116 City Reconnaissance Meetings and provide updates on agreed data points, nodal contact person, timelines, mode of secondary data provision (online tool e.g., *sharepoint* vs. manual) among other aspects. This tool will be in the form of a dashboard that will also monitor the progress made by cities on secondary data submission.

We will develop a set of research instrument for primary data collection for an identified set of indicators. The research instrument will be coded into a mobile application and finalised post field test. Additionally, we will also develop draft template for validation of secondary data pertaining to some indicators such as number of schools having facilities for using digital content etc.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

We see the state/UT level engagements as a platform for not only disseminating the objectives and rationale for undertaking the liveability assessment of cities within each state/UT but also as an opportunity to finalise our approach for arriving at the input data points for each of the 79 indicators and associated modalities. As a run-up to the state/UT workshops and city reconnaissance missions, the following preparatory activities would be undertaken:

Identification of City level Stakeholders



City level stakeholder would be identified with respect to key stakeholder with respect to each indicator. The Methodology Report states the agency/department from which data could be obtained for each of the indicator. For instance, data on cost recovery, online services would be provided by the ULB, data on restoration of historic buildings are to be provided by ASI and State ASI apart from ULB. Similarly, data on projects on ecologically sensitives areas would be provided by the local development authority. Consideration would be given to identify key officials within an organisation as well.

Preparation and dispatch of city wise Secondary data collection sheets

An important step in this phase is to prepare city level data sheets covering the input data points for the 79 indicators to all the cities through the State nodal officer. The data sheets would be populated from existing data sources such as Census 2011, Swachh Sarvekshan, AMRUT, SCM, HRIDAY and other programmes/schemes. Advance dispatch of the sheets would provide cities some time to review and understand the required data points so that issues/clarifications could be made at the workshops.

Scheduling of State-level workshops and City Reconnaissance Missions

Timelines for State-level workshops and City level reconnaissance missions would be scheduled in consultations with the State nodal officer for each State. The dates for the workshop would be reflected on the State Workshop Progress Monitoring Dashboard as and when the dates for each workshop gets finalised. This dashboard would help MoHUA and States to track the progress of State workshops and city reconnaissance missions, respectively. This dashboard would later be utilized to monitor progress of secondary data submission by cities.

Preparation of draft workshop agenda and discussion content

A draft workshop agenda would be prepared and finalised in consultation with the MoHUA and respective State Governments. The workshop would have structured discussions around the following thematic areas – Project Background and Methodology, Understanding the indicators (demystifying nomenclatures and data points), smart proxies, data collection template, standardization of reporting period, data lags, incentives for timely/early submissions, etc.

Project coordination | Indicator mapping and development | Template development | Tool development | State/UT Workshop and City Reconnaissance Rollouts | **Dissemination Strategy**

We will create a strategy for dissemination of the city liveability assessments at the international and national level. While a national workshop to share the city level rankings is planned towards the end of the study we plan to engage with international, national, state and local level on an on-going basis through a host of media dissemination activities such as photo journals, articles, blogs and a high decibel social media campaign. One key outreach event is the creation of a dissemination platform - 'The Hub' @ The Economist to connect and share progress with global audience. Our dissemination activities will conclude with the national level workshop to demonstrate use-case of evidence generated by this exercise for futuristic urban planning for Indian cities.

Phase 2: State/UT-level Engagements and City Reconnaissance Missions [Week 5- Week 8]

Phase two will commence with launch of state/UT level workshops. Overall a total of 36 workshops will be conducted over a period of two to three months. Our teams would coordinate with the state level nodal officers early on for tentative dates for scheduling workshops. The objective of the State level workshop will be to familiarize the state/UT government and city representatives about the overall concept of Liveability Index, assessment methodology, data requirements, data sources, data collection interface/application and validation methodology and associated processes and timelines for submission of complete data. Schedule for city level reconnaissance meetings will able to finalised during the state/UT workshops. The figure below summarises the key activities and milestones to be complete in this phase.

Phase 2 State/City level engagement

Duration
W5-W8

Organisation of State-level Workshops

Launch and updation of Nation-wide workshop tracker

Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official

City level Reconnaissance meetings

Final list of indicators (with details as to calculation and ambit), incorporating comments from the workshop; and Inception Report preparation

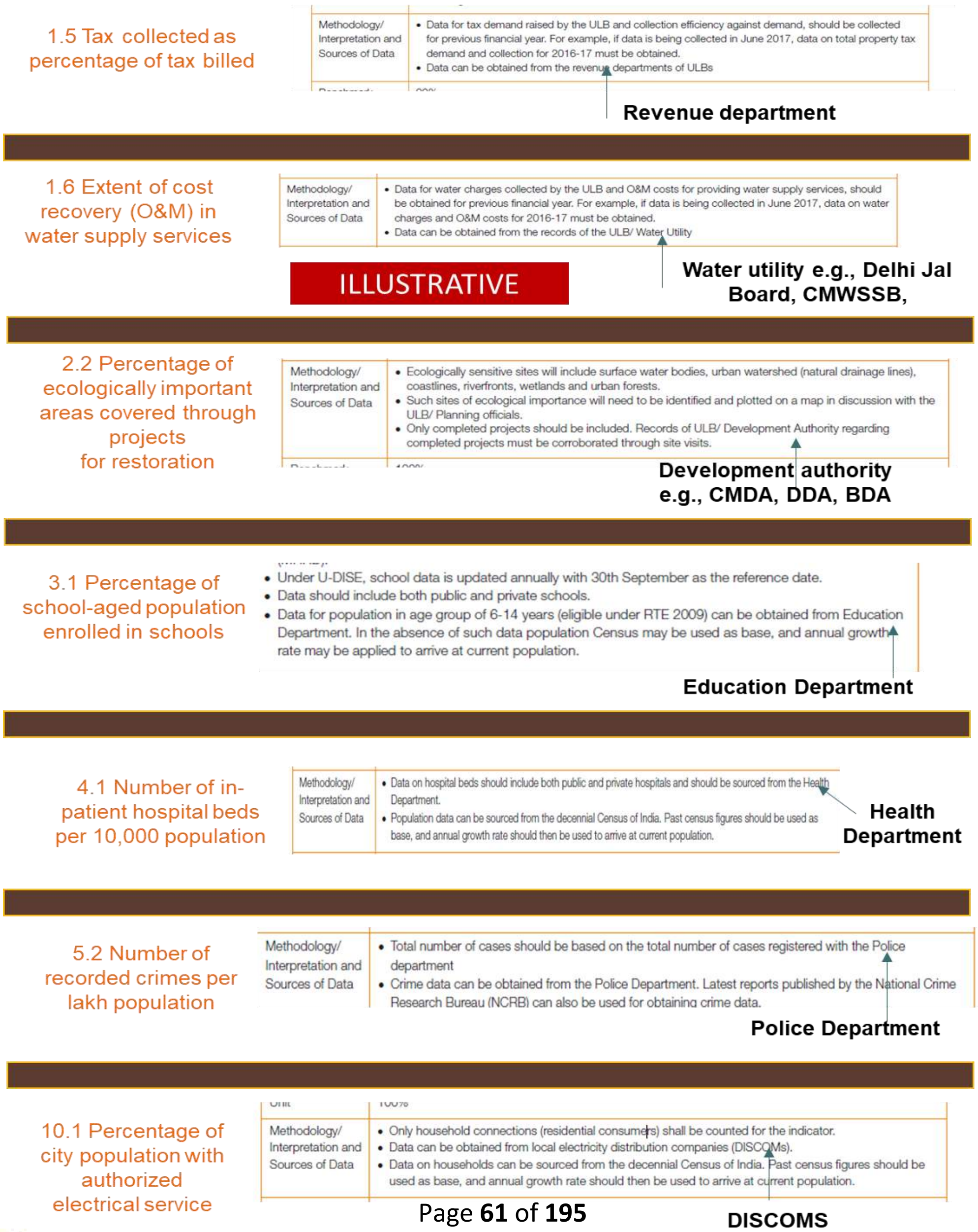
Media dissemination through photo journals, national portal to be an on-going exercise

It is expected that about 40-45 participants comprising city representatives, state nodal officer, representatives from relevant line department of the State government and other participants suggested by the State Government will attend the workshop. Key outcomes of the State level workshops will include the following:

- Timelines for city level reconnaissance meetings

- Identification of preferred mode of data collection interface
- Timelines for confirming availability/unavailability of required data
- Timeliness for submission of secondary data
- Timelines for review and agreement on data
- Protocols for escalation of issues relating to data nomenclature, submission delays etc.
- Incentive structure for timely submission of secondary data

An initial list of participants will be drawn based on the agency suggested for different data points in the 'Methodology Report. This list would be finalised in consultation with the nodal officers of each state.



ILLUSTRATIVE

Indicator	Source suggested (Methodology Report)	
1.5 Tax collected as percentage of tax billed	Methodology/ Interpretation and Sources of Data: • Data for tax demand raised by the ULB and collection efficiency against demand, should be collected for previous financial year. For example, if data is being collected in June 2017, data on total property tax demand and collection for 2016-17 must be obtained. • Data can be obtained from the revenue departments of ULBs	**Revenue department**
1.6 Extent of cost recovery (O&M) in water supply services	Methodology/ Interpretation and Sources of Data: • Data for water charges collected by the ULB and O&M costs for providing water supply services, should be obtained for previous financial year. For example, if data is being collected in June 2017, data on water charges and O&M costs for 2016-17 must be obtained. • Data can be obtained from the records of the ULB/ Water Utility	**Water utility e.g., Delhi Jal Board, CMWSSB,**
2.2 Percentage of ecologically important areas covered through projects for restoration	Methodology/ Interpretation and Sources of Data: • Ecologically sensitive sites will include surface water bodies, urban watershed (natural drainage lines), coastlines, riverfronts, wetlands and urban forests. • Such sites of ecological importance will need to be identified and plotted on a map in discussion with the ULB/ Planning officials. • Only completed projects should be included. Records of ULB/ Development Authority regarding completed projects must be corroborated through site visits.	**Development authority e.g., CMDA, DDA, BDA**
3.1 Percentage of school-aged population enrolled in schools	• Under U-DISE, school data is updated annually with 30th September as the reference date. • Data should include both public and private schools. • Data for population in age group of 6-14 years (eligible under RTE 2009) can be obtained from Education Department. In the absence of such data population Census may be used as base, and annual growth rate may be applied to arrive at current population.	**Education Department**
4.1 Number of in-patient hospital beds per 10,000 population	Methodology/ Interpretation and Sources of Data: • Data on hospital beds should include both public and private hospitals and should be sourced from the Health Department. • Population data can be sourced from the decennial Census of India. Past census figures should be used as base, and annual growth rate should then be used to arrive at current population.	**Health Department**
5.2 Number of recorded crimes per lakh population	Methodology/ Interpretation and Sources of Data: • Total number of cases should be based on the total number of cases registered with the Police department • Crime data can be obtained from the Police Department. Latest reports published by the National Crime Research Bureau (NCRB) can also be used for obtaining crime data.	**Police Department**
10.1 Percentage of city population with authorized electrical service	Methodology/ Interpretation and Sources of Data: • Only household connections (residential consumers) shall be counted for the indicator. • Data can be obtained from local electricity distribution companies (DISCOMs). • Data on households can be sourced from the decennial Census of India. Past census figures should be used as base, and annual growth rate should then be used to arrive at current population.	**DISCOMS**

Key ULB officials will participate in the state level workshops while the remaining officials may be encouraged to participate in city level reconnaissance discussions. An indicative programme structure is presented below:

Programme	Day 1	Day 2	Day 3	Day 4
Internal orientation to state/regional coordinators	√		ILLUSTRATIVE	
State/UT workshop		√		
City/ULB Reconnaissance discussions			√	

Post the State/UT workshops, our team will engage in city-level reconnaissance missions that would involve meeting relevant city-level stakeholders including utilities (DISCOMS, water supply, etc.) SPV for Smart Cities, different project heads, parastatals such as development authorities, district collector, concerned line departments such as health, education, police, tourism, among others. Special focus will be given to engage with key officials within ULBs such as revenue, accounts, solid waste management etc.

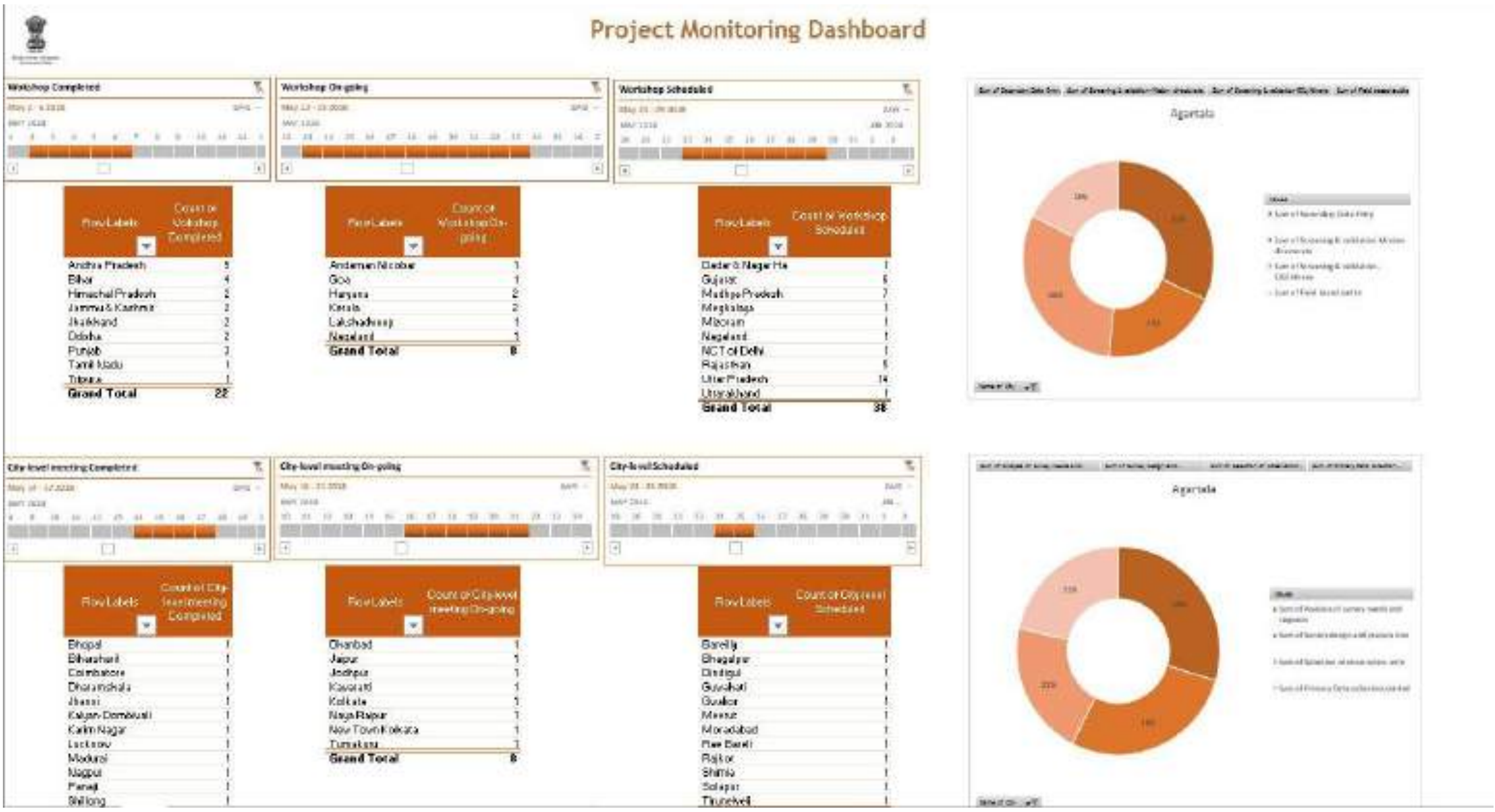
For effective coordination, smooth exchange of information flow and continuity, it is proposed that engagement with the cities will be undertaken through a nodal officer at the state/UT level. A critical milestone of this workshop will be designation of nodal officer for overall coordination by the respective state/UT government. The nodal officer will also serve as the State Data Ombudsman and troubleshoot issues relating to data.

Incentive structure for data submission

A key challenge envisaged in this study pertains to potential challenges related to timely submission of secondary data by the cities. We propose to formulate an innovative incentive structure in consultation with MoHUA and convey it at the state/UT workshops/city meetings to ensure their buy-in. Some of the ways in which cities could be incentivised could be 'appreciation of best performing cities on national portal and social media campaign,' with SMS alerts sent to all key city representatives, and exclusive coverage of best performing cities in photo journals etc.

Monitoring progress of state/UT workshops and City Reconnaissance Missions

The progress of the state/UT workshops and City Reconnaissance Missions will be monitored through a dashboard that will be updated near-real time. The dashboard will information on upcoming, on-going and completed workshops and reconnaissance missions. Associated documents such as workshop agenda, list of participants, discussion materials, workshop proceedings/minutes, photographs, etc. will be accessible through the dashboard.



Project Monitoring Dashboard

Workshop Completed

Row Labels	Count of Workshop Completed
Andhra Pradesh	5
Bihar	4
Himachal Pradesh	2
Jammu & Kashmir	2
Jharkhand	2
Odisha	2
Punjab	3
Tamil Nadu	1
Tripura	1
Grand Total	**22**

Workshop On-going

Row Labels	Count of Workshop On-going
Andaman Nicobar	1
Goa	1
Haryana	2
Kerala	2
Lakshadweep	1
Nagaland	1
Grand Total	**8**

Workshop Scheduled

Row Labels	Count of Workshop Scheduled
Dadar & Nagar Ha	1
Gujarat	6
Madhya Pradesh	7
Meghalaya	1
Mizoram	1
Nagaland	1
NCT of Delhi	1
Rajasthan	5
Uttar Pradesh	14
Uttarakhand	1
Grand Total	**38**

City-level meeting Completed

Row Labels	Count of City-level meeting Completed
Bhopal	1
Biharsharif	1
Coimbatore	1
Dharamshala	1
Jhansi	1
Kalyan-Dombivali	1
Karim Nagar	1
Lucknow	1
Madurai	1
Nagpur	1
Panaji	1
Shillong	1

City-level meeting On-going

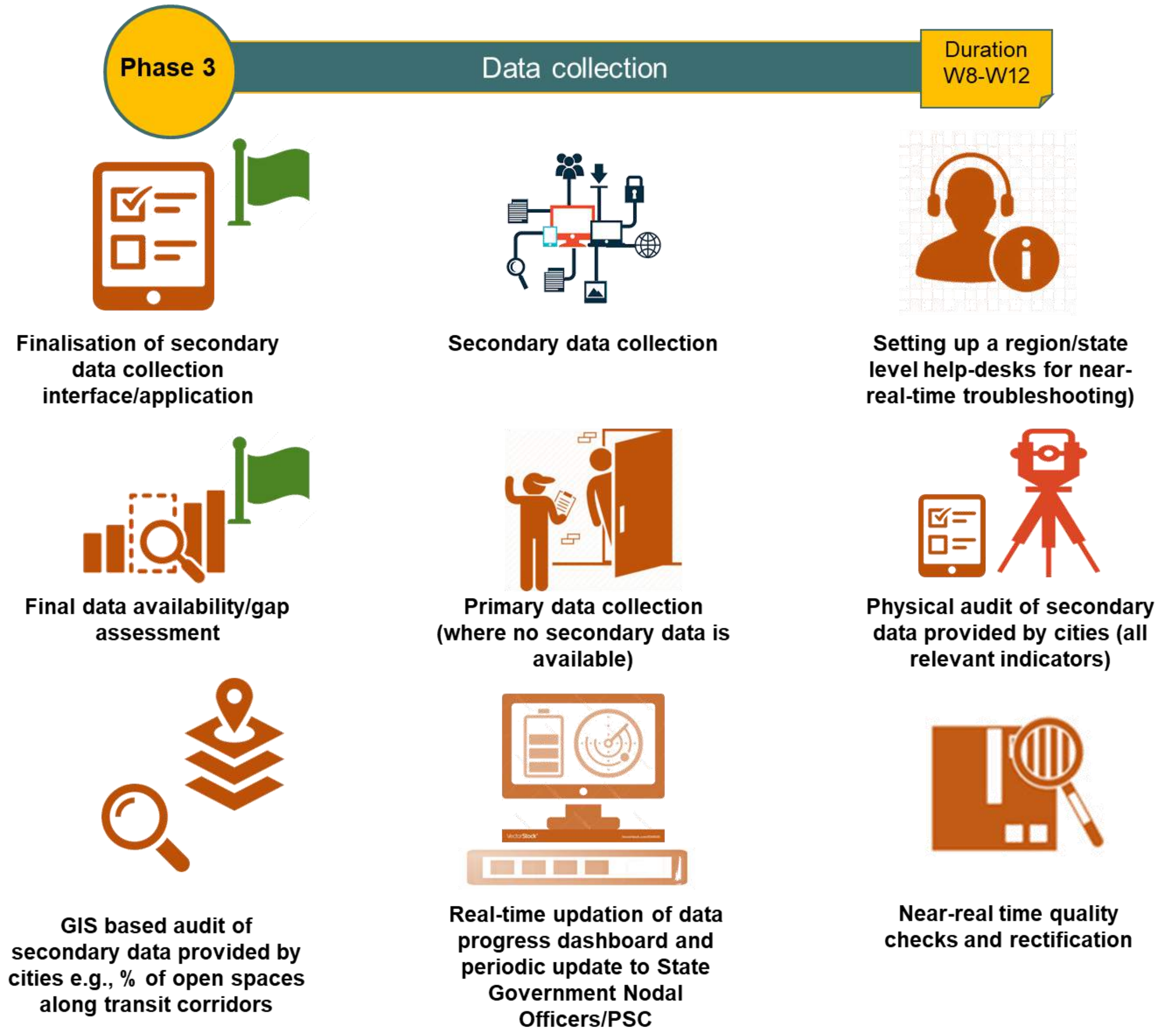
Row Labels	Count of City-level meeting On-going
Dhanbad	1
Jaipur	1
Jodhpur	1
Kavaratti	1
Kolkata	1
Naya Raipur	1
New Town Kolkata	1
Tumakuru	1
Grand Total	**8**

City-level Scheduled

Row Labels	Count of City-level Scheduled
Bareilly	1
Bhagalpur	1
Dindigul	1
Guwahati	1
Gwalior	1
Meerut	1
Moradabad	1
Rae Bareli	1
Rajkot	1
Shimla	1
Solapur	1
Tirunelveli	1

Phase 3: Data collection [Week 9 – Week 12]

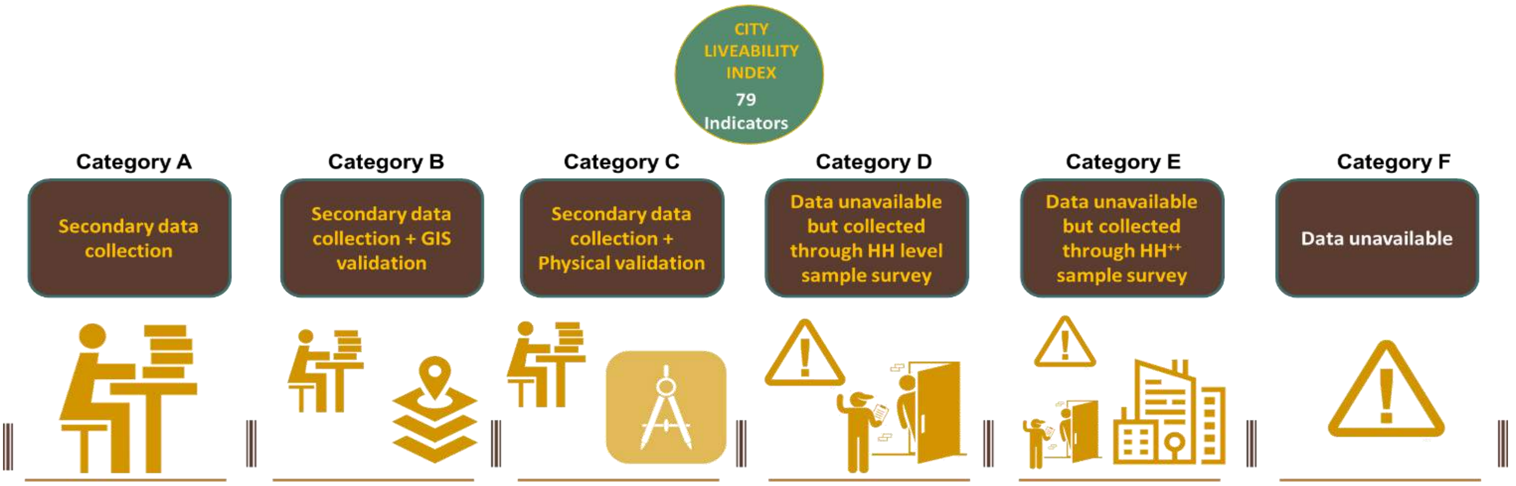
This phase will involve the following activities:


Phase 3
Data collection
Duration W8-W12
Finalisation of secondary data collection interface/application
Secondary data collection
Setting up a region/state level help-desks for near-real-time troubleshooting)
Final data availability/gap assessment
Primary data collection (where no secondary data is available)
Physical audit of secondary data provided by cities (all relevant indicators)
GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors
Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC
Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

We propose collection of secondary data as an on-going exercise as our teams will start collating city level data from the preparatory phase itself and prepare data sheets with pre-filled data covering the 79 indicators to the extent possible. However, formal data collection will commence from week 9 as indicated in the ToR.

As presented in the section on preparatory phase, the 79 indicators could have six categories of data collection interface.


CITY LIVEABILITY INDEX
79 Indicators
Category A
Secondary data collection
Category B
Secondary data collection + GIS validation
Category C
Secondary data collection + Physical validation
Category D
Data unavailable but collected through HH level sample survey
Category E
Data unavailable but collected through HH++ sample survey
Category F
Data unavailable

While it is expected that input data associated with all the 79 indicators will be provided by the cities, there could be some data gaps and concerns regarding period of availability, reporting units and formats, reliability etc. In this section we outline our preliminary approach for addressing the issues for various indicator category. For Category A (Secondary data collection), pre-filled templates will be prepared for each city wherever possible and shared for validation/filling new data.

State level helpdesks will be set up for each State/UT to assist the cities on any aspect relating to filling secondary data templates. This helpdesk would be manned by respective State level coordinators with technical back stopping facility by the support team.

Category B involves indicators that merit spatial validation. Some of the indicators under this category are:

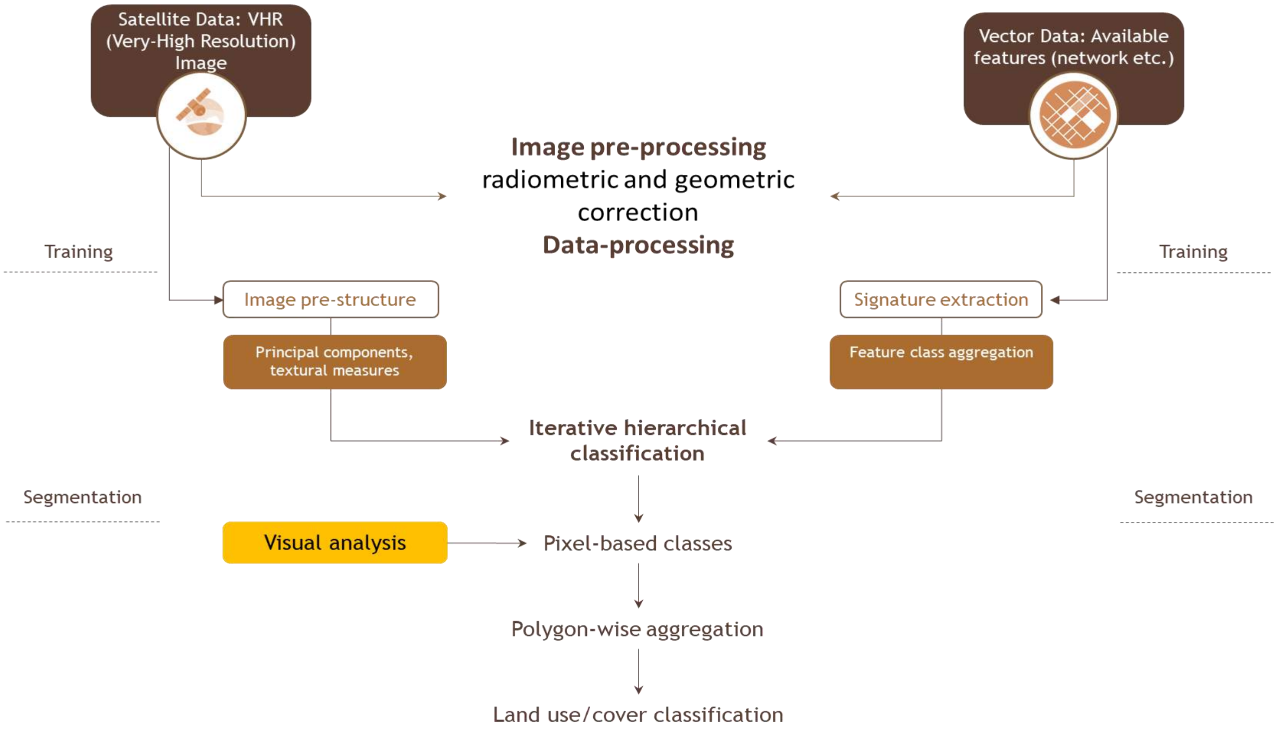
8.1 | Per capita availability of green spaces

5.1 | Number of streets, public places, junctions covered through surveillance systems

9.1 | Share of mixed land use area in overall city land use

9.2 | Net Density

For these indicators, we will be undertaking validation of the secondary data provided by cities through visual analysis using satellite and vector data. Figure below presents our approach:


Satellite Data: VHR (Very-High Resolution) Image
Vector Data: Available features (network etc.)
Image pre-processing
radiometric and geometric correction
Data-processing
Training
Training
Image pre-structure
Signature extraction
Principal components, textural measures
Feature class aggregation
Iterative hierarchical classification
Segmentation
Segmentation
Visual analysis
Pixel-based classes
Polygon-wise aggregation
Land use/cover classification

Indicators under Category C merit physical validation in the field to strengthen reliability of the indicators. Preliminary review of the indicators suggest that physical validation exercises would need to be carried out for 11 indicators. Figure below presents our sampling approach:

Indicator	Validation approach
2.3 | Hotel occupancy	Total 35 hotels; 5 star (5 hotels); 4 star (10 hotels), 3 star (10 hotels) less than 3 star (10 hotels) randomly in each city
3.4 | Percentage of schools with access to digital education	Randomly select 40 schools for validation in each city
5.1| Number of streets, public places, junctions covered through surveillance systems	Inspect 30 major public places and junctions in each city, randomly
6.5 | Percentage of vendors registered and provided formal spaces	Randomly select 30 street vendors in each city
11.7 | Availability of Passenger Information System	Select 30 interchange sites- bus depots/stations, metro or suburban rail stations and water transport terminals (e.g. ferry terminal), randomly
11.8 | Extent of signal synchronization	Randomly select 30 signalized intersections in each city
11.9 | Availability of paid parking spaces	Select 30 paid parking spaces, randomly in each city
11.10 | Percentage coverage of footpaths – wider than 1.2 m	Select 30 footpath sections across major roads, randomly in each city
11.11 | Percentage of traffic intersections with pedestrian crossing facilities	Select 30 intersections randomly in each city
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way	Select 30 public right-of-way areas to represent areas such as Government buildings, sidewalks/ footpaths, subways/city
14.3 | Extent of municipal solid waste recovered through reuse	Random selection and visits of recovery/re-use sites in each city

Categories D and E call for collecting data from households and households plus institutional and commercial entities such as schools, public offices etc. Category D covers four indicators while Category E covers one indicator as presented below. We propose to undertake a survey of about 400 households in each of the 116 cities for both these categories. For Category C, 400 households will be spread across different socio-economic strata of respective cities and for Category D, 200 households will cover only low-income urban communities (notified slums) in each city.

Category D

Indicator	Validation approach
7.2 | Percentage of slum areas covered through basic services	Random sampling of 200 citizens across ten notified slums in each city
11.3 | Mode share of public transport	Random sampling of 400 citizens across different socio-economic strata in each city
11.6 | Mode share of non-motorized transport	Random sampling of 400 citizens across different socio-economic strata in each city
14.1 | Household level coverage of municipal solid waste collection	Random sampling of 400 citizens across different socio-economic strata in each city

Category E

Indicator	Validation approach
13.1 | Coverage of toilets	Random sampling of 400 respondents It would cover households, schools, public institutions, commercial establishments, etc. per city

Indicators where data is not available will be excluded from computation from the liveability index in line with the suggested methodology

Methodology for sample determination

For arriving at the sample size for this study, we have treated the present research problem as a Case of Proportions, i.e., a problem involving the estimation of the proportion of respondents exhibiting a certain kind of behaviour (in our case, proportion of households who have access to safe drinking water). In a Case of Proportions, the sample size is determined as under:

Let the sample size be n. The various assumptions made in calculating n is as under:

p is the proportion of the households (our universe in the project area) having benefited from the various urban mission. This proportion p is called the population proportion. In the absence of any estimate of p, a figure of 50 per cent could be used for the anticipated population proportion.

π is the proportion of the sample having benefited from the urban missions. This proportion π is called the sample proportion. π is obviously a dichotomous variable (a dichotomous variable is one which has only two response choices, such as "Yes, benefited from the urban mission " and "No, did not benefit from the urban mission")

E is the allowable error, i.e., the allowable difference between p and π while drawing the sample. We have fixed this 5 percent say 0.05

Z is the number of standard errors associated with the confidence level. The confidence level is fixed at 95 per cent, i.e., the pre-assigned chance of finding the true population proportion p to be within the range of ($\pi \pm 1.96s$), where, s is the standard deviation of the sampling distribution.

At a confidence level of 95 percent, the value of Z is 1.96. The estimated sample size n is worked out based of the below formula.

$$n = \frac{\pi (1 - \pi) Z^2}{E^2}$$

$$n = \frac{0.5 (1 - 0.5) 1.96^2}{0.05^2}$$

Thus, sample size n works out to 384. Considering the possibility of non-availability and non-consent of the beneficiaries, about 5 per cent additional sample is proposed. With this allowance, the sample size works out to 400 per city.

A total of about 400 respondents will be covered from each city. Given that there are 116 cities to be covered in 1st year, the total sample size works out to minimum 46,400 respondents. This is a minimum sample size needed if we want the observed proportions (π) to be within ±5 percent of the unknown population proportion (p).

Approach for geospatial sampling:

We propose to select our survey respondents based on a geospatial sampling methodology after evaluating the spread of the city under multiple criteria. The table shown below is an illustration of our approach towards rating each of the wards in the city. It is to be noted that any ward is likely to receive the score based on the presence of the criterion mentioned in each of the question (for eg: Presence of park/playground in the ward = 4.5%, else = 0). The scores obtained against each of these questions will be summed to provide ward level total score. It is to be noted that “slums” have been given a special attention to ensure social inclusion in our geospatial sampling methodology.

Table 1: Sampling criteria

Questions	Answers	Score / Ward
List the wards having market area in your city?		4.5%
List the wards having tourist attraction places in your city?		5.0%
List the wards having schools in your city?		5.0%
List the wards having hospitals in your city?		5.0%
List the wards having parks / playgrounds in your city?		4.5%
List the wards having rivers, lakes and/or mountains in your city?		4.5%
List the wards having large commercial areas in your city?		4.5%
List the wards having proximity to industries in your city?		4.5%
List the wards having earthen roads in your city?		4.5%
List the wards having footpath in your city?		4.5%
List the wards having good road network connectivity in your city?		4.5%
List the wards having UGSS penetration in your city?		4.5%
List the wards having low incidence of crime in your city?		5.0%
List the wards having high population density in your city?		4.5%
Score (A)		65.0%

Questions	Answers	Score / Ward
List the wards having large slums in your city?		35.0%
Score (B)		35.0%

Based on the obtained total scores, wards will be shortlisted based on the following combination:

- Combo 1: Wards with larger slum population with higher livability characteristics
- Combo 2: Wards with fewer slum population with higher livability characteristics
- Combo 3: Wards with fewer slum population with lesser livability characteristics
- Combo 4: Wards with larger slum population with lesser livability characteristics

Within the shortlisted wards, about 33% of the primary survey (200 Surveys) will be conducted in wards having larger slum population. We would also ensure that the survey conducted within every ward will

be well spread within the ward boundary to ensure representativeness of the entire city and this will be constantly monitored by the field officer through a mobile application.

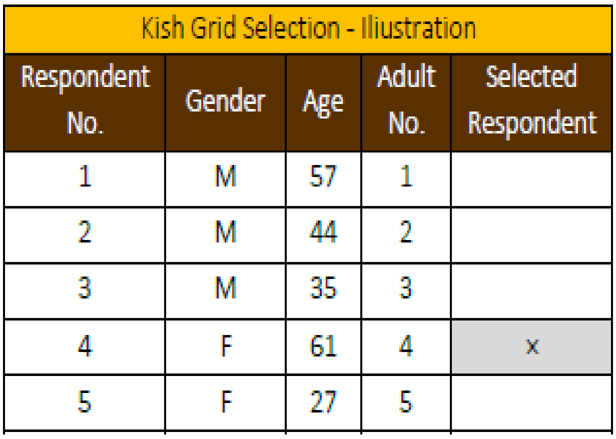
Score (A)	SCORE (B)	Sample
High	High	200 SURVEYS
Low	High	
Low	Low	400 SURVEYS
High	Low	

Sampling of Households

In each starting point 10 households(HH) will be covered for eliciting feedback about the various facilities available in the city. The first household shall be zth number household from a starting point. The second household will be (5+z)th household. This process should be continued till the time we achieve the sample size (10 HHs) for that particular starting point. During selection of household serpentine Right Hand Rule will be followed.

Sampling of respondents

Adult members of the sampled household, who are aged 18 and above would be considered as eligible respondents for the survey. Where ever there are more than on eligible respondent in the household KISH grid will be used for unbiased selection of the eligible respondent. The usage of KISH grid will also ensure the fair representation of both the gender in the sample. For the Indicator 7.2, percentage of slum areas covered through basic services, we propose a sample of 200 per city across 10 slums (as per list available with slum rehabilitation board).



Kish Grid Selection - Illustration

Respondent No.	Gender	Age	Adult No.	Selected Respondent
1	M	57	1	
2	M	44	2	
3	M	35	3	
4	F	61	4	x
5	F	27	5	

The slums will be selected using a simple random sampling from the available list. We will overlay this selection to ascertain the geographical spread across wards / zones in the city. The same process as outlined above will be followed for selection of HHs and individuals in the selected HH.

Overall sample size

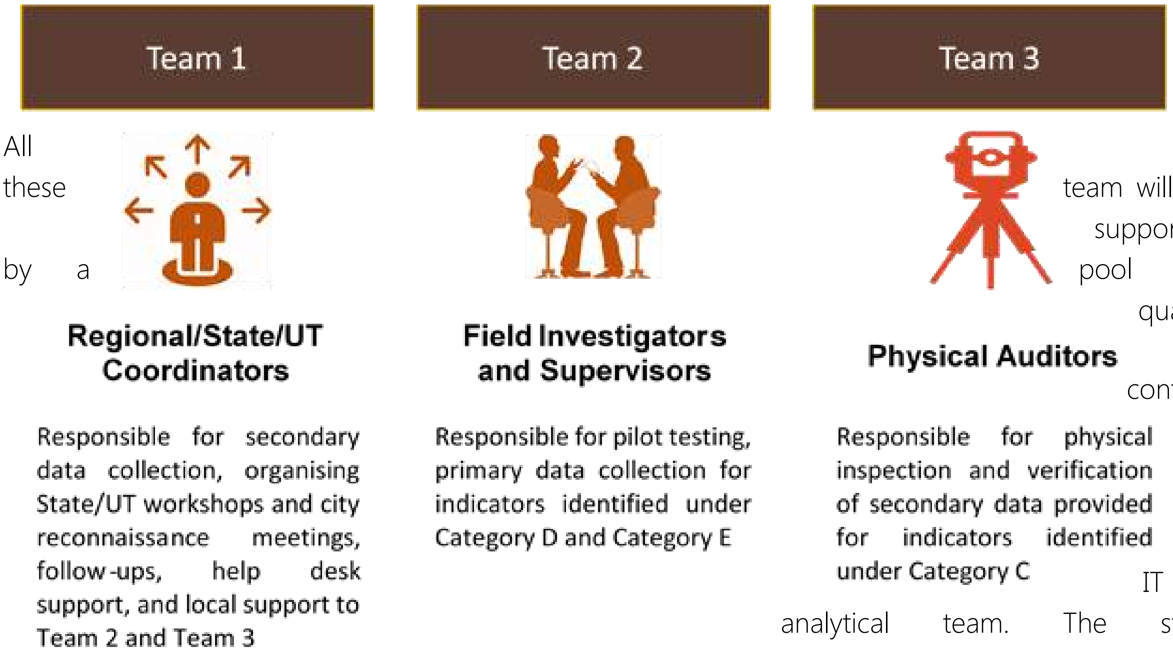
The total number of respondents to be covered as part of our primary data collection including physical audit across identified indicators is presented below:

Unit	Sample per city	No of cities	Total sample
HH survey/ Citizen (slum and non-slum)	600	116	69,600
Institutions- Hotels, Schools, Establishments	98	116	11,368
Physical validation through Observation	270	116	31,320
Total	968	116	1,12,288

Data collection team structure

Based on different categories of data to be collected/validated, three different teams will be working in tandem to collect the required data in time. First team comprises regional/state/UT coordinators who will be entrusted primarily with the responsibility of secondary data collection. Second team comprises field investigators and supervisors who will be involved in collection of primary data for indicators identified under Category D and Category E. The third team will include physical auditors who will be validate the reliability of secondary data provided by cities for indicators identified under Category C.

All these team will be supported by a pool of quality control, IT and analytical team. The state



Team 1

Regional/State/UT Coordinators

Responsible for secondary data collection, organising State/UT workshops and city reconnaissance meetings, follow-ups, help desk support, and local support to Team 2 and Team 3

Team 2

Field Investigators and Supervisors

Responsible for pilot testing, primary data collection for indicators identified under Category D and Category E

Team 3

Physical Auditors

Responsible for physical inspection and verification of secondary data provided for indicators identified under Category C

All teams will be supported by a centralised quality control, IT and technical backstopping team

coordinators will serve as an additional layer of local support for guiding the field team on different aspects of primary data collection and physical validation.

Training of regional/state coordinators [secondary data collection]

We will conduct an internal brainstorming cum training session wherein the Regional/State Coordinators will participate and familiarise themselves with the assignment and modalities involved along with non-key staff/consultants. Subsequently, we will be conducting a three-day training programme for the Regional/State Coordinators and key city/ULB representative along the State/UT workshops. Training will cover secondary data collection interface/application, data formats including reporting period, reporting units, data collection process, escalation protocols, and ethical considerations among other modules. Subsequently, the Regional/State Coordinators with support from the PCC team will train field supervisors, investigators and physical auditors.

Research instrument development, pilot test and training [primary data collection]

The overall sampling strategy for categories indicated above will be finalised in consultation with MoHUA. Subsequently, the team will develop research instruments covering relevant indicators and target groups. Each of the research instrument will be pilot tested and finalised based on field level insights. Our consortium specialises in developing minimalistic instruments without losing coverage and rigour of data collection. To carry out the survey, the research instruments will be developed as mobile application such as ODK Collect or Kobo Tool Box that allows that cloud based storage of backend data and provides near analysis ready data.

We will explore using a computer-aided in-person interviewing (CAPI) methodology to collect data on Windows-based phones or tablets, which has numerous advantages over traditional pen-and-paper methods. The programmed instrument will have built-in logic that ensures the correct path through skip-patterns, doesn't allow interviewers to enter invalid responses to closed ended questions, and runs internal consistency checks.

Using CAPI enhances measurement quality, reduces error, and limits the need for editing and cleaning following data collection. For every interview, the exact GPS location is captured, which means that quality control departments can verify interviews are being performed at the correct locations. In addition, quotas are automatically tracked on the mobile device which reduces the need for manual tracking. We have invested significantly in enhancing our CAPI capacities both in terms of infrastructure and human capacity. Ipsos has a well-trained pool of interviewers that are familiar with quality processes for CAPI interviews and used to close scrutiny and rigor of monitoring. Our expert data team will program the survey, after which extensive quality checks will be carried out by the Ipsos team. We will then run sample cases through the survey to test for logic and skip patterns. Following the completion of programming in English, we will overlay the translated instruments and additional quality checks on

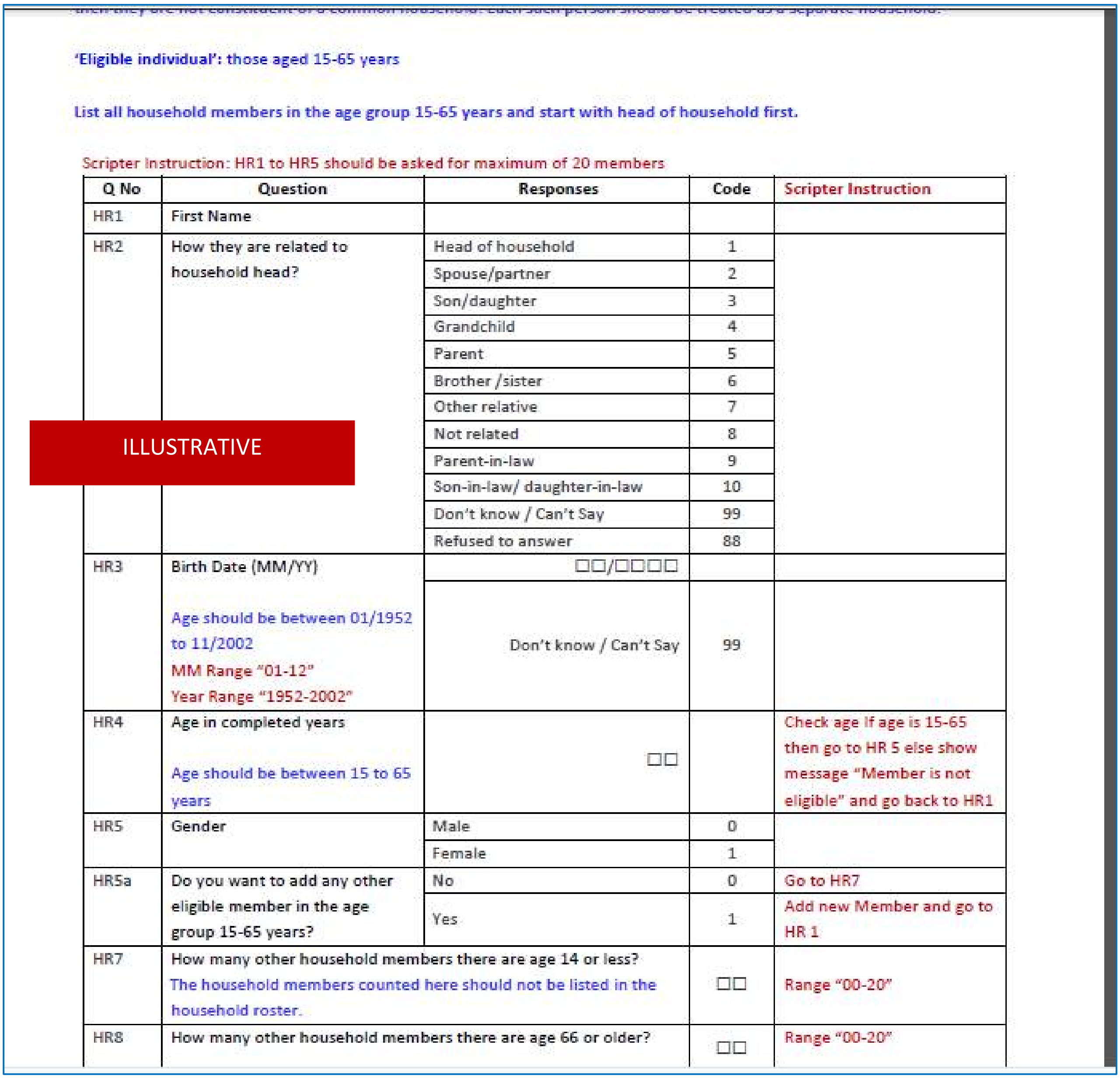
all translations will be done. The programmed instrument will be downloaded to the Phone/Tablet devices to be used by interviewers.

The research instruments will be translated in all relevant regional languages for all 116 cities. All translation will be checked by the researchers to ensure that the meaning of the questions has not

Our extensive experience conducting quantitative social research in a variety of fields has taught us that the questionnaire can be designed to maximise participation based on the following key principles:

Concise and well-structured survey design:	A short survey will get more responses than a long survey, and competing priorities can lead to very long questionnaires. It is important to focus on top priorities and understand key opinions while also being realistic both regarding length of survey but also respondent ability to report on certain items.
Questions are easy to answer:	Instruments that are difficult to complete lead to errors from the interviewer as well as the respondent. Although we provide extensive training to interviewers, complicated questions can be difficult to complete accurately. Additionally, we ensure that questions are drafted with as few clauses as possible, without double-negatives, and should include as comprehensive a range of answer options as possible.
Take into account the respondent's knowledge and sensitivities:	Sensitive questions, such financial questions or those about socially unacceptable behaviors (for instance open defecation), most often lead to inaccurate reporting and poor data because respondent over/under report or give the more socially acceptable answer.
Questions should allow respondents to not know:	Where respondents are forced to answer questions, they do not feel they know the answer to, they are likely to become frustrated and close the survey early. We therefore recommend that a "DK (Don't Know)/NA (Not Applicable)" option is always provided, particularly in sensitive environments.
Allow respondents to feel heard without burdening them unduly:	Limit open-ended questions to one to two and do not require respondents to fill them out. Additionally, a confusing screener or imprecise definitions of the target respondent can take a lot of time and lead to errors in data collection.

Additionally, we will ensure that questions used are tested and used as a standard. We will also have all survey instruments undergo a thorough review by sociologists and psychologists with expertise in instrument design, who will look to ensure the overall instrument and individual questions are structured in a way that is accessible to respondents (by, for instance, organizing the instrument logically and introducing new topics/question modules so that respondents are not confused about why they are being asked certain questions at a given point in the interview) and cognitively unambiguous (avoiding, for instance, questions where one question asks about multiple constructs).



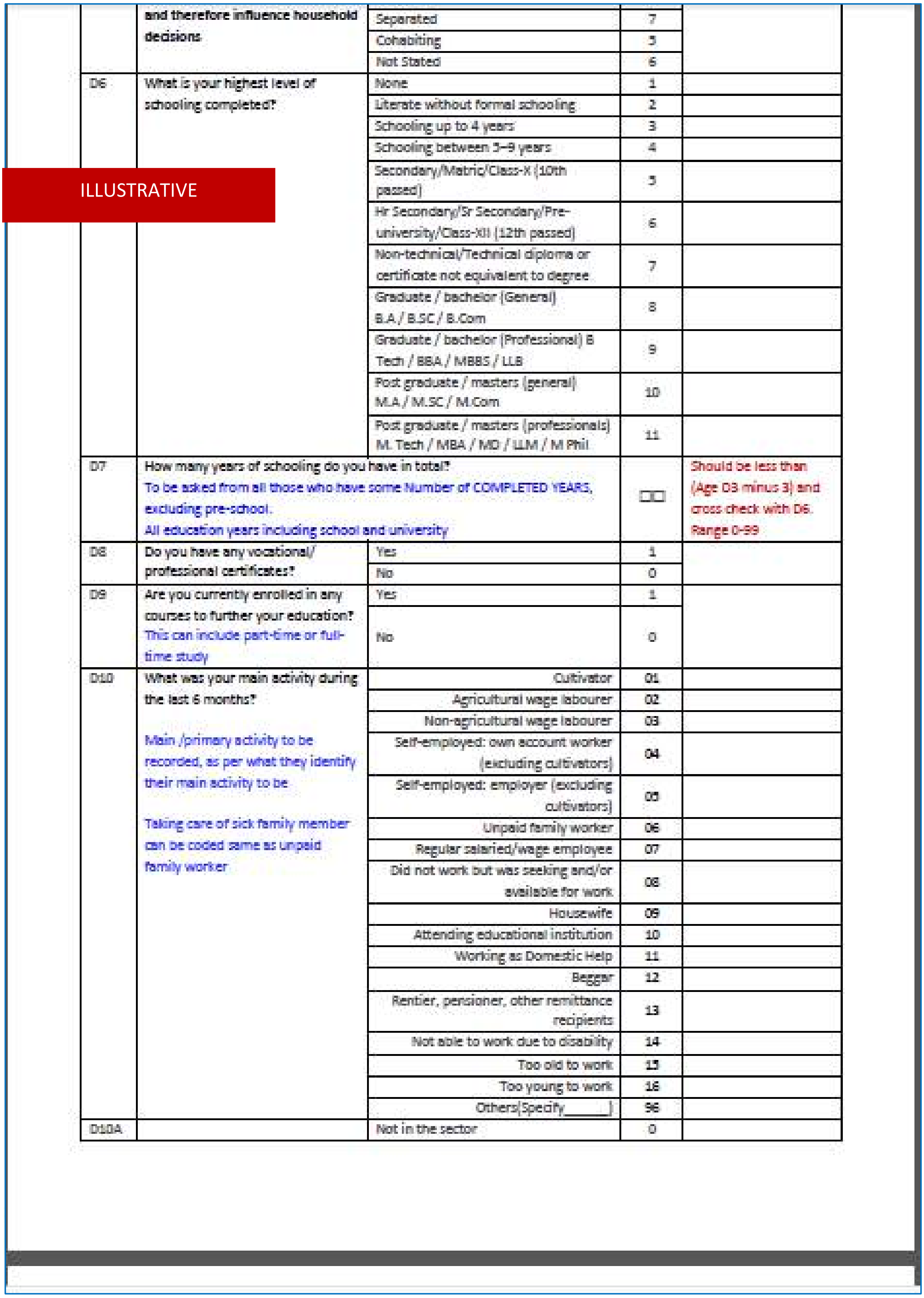
'Eligible individual': those aged 15-65 years

List all household members in the age group 15-65 years and start with head of household first.

Scripter Instruction: HR1 to HR5 should be asked for maximum of 20 members

ILLUSTRATIVE

Q No	Question	Responses	Code	Scripter Instruction
HR1	First Name			
HR2	How they are related to household head?	Head of household	1	
		Spouse/partner	2	
		Son/daughter	3	
		Grandchild	4	
		Parent	5	
		Brother /sister	6	
		Other relative	7	
		Not related	8	
		Parent-in-law	9	
		Son-in-law/ daughter-in-law	10	
		Don't know / Can't Say	99	
		Refused to answer	88	
HR3	Birth Date (MM/YY) Age should be between 01/1952 to 11/2002 MM Range "01-12" Year Range "1952-2002"	☐☐/☐☐☐☐		
		Don't know / Can't Say	99	
HR4	Age in completed years Age should be between 15 to 65 years	☐☐		Check age If age is 15-65 then go to HR 5 else show message "Member is not eligible" and go back to HR1
HR5	Gender	Male	0	
		Female	1	
HR5a	Do you want to add any other eligible member in the age group 15-65 years?	No	0	Go to HR7
		Yes	1	Add new Member and go to HR 1
HR7	How many other household members there are age 14 or less? The household members counted here should not be listed in the household roster.		☐☐	Range "00-20"
HR8	How many other household members there are age 66 or older?		☐☐	Range "00-20"



ILLUSTRATIVE

	and therefore influence household decisions	Separated	7	
		Cohabiting	5	
		Not Stated	6	
D6	What is your highest level of schooling completed?	None	1	
		Literate without formal schooling	2	
		Schooling up to 4 years	3	
		Schooling between 5–9 years	4	
		Secondary/Matric/Class-X (10th passed)	5	
		Hr Secondary/Sr Secondary/Pre-university/Class-XII (12th passed)	6	
		Non-technical/Technical diploma or certificate not equivalent to degree	7	
		Graduate / bachelor (General) B.A / B.SC / B.Com	8	
		Graduate / bachelor (Professional) B Tech / BBA / MBBS / LLB	9	
		Post graduate / masters (general) M.A / M.SC / M.Com	10	
		Post graduate / masters (professionals) M. Tech / MBA / MD / LLM / M Phil	11	
D7	How many years of schooling do you have in total? To be asked from all those who have some Number of COMPLETED YEARS, excluding pre-school. All education years including school and university		☐☐	Should be less than (Age D3 minus 3) and cross check with D6. Range 0-99
D8	Do you have any vocational/ professional certificates?	Yes	1	
		No	0	
D9	Are you currently enrolled in any courses to further your education? This can include part-time or full-time study	Yes	1	
		No	0	
D10	What was your main activity during the last 6 months? Main /primary activity to be recorded, as per what they identify their main activity to be Taking care of sick family member can be coded same as unpaid family worker	Cultivator	01	
		Agricultural wage labourer	02	
		Non-agricultural wage labourer	03	
		Self-employed: own account worker (excluding cultivators)	04	
		Self-employed: employer (excluding cultivators)	05	
		Unpaid family worker	06	
		Regular salaried/wage employee	07	
		Did not work but was seeking and/or available for work	08	
		Housewife	09	
		Attending educational institution	10	
		Working as Domestic Help	11	
		Beggar	12	
		Rentier, pensioner, other remittance recipients	13	
		Not able to work due to disability	14	
		Too old to work	15	
		Too young to work	16	
		Others(Specify_______)	96	
D10A		Not in the sector	0	

changed while translating into regional languages. We propose to pre-test the questionnaire in two non-sampled areas in any two selected cities. The pre-testing of the questionnaires will be undertaken on the translated questionnaires. The pretesting will ensure the following aspects:

- Whether all the questions are comprehensible to the enumerator
- Whether the respondents have any difficulty in understanding the questions
- Whether the length of the questionnaire is optimum?
- Whether the questions ordered properly
- Whether any change is required in the questionnaire

Finally, it will help in fine tuning the questionnaire and to determine the flow of questions, to make life easy for the investigator as well as the respondent.

The final tool will be scripted and uploaded in all regional languages for the main survey. Ipsos internal platform i-field will be used for HH survey that brings in the advantage of GPS capture and audio recording as well as real time tracking of field work completion status

Approach to data collection:

Secondary data collection for cities will start immediately after culmination of State/UT workshop and subsequent training of key city/ULB representative through city level reconnaissance meetings. The launch date for cities will vary depending upon the workshop schedule and fixing of appointment for city level meetings in each State. In the mean-time we will update secondary data collection interface/application based on the inputs and suggestions provided by the State and city representative at the workshop. Progress of data collection will be monitored through an integrated dashboard (refer prototype presented in the section on preparatory phase activities). We propose to deploy a team of four field investigators, four physical auditors and one field supervisor per city to undertake primary data collection/audit exercise in each city. Overall 69 such teams will be deployed to complete primary data collection across 116 cities in 16 days' time. Our pool of enumerators is experienced in undertaking large surveys in the urban areas across different sectors and hand-held devices. We will be undertaking a three-day training programme at a regional level to familiarise our field team with project objectives, research instruments, sampling frame and survey ethics. We propose to involve the field team in pilot testing of the research instruments for field-based training and better understanding of the research instrument. Our experience in managing large-scale survey research assignments tells us that the successful organisation and management of an assignment such as this requires the following approach:

A national level presence: We will work through its own offices and teams in all states and Union Territories and will not outsource any part of the survey management or data collection task to any external supplier or vendor. This will ensure that data in each state is collected as per agreed protocols

and quality norms. All our offices are manned by local teams that have a panel of interviewers and supervisors from the state/ districts that are familiar with the geography and local dialects.

Zonal hubs: The core project management team based in Delhi will be supported by zonal hub managers who will be Ipsos permanent staff – field managers with experience of managing large scale projects. These hubs will help the core team in all phases of the research process. Their contributions are particularly important while team mobilisation, making the route plan, translation in local languages, and managing the fieldwork. They will also provide valuable support at time-intensive stages of the project, such as script checking, fieldwork monitoring, and data checking. These zonal coordinators will operate under the guidance Central Project Team.

Centralised Training of Trainers: We will conduct centralised TOT for Zonal and State Managers to plan and implement the fieldwork. The training will be for 4 days including field visits to ensure that field managers are familiar with the field situations, exposed to potential challenges, and have a thorough understanding of research subject. Emphasis will also be on imparting them facilitation and risk assessment skills required for managing the survey.

Multi-disciplinary expert teams, with resource at the right level to ensure value for money: The organisation and implementation requires expertise in sampling, scripting, and strong operations, but also proven skills in co-ordination, rigorous analysis of quantitative data, high quality reporting skills, as well as relevant experience in the states. Given the scale of this project, there are certain stages that are resource and time intensive, and we know that it is important to maximise the skills of resources to ensure value for money, with senior oversight. We propose a very strong core team together based on their multi-disciplinary skills. In addition, all offices will be supported through layers of reporting by the respective functions- operations, research, and IT for monitoring completion of the survey and reviewing completes.

Fieldwork monitoring procedures

This section details PCC Team monitoring responsibilities **prior to and during the survey implementation** to guarantee timely delivery of the project, while maintaining high quality. There will be several standard monitoring actions undertaken by the PCC-Team prior to and throughout the fieldwork:

- Providing state offices with **guidelines on managing fieldwork** and checking that these guidelines are correctly implemented;
- A dedicated fieldwork manager will be appointed in each state and will be responsible for receiving and reviewing the **weekly resource planning** of its state.
- Project executives from the PCC Team will also review **daily progress and sample reports** (and outcomes) and share their observations with the state teams, following up where necessary.

The quality control plan envisages quality check mechanisms at the at the data collection level as discussed below.

Table 2: Structure for Quality Checks in the Field

Level of staff	Functions in quality check
Field Investigators	Data Collection
Field Supervisors	100% scrutiny & accompaniments
Core and research support team	25% scrutiny, overall field monitoring and quality checks

1. Spot check and observation

In a spot check, the supervisor will attend an interview along with the investigator, to see if the investigator is comfortable with the flow of the questionnaire, is explaining the questions as they should be and is recording the responses correctly. The following forms a part of the spot checks and observation process to be adhered by the Supervisor:

- Observe some of the interviews, to ensure that the interviewers are conducting themselves well, asking the questions in the right manner, and interpreting the answers correctly
- Spot check some of the addresses selected for interviewing to be sure the interviewers interviewed the right household
- Review the questionnaire to be sure it is complete and is internally consistent
- Meet with each member of the team on a daily basis to discuss performance
- Help to solve any problems that interviewer might have with finding assigned households, understanding the concepts in the questionnaire or with difficult respondents.

2. Back checks

Field supervisors shall ensure that for all sampled areas wherein completion rate is found to be low or seems to be a problem, back checks shall be done by himself/supervisor of other team.

3. Inbuilt Quality Control

The manually filled in questionnaires have a risk of manual errors which would be eliminated completely at the software development process. The following checks would be inbuilt within the questionnaire design:

- Range Checks: To make sure that an entered number is within the right range. For example; a field indicating month cannot be more than 12.
- Consistency Checks: To make sure that the information entered is consistent and there are no errors. These checks are important for open ended questions.

- Validation Checks: To check that the data type entered is valid as per the design of the questionnaire. For example, age cannot be entered as an alphabetical value.
- Skip Checks: To make sure that the question is chosen logically correctly based on a previously answered question.

Ethical Considerations

Following three categories of ethical norms advocated by our consortium will be adhered to by all project staff:

Integrity

- The staff on payroll or contract always demonstrates honesty, integrity, and professionalism at all times.
- The team understands and appreciates that, while primary data represents attributes of real people, the actual person is not described in the reports.
- The staff is aware of applicable statutes, regulations, practices, and ethical standards governing data collection and reporting.
- The team reports information accurately and without bias.
- The team is accountable, and holds others accountable, for ethical use of data.

Data Quality

- The team promotes data quality by adhering to best practices and operating standards.
- The team provides all relevant data, definitions, and documentation to promote comprehensive understanding and accurate analysis when releasing information.

Security

- The team treats data systems as valuable organizational assets and hence data backup is a mandatory affair.
- The team safeguards sensitive data to guarantee privacy and confidentiality as our servers are accessible to limited staff only.

Within the ambit of the above ethical norms, the team for this assignment would ensure that no violations like collecting data not pertaining to this assignment, accessing areas within the institution premises for which approval has not been taken etc. are committed during the data procurement from various institutions.

The team would also ensure that any data which may have been classified as confidential is not disclosed intentionally or unintentionally. Any other issues that may emerge during the course of the assignment, will be informed to the client and as per the advice given, necessary safeguards would be undertaken by the consultants.

Real time access to status of fieldwork/ online monitoring: Efficient and fast communication is a pre-requisite for any survey these days to identify problems early on and introduce mid-course corrections. Ipsos globally and in India is transitioning away from PAPI to use of CAPI which helps addresses some of the inherent challenges of PAPI survey in terms of quality and reporting. CAPI will allow the core team to get daily updates across all centres. A dedicated project management team will monitor completes and review trends in data to review that the interviews are being conducted as planned and the quality of interviews is good. CAPI allows us to capture GPS coordinates that is useful in tracking spread of locations for the interviews and ascertain that the sampling protocols are followed, facility to record part of interviews, and capture photograph with consent of respondents provide additional levels of quality checks.

The research team will assess the minimum quality check requirements that can be drawn from CAPI and implement for the survey. We will also schedule regular hub conference calls at key stages of the project can help disseminate essential information, and that hub managers and junior members of the core coordination team are in daily written/telephone contact with field managers.

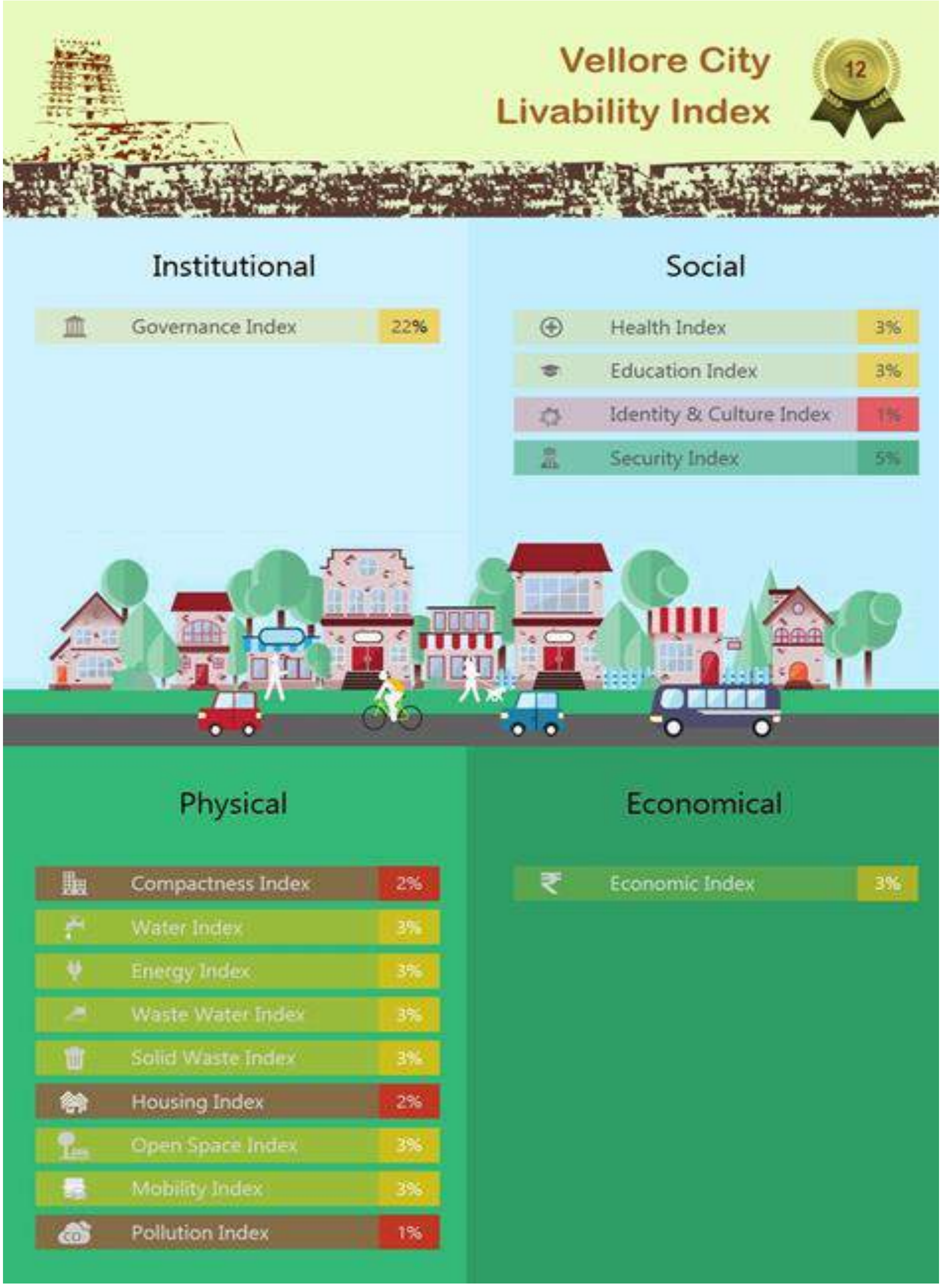
Phase 4: Data collation, sign-off and finalisation [Week13 – Week 14]

Once we receive secondary data, validated secondary data and primary data we will collate these into a single format and share them back with the cities post detailed scrutiny and review with proper citation. It is possible that there could be some variation in the secondary data provided by cities vis-à-vis data validated for some of the indicators identified under Category C. For instance, data from City A may report 80% of the schools to have facilities for using digital content but physical validation exercise could report 70%. Such variations are possible even after due consideration of aspects such as sampling only from sub-set of schools reported to have such facilities, random selection of schools etc. We will be developing protocols for addressing such issues during the preparatory phase itself and will work closely with the State Nodal Officer who will also serve as the data ombudsman to help reconcile such deviations.

Overall, each city will have a window of two weeks to review the final data sets and indices and revise/modify and sign-off on their datasets. Post sign-off, we will finalise the datasets (considering receipt of new data from cities during the two-week review window) and develop final indices for report preparation and visualisation.

Phase 5: City Assessment Reports, Media and dissemination [Week 15 – Week 20]

This phase involves preparation and submission of city wise final assessment reports and dissemination of the assessment through a national workshop. The structure and content of the report will be standardised across different city typologies and finalised in consultation with the MoHUA on an iterative basis. An illustrative report template is presented below for reference.


Vellore City
Livability Index
12
Institutional
Governance Index 22%
Social
Health Index 3%
Education Index 3%
Identity & Culture Index 1%
Security Index 5%
Physical
Compactness Index 2%
Water Index 3%
Energy Index 3%
Waste Water Index 3%
Solid Waste Index 3%
Housing Index 2%
Open Space Index 3%
Mobility Index 3%
Pollution Index 1%
Economical
Economic Index 3%

Data availability and quality assessment framework

Cities typically lack the ability and the institutional mechanisms to reliably collect data. Datasets which have internal decision-making linkages are usually better reported than datasets reported solely for compliance purposes. Hence, both criticality and reliability of datasets is not homogenous, but specific to each indicator, and possibly jurisdiction. In this context, we present a rubric to help assess quality and reliability of datasets below:

Table 3: Rubric for Data Quality Assessment

No.	Indicator	Notes
Data Quality and Reliability		Designed to provide an overview of the availability and quality of the dataset in discussion. Calculated as a combination of five sub parameters below
A	Availability	Measure of whether the dataset is available at all. A multiplicative factor (in case data on the indicator is not available, the data quality/availability is given a score of zero, without any further investigation into other sub areas)
B	Open access	Measure of the open availability of the dataset in question. Incorporates both user access (which user groups is the data made available to), nature of access (open access, or access upon request), and the format of availability (paper vs. machine readable formats)
C	Representativeness	In case the collected data is through a sample, this captures the representativeness of the same. A measure of robustness of the sampling and estimation methodology
D	Frequency	Measures the gap between the desired frequency of reporting for the dataset (based on global standards and best practices) with the available frequency. It is important to note that the frequency of datasets is a function of their mutability (e.g. topographic information can be decadal, but toilet usage behaviours warrant more frequent data)
E	Granularity	Measures disaggregation at two levels – by spatial characteristics and user characteristics
F	Reliability	Measure of mechanisms available to audit the data, and the results of such audits. A proxy to the level of confidence which users typically have for the dataset, third party validation etc.

Based on the insights from the data collection exercise pertaining to sectoral and city level data ecosystems, we will develop a data availability and quality assessment framework considering the above parameters.

We propose a multi-pronged platform for dissemination of the assessment of the liveability status of the cities. Apart from a national level workshop proposed by the MoHUA to share the findings from the study and set the stage for a futuristic vision wherein the information generated as part of this country wide exercise could inform urban planning, we propose to disseminate the findings to a larger global audience by leveraging our outreach capacities. Overall our media and dissemination channels include the following:

The Economist FILMS
THE Hub

National workshop | **The Hub @ The Economist** | **Policy Briefs** | **Blogs/Articles**

The National workshop could be structured as a panel discussion comprising international and national experts from academia, industries, public authorities, media, civil societies to discuss and debate the concept and measurement of urban liveability and its role in urban and infrastructure planning. City level liveability assessment could be presented on the sidelines of the workshop while the focus would be to help understand how people (and special groups thereof such as women, transgenders, children, specially-abled, senior citizens etc.) assess quality of life, wellbeing and citizen aspirations, and translate and scale them to inform how cities and regional centres can be better designed and managed.

Agenda of National Workshop

- *To drive new knowledge development into the interaction of assets, people and networks across critical aspects of the infrastructure system.*
- *To invite activity and creativity in knowledge development on infrastructure and infrastructure planning and management in the future*

Specific focus could be on defining conditions under which scientific models can encapsulate adaptive and heterogeneous social responses in a meaningful way.

We propose to keep the dissemination as an ongoing activity through a series of engaging and interactive content assets designed for marketing and dissemination such as infographics, photo journals covering State/UT workshops, city reconnaissance missions and data visualisation tools under the Ministry's name both before and after the National workshop.

It is proposed that the liveability assessment results could be housed on 'The Hub' – a prestigious online knowledge dissemination platform of the Economist Group that has global outreach. Our team would design the hub and finalise the design in consultation with MoHUA. The Liveability Index Hub would

host policy briefs, two interviews from senior officials/policy makers from the MoHUA, infographics and an interactive digital data map of India containing assessment results. Each of the 116 cities will contain the liveability index for that city, its ranking, as well as the rankings for the four underlying pillars of liveability for each city.

Quality Assurance

We provide high quality of services are committed to continuously improving what we do. Our integrated quality, compliance and information security management system, along with our quality assurance guidelines ensures all our projects are delivered to quality standards that we are committed to. Ipsos is ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISI 20252:2012. Athena and EIU serve reputed clients globally.

Our Quality Objectives

Our most important quality objectives are:

- To *provide assurance* to Ipsos's clients that we will deliver reliable and robust research findings by, among other measures, meeting the requirements of the international quality standard for market research, ISO 20252.
- To support the business in meeting its overall objectives, including client retention and new business development – by having effective policies, procedures and practices in place to ensure that we all work to the same quality standards.
- To minimise risk to the business by focussing on quality and continuous improvement.

We achieve these objectives by having in place a Quality Assurance System which is continually reviewed for effectiveness and improvement in a number of ways:

At every step of the project, we will ensure the compliance with the standard working procedures and quality assurance methods that have been designed for the success of the project. Online data input and collection platforms will be very powerful tools that will enable the PCC (Project Command Centre) Team to have tighter control over research process, accurate and up-to date information about state teams' performance and more efficient fieldwork monitoring and quality control. In addition to this, many standard procedures, such as training, supervision and back checking, will be put in place to ensure quality standards are adhered to (and exceeded where appropriate).

Throughout this proposal we discuss the measures we will take to ensure high quality deliverables which will meet the objectives of the study. They are summarised here in brief:

- Carefully resourced and structured Coordination Team with the relevant skills and experience to design and deliver international studies of this nature including regional social research experts;
- Internal field teams that are part of Ipsos State offices who are familiar with the geography, local dialect, nuances, and experienced in working to expected quality standard.
- Cascading training approach starting with ToT for core team, Centralised State Coordinators training and state level face to face trainings for validation and primary survey
- Direct observation of interviewer training and the early stages of fieldwork in each zone;
- Using Ipsos Dimensions/ Dooblo platform to closely monitor progress and quality indicators across all states allowing any issues to be identified early (daily updates from the field);
- Weekly conference calls with all local teams to discuss the current situation and with MoUHA to assess actual progress and make key decisions for the next steps;
- A detailed risk register updated on a weekly basis;
- At least 15% of back-checks in states;
- A dedicated Quality Director assigned to the project team.

Our approach to minimising problems

As outlined above, we are keen to properly set up this study to minimise problems and risks during execution. In addition, effective project management using an experienced PCC Team with the correct balance of technical expertise and project management expertise means that problems are avoided through clear instruction, regular and open communication, and careful monitoring and review during the project set-up and throughout project implementation. However, we know that even with the best teams in place the complexities of large-scale projects mean that problems do arise, and sometimes quick and effective intervention is needed. We are determined to be proactive and set up the process in a way it will enable us to detect any problem in an early phase and solve it before it escalates.

As a consortium responsible for implementing the project, we regard risk management as a key part of project management. We will put in place a risk management process because we know from experience that management of a survey such as this involves dealing with many logistical challenges, complexities and risks.

We are keen to discuss with you all potential risks in the inception meeting and to register all issues we might experience during the process. This will be a 'live' document, reviewed weekly throughout the project both internally and with you. As Project Co-ordinators, Ankit and Tripti, will retain overall responsibility for risk management, will work with the Technical Team and functional to find solutions if any aspect of the project is deemed at risk.

We would provide a full assessment of what we believe to be the most important risks to the successful completion of the project. This would constitute a starting point for further discussion with MoHUA. Below we have provided an initial assessment of what we believe to be the most important risks to the successful completion of the project.

Key risks and mitigation plan

Risk description	Probability	Impact	Mitigation Plan
Delays in finalizing the schedule for state workshops	Low	High	An intense preparatory phase has been outlined wherein co-ordination with the state mission directorates is expected to begin within the first week of the inception kick-off meeting at MoHUA. A detailed workshop schedule will be developed within the first week of project commencement and a discussion will be initiated early on to fix the dates and finalize and publish the workshop calendar.
Inconsistency in the way data is interpreted and entered by cities	High	High	There is a possibility that the city representatives might interpret the data entry requirement in a manner inconsistent with the required protocol. In addition, to an intensive training session, where cities will be apprised of the data requirements, data sources and entry protocols, the regional and state co-ordinators will be responsible for both auditing the way in which the presented data is being sourced and troubleshooting if there are discrepancies
Delays in data entry by the city	Medium	High	Given the very short timelines of the exercise, any delays in data entry by the city can have serious cascading effects on the overall timelines of the programme. In addition to close follow up that the consulting team will undertake with every city, we hope to co-ordinate closely with the state nodal officer (appointed in every state) to ensure that cities comply with the stated timelines
Challenges in reconciling physical audit data with secondary data	High	High	There is a possibility of discrepancy between the audited data outcomes and the self-reported data. To seamlessly resolve and respond to such instances, we hope to jointly set up a process in place in consultation with MoHUA representatives and the state missions right at the outset and inform cities of the same during the training workshop
Challenge securing	Medium	High	Ipsos' has local teams who has experience of working in the project cities so they are familiar with the process for

Risk description	Probability	Impact	Mitigation Plan
permissions for research			seeking consent for interviewing. As per our experience of seeking permission for interviews in different officials , a formal letter from client side will be issued to the local office. A senior team member will visit the offices with the letter for prior consent. assuring confidentiality and seek their inputs on timings, accessibility to respondents.
Poor administration of questionnaire by the data collection team	Medium	High	Qualified and experienced field investigators will be recruited. The training programme (face to face) will be intensive and focus on all aspects of the study, sensitisation for self on issues of gender, being aware of implicit biases, and tips on being aware and to counter this bias during data collection. Levels of monitoring in form of accompaniment by supervisors will also facilitate identifying interviewers demonstrating any bias and take corrective measures.
Fieldwork delays- Citizen Surveys and Physical Validation	Medium	Low	At the planning stage, Ipsos local team will review the list of selected clusters for the survey and their geographical spread. Number of teams will be recruited based on the geographical spread of sample locations. The field movement plan will be developed to ensure that a team covers contiguous clusters minimizing travel. The plan will also include off days and travel days with buffer days that allows timely completion.
Challenges in physical validation and primary data collection	Low	High	Quality Assurance plan developed at the onset of fieldwork preparation will detail out the measures and process at each stage of planning and fieldwork to ensure quality. Beginning with training, field plan, and field monitoring detailed parameters of quality and process to monitor the same will be detailed. Each team working will be accompanied by a supervisor and will be monitored daily. Additional layers of

Risk description	Probability	Impact	Mitigation Plan
	🟩	🟥	monitoring in form of state coordinators will be deployed who will manage all the cities of a particular state. More over the state coordinators will be in continuous coordination with zonal coordinators. Formats for monitoring will be developed that will focus on reviewing the interviews and interviewers' performance. Regular debriefs and feedback sessions will be led by field coordinator and state coordinators during fieldwork
Inconsistency in data collected	Medium	High	Field investigators when administering paper survey are prone to making mistakes in following the flow and may not check responses that seem inconsistent. To counter this, we propose using CAPI for administration. The scripting process will take care of the logic and consistency check and improve the quality of interviews.
Refusal of respondents to take part / high non-response rate	Low	High	All interviewers will be fully briefed on how to deal with refusal. They will be trained to reassure the respondent that the research is independent, that all information provided is confidential, and to emphasize the survey's short length and the importance of the topics it covers. Interviewer training will stress the importance of confidentiality, safety and ethical aspects of the survey. Reasons for refusal will be recorded so any potential issues can be identified early and resolved.
Issues related to data quality and storage	Low	High	The Ipsos Team adheres to the highest possible standards for market research set by European Society for Opinion and Market Research (ESOMAR) and has been awarded numerous certifications for quality in market research, ensuring data security, confidentiality, and participant safety. Ipsos data storage is audited annually as part of our ISO 27001 and 20252 accreditations.
Issues related to IT security	Low	Medium	We are proud of the reliability and security of the Ipsos data storage systems, at the forefront of best practice in information security. Ipsos has a comprehensive backup

Risk description	Probability	Impact	Mitigation Plan
	🟩	🟨	system to ensure that we can retrieve data files from that day or, if necessary, even months beforehand. This system consists of incremental, daily, weekly, and monthly full system backups. All emails, files, and internet content are swept regularly for viruses, and our servers have protection software.

B. Work Plan

Our approach to this assignment seeks to fully leverage the first 5 weeks of the project as a phase of intensive preparation where all the key templates, tools and formats for secondary and primary data collection will be developed and submitted for inputs and approval to MoHUA. This will allow us time to deliberate on the data collection instruments as well as the interface design and ensure that we pilot test the prototypes to ensure that the entire data entry process is hassle free for the city. Efforts will also be made to mine and integrate the secondary data sets collected through different programmes (Smart City Mission, AMRUT, HRIDAY etc.) and already available with the ministry to create 'pre-filled' instruments (with the source indicated) that may be validated by the cities.

Developing the indicators (defining specific data points to be collected) and ensuring that there are bespoke data collection protocols and sources will be lead by the team by drawing on international benchmarks and national standards.

This phase will also see us commence engagements with state mission directorates to ensure that the scheduling of workshops is in line with the stated timelines. A draft structure for every workshop, with the list of participants required/desired, will be circulated within a week of the inception kick off with MoHUA to give the state mission directorates enough time to plan and mobilize resources. The training material with supporting reading material will be circulated at least 1 week before the training commences to provide participants with enough preparation time. State level discussions will also serve as a channel to do a first level reconnaissance on data availability and map the current sources and the need for proxies. Draft frameworks for documenting the workshop proceedings and the city level assessment reports will also be developed during this phase, along with an internal training workshop for the core staff.

Another unique value proposition that this team brings to the table is an effective global and national media and dissemination strategy and real-time tracking system to closely monitor the progress of the assignment. The blueprint for the media strategy and the tracking system will also be developed and submitted for inputs with the MoHUA in the preparatory phase.

Phase 1: Deliverables

This phase will culminate with the following deliverables at end of 5 weeks from project commencement:

1) Indicator development
2) Data collection instruments (primary and secondary)
3) Data entry portal (secondary)- Beta version
4) Blueprint for media strategy and project progress tracking
5) Workshop structure, content and participant list
6) Draft templates for workshop proceedings and city reports
7) Training of core staff (Key Consultants, Regional Co-ordinators and State Co-ordinators)
8) Framework for city GDP measurement

Phase 2, which is expected to last 3 weeks, will commence with the launch of the 'Liveability Tracker' and will see the roll out of the state workshops and city reconnaissance visit, led by a team of 20 trained

professionals. The training of the field staff (field supervisors and enumerators) will also be conducted during this phase. The key outcomes/deliverables envisaged under this phase include:

Phase 2: Deliverables

1. State workshop and city-reconnaissance reports
2. Finalization of data entry interface and collection protocols based on feedback from cities
3. Updation of the Liveability Tracker
4. Dissemination of the workshop interactions and outcomes through social media

Much of the actual data collection is expected to be undertaken in phase 3, which will be for a period of 4 weeks, and will be backed by a team of market research professionals and analysts who will perform real time QC checks on the quality of data that is generated and aggregated at the back-end. The core consulting staff alongside the network of state and regional coordinators will work closely with the cities and the field staff to trouble shoot on questions/clarifications through a network of help-desks and work towards encouraging cities to complete data collection over a period of 10 days. This phase will also see the commencement of the primary surveys and physical validation, which will be closely supervised with strong QC checks. Unique geo-spatial sampling methods will be deployed to ensure that we capture citizen feedback in the context of different geo-spatial incident conditions and 600 citizens (with 33% of the sample concentrated in slums) will be interviewed in every city. Open data that is spatial will also be leveraged to validate certain data sets in combination with physical audits of a random set of units. The key deliverables in this phase include:

Phase 3: Deliverables

1. Sampling plan for citizen surveys
2. Raw data sets

Each city will be given an opportunity to review the final data sets in detail and sign off on the same in phase 4. Reconciliation between self-reported and audited data if any will commence in this phase and the index will be developed and the cities will be ranked based on the formula. The draft and final city assessment reports will also be prepared in this phase over an 8-week period and submitted for approval to MoHUA.

Phase 4: Deliverables

1. Ranking List
2. Draft and final city assessment reports
3. Updated online tracker/portal
4. Social media dissemination

Phase 5, which is likely to last 4 weeks, will involve creating a dedicated economist portal with the findings of the study to be disseminated to a global audience and will culminate with a national workshop where the experience and the findings of the exercise are shared with all the cities and other key stakeholders. Special focus on the use-case applications of this process and alignment with national and global programs and specific opportunities to strengthen data interoperability and quality will be discussed.

Phase 5: Deliverables

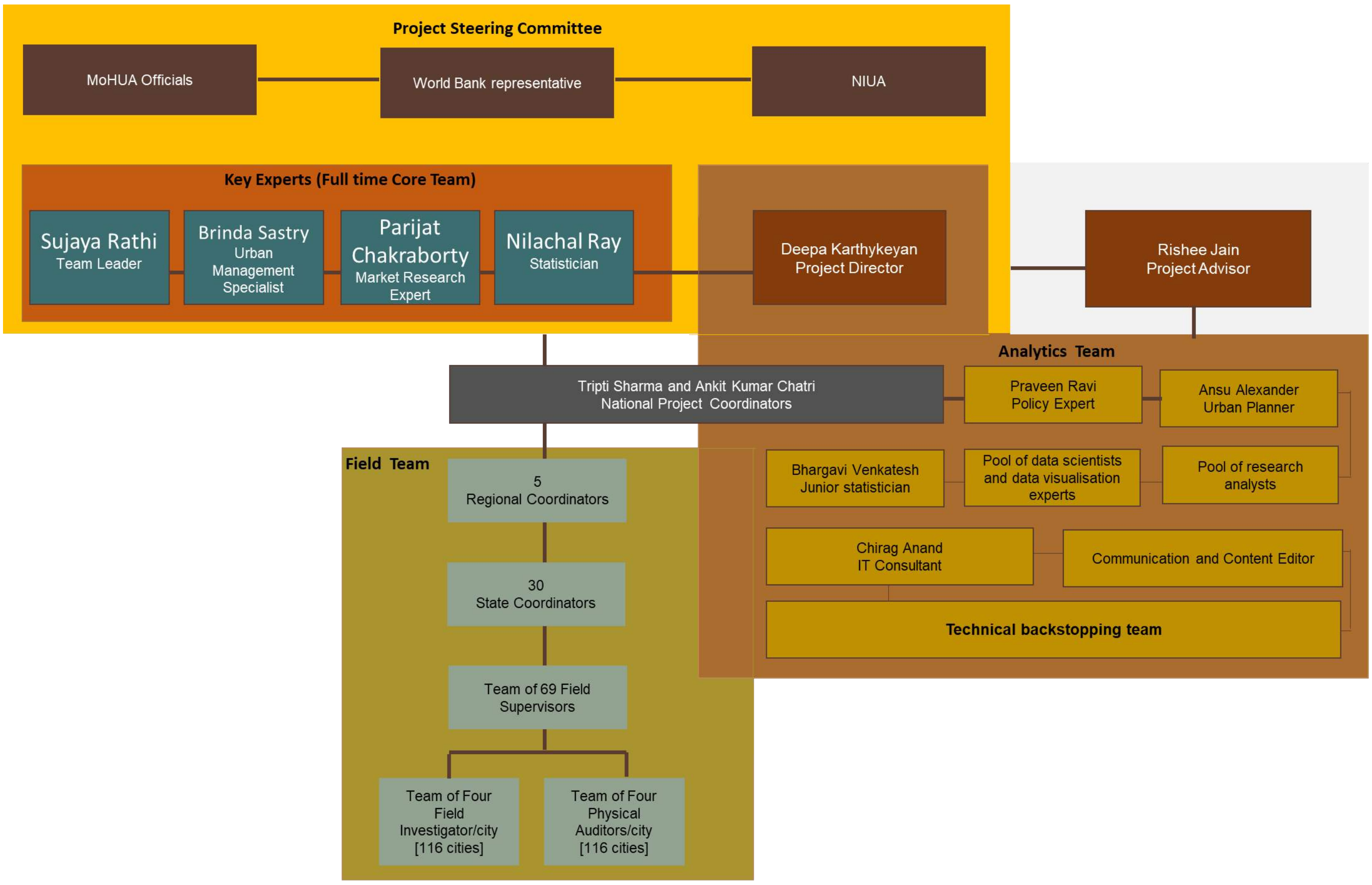
1. Economist Hub Portal
2. National workshop
3. White paper on use-case applications, interoperability and levers

C. Organization and Staffing

We propose a four-tier project planning, governance and execution team for timely completion of the overall project and sub-tasks thereof. For continuous updation and monitoring of the overall project progress we propose to constitute a Project Steering Committee with representatives from the MoHUA, NIUA, World Bank, Full-time Core/Key Experts and Project Director to conceptualise, plan, guide and troubleshoot during the 20-week period. The Core/Key Experts, Project Director, National Project Coordinators, and Senior members from the Support/Analytical Team will constitute the Project Command Centre Team. We have structured the Project Command Centre (PCC) Team to ensure that the appropriate level of skills, experience and resource is available to carry out the tasks involved in a timely and cost-effective manner. The PCC will coordinate and manage all activities for the Assessment of Liveability Indices and provide a central point of contact for both MoHUA and the Technical Team, State Specific teams. The PCC will ensure compliance of with the working procedures and quality assurance measures that have been designed for the success of this project.

Two national level project coordinators along with five regional coordinators and 30 state/UT level coordinators will manage information exchange across the core team, field team and support/analytics team. A 15 to 18 member support team comprising senior economists, policy expert, statisticians, data scientists, visualisation experts, senior analysts, urban planner, IT expert and content editor will provide research, analytical and technical support to the core and field teams. Figure below presents our organisation and staff of key and non-key experts on this assignment. The Core Team, Project Director, Project Coordinators, and regional and functional teams illustrated in our team structure will be responsible for the overall design and delivery of the central tasks as well as monitoring quality on each. They are supported by an experienced senior director of the consortium

The core team will be supported by 5 regional coordinators all senior permanent staff of Ipsos who will coordinate all activities for the project for the states in their region. The Regional Coordinators will support the State Facilitators in scheduling and conduct of state level workshops, support facilitation of city level kick-off meetings, oversee the translation of the questionnaire and other materials into the relevant languages, provide feedback on the pilot and oversee all data collection activities. The Regional Coordinators will attend a project briefing in Phase 1 before delivering the training to their team members. They will contribute to the interim and technical reports and be responsible for reviewing and approving the datasets for the states and cities in their region. At the State level, the State Coordinators/Facilitators will be responsible and the POC for State Mission Director's office and allied departments. They will be supported by city specific teams for carrying out the tasks outlined such as scheduling and conduct of state level workshops (supported by Regional Coordinator) and PCC team, city reconnaissance studies, coordinating and facilitating submission of secondary data, training the city teams for primary validation, and HH surveys.


Project Steering Committee
MoHUA Officials
World Bank representative
NIUA
Key Experts (Full time Core Team)
Sujaya Rathi
Team Leader
Brinda Sastry
Urban Management Specialist
Parijat Chakraborty
Market Research Expert
Nilachal Ray
Statistician
Deepa Karthykeyan
Project Director
Rishee Jain
Project Advisor
Analytics Team
Tripti Sharma and Ankit Kumar Chatri
National Project Coordinators
Praveen Ravi
Policy Expert
Ansu Alexander
Urban Planner
Field Team
5
Regional Coordinators
Bhargavi Venkatesh
Junior statistician
Pool of data scientists and data visualisation experts
Pool of research analysts
30
State Coordinators
Chirag Anand
IT Consultant
Communication and Content Editor
Technical backstopping team
Team of 69 Field Supervisors
Team of Four Field Investigator/city [116 cities]
Team of Four Physical Auditors/city [116 cities]

Planning and Conceptualisation team comprising Project Director, Project Advisor and National Project Coordinators

Project Coordination team comprising Team Leader, National Project Coordinators and Regional Coordinators

Data Collection team comprising State Coordinators, Field Supervisors, Field Investigators and Physical Auditors

Support team comprising Senior Economist, Data analytics, visualisation, quality control, IT and technical backstopping staff

FORM TECH 5:
Work Schedule and Planning for Deliverables

TECH-5: WORK SCHEDULE AND PLANNING FOR DELIVERABLES

Our five phased workplan spread over 20 weeks is presented below:

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 1: Preparatory Phase	■	■	■	■	■															
1	Literature review of existing studies and data sources (Smart Cities Report, AMRUT reports, Data.gov, etc.) to prepare baseline for each city	■	■																		
2	Data availability/gap assessment	■	■																		
3	Preliminary review and detailing the specific data points to be collected and finalising collection protocols		■	■																	
4	Development of Stakeholder Participation Structure			■																	
5	Development of Workshop Participation Structure			■																	
6	Finalisation of workshop dates for the state workshops'			■	■																
7	Development of data entry application /interface		■	■	■																
8	Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation			■	■	■	■	■													
9	Draft report templates						■	■													
10	Preparation of Research Instrument for primaries and physical validation							■	■	■											
11	Data entry and quality control template				■	■	■	■													
12	Data administration protocols and data collection monitoring framework						■	■													
13	Framework for estimate city GDP	■	■	■	■	■	■														
14	Formulation of media strategy			■	■	■	■														
15	Approach note for data interoperability			■	■	■	■	■	■	■	■	■	■	■	■						

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2: Conducting State/UT Workshops and City Reconnaissance Missions																				
16	Organisation of State-level Workshops					■	■	■													
17	Launch and updation of Nation-wide workshop tracker					■	■	■													
18	Preparation of workshop proceedings, materials and key-takeaways					■	■	■													
19	Inception Report						■	■	D1												
20	Internal ToT, training of Field Staff and orientation of ULB Official						■	■	■												
21	City level Reconnaissance meetings						■	■	■												
22	Final data availability/gap assessment							■	■												
23	Final list of indicators								■												
	Phase 3: Data collection					■	■	■	■	■	■	■	■								
24	Finalisation of secondary data collection interface/application					■	■	■	■												
25	Secondary data collection									■	■	■									
26	Setting up a region/state level help-desks for near-real-time troubleshooting)								■	■											
27	Primary data collection (where no secondary data is available)										■	■									
28	Physical audit of secondary data provided by cities (all relevant indicators)										■	■									
29	GIS based audit of secondary data provided by cities										■	■									
30	Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC								■	■	■	■									
31	Near-real time quality checks and rectification										■	■									
32	Draft assessment report												D2								

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W 12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2 : Conducting State/UT Workshops and City Reconnaissance Missions																				
	Phase 4 : Data collation, Sign-off and Finalisation													■	■						
33	Preparation of Draft data sets (Indices wherever complete data is available) and circulation back to cities for validation											■	■								
34	City level discussions for addressing queries and incorporating revisions, modifications etc.													■	■						
35	Sign-off on final list of data points/ indicators													■	■						
	Phase 5 : Report Preparation, National Workshop										■	■	■	■	■	■	■	■	■	■	■
36	Indices development and visualisation										■	■	■	■	■	■	■				
37	Submission of final assessment report															■	■	■	■	■	D3
38	Organising National-level Workshop															■	■	■	■	■	■
39	Submisison of digital database and raw database																			■	■
40	Framework for City GDP Estimation					■	■	■	■	■	■	■				■	■	■	■	■	■
41	Framework for interoperability					■	■	■	■	■	■	■				■	■	■	■	■	■

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

FORM TECH 6:
Team Composition, Assignment, and Key Experts' Inputs

TECH-6: TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
KEY EXPERTS												
K-1	Sujaya Rathi	[Team Leader]	[Home]	2	[Home]	1	[Home]	2		5		5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-2	Brinda Sastry	[Urban Management Specialist/ Planning Expert]	[Home]	2	[Home]	1	[Home]	1.5		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-3	Parijat Chakrabarty	[Market Research Specialist]	[Home]	0.5	[Home]	1	[Home]	0.5		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
K-4	Nilanchal Ray	[Statistician]	[Home]	1	[Home]	0.5	[Home]	2		3.5		3.5
			[Field]	0	[Field]	0	[Field]	0			0	0
			Subtotal (D-1)	5.5	Subtotal (D-2)	3.5	Subtotal (D-3)	6		15		15
NON-KEY EXPERTS												
N-1	Rishee Jain	[Non-Key Expert -1]	[Home]	0.2	[Home]	0	[Home]	0.3		0.5		0.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-2	Deepa Karthykeyan	[Non-Key Expert -2]	[Home]	0.5	[Home]	0.5	[Home]	0.5		1.5		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-3	Tripti Sharma		[Home]	1.5	[Home]	0.5	[Home]	2		4		4.5
			[Field]	0	[Field]	0	[Field]	0				

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
N-4	Ankit Kumar Chatri		[Home]	2	[Home]	0.5	[Home]	2		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-5	Praveen Ravi		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-6	Dr. Rajarshi Singh		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-7	Ambrin M		[Home]	0.5	[Home]	0.5	[Home]	1		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
N-9	Bhargavi V		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-10	Kowshik Ganesh		[Home]	0.75	[Home]	0	[Home]	0.75		1.25		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-13	Ansu Alexander		[Home]	0.5	[Home]	0.25	[Home]	0.5		1.25		1.25
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Anusha Ghosh		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Samvita Kalyan		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Leo Abruzzesse	Home	[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
N-14	Roxana Slavcheva		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Stefano Scuratti		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Regional Coordinators: (5 Nos)		[Home]	2.5	[Home]	5	[Home]	2.5		10		10
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	State Coordinators (30 Nos)		[Home]	7.5	[Home]	15	[Home]	7.5		30		30
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Executives (116 Nos)		[Home]	0	[Home]	290	[Home]	0		290		290
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Physical Auditors (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Enumerators (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Supervisors (116 Nos)		[Home]	0	[Home]	232	[Home]	0		232		232
			[Field]	0	[Field]	0	[Field]	0			0	0
							Total			1306.5	1.5	1308

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1. 2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty-two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

Section 3 – Technical Proposal – Standard Forms

3 “Home” means work in the office in the expert’s country of residence. “Field” work means work carried out in the Client’s country or any other country outside the expert’s country of residence.

CURRICULUM VITAE (CV)

CV of Team Leader

Position Title and No.	Team leader
Name of Expert:	Sujaya Rathi
Date of Birth:	15th September 1969
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Masters in Community and Regional Planning, Iowa State University, USA, 1998
- Masters in Economics, Jadavpur University, India, 1994

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
November 1, 2017 – current	Self/ Independent Consultant	India	Urban transport, urban sanitation, urban planning, decision support, capacity building Project involved: Faecal Sludge Management (FSM)Toolbox Rapid Assessment and Market Priming, Athena Infonomics, Client: Bill and Melinda Gates Foundation, November 1, 2017 – January 31 2018

June 2010 to October 2017	Center for Study of Science Technology and Policy (CSTEP)/ Principal Research Scientist Ref: Vivek Vaidyanathan, vivek.v@cstep.in	India	Led and formed the urban planning team. Responsible for all urban domain projects related to planning, transport, sanitation, development of decision support systems, modelling, infrastructure assessment, evaluation studies, urban development projects such as evaluation of smart city plans, policy analysis Project involved: • Intersectionality-Informed Framework for Implementation of Effective Gender Mainstreaming in WSH: Andhra Pradesh (Bill and Melinda Gates Foundation (BMGF), along with partners Administrative Staff College of India (ASCI), and Centre for Research and Advocacy (CFAR), July 2017 – October 2017) • Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche (Client: International Finance Corporation)- May 2017 – October 2017 • Implementation plan for electrification of public transportation in Kolkata and Bangalore city – Shakti Foundation, 2016-2017 • Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog, 2015 • CSTEP (2015) Electric Vehicles: Technology, Policies and Benefits, 2015-16 – Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore • Need for Government support for public transport – BMTC, 2015 • Review of urban transport in India, 2014 – Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore • Development of Decision Making Platform for Integrated Sanitation Investment Planning – Bill

			and Melinda Gates Foundation, 2013 – August 2017 (Phase 1 and 2) • Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change, IDRC Opportunity Fund, 2015 Other Projects: • Have been involved with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. • Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative • Faculty for Sensitization Module on Urban Transport, IUT, Bangalore, 2013 • Coordinator for India- Fecal Sludge Management Toolbox – validation, dissemination and training. • Worked with Planning Commission, Government of India to develop a systems dynamics model for identifying future development trajectories for India. This chapter titled, "Scenarios: Shaping India's Future" has just been published by the Planning Commission • Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP • Pedestrian Guidelines for Karnataka (Client: Directorate of Urban Land Transport, Govt. of Karnataka)
2006 to 2010	Wilbur Smith Associates, Bangalore, India/	India	Projects Involved: • Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area, 2009-10

	Transportation Project Manager; Contact information for references: available upon request		• Mobility Indicators for Bangalore, India-2008 (Client: Directorate of Urban Land Transport, Govt. of Karnataka) • Guwahati Comprehensive Mobility Plan, 2008-09 • Capacity Building for Sustainable Urban Transport Planning- India, 2008 - Client-DFID-World Bank, Ministry of Urban Development, Government of India • Jaipur Comprehensive Mobility Plan, Jaipur, India-2009 (Client: Jaipur Development Authority) • Chennai Comprehensive Traffic and Transportation Study, Chennai, India-2008 (Client: Chennai Metropolitan Development Authority) • Traffic and Transportation policies and strategies for urban areas in India, 2007(Client: Ministry of Urban Development, Government of India) • Techno-Economic Feasibility for Light Rail Transit, Kolkata, India -2009 -2010(Client: Kolkata Mass Rapid Transit Pvt. Ltd) • Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 (Client: Urban Mass Transit Corporation) • Bagmane Tech Park-Traffic Impact Study, Bangalore, India-2007-2008 (Client: Bagmane Developers)
2003 to 2006	The Transpo Group, Kirkland, WA, USA/ Transportation Project Manager; Contact information for references: available upon request	USA	Projects Involved • Northwest Landing Developments, DuPont (Washington, USA)-2003-2006(Client: Quadrant Corporation, WA, USA) • City of Bonney Lake (Washington, USA) Land-Use-Transportation Plan-2005(Client: City of Bonney Lake, WA, USA) • Interstate-405 Congestion Relief Project (Washington, USA)-2005(Client: Washington Dept. of Transportation, WA, USA)

			• State Route 539 Corridor Study (Washington, USA)-2004-2005(Client: Washington Dept. of Transportation, WA, USA) • PSRC Air Cargo Study (Washington, USA)-2004-2005(Client: Puget Sound Regional Council, WA, USA) University of Washington, West Campus Garage Expansion Environmental Impact Statement (Washington, USA)-2005(Client: University of Washington, WA, USA) • Traffic Calming Study for California Department of Transportation (CalTrans)-2004(Client: California Dept. of Transportation, WA, USA) • City of Bellingham Parking Study (Washington, USA)-2004 (Client: City of Bellingham, WA, USA) • Feasibility Analysis for Wal-Mart (Oregon, USA)-2004(Client: PACLAND, USA) • City of Lynden (Washington, USA) Transportation Plan-2003 (Client: City of Lynden, WA, USA)
2000 to 2003	Howard R Green, Des Moines, Iowa/ Transportation Planner; Contact information for references: available upon request	USA	Projects Involved: • Ankeny Comprehensive Plan, City of Ankeny (Iowa, USA)-2002-2003(Client: City of Ankeny, IA, USA) • 2002 Land-use and Transportation Analysis and Planning, City of Johnston (Iowa, USA) 2002-2003(Client: City of Johnston, IA, USA) • Outer Drive Project, Sioux City (Iowa, USA)-2002(Client: City of Sioux City, IA, USA) • Russell Street Access Management Study, Sioux Falls (South Dakota, USA)-2002(Client: South Dakota Dept. of Transportation, WA, USA) • Traffic Impact study for Century Trace/Century Woods and Windsor Park Development, Johnston, (Iowa, USA)-2002(Client: City of Johnston, IA, USA) • N. 19th Ave Corridor Study, City of Newton (Iowa, USA)-2001-2002(Client: City of Newton, IA, USA)

			• Traffic Impact Study and Regional Land-use Transportation Model Evaluation, West Des Moines (Iowa, USA)-2000-2003(Client: City of West Des Moines, IA, USA) • Transportation Engineering Assistance Program (TEAP), Iowa Department of Transportation2000-2003(Client: Iowa Dept. of Transportation, WA, USA) • West Side Visioning Study (Land Use Update) West Des Moines (Iowa, USA) -20002003(Client: City of West Des Moines, IA, USA)
1996 to 1999	Center for Transportation Research and Education, Iowa/ Research Analyst; Contact information for references: available upon request	USA	Project Involved: • "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. 1997-2000 (Client: Iowa Department of Transportation, IA, USA)
1996-1998	Iowa State University, USA/ Graduate Research Assistant; Contact information for references: available upon request	USA	• Involved in "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. • Collected data and conducted research on traffic patterns and mode choice behaviors based on several factors. • Developed intercity passenger and freight transportation models based on the research. • Involved in computer applications for development of the conceptual strategy for integrating these models with Geographic Information Systems (GIS).
1994-1996	CII, Kolkata, India/ Executive Officer ; Contact information for	India	• Representative of industry for addressing and analyzing problems related to transport, infrastructure, and economic affairs. Made recommendations on policies and issues to

	references: Indrani Kar, indrani.kar@cii.in		government agencies, on behalf of regional industry. • Responsible for making recommendations to the State Budget to the Finance Ministry. • Conducted seminars and conferences for awareness of contemporary policies and issues, technology transfer between India and United States, Britain, Belgium etc.

Membership in Professional Associations and Publications:

- Member, American Institute of Certified Planners, USA
- Member, American Planning Association, USA
- Individual Member, National Faecal Sludge and Septage Management (NFSSM) Alliance, India
- Member of the Technology and Gender Task Forces of the NFSSM Alliance
- Life Member, Institute of Urban Transport, India
- Alumni, Strategic Non-Profit Management Course-India, Harvard Business School

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Lead the state level and national workshops • Lead the design and implementation plan in conducting Reconnaissance Study of all cities • Survey Design and Indicator Finalization • Analysis Review	Project Name: Reconceptualising Smart Cities: A Reference Framework for India Client: NITI Aayog Year: 2015 Position Held: Project Lead Activities Performed: — Project lead involved in the development and dissemination of a reference framework based on the sustainability principles — Application of the reference framework for analysis of the smart city proposal for Indian cities

• Database Wireframe Design • Review and submission of reports • Client Engagement and Governance Stakeholder Liasoning	— Published a report titled "Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog,"
	Project Name: Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change Client: IDRC Opportunity Fund Year: 2015 Position Held: Project Lead Activities Performed: — Contributor to the research on governance, specifically focusing on land and water — Guided and reviewed participatory scenario development and primary surveys.
	Project Name: Engagement with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. Client: Planning Commission Year: 2013 Position Held: Principal Research Scientist Activities Performed: — Participatory consultation, — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Developing analytical systems approach — scenario development and documentation — Reviewed and submitted reports

	Project Name: Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP Client: IDRC Think Tank Initiative Year: 2010- 2013 Position Held: Principal Research Scientist Activities Performed: — Principal Investigator for the project, developed methodology, conducted data collection, reporting — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Capacity Building for Sustainable Urban Transport Planning- India Client: DFID-World Bank, Ministry of Urban Development, Government of India Year: 2008 Position Held: Activities Performed: — Gap Analysis of the urban transport planning scenario for the cities of Kolkata, Guwahati, Pune and Bangalore — Development of Alternative Analysis Toolkit and Training Material — Have been involved in capacity building for transportation professional all over India where I imparted training to over 100 officials as part of the "Training the Trainers" program for the Ministry of Urban Development.
	Project Name: Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban

	transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative scenarios for India. Client: UMTC, GiZ for Ministry of Urban Development Year: 2012 Position Held: Principal Research Scientist Activities Performed: — Independently developed the module — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Mobility Indicators for Bangalore, India Client: Directorate of Urban Land Transport, Govt. of Karnataka Year: 2008 Position Held: Project Lead and Project Manager Activities Performed: — Development of indicators that can be measured regularly — Development of the methodology and templates to be replicated — Year-long dissemination with different stakeholders including the government and the citizens
	Project Name: Traffic and Transportation policies and strategies for urban areas in India Client: Ministry of Urban Development, Government of India Year: 2007 Position Held: Transport Project Manager Activities Performed: — Stakeholder engagement and project management — Data analysis

	— contribution to final recommendations and report.
	Project Name: Review of Urban Transport in India Client: Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore. Year: 2014 Position Held: Project Lead Activities Performed: — Project lead involved in the development of urban transport review conceptual and working model which focuses on travel demand, energy consumption and emissions from various categories of cities in India.
	Project Name: Electric Vehicles: Technology, Policies and Benefits, Client Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore Year: 2015-16 Position Held: Team Leader Activities Performed: — Involved in the preparation of report to highlight the need for looking at green growth strategies for public transport and identification of policy gaps associated with the adoption of battery electric buses at National, State and City levels
	Project Name: Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche Client: International Finance Corporation Year: May 2017 – October 2017 Position Held: Team Leader Activities Performed: — Stakeholder engagements with the cities of Bhubaneshwar, Bangalore, Chennai and Thane — Coordination with the team — Review of policies, guidelines for EVs in India

	— Study of schemes and policies used globally for promoting EV adoption — Identification of gaps in existing EV schemes/ policies in India — Recommending supply and demand - side incentives to promote investments in EV manufacturing and related infrastructure
	Project Name: Need for Government support for public transport – BMTC Client: BMTC Year: 2015 Position Held: Principal Research Scientist, Project Lead Activities Performed: — Involved in the preparation of report to highlight the need for funding bus system in Bangalore city and recommended the need for alternative funding mechanisms for sustainable public transport in Bangalore
	Project Name: Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area Client: BMTC Year: 2009-10 Position Held: Transport Project Manager Activities Performed: — Development of the integrated land use and transport strategy for the area — Co-ordination with Consultant doing Structure Plan for the area –working in tandem to ensure consistency with structure plan and the transport plan scenarios — Formulated long term Metropolitan Regional Transportation Strategies for BMR-203
	Project Name: Guwahati Comprehensive Mobility Plan Client: Transport Project Manager and Lead Year: 2008-09

	Position Held: Activities Performed: — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Jaipur Comprehensive Mobility Plan Client: Jaipur Development Authority Year: 2009 Position Held: Transport Project Manager Activities Performed: Data analysis, reviewing modeling outputs and options for mobility — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Chennai Comprehensive Traffic and Transportation Study Client: Chennai Metropolitan Development Authority Year: 2008 Position Held: Transport Project Manager Activities Performed: Land use and transport integration, developing transport strategies — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Techno-Economic Feasibility for Light Rail Transit, Kolkata

	Client: Kolkata Mass Rapid Transit Pvt. Ltd Year: 2009 -2010 Position Held: Transport Project Manager, Project Lead Activities Performed: Methodology design, conducting primary surveys in Kolkata, review transport modeling, suggest technology options, client engagement
	Project Name: Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 Client: Urban Mass Transit Corporation Year: 2008 Position Held: Transport Project Manager, Lead Analyst Activities Performed: Methodology design, reviewed primary data collection methods and survey plan, analysis, recommendations and final documentation

Publications/Articles:

- Singh, Shubhra & Mohan, Riya & Rathi, Sujaya & Raju, Nandimandalam. (2017). Technology options for faecal sludge management in developing countries: Benefits and revenue from reuse. Environmental Technology & Innovation. 7. 10.1016/j.eti.2017.02.004.
- Electronic Waste Management in India: Issues and Recommendations, Shramana Dey, Sonali Anusree Patro, Shubhra Singh and Sujaya Rathi, Annual Technical Volume, Environmental Engineering Division Board, Session-2015-16, The Institute of Engineers, India, 2016
- Sujaya Rathi, Author on the Chapter on India in Pojani, D. Stead (Eds.), The Urban Transport Crisis in Emerging Economies, 1st ed. 2017, XV. This edited volume discuses urban transport issues, policies, and initiatives in twelve of the world’s major emerging economies – Brazil, China, Colombia, India, Indonesia, Iran, Mexico, Nigeria, Russia, South Africa, Turkey, and Vietnam - countries with large populations that have recently experienced large changes in urban structure, motorization and all the associated social, economic, and environmental impacts

- Development of the systems model and its interpretation and development of the scenarios for the Planning Commission Report – " Scenarios: Shaping India's Future" http://planningcommission.nic.in/reports/genrep/scenarios_v10712.pdf
- Ashish Verma, H.S. Sudhira, Sujaya Rathi, Robin King and Nibedita Dash, "Sustainable urbanization using high speed rail (HSR) in Karnataka, India" Research in Transportation Economics, 2013, Vol. 38 ,pp. 67-77
- Robin A. King, Sujaya Rathi and H.S. Sudhira, "An approach to regional planning in India," International Journal System of Systems Engineering, 2012, Vol. 3, pp. 117-128.
- Abhik K Das, Sujaya Rathi, "An Empirical Geometric Model for City Expansion", published in the Proceedings of the First International Conference on Intelligent Infrastructure, Computer Society of India, December 2012
- Anantha Lakshmi P, Sujaya Rathi and Abhik Kumar Das. 2015. A Dynamic Model for a Scenario based Analysis of Modal Split of Road based Passenger Mobility, 3rd Conference of Transportation Research Group.
- Anantha Lakshmi P, Sujaya Rathi.2013.Strategies to reduce energy consumption from commuting by employees, Elsevier, Procedia- Social & Behavioral Sciences, Volume 104, Pages 952-961. Available at http://www.sciencedirect.com/science/article/pii/S1877042813045813
- Anantha Lakshmi P, Sujaya Rathi. 2015. Article on 'Intelligent systems for smart and sustainable transport' published in Sustainability next. Available at http://sustainabilitynext.in/cstep/intelligent-systems-for-smart-and-sustainable-transport/
- Sujaya Rathi, Anantha Lakshmi P.2014. Article on 'Building towns to save our cities' published in India Together. Available at http://indiatogether.org/towns-government
- Sujaya Rathi, Anantha Lakshmi P.2013. Article on 'The way out of the mess on road' published in The Hindu. Available at http://www.thehindu.com/opinion/open-page/the-way-out-of-themess-on-road/article4614715.ece
- Holistic approach for Smart Cities mission: Need for a reference framework, Business Standard, July 5, 2015. http://cstep.in/pressroom/newspaper-articles/218
- Think beyond building toilets, Sustainability Next, January 2015, Sujaya Rathi. http://sustainabilitynext.in/toilet-special/think-beyond-building-toilets/ Republished version: Beyond toilets: Improving the sanitation value chain, Ideas for India, July 20, 2015. http://www.ideasforindia.in/article.aspx?article_id=1480
- Can Bangalore's planners solve its commuter woes?- http://indiatogether.org/need-for-mobilityplan-for-bangalore-economy
- Planning for a climate-resilient city- http://indiatogether.org/urban-planning-and-climateresilience-environment
- Building towns to save our cities, Sujaya Rathi and Anantha Lakshmi, India Together, October 24, 2013

- Are Slums a problem or a solution? The Hindu, 14th July 2013 (http://www.thehindu.com/todays-paper/tp-features/tp-openpage/are-slums-a-problem-orsolution/article4913512.ece) The way out of the mess on road, The Hindu, 14th April 2013
- The Derelict mile, The World Streets Forum (http://worldstreets.wordpress.com/2012/12/13/letter-from-bangalore-the-derelict-mile/)
- Target Sustainability, Become Smart, Sujaya Rathi and Shrimoyee Bhattacharya, Infrastructure Today, March 2015.
- Smart-City Challenge: Building on pillars of good governance, Shrimoyee Bhattacharya and Sujaya Rathi, Economic Times, May 12, 2015.
- What can Bengaluru gain from Smart Cities Mission? Sujaya Rathi and Shrimoyee Bhattacharya, Deccan Herald, August 26, 2016

Expert's contact information: (e-mail: sujaya.rathi@gmail.com , phone: 9900087161)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Sujaya Rathi	Sujaya Rathi	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Urban Management Specialist

Position Title and No.	Brinda Sastry
Name of Expert:	Urban Management Specialist
Date of Birth:	11-JAN-1965
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelors in Architecture programs at the RV College of Architecture, Bengaluru, 1981
- Master of Urban Management and Design, University of Oregon, Eugene, Oregon, USA, 1993
- Diploma in Architecture - equivalent to a degree and recognized by the Royal Institute of British Architects (RIBA) - Center for Environmental Planning and Technology, School of Architecture, Ahmedabad, India, 1988

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
2000 To: PRESENT	VARIOUS GOVERNMENT, PRIVATE AND NGO ORGANISATIONS Positions / ADVISOR, COMMUNITY DEVELOPMENT EXPERT, PROJECT COORDINATOR Contact Information: ROBIN KING, Director of Knowledge Capture and Collaboration, WRI, Washington DC, USA	India	• Institutional arrangements that shape urban settlements within the framework of inclusivity, equity, disaster resilience, and sustainability. • Technical assistance to citizen groups on various urban planning matters, and conducts independent research in the areas of participatory planning, livability, spatial planning, urban governance, and urban design policy implementation

	EMAIL: RKING@WRI.ORG PHONE: +1 (202) 729-7816		
2004 To: PRESENT	RV COLLEGE OF ARCHITECTURE, BENGALURU / ADJUNCT FACULTY	India	• Teaching courses in architecture • Urban management and planning research
2014 To: PRESENT	HABITAT FORUM (INHAF) / PROJECT COORDINATOR Contact Information: KIRTEE SHAH, PRESIDENT, INHAF (HABITAT FORUM) EMAIL: kirtee@ksadps.com , kirtee0107@gmail.com PHONE: +91-99250 10706	India	• Prepared a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy
Nov. 2012 To: Feb. 2013	INDIAN INSTITUTE FOR HUMAN SETTLEMENTS, BENGALURU / VISITING FACULTY Contact Information: Available upon request	India	• Teaching • Urban management and planning research
From: 2012, 2013, 2014, 2016	EPFL LUASSANE, SWITZERLAND, SUMMER SCHOOL IN BENGALURU / EXTERNAL FACULTY	India	• Teaching • Urban management and planning research
2004 To: 2010	GROUPE SCE / EGIS INDIA PVT LTD., BENGALURU/ SENIOR PLANNING CONSULTANT, COMMUNITY DEVELOPMENT	India	• Reviewed and provided technical input on the data analysis and Master Plan Projects

	EXPERT, PLANNING ADVISOR		
2000 To: 2004	DEPARTMENT OF INFORMATION TECHNOLOGY AND BIOTECHNOLOGY, GOVERNMENT OF KARNATAKA/ PLANNING CONSULTANT / PROJECT COORDINATOR	India	• Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
1996 To: 2000	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON, USA / CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net	USA	• Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. Organised and conducted public meetings, workshops and neighborhood walks. Prepared questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000. • Developing design standards and guidelines for residential zones in the city of Portland
1993 To: 1996	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON,	USA	• Prepared a community plan for 18 neighborhoods in East Portland: Worked with a team to develop alternative zoning concepts and a summary document for

	USA / ASSOCIATE CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net		the plan area. Organised public workshops, and worked with the Citizen Advisory Committee to solicit input from neighborhoods and businesses and develop the plan. The plan was abandoned due to lack of funds • Prepared a transportation plan for the Broadway-Weidler: Provided technical assistance on zoning, development regulations (bye-laws) and design guidelines issues to develop a transportation plan for the corridor. • Westside Light Rail Project: Developed a station area plan (micro-level plan) for the Goose Hollow District in Portland city and coordinate with all concerned agencies. Prepared a background report, an urban design plan, and special design guidelines for the Goose Hollow District. This involved preparing a historic conservation strategy for the District. Developed a land use plan and zoning recommendations for the light rail station area. Served as an advisor to the design review team for new projects in this area. Prepared legal documents for adoption of the plan. The Portland City Council officially adopted the Goose Hollow District Plan in February 1996. • Livable City Project: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering for discussing light rail station area planning, and organized public workshops.
August 1993 To: December 1993	CITY OF PORTLAND, OFFICE OF TRANSPORTATION, REGIONAL RAIL PROGRAMME,	USA	• Assisting on urban and city related projects

	PORTLAND, OREGON, USA/INTERN Contact Information: Available upon request		
June 1993 To: August 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA/ ADJUNCT INSTRUCTOR Contact Information: Available upon request	USA	• Assisting on urban and city related projects
1990 To: 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA / GRADUATE TEACHING FELLOW, RESEARCH ASSISTANT Contact Information: Available upon request	USA	• Assisting on urban and city related projects
1988 To: 1990	BOPAIAH AND ASSOCIATES, ARCHITECTS AND PLANNERS, BENGALURU /PROJECT ARCHITECT Contact Information: Available upon request	India	• Working on urban and city related projects
1988 To: 1988	CEPT, SCHOOL OF ARCHITECTURE, AHMEDABAD / RESEARCH ASSISTANT Contact Information: Available upon request	India	• Assisting on urban and city related projects
1986 To: 1987	JAIN ASSOCIATES, ARCHITECTS AND URBAN DESIGNERS,	India	• Working on urban and city related projects

	AHMEDABAD /JUNIOR ARCHITECT		
1986 To: 1986	WACHTL AND ASSOCIES, ARCHITECTS, ZURICH, SWITZERLAND/INTERN	Switzerland	• Assisting on urban and city related projects

Membership in Professional Associations and Publications:

- COUNCIL OF ARCHITECTURE, INDIA
- CEPT FAAA
- UNIVERSITY OF OREGON ALUMNI ASSOCIATION

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Gujarati
- Kannada
- Tamil

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Urban indicators assessment and finalization • Ground-level urban data collection, analysis • Benchmarking (Ranking) and comparative analysis • Organising urban citizen level engagements	Name of Assignment or Project: Revisioning JnNURM Year: 2014 Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: Conducted a secondary literature, **urban data collection and analysis of 65 JnNURM cities** under the JnNURM, the money spent, projects completed and citizens' review of the mission. **Used this to prepare an approach paper, an information brochure to advocate for a need for re-visioning, and several grant proposals to be submitted to the TATA Trust, Ford Foundation and other funding agencies.** This Project outlines the goals and criteria for **assessment that aim for principles of good governance - accountability and transparency**
	Name of Assignment or Project: Draft report on data assessment for 65 JNNURM cities (work in progress) Year: Ongoing Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: • Assess role of ULBs in JNNURM and impact of the Mission on performance of ULBs; • Highlight the role of the public or lack of it in the process of implementing JNNURM; - • Assess if intended outcomes were achieved; • Assess ULB performance with respect to reforms achievement, funds utilization, and project implementation; • Identify, from the analysis of data, criteria for city selection and key questions that need to be investigated through on-ground consultations and interactions with participating ULBs; and • identify factors for recommending a revised framework for a re-visioned strategy for urban development

	• Review of data from JNNURM, HUPA, MoUD, and other official websites for UIG as well as UIDSSMT towns. Data concerning Additional Central Assistance (ACA) funds released; funds utilized; project completion rates including BSUP housing completion status with occupancy rates; reforms performance; credit ratings of ULBs; and best practices and awards are considered for this review. Most data accessed is 2013-14 data, except in some instances data for 2010-11 is used. • Employed gathering data through empirical work, including public consultations, surveys, and interviews with ULBs, among other tasks.
	Name of Assignment or Project: Green Logistics Project – Gandhi Bazaar Market Street, An inclusive re-design. Year: 2017-18 (on-going) Location: Bengaluru Client: GIZ and the Government of Karnataka (DULT and BBMP) Positions held: Team Leader, Urban Designer and Planner Activities performed: Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
	Name of Assignment or Project: Saving cities, building towns - A case of spatial reorganisation Year: 2014 Location: Bengaluru Client: Center for Study of Science, Technology and Policy (CSTEP), Bengaluru Main project features: Review of small town growth and development dynamics Positions held: PLANNING CONSULTANT Activities performed: • Reviewed the report: Saving cities, building towns - A case of spatial re-organisation, prepared by CSTEP and provided technical and methodological advice in written form for changes and improvements.

	- Assessed the indicators and framework assigned for urban data collection
	Name of Assignment or Project: An assessment of the role of NGOs in CSR Activities Year: 2017-18 (on-going) Location: Bengaluru Client: Habitat Forum (INHAF) Positions held: Project Coordinator, Principal Researcher Activities performed: Preparing a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy.
	Project name: Preparation of development controls for the Indiranagar Metro Station area Location: 2013 Client: EMBARQ (WRI), Bengaluru Position: SENIOR URBAN DESIGN AND PLANNING CONSULTANT Activities performed: - Co-authored with other team members the draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru - Prepared a city-wide assessment of station area typologies. Developed a work plan and conducted ground surveys of the Metro station area to prepare a land use, ground-level urban data collection & analysis and urban design plan, with development control proposals using a hybrid of form based codes and land use regulations. Also, prepared methodologies to be applicable to other station areas for plan preparation and plan implementation.
	Name of Assignment or Project: Revision of the Structure Plan for the Bangalore Metropolitan Region Year: 2008-10 Location: Bengaluru Client: Bangalore Metropolitan Region Development Authority (BMRDA) Positions held: SENIOR URBAN PLANNING CONSULTANT Activities performed:

	• Reviewed and analyzed land use planning policies and land management instruments, planned the implementation and consultative / participatory approach; conducted existing situation analysis, used trend analysis and population projections for development analysis, SWOT analysis, and preparing development scenarios and visions; prepared sector specific vision and policy guidelines, provided. • Lead extensive urban data collection for assessment of the existing conditions of the Bengaluru Metroplitan region and the proposals for future planning of the region. • Also involved in the land use analysis, spatial transportation proposals, the economic strategy of cluster and nodes, and the preparation of the zonal regulation • Link: http://www.bmrda.kar.nic.in/rsp_report.pdf
	Name of Assignment or Project: Hollywood and Sandy Area Plan Year: 1998-2000 Location: Portland, Oregon, USA Client: City of Portland Positions held: CITY PLANNER Activities performed: • Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. • Organised and conducted public meetings, workshops and neighbourhood walks. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000.
	Name of Assignment or Project: Creston Kenilworth Neighborhood Plan Year: 1996-98 Location: Portland, Oregon, USA

	Client: Bureau of Housing and Community Development, City of Portland Positions held: CITY PLANNER Activities performed: • Worked independently to develop an urban design plan, policies, and implementing actions and legal findings for this low-income neighborhood. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Organised and conducted public meetings, workshops and made presentations before official bodies. The Portland City Council officially adopted the plan in June 1998
	Name of Assignment or Project: Preparation of DPRs under the JnNURM for Heritage Conservation, Urban Renewal, Basic Services for the Urban Poor and Mobility Plan Year : 2008-09 Location: PANAJI, GOA Client: CCP, PANAJI Positions held: PUBLIC PARTICIPATION CONSULTANT Activities performed: Prepared a public participation strategy and timeline, identified primary and secondary stakeholders (over 35 target groups), held meetings with the Mayor and Councillors, conducted ward level outreach, surveys, and meetings with target groups to document issues, conducted 6 open houses at city level, compiled the process into a report that was officially submitted to the City Corporation of Panaji.
	Name of Assignment or Project: Livable City Project Year: 1993-94 Location: Portland, Oregon, USA Client: City of Portland Positions held: ASSOCIATE CITY PLANNER Activities performed: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering

	for discussing light rail station area planning, and organized public workshops.
	Name of Assignment or Project: Master Plan (Revision II) – 2021 A.D. for Mangalore Year: 2007-12 Location: Bengaluru Client: CITIZEN FORUM FOR MANGALORE" S DEVELOPMENT Activities performed: Prepared a report assessing the Plan and suggesting revisions by identifying the gaps in information and analysis. Prepared a participatory process work plan for the citizens group.
	Name of Assignment or Project: Draft Master Plan for the Hampi World Heritage Site Year: 2007-10 Location: Bengaluru Client: ASI and UNESCO Positions held: PLANNING CONSULTANT (to INDE, Bengaluru) Activities performed: Reviewd the Hampi Master Plan and provided technical inputs for revision in the form of a report. Prepared a work plan for conducting a public participation process.
	Name of Assignment or Project: Review of the working paper: Transit-Oriented Development Policy Mapping: comparing TOD implementation in three cities - Portland (Oregon), Mexico City and New Delhi Year : 2016 Location: NA Client: World Resources Institute (WRI), Washington DC, USA Positions held: PLANNING CONSULTANT Activities performed: Assessed the breadth and depth of information related to TOD policy and provided written technical and policy related notes identifying a) gaps in method and information, and b) areas for improvement for the working paper
	Name of Assignment or Project: Metropolitan Spatial Data Infrastructure Project Year: 2004

	Location: Bengaluru Client: Bangalore Development Authority Positions held: SENIOR URBAN PLANNING AND DESIGN CONSULTANT Activities performed: As consultant, reviewing and preparing a Vision Document, Planning Districts Report and a planning Handbook for the Revised Master Plan. Prepared brochure explaining the Master Plan and assisted in preparation for the public participation process. Participated in an advisory role in team discussions on zoning regulations, and land use planning issues.
	Name of Assignment or Project: Bangalore Information Technology Corridor Project Year: 2000-04 Location: Bengaluru Client: NA Positions held: PROJECT COORDINATOR - Consultant Activities performed: Coordinated with other consultants in preparation of the Structure Plan and reviewed their works. Dealt with official correspondence, prepare presentations on the project and drafts for the Cabinet note. Participated in discussions on and assisted in preparing the amendments to the proposed the IT Corridor Authority Bill.
	Name of Assignment or Project: Proposed Recommendations for the Karaikal Master Plan Year: 2007 Location: Karaikal, Puducherry Client: Architecture and Design (A&D), Paris, and Development Alternatives, New Delhi, India Positions held: URBAN PLANNING CONSULTANT Activities performed: Prepared a review of the Master plan document and recommended strategies for revisions

Training and certificates attained:

- City of Portland, Bureau of Planning, Portland, Oregon, USA (1993-2000) : Professional development training conducted by the American Planning Association - Portland Chapter, and Oregon Department of Transportation, USA. Involved sessions on transit-oriented planning, community development, public involvement strategies and growth management principles.

Publications:

Sastry, B., and Rajagopal, C. 'Stakeholder participation process for preparing Detailed Project Reports (DPRs) under JnNURM, Panaji, Goa,' in Urban Initiatives - Peer Experience and Reflective Learning (PEARL) under JnNURM. New Delhi: National Institute of Urban Affairs. Vol. 4. pp. 92-97. 2011.

N, Asha., and Sastry, B. 'A Study of urban villages - A case of Bangalore', in Proceedings of IUDI National Urban Design Thesis Seminar, Bengaluru. 2010.

Sastry, B. 'Barmer' and 'Bikaner', in Oliver, Paul (ed) Encyclopedia of Vernacular Architecture of the World. Oxford: Basil Blackwell Ltd. Vol. 2.II. pp. 7-8. 1997.

Brown, G.Z., Meacham, M.A., Miller, P.A., McDonald, M., Kline, J.A., and Sastry, B., in Technical Report Number CONF - 9208196-1 of InterSymp '92, Baden-Baden, Germany. 1992.

Selected Official Reports:

Towards a walkable and sustainable Bangalore- Development Control Regulations for Indiranagar Metro Station, September 2013, draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru (co-authored with other team members)

Bangalore Metropolitan Region Revised Structure Plan 2031, Draft document for the Bangalore Metropolitan Region Development Authority, Bengaluru, 2009 (co-authored with other team members)

Report on Stakeholder Participation Process for the Detailed Project Reports under the JNNURM, Corporation of the City of Panaji, September 2008 prepared for Groupe SCE India Pvt. Ltd.

Revised Master Plan 2015, Bangalore, Volume 1, Draft document for the Bangalore Development Authority, Bengaluru, March 2006 (co-authored with other team members)

Master Plan 2015, Planning Districts Report, Volume 5, Draft document prepared for the Bangalore Development Authority. March 2006 (co-authored with other team members)

Hollywood and Sandy Plan, City of Portland, Bureau of Planning, Portland, Oregon, April 2000 (co-authored with other team members)

East Portland Community Plan Project Summary Report, City of Portland, Bureau of Planning, Portland, Oregon, August 25, 1997 (co-authored with other team members)

Adopted Creston Kenilworth Neighborhood Plan, City of Portland, Bureau of Planning, Portland, Oregon, June 1998

Goose Hollow District Design Guidelines, City of Portland, Bureau of Planning, Portland, Oregon, Adopted by the Portland City Council, February 21, 1996 Goose Hollow Station Community Plan for the Westside Light Rail Station Community Planning Project, City Council Adopted Ordinance No. 169699, City of Portland, Bureau of Planning, Portland, Oregon, January 10, 1996 (co-authored with other team members)

Expert's contact information: (e-mail: brinsastry@gmail.com, phone: +91 9844252552)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Brinda Sastry	Brinda. Sastry.	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Market Research Specialist

Position Title and No.	Market Research Specialist
Name of Expert:	Parijat Chakraborty
Date of Birth:	02 August 1972
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelor of Engineering - from Indian Institute of Engineering Science and Technology, Shibpur (Erstwhile Bengal Engineering College, Calcutta University) - Mining Engineering (1989-1993).
- Executive MBA ISB Hyderabad

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Jan 2017 to present	IPSOS India /Executive Director and Head of Public Affairs research Contact: Ipsos, 801, 8th Floor, Vipul Square B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana.	India	• As an Executive Director and Head of Public Affairs research at IPSOS India, Parijat Chakraborty leads the division and ensure the clients receive the best quality service aligned with rich heritage of Ipsos Public Affairs globally. He and his team work closely with several organizations and entities in developmental, commercial and Government sectors

July 2007 to Jan 2017	TNS India/ Executive Director Contact: TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001	India	• As an Executive Director at TNS India, Parijat Chakraborty was primarily responsible for entire business of the divisions, in India (second largest and fastest growing team). His key responsibilities includes Business development as per target, P&L of the division, Presenting research findings to top/senior management of client organisations, Assisting researchers in conceptualizing complicated studies and cull out actionable findings from the data, Ensuring quality of deliveries within given time-frame, Client as well as employee satisfaction and motivation, Ensuring Knowledge Management and refresh/update in a high employee-turn-over environment and Setting up and maintaining processes for all key initiatives.
April 2001 to June 2007	International Data Corporation, Gurgaon /Associate Vice President Contact: Cyber House, B 35, Sector 32, Gurugram, Haryana 122001	India	• Associate Vice President in International Data Corporation, Gurgaon. IDC is the leading research and consultancy organisation with the mission to provide strategic and tactical guidance to builders, providers and users of information and communication technology in order to help them make appropriate business decisions. Parijat developed the End-user research division there and made it contribute to 40% of the company revenue eventually. He also re-established Telecom research as a major pillar of success for the company
May 1998 to April 2001	NFO MBL India Limited (NFO World group), New Delhi /Associate Project Manager Contact: Company got acquired by TNS.	India	• Served as Associate Project Manager in NFO MBL India Limited (NFO World group), New Delhi. In NFO MBL, Parijat was heading one of the Research teams. He managed reputed accounts (independently or jointly) for Dabur, RCI, Hero Honda, Nestle etc. He also Initiated Industrial Market Research in the company.

	TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001		
March 1995 to January 1998	B2B / Industrial Market Research division /Research Executive in ORG-MARG India. Company got acquired by Nielsen India Private Limited, 7th Floor, 404-405, ILAB Info Technology Centre, Udyog Vihar Phase 3, Gurgaon, Haryana, 122016	India	• Worked as Research Executive in B2B / Industrial Market Research division. He had complete project management responsibility for all projects under this division. He headed Industrial Market Research team in Delhi and was driving a team of four researchers and more than 10 Operations executives.

Membership in Professional Associations and Publications:

Nil

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Technical inputs on research design, sampling, analysis and generation of fact sheet	Project name: Comprehensive National Nutrition Survey (CNNS) Year: 2016-2017 (study in progress in some states) Location: UP, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh and West Bengal Client: UNICEF

- Management support with mobilization and organization for market research - Schedule Finalization and training	Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling, analysis and generation of fact sheet.
	Project name: FPwatch Family Planning Outlet Survey, 2016 Year: 2016 Location: Bihar & Uttar Pradesh Client: PSI, Washington Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling and analysis including determination of market size by various family planning methods and generating products penetration estimates.
	Project name: Road user satisfaction survey for Himachal Pradesh Year:2016 Location: Himachal Pradesh Client: HPRIDC / World Bank Funded Project. Position: Project coordinator Activities performed: Finalization of schedules, training, inputs for sampling of speed survey and creation of road users' satisfaction indices using factor analysis.
	Project name: The Nodal Agency (NA) for the Nationwide Concurrent Evaluation study of the flagship programme of MGNREGA Year:2015 Location: All India Client: Ministry of Rural Development Position: Project Advisor Activities performed: Provided technical inputs to ministry on research design, sampling, analysis and report writing. Participated in various stakeholders' workshops and dissemination of study findings.
	Project name: Rating of cities on sanitation parameters Year:2015 Location: Maharashtra, Rajasthan, Gujarat

	Client: Ministry of Urban Development Position: Project Advisor Activities performed: Participated in core expert training, contributed in data collection strategy, conducted pilot in Biwadi town, provided logistics support particularly for the identification of NABL accredited labs for the testing of water sample, designed template with algorithms for the calculation of scores, presented scores at the Ministry level stakeholders' workshop.
	Project name: Assessment of Routine Immunization Coverage and Maternal and Child Health Services in 75 districts of Uttar Pradesh Year:2015 Location: Uttar Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling and immunization coverage estimates.
	Project name: National Integrated Biological Behavioural Surveillance Year: 2015 Location: J&K, Himachal Pradesh, Punjab, Chandigarh, Haryana Client: National Aids Control Organization Position: Project Advisor Activities performed: Participation in regional workshops, training, mobilization logistics support particularly for biological component, inputs for sampling HRG and migrant domains.
	Project name: Assessment of Implementation of Reservation Provision for Children from Weaker Section and Disadvantaged Group in Unaided Private Schools under RTE Act Year:2015 Location: Madhya Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.

	Project name: Data collection for component Clinical Anthropometric and Biochemical (CAB) test under Annual health survey Year:2014 Location: All India Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Provided logistics support and critical inputs at various stages of implementation and generation of anthropometric and bio-chemical related estimates.
	Project name: Assessment of SMO Performance under CSMP and Overall Impact of CSM Programme Year:2013 Location: All India Client: Technical Support Group to NACO Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Annual health survey Year:2011–2013 Location: Bihar & Jharkhand Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and generation of fact sheet
	Project name: Evaluation of link worker scheme Year:2012 Location: All India Client: National AIDS Control Organization (NACO) Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Comprehensive socio-economic assessment of project catchment area of Moradabad - Bareilly expressway road Year:2012 Location: Uttar Pradesh Client: IL&FS

	Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Socio-Economic & Health Assessment around Zeawar and Kayad mines Year: 2012 Location: Rajasthan Client: Hindustan Zinc Limited Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
Training and certificates attained: • Certified Lead Auditor for ISO 9001:2000 Quality Management System • Distinction on "Six Sigma" (Green Belt level) • Training on high-end statistical application for Marketing and Research applications • Several other MDP programs organized by the employers	

Expert's contact information: parijat.chakraborty@ipsos.com, Ph: 9810496838

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Parijat Chakraborty		26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Statistician

Position Title and No.	Statistician
Name of Expert:	Nilachal Ray
Date of Birth:	06 Oct, 1955
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- M.A. in Economics, Madras University, 1987,
- Graduate Diploma in Operational Research, Operational Research Society of India, 1984
- M.Sc. in Statistics, Calcutta University, 1977
- B.Sc.(Hons.) in Statistics, Calcutta University, 1975

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Aug 2016 – Present	Self / Independent	India	• Survey designing, collection, large-scale data processing, compilation, tabulation, dissemination and statistical and economic analysis, report writing, editing, multiple copy preparation and publishing including teaching and training of several types of data, viz. trade, socio-economic, industrial, agriculture, health, etc. • Wide experience in collection, compilation, validation, tabulation, analysis and dissemination of large-scale survey data at national level.

			• use of personal computer based software packages for statistical computing, data collection, compilation, presentation, analysis and dissemination.
17 Jun 2016 - 03 July, 2016	Food and Agriculture Organization (FAO) of the United Nations / International Consultant, Strategic Planning in Agricultural Statistics; Contact information for references: Mukesh Kumar Srivastava Senior Statistician Economic, Social and Policy Assistance Group (ESP) FAO Regional Office for Asia and the Pacific 39 Maliwan Mansion, Phra Athit Road, Bangkok 10200, Thailand E-mail: mukesh.srivastava@fao.org Mob: +66818275767	Bhutan	• Undertaken field visits to selected farms to enable an appreciation of the agricultural system in Bhutan and document findings. • Assisted with preparations for a technical workshop on Renewable Natural Resources (RNR) census and survey planning. • Participated in the technical workshop and provide a summary report of key points discussed. • Participated in broad level discussions to prepare a detailed work program on the way forward. • Prepared a document on a strategy for the RNR census and surveys, including scope and coverage as well as a detailed survey calendar and data collection strategy. • Undertaken detailed discussions with relevant officers to obtain information needed to prepare this strategy document. • Provided an end of assignment report.
30 Nov 2015 - 04 Jan, 2016	Eastern Africa Statistical Training Centre (EASTC) / Teaching and Consultancy; Contact information for references: Dr. FAE Mkumbo Rector, EASTC PO Box 35103	Tanzania	• Very successfully done a teaching and relevant consultancy assignment for 5 weeks for 2 courses "Trade Statistics" for 3 weeks and "Industrial Statistics" for 2 weeks for 3 Master in Statistics Batches – one 1st year and two 2nd year.

	Dar es Salaam Tanzania E-mail:faemkumbo@yahoo.com		
14 Nov 2011 - 31 Oct, 2015	**National Sample Survey Office (FOD) / Deputy Director General;**Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	- Worked as Deputy Director General in the higher pay-scale of Additional Director General at National Sample Survey Office (Field Operations Division), Zonal Office (ZO), Eastern Zone, Kolkata of Ministry of Statistics & Programme Implementation, Government of India from 14.11.2011 to 31.10.2015 and retired from the service on 31.10.2015. This ZO was responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO). Worked as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of industries (ASI) on annual basis in Industrial sector, Area Enumeration Survey with Area Aggregation Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price

			Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as work of all on-going statistical activities in the respective states besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) as and when required basis. I was responsible to monitor the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
01 Mar 2011 - 11 Nov, 2011	National Sample Survey Office (FOD) / Deputy Director General; Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked as Deputy Director General at National Sample Survey Office, Field Operations Division. Regional Office (RO), Ranchi, Jharkhand of Ministry of Statistics & Programme Implementation, Government of India. • This RO employs 102 personnel spread over the whole state of Jharkhand in 4 Sub-Regional Offices (SRO's) at Ranchi, Dumka, Hazaribagh & Jamshedpur. Worked as the Techno-administrative Regional Head of the Office to look after all technical and administrative matters of the Regional Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of industries (ASI) on annual basis in Industrial

			sector, Area Enumeration Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as and when required basis. I was also functioning as State Statistical Adviser for the state of Jharkhand to look after effectively coordinate all on-going statistical activities in the state besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP). I opened a new SRO at Dhanbad on 25.10.2011 and another new SRO at Daltonganj opened in 2012 due to my proper initiative.
01 Jul 2009 - 14 Feb, 2011	All India Institute of Hygiene & Public Health (AIIH&PH) / Director-Professor and Head of the Department of Statistics Contact information for references: Director AIIH&PH 110, CR Avenue Kolkata-700073	India	• Worked as Head of the Department of Statistics to look after all day to day technical and administrative matters employing 40+ personnel to run the Institute in general and Department smoothly. As Director-Professor and Head of the Department of Statistics my primary responsibility was to ensure that the Statistics Department functioned efficiently and was fully geared up to take up the responsibilities of teaching, research, projects and other activities assigned

			to it. I was very effectively engaged in monitoring and evaluation of various Health Programmes through the on-line analytical studies of HMIS data on regular and continuous basis. Since the Department had several vacancies in the ISS and the SSS, all the existing faculty members were required to share added responsibilities to ensure that the primary activities of the Department do not suffer. Worked as techno-administrative head of the department as a Faculty Member. Rendered lot of techno-administrative help, guidance and consultation to the Institute administration on various techno-administrative issues with the direct involvement on those issues. The job was mainly of academic and research nature besides conduct of various Scientific Projects and Studies and Technical Courses with lot of administrative work to run the institute in smooth manner.
01 Feb 2007 - 30 Sep, 2009	**Directorate General of Commercial Intelligence & Statistics (DGCI&S)/Ministry of Commerce & Industry/Govt. of India** **Director General** Contact information for references: Director General DGCI&S,1, Council House Street, Kolkata-700001	India	• Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.

04 Nov 2006 - 31 Jan, 2007	**Data Processing Division(DPD)/National Sample Survey Organisation (NSSO) /** **Deputy Director General;** Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys.
05 Jun 2000 - 04 Nov, 2006	**Central Statistical Organisation/ Director;**Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of CSO, MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI.
09 Apr 1999 - 05 Jun, 2000	**Central Statistical Organisation/ Joint Director;**Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI). Functioned as techno-administrative head of the Department employing 205+ personnel.
17 Oct 1997 - 08 Apr, 1999	**National Sample Survey Organisation (SDRD) / Joint Director;**Contact information for references:	India	• Worked in Survey Design & Research Division (SDRD) NSSO, MOSPI, GOI and oversaw conduct of various large-scale Socio-economic Surveys

	Additional DG NSSO(SDRD) 164, GLT Road Kolkata-700108		including 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
16 Aug 1996 - 16 Oct, 1997	Data Processing Centre (DPC)/ National Sample Survey Organisation (DPD) / Deputy Director Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of unit / center employing 150+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
01 Oct 1993 - 15 Aug, 1996	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of the office employing 75+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
08 Aug 1986 - 30 Sep, 1993	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director; Contact information for references: Additional DG NSSO(DPD)	India	• Functioned as techno-administrative head of units / sections employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.

	164, GLT Road Kolkata-700108		
01 Apr 1984 - 07 Aug, 1986	**Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) / Deputy Director;** Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	- Worked in National Sample Survey Organisation (Data Processing Division) of MOSPI, GOI. Functioned as head of units/sections employing 80+ personnel to look after all techno-administrative issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
15 Sep 1982 - 31 Mar, 1984	**National Sample Survey Organisation/ Regional Assistant Director;** Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	- Worked for Gwalior (MP) Regional office of National Sample Survey Organisation (Field Operations Division) of MOSPI, GOI. Functioned as techno-administrative head of the Regional Office employing 95+ personnel.
15 Sep 1980 – 14 Sep, 1982	Central Statistical Organisation / Indian Statistical Service Probationer; Contact information for references: Director General CSO, MOSPI SP Bhawan,Parliament Street New Delhi-110001	India	- Underwent for 2 years' Probation-cum-Training on Administration, Economics, Statistics, Law, etc.

Membership in Professional Associations and Publications:

- Ex-Member of Standing Committee on Industrial Statistics (SCIS).
- Ex-Member of few technical sub-groups on Industrial Statistics.
- Ex-Member of technical sub-group on 5th Economic Census.
- Ex-Member of technical sub-group on revision of Wholesale Price Index Number.

- Ex-Member of the Board of Directors in Export Inspection Council of India (EICI), Delhi.
- Ex-Member of the Board of Directors in National Centre for Trade Information, Delhi.
- Ex-Member of Computer Society of India.
- Member of Operational Research Society of India, India.
- Member of Indian Association of Research in National Income and Wealth, India.
- Ex-President of Indian Statistical Service Association (Eastern Chapter), Kolkata for consecutive 3 terms.
- Life Member of Administrative Staff College of India (ASCI), Hyderabad, India.
- Life Member of Presidency College Alumni Association, Kolkata, India.
- Life Member of Australian National University (ANU) Alumni Association, Canberra, Australia

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Statistically designing and managing sample surveys • Large Data Sets Management and Analysis • Data Sets checking and correcting for errors and inconsistencies	Project Name: NSS Socio-economic Sample Surveys including Urban Price Index Client: National Sample Survey Organization (NSSO) / Central Statistical Organization (CSO/ MOSPI Year: 2011 to 2015& 1982 -1999 Position Held: Deputy Director General (2011 to 2015) Various Capacities (1982 to 1999) Activities Performed: — 1982 to 1984:Worked as Regional Assistant Director from 15.09.1982 to 31.03.1984 for Gwalior (MP) Regional office of National Sample Survey Organization (Field Operations Division) of MOSPI, GOI for both Urban and Rural Sectors. Functioned as techno-administrative head of the Regional Office employing 95+ personnel — 1984 to 1986:Worked as Deputy Director at Data Processing Centre (DPC), Delhi of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI from 01.04.1984 to 07.08.1986. Functioned as head of units / sections employing 80+ personnel to look after all techno-administrative issues for

	large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1986 to 1993: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of units / sections employing 150+ personnel from 08.08.1986 to 30.09.1993 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors — 1993 to 1996: Worked as Deputy Director at Data Processing Centre (DPC), Giridih (Jharkhand) of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of the office employing 75+ personnel from 01.10.1993 to 15.08.1996 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1996 to 1997: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of unit / center employing 150+ personnel from 16.08.1996 to 16.10.1997 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1997 to 1999: Worked as Joint Director from 17.10.1997 to 08.04.1999 at National Sample Survey Organization (Survey Design & Research Division) of MOSPI, GOI and oversaw conduct of 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors.

	— **2006 to 2007:** Worked as Deputy Director General from 04.11.2006 to 31.01.2007 at National Sample Survey Organization (Data Processing Division) HQ, Kolkata of MOSPI, GOI and oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. **Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys for both Urban and Rural Sectors.** — **2011 to 2015:**Responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and acted as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to **conduct field work in data collection and validation of various statistical surveys.** — Worked very successfully for more than 33 years in National Statistical Office of Government of India in the fields of expertise, mainly as the Techno- Administrative HEAD of the organization
	Project Name: Annual Survey of industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Held: Deputy Director General (2011 to 2015) Various Capacities (1999 to 2006) Activities Performed: — **1999 to 2000:** Worked as Joint Director from 09.04.1999 to 05.06.2000 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.**Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 205+ personnel.**

	— .2000 to 2006: Worked as Director from 05.06.2000 to 04.11.2006 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI. — 2011 to 2015:Conducted the Annual Survey of industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector from 2011 -2014 spreads across 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys
	Project Name: Field work in data collection and validation on Consumer Price Index (Urban), Rural Price Collection (RPC), International Comparison of Price (ICP) and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Deputy Director General Activities Performed: — Responsible field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and on many other schemes as work of all on-going statistical activities in the respective states.

	— **Guided and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP)** as and when required basis. — Monitored the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
	Project Name: **Generated and released Foreign Trade Statistics with indices (Foreign Trade Index) in India** on monthly basis and various other ancillary trade statistics including internal trade on annual basis. Client: **Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India**, Kolkata Year: 01.02.2007 to 30.06.2009 Position Held: Director General Activities Performed: — Worked as Director General at Directorate General of Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India, Kolkata from 01.02.2007 to 30.06.2009 for both Urban and Rural Sectors. **Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.**
	Project Name: Engagement on formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Client: by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Year: 2017 Position Held: Independent Expert Activities Performed:

	— Formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India.

Publications/Articles:

- (1) Workers Engagement in Factory Sector in India (Staff Papers, CSO (IS Wing), MOSPI, GOI – October 1999);
- The Pattern of Concentration of Major Industries (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 1999);
- Economics of Environment Management – Can Indian Economy afford to shut down Dirty Industries? (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2000);
- Sources, Impact and Control of Industrial Pollution (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- Economics of Environment Management (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- Growth in Factory Sector- Mathematics & reality (Staff Papers, CSO (IS Wing), MOSPI, GOI – March 2001);
- Pollution Load in Small, Medium and Large-Scale Industries (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2001);
- Industrial Scenario in West Bengal (Quarterly Bulletin, Ministry of Industry & Commerce, Govt. of West Bengal – March 2002);
- Women Participation in Organized Factory Sector (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Unorganized vis-à-vis Organized Manufacturing Sector in India (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Understanding Social Choice Through Pl Factor of Indian Dirty Industries (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Indian Farmers: Challenges Ahead – Presented in the National Seminar organized by NSSO, MOSPI, GOI on 17.10.2005 in Kolkata;
- Evolving Trends in Indian Manufacturing: A Case Study for West Bengal (Quarterly Bulletin, Directorate of Industries, Govt. of West Bengal – September 2005);
- Index of Industrial Production: Its problems (Quarterly Bulletin, Min. of Industry & Commerce, Govt. of West Bengal – March 2006);
- Global Economic Imbalances (Vaanijya– October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);

- Purchasing Power Parity – The Economy and Policy (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);
- Export Diversification of China – A Sectoral Study (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);
- Determinants of Infant Mortality in India: Income vis-à-vis Other Socio-Demographic Factors – Presented and Published in the 25th Annual Conference of Indian Society for Medical Statistics (ISMS) on 11-13 November 2010 at New Delhi;
- ASI Frame: How Dynamic It Should Be? – Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 17 October 2011.
- Manufacturing Sector in India: Performance Differentials - Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 4 October 2012.

Training/Workshops Attended and Software Skills:

- Attended Regional Roundtable on the World Programme for the Censuses of Agriculture 2020 (WCA 2020) of the FAO of the UN held in Bangkok, Thailand during 19-23 September 2016.
- Attended a specialized training course on "Survey Data Analysis" at Australian National University (ANU), Canberra, Australia during the period from 10.06.1997 to 04.07.1997.
- Attended various relevant training courses in India.
- Attended an International Workshop on Classification conducted by UNESCAP, Bangkok and UNSD, New York at New Delhi during 14-16 October 2003.
- Organised very successfully the 1st Meeting of the Heads of the Statistical Organisations of the SAARC Member Countries in Kolkata during 26-27th May, 2005.
- Attended an International Conference On Towards BIMSTEC- Japan Comprehensive Economic Cooperation: Vision and Tasks Ahead on 16-17 December 2005 in Kolkata.
- Attended and delivered lectures in SAARCSTAT Workshop on Classification at New Delhi in 2006.
- Attended an International Workshop on International Merchandise Trade Statistics conducted by UNESCAP, Bangkok and UNSD, New York at Bangkok, Thailand during 09-12 September2008.
- Worked as Resource Person in various Training Courses conducted by UNSIAP in India.
- Attended Advanced Management Development Course of 6-weeks duration at Indian Institute of Management (IIM), Lucknow from 08.11.2010 to 17.12.2010 in which I visited various Institutes /International Organisations at Amsterdam (Netherlands), Luxemburg, Paris (France), Brussels (Belgium), London (UK) & Southampton (UK).
- Software Skills: Experienced in Computerized Large- Scale Data Processing since 1984 by using dBase software like ORACLE, Developer, FOXPRO and MS – OFFICE, STATA, SPSS, SAS, LIMDEP, E-Views, M-fit, NVivo, ATLAS.ti etc.

Expert's contact information: (e-mail:nray111@yahoo.co.in, phone: +917980135371 / +918961515397 (WA))

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Nilachal Ray	Nilachal Ray	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

Non-Key Experts (Support Team including Analytics Team)

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
1	Rishee Jain – Project Advisor	PhD, Civil engineering, Columbia University	10 years	Palo Alto city, Washington DC, Thane Municpal Corporation etc	His expertise is in data-driven benchmarking and interoperability
2	Tripti Sharma – Project Coordinator	MA in Social Science from Tata Institute of Social Sciences (TISS)	21 years	Ministry of Health & Family Welfare, Dept. of Panchayat Raj & Rural Development, and Ministry of Social Justice and Empowerment, Bilateral, Multilateral, International NGOs, Corporate/ Foundations that include World Bank, UNDP, UNICEF, Path International, Michael & Susan Development Foundation, Save the Children, Micronutrient Initiative, Clinton Health Access Initiative (CHAI), Coffey International, NASSCOMM Foundation, CARE India, Oxfam India, and several government departments in India.	Her key expertise includes designing and implementing research studies (qualitative, quantitative, and participatory), monitoring & evaluation, and stakeholder engagement for programme design and implementation. She is an MLE expert. She has core expertise in formulating result framework for client by mapping the outcome indicator.
3	Deepa Karthykeyan – Project Director	M.A. Economics University of Madras (Loyola	7 years	World Bank, Govt. of Tamil Nadu, British High	Policy Research and Analysis, Documentation

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		College) and National University of Singapore		Commission, ADB, BMGF, Save the Children, UNDP, GIZ NSDC, CII	Review, Project Management, Client Engagement, Governance Liasoning, Presentation
4	Ankit Chatri – National Project Coordinator	M. Phil (Planning & Development), IIT Bombay, Mumbai; M.A. (Economics), University of Hyderabad, Hyderabad; B. Com. (Hons.), Banaras Hindu University, Varanasi	7 years	World Bank, GIZ, 3ie, UNDP, Arghyam Foundation, WSUP, TNIDB, INCAP – AP, British High Commission	Project management and data analysis Design the survey tool, QC templates and Training the investigators on data collection Undertake QC on the collected data Project Report writing
5	Praveen Ravi – Policy Head	PGDM (Economics and Finance) from IIM Lucknow; BSc (Hons) Mathematics, Chennai Mathematical Institute.	10 years	UNOPS Cities Alliance, BMGF, Tamil Nadu Govt., 5th State Finance Commission, British High Commission, Trade Mark East Africa, GIZ, Wadhwani Foundation, NSE	Data Indicator Finalisation, Quantitative & Qualitative Analysis, Principal Component Analysis, Factor Analysis, Data toolkit creation and meta data formulation
6	Dr. Rajarshi Singh – Data Expert	PhD in Computational Mechanics from Carnegie Mellon University, Pittsburgh (USA)	5 years	PACT, Goal Ireland, Ministry of External Affairs, Pratham Educational Foundation, UNICEF	Survey program design, data collection instrument testing, data cleansing and consolidation
7	Bhargavi Venkatesan – Statistician	M.S. (Statistics), Rutgers University, USA;	18 years	BMGF, Save the Children, UNWOMEN, PACT Nepal (A World Bank Initiative),	Data superset finalization, Data modelling and testing,

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		Graduate degree in Cost & Works Accounting ICWAI (Institute of Cost and Work Accountants of India); B.Sc. (Mathematics) University of Madras		Rutgers University, Dell Foundation, Developmental Disabilities Planning Institute, New Jersey Institute of Technology (NJIT)	Intervention impact, survey one-group pre-test/post-test design Proficiency in Analysis Tools: SAS, SPSS, R and Microsoft Excel.
8	Mael Thomas Balac – Data Scientist	Magistère International Development – Centre for Studies and Research on International Development (CERDI), School of Economics - University of Auvergne, France (2012-2015)	2 years	Trade Mark East Africa, FHI 360, World Bank, Department of Planning, Government of Andhra Pradesh, Regional Council of Auvergne	Economic Modeling and Analysis, Policy Research and Assessment
9	Devkanya Chakravarty – Data Scientist	MSc Economics, DSE	2 years	Central Banks of Bhutan and the Maldives, World Bank, ADB	Economic Modeling and Analysis, Policy Research and Assessment
10	Ambrin M – Data Scientist	Master's degree in International Economics at Institut de Hautes Études Internationales et du Développement, Geneva		UNEP, TMEA, Private Sector Foundations	Text Analysis, SAS, Sentiment Analysis, SPSS, Big Data Analysis, R
11	Kowshik Ganesh – Data Visualization Expert 1	Masters in Electrical Engineering,	7 years	World Bank, Arghyam Foundation, ADB,	Automation & Dashboard Creation,

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		(Specialization in Applied Deterministic Operations Research), Arizona State University; Bachelors in Electrical Engineering, Anna University		Save the Children & BASF, Government of Tamil Nadu, BMGF, RTI International	Data visualisation, GIS tool mapping & MIS Blueprint
12	Chirag Anand –IT Infrastructure and Systems Expert	B. Tech Computer Science, Jaypee University of Information Technology	7 years	National Institute of Public Finance and Policy, Task force on Financial Data Management Center Ministry of Finance, Government of India, Indira Gandhi Institute of Development Research	Dynamic API-based data generation and storage, Data processing, cloud computing, open source project management tools, RDBMS
13	Kasirajan Mahalingam – Data Visualisation 3 (Analysis Assistance and GIS)	Bachelor's degree in Urban Planning from the School of Planning and Architecture (MHRD, Govt. of India), Vijayawada. Master's degree in Geo-Information Science and Earth Observation from Faculty of ITC, University of	2 years	BMGF, Floating City Apps Foundation, Waterstudio.NL., Auroville Foundation / Urban Networks	GIS Mapping and Analysis, Spatial Assessment, MIS Dashboard, Planning outline, Policy Research Assistance

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		Twente, The Netherlands			
14	Ansu Alexander – Urban Planner	M.Sc Habitat Policy and Practice (presently Urban Policy and Governance), TISS Mumbai; Bachelor of Planning, School of Planning and Architecture, Vijayawada	1.5 years	Municipal Corporation of Greater Mumbai (MCGM), Mumbai Transformation Support Unit (MTSU), IDRC Canada, GIZ	Urban planning,GIS Mapping and Analysis, Infrastructure assessment, city indicator, field reporting and documentation
15	Maria Jose – Research Associate	M.A. Economics at Madras School of Economics; B.A. Economics at St. Stephen's College, Delhi	3 years	Tamil Nadu Industrial Guidance and Export Promotion Bureau, FHI 360 and World Resources Institute	Data Cleansing and Consolidation, Data Research and Analysis
16	Anusha Ghosh – Policy Research Associate	B.A. Economics at Miranda House, University of Delhi; Master's degree in Economic Policy at University College, London	2 years	BMGF, World Bank, PACT Nepal	Data Cleansing, Questionnaire Design, Stakeholder Engagement, Policy Research and Analysis
17	Samvita Kalyan Kumar – Research Associate	B. Tech + M. Tech) in Civil Engineering, IIT Madras.	2 years	IIT Madras, FHI 360, BMGF	DSS Development, Policy Research and Analysis, Urban Area Assessment
18	Aditi Gupta – Research Associate	B.A. Economics University of Delhi; Masters in Economics, NUS Singapore	6 months	Lee Kuan Yew School of Public Policy	Economic Modelling, Policy Research and Analysis, Report Writing and Documentation

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
19	Leo Abruzzese	BA in Liberal Arts, St Joseph's University	19 years	World Bank, the IMF, the UN, the Inter-American Development Bank, the Gates Foundation, the Clinton Foundation, the International Organisation for Migration, the Office of Mexico's President, the Nuclear Threat Initiative, the Nike Foundation, and the Internet Corporation	economic and financial benchmarking, gender equality, poverty alleviation, access to finance, nuclear security, global peace, food security and environmental protection
20	Roxana Slavcheva	MSc in Urban Economic Development (distinction), University College London	3 years	LSE Cities, Global Commission on the Economy and Climate's New Climate Economy	World Cost of Living and Liveability surveys and Market Indicators and Forecasts Plus. Roxana's expertise includes index-building, qualitative and quantitative research, policy analysis, and strategies for consumer market entry and growth.
21	Stefano Scuratti	MSc in International Political Economy, London School of Economics	5 years	Accenture, Grameen Bank, the Italian Ministry of Foreign Affairs and the United Nations	multi-country benchmarking projects and the design of risk-assessment frameworks.

Field Team

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
Zonal Coordinator					
1	Kunwar Asif Aftab - Zonal Coordinator-North	MA (pursuing), BA-Sociology	23 years	Save the Children, IPLM, NACO, NARI, ORGI, MoHFW, Public Affairs Committee, Ministry of Rural Development, IIPS	Managing consultancy research and intervention studies in the areas of Water and Sanitation, R&R (Resettlement & Rehabilitation), Health and Family Welfare, Sexual health & behavior, Education, Rural Development, Nutrition, MCH & ICDS for State, National & International Agencies. In addition to research was also involved with various divisions such as, Operations, end to end PMT, Quality assurance and B&P.
2	Arna Seal - Zonal Coordinator-East	PhD- Sociology	25 years	UNICEF, Oxfam, Save the Children, PWC, Techno India, Sanlaap	Analytical expertise in consulting for social components of infrastructure and development sector projects, social impact related assessment of organizational capacities, leading quality management of

					large & small education projects, gender and behaviour change communication analytics, capacity building and education leadership development.
3	Kshetrimayum Gopal Singh - Zonal Coordinator-North-East	PhD-Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
4	Pramod Bhatt - Zonal Coordinator-West	Masters in Planning with Specialization in Regional Planning from School of Planning and Architecture (SPA)	15 years	HCL Foundation and Johns Hopkins University, Himachal Pradesh Road & other Infrastructure Development Corporation Ltd., UNICEF, PSI Washington, BMGF, NACO, Ministry of Panchayati Raj, MoHFW, World Bank, Asian Development Bank, ECOSMART - IL&FS, Centre for Good Governance	Integrated Development Plan, Impact Assessment, Programme Evaluation, Baseline/Midline/Endline studies, Social Assessment/audits, CSR Evaluations including stakeholder analysis / need assessment, intervention design, etc.
5	K. Ravi Shankar - Zonal Coordinator-South	MSW, MBA	16 years	UNICEF, UNDP, United Nations foundation, World Bank, USAID,	Handling end to end customized research, including the study of client

				Ministry of health and family welfare, Directorate of Census operations, Ministry of Agriculture and farmer welfare, Ministry of Panchayati raj, Ministry of women and child development, Ministry of youth affairs and sports, Ministry of Textiles, Akshaya Patra Foundation, Public Affairs Foundation (PAF), APAC	needs, background research, proposal writing and presentation, instrument design, planning and monitoring of fieldwork, analysis of research data, report writing and regular client servicing during the project cycle.
6	Panchangam Chidambara Kasinath - Zonal Coordinator-South(Andhra Pradesh Telangana)	M. Phil, MA (Sociology)	26 years	UNAIDS, HLFPPT, CSSRL	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
S. No	Name – State Responsible	Educational Qualification	Years of Experience	Clients Served	Key Skills
State Field Team					
1	Bala Iyer - Andaman Nicobar	PG diploma in Marketing and Sales Management	18 years	P&G, Monsanto, DuPont,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated

					CAPI Data Collection
2	Sivakrishna Augusthi – Andhra Pradesh	B.Com	15 years	Lirneasia, Piramal Swasthya Management Research Institution, Ministry of agriculture	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
3	Surajit Podder – Arunachal Pradesh	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
4	Dhananjay Das - Assam	B.Com	25 years	AHS	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
5	Anoop Prakash - Bihar	B.A.	25 years	AHS	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection

6	Jaspreet Singh – Chandigarh	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
7	Sanjay Katekhaye - Chattisgarh	M.com	19 years	IBBA, BBC, NACP II	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
9	Praful Sali – Daman and Diu	MA in Social Work	25 years	NACO, HLFPPT, AVERT Society, International and Local NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
10	Sadanand Ambre - Goa	B.Com	16 years	Unilever	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, CAPI Data Collection
11	Bharat Negi - Haryana	BA	15 years	NCBS, Google,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target

					groups, integrated CAPI Data Collection
12	Jaspreet Singh - Himachal Pradesh	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
13	Jaspreet Singh – Jammu and Kashmir	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
14	Atanu Bhaduri - Jharkhand	B.Com	13 years	UNICEF, AHS	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
15	Laxman Dash - Karnataka	BA	14 years	Bi-Lateral, Multi-lateral, National NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
16	Pradeep Babu - Kerala	M.sc Applied psychology	10 years	IPLM, APAC, RHS, Vodafone	Qualitative survey- Conducting FGD, depth interviews, with a wide range of target groups, Data

					collection using CAPI
17	Pradeep Babu - Lakshwadeep	M.sc Applied psychology	10 years	IPLM, APAC, RHS, Vodafone	Qualitative survey- Conducting FGD, depth interviews, with a wide range of target groups, Data collection using CAPI
18	Praful Sal - Maharashtra	MA in Social Work	25 years	NACO, HLFPPT, AVERT Society, International and Local NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
19	Surajit Podder - Manipur	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
20	Surajit Podder - Meghalaya	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
21	Kshetrimayum Gopal Singh - Mizoram	Ph.D. in Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large

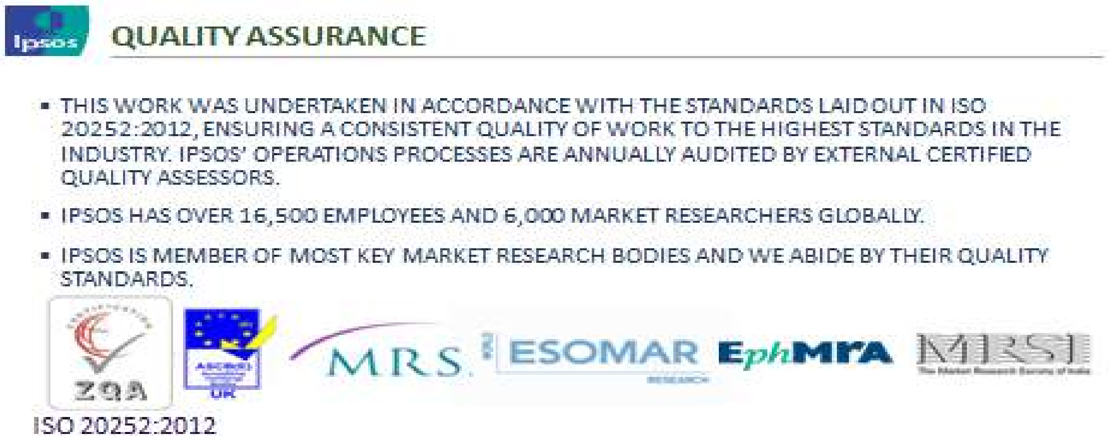
					Scale Survey Management, large scale method mix surveys, CAPI Data collection
22	Kshetrimayum Gopal Singh - Nagaland	Ph.D. in Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
23	Dilip Mishra - NCT of Delhi	MBA	18 years	OCHS, Ministry of Agriculture & Farmers' Welfare, Monsanto	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
24	Balaram Senapati - Odisha	BA	8 years	MNREGA, BBC	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
25	R. Saravana - Puducherry	MBA	22 years	Private Clients	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated

					CAPI Data Collection
26	Jaspreet Singh - Punjab	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
27	Surajit Podder – Sikkim	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
28	Bala Iyer – Tamil Nadu	PG diploma in Marketing and Sales Management	18 years	P&G, Monsanto, DuPont,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
29	Chapalamadugu.Chinnamma - Telangana	B. Com	13 years	Satyam Foundation, CARE India,	fieldwork monitoring, data collection, qualitative surveys
30	Atanu Bhaduri - Tripura	B. Com	13 years	UNICEF, AHS	Large scale survey management, fieldwork monitoring and deployment,

					Stakeholder management, Data Collection
31	Bharat Negi - Uttarakhand	BA	15 years	NCBS, Google, Census study	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
32	Surajit Podder – West Bengal	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection

Annexures

Annexure 1: Quality assurance certification



QUALITY ASSURANCE

- THIS WORK WAS UNDERTAKEN IN ACCORDANCE WITH THE STANDARDS LAID OUT IN ISO 20252:2012, ENSURING A CONSISTENT QUALITY OF WORK TO THE HIGHEST STANDARDS IN THE INDUSTRY. IPSOS' OPERATIONS PROCESSES ARE ANNUALLY AUDITED BY EXTERNAL CERTIFIED QUALITY ASSESSORS.
- IPSOS HAS OVER 16,500 EMPLOYEES AND 6,000 MARKET RESEARCHERS GLOBALLY.
- IPSOS IS MEMBER OF MOST KEY MARKET RESEARCH BODIES AND WE ABIDE BY THEIR QUALITY STANDARDS.

ISO 20252:2012

TENDER REF. NO.: K14012/101 (11)/2017-SCM-III (V)

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Financial Proposal

Umang

17/01

18/01/2018

Parijat Chakraborti - IPSOS

Meghna Aggarwal (Deloitte)

Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos

Ipsos Public Affairs
A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1,
Gurgaon – 122016, Haryana,

And

ATHENA
INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited
#15, Arcot Street, T Nagar, Chennai 600017, Tamil Nadu, India

The Economist Intelligence Unit

The Economist Group Limited
(Sub-Consultant)

15/01

15/1/2018 Umang

Meghna Aggarwal

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15/01

16/1/2018

Meghna Aggarwal

FIN 1:
Financial Proposal Submission Form

17/01 Umang

Meghna Aggarwal

Fin-1: Financial Proposal Submission Form

(New Delhi, 26th December 2017)

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi,
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for **INR 10,94,28,200 (INR Ten Crores Ninety-Four Lakhs Twenty-Eight Thousand and Two Hundred Only)**, excluding of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is INR 1,96,97,076 (INR One Crore Ninety-Six Lakhs Ninety-Seven Thousand & Seventy-Six Only) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution
We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Authorized Signature (In full and initials): Parijat Chakraborty
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist
In the capacity of: Authorised signatory for the consortia
Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

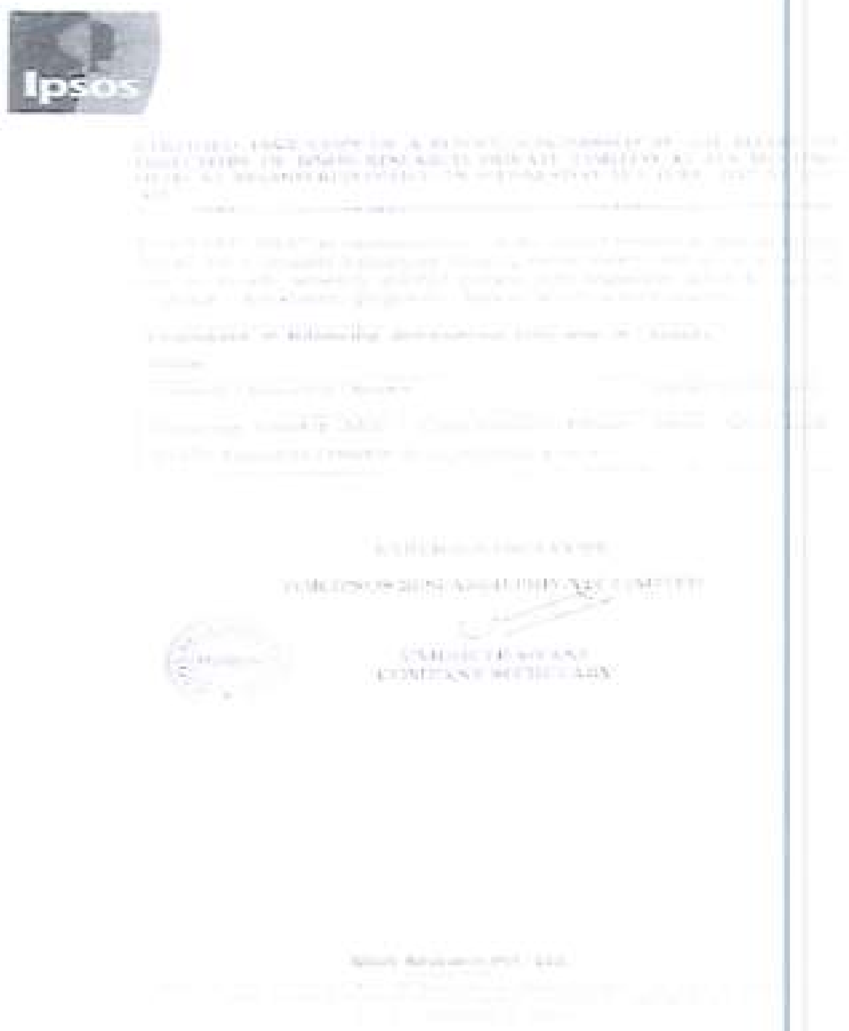
15/01

Umang - Meghna Aggarwal

Ipsos Authorisation

Power of Attorney

The proposal has been signed by Executive Director – head of public affairs authorized by board resolution shown below



Meghna Aggarwal

एक सौ रुपये Rs. 100
रु. 100 ONE HUNDRED RUPEES
भारत INDIA
INDIA NON JUDICIAL

तमिलनाडु TAMIL NADU

Power of Attorney

[illegible]

[illegible]

[illegible]

Meghna Aggarwal

NOW THIS POWER OF ATTORNEY WITNESS THAT:

Athena Infonomics India Private Limited having its registered office at 15 Arms Street, T. Nagar, Chennai 600017, India, We hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Corporate Park, 1702, 17th Floor, A Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MoHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV.

Dated this the 27th Day of December 2017

On behalf of the Athena Infonomics India Private Limited

Authorized Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

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Meghna Aggarwal

FORM FIN 2:
Summary of Costs

Meghna

Aggarwal

Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

Imran
Umang.
13/01/2018

Meghna Aggarwal
(Deloitte)

FORM FIN 3:
Breakdown of Remuneration

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Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

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N-15	Tripti Sharma	Project Coordinator	Field	1122000	0.5	561000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	682000	4	2728000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	550000	10	5500000
			Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

Meghna Aggarwal

Sample Form

Consultant: Ipsos Research Pvt. Ltd. In Joint Venture with Athena Infonomics India Pvt. Ltd, and The Economist Intelligence Unit as the Sub-consultant
Country: India

Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Date: 27th December 2017

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:
(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;
(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;
(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and
(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

Ipsos Research Pvt. Ltd.
[Name of Consultant]

Signature of Authorized Representative Date

Name: Parijat Chakraborty

Title: Executive Director and Head of Public Affairs

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Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

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FORM FIN 4:
Breakdown of Reimbursable Expenses

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Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

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	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
		State Level Workshops			
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
		National Level Workshop			
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
		City Level Meetings			
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**

Meghna Aggarwal

	Total B				4790000
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				10457900
	Total Reimbursable Expenses				3,73,94,700

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Meghna Aggarwal

Ipsos

STATEMENT OF UNDERTAKING

We confirm to observe, in competing for and executing a contract, the Client country's (India) laws against fraud and corruption (including bribery).

Authorized Signature (in full and initials): Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. in consortium with Athena Infonomics Pvt. Ltd. and The Economist

In the capacity of: Authorised signatory for the consortia

Meghna Aggarwal

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ______________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and The Economist Group Limited.

Dated: 13th February 2018

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ………………. day of the month of *February, 2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium with M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days’ written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days’ written notice in case of the event referred to in (e); and at least five (5) calendar days’ written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 _Advance payment:_ Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 _The Lump-Sum Installment Payments._ The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 _The Final Payment_ .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** ***Republic of India***.
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention: Mr. G.Vijay Kumar** Under Secretary,Ministry of Housing and Urban Affairs **Facsimili:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** *Mr. G.Vijay Kumar* *Under Secretary,* ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
11.1	No additional provisions
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**

13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**
39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.

41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators*, *New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator*, *New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each

	appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or

	(c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
  a. Database of aggregate data in the format as mutually agreed
  b. All raw data and data sheets;
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

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File No. K.14012/101(11)/2017-SCM.III(V)-Part(2)

false

GOVERNMENT OF INDIA

Ministry of Housing and Urban Affairs

UD

O/o JS (AMRUT&MD)

SUBJECT

Main Category :

Sub Category :

Description : Shortlisting of agencies for assessment of liveability index in selected cities.

OTHER DETAILS

Retention :

Priority :

Language :

Remarks :

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

9th May, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.
f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.
g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.
h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website
https://eprocure.gov.in/cppp,
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	9th May 2017
2.	Pre Application Conference	16th May, 2017 2.00 PM
3.	Last Date for receiving queries	19nd May 2017
4.	NIUA's response to queries latest by	23th May 2017
5.	**Last Date of Submission of EOI**	**30th May 2017 3.00PM**

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date: 16th May, 2017
Time: 2.00 PM
Venue: Conference Hall, National Institute of Urban Affairs, Core 4- B, Ist Floor, India Habitat Centre, Lodhi Road, New Delhi 110003

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

  The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website:
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email:niua@niua.org Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India)	Refer Appendix 6 and 6A

	Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………. ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. …………….. (Lead Member), and M/s …………….. (the respective names and addresses of the registered office) do hereby designate M/s. ……………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only**)(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

National Institute of Urban Affairs on behalf of Ministry of Urban Development, Government of India

Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities

Expression of Interest

CRISIL Risk and Infrastructure Solutions Limited

In Association with

Hansa Research Group

May 2016

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1. Appendix 1: Format for Letter of Application

Enclosed in next page.

Infrastructure
Advisory

CRISIL
An S&P Global Company

Date: 30th May, 2017

To
Director,
National Institute of Urban Affairs,
Core 4- B, 1st Floor,
India Habitat Centre, Lodhi Road,
New Delhi 110003

Ref: EOI for Assessment of Liveability standards in selected Cities

Dear Sir,

Being duly authorized to represent and act on behalf of M/s CRISIL Risk and Infrastructure Solutions Limited (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from 30th May, 2017 (Application Due Date)

Yours sincerely,

Ravi Poddar,
Director and Practice Leader – Urban Practice,
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India
Phone No. (D) 0124 672 2484; (B) 0124 672 2000; Mobile: +91 9810234251; Fax: 0124-6722495
E-Mail: ravi.poddar@crisil.com

2. Appendix 2: Format for Power of Attorney for Signing of Application

Enclosed in next page.

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ SB 967851

प्रधान मुद्रांक कार्यालय, मुंबई
प. मु. वि. क्र. ८०००००६
16 MAY 2017
सक्षम अधिकारी

Power of Attorney

Know all men by these presents, I **Sameer Bhatia, President - CRISIL Infrastructure Advisory, a division of CRISIL Risk and Infrastructure Solutions Limited** , a company registered under the Companies Act, 1956 having its Registered Office at CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076 (name and address of the registered office) do hereby constitute, appoint and authorise Mr. **Mr. Ravi Poddar**, presently residing at B 262, Pocket B, Sarita Vihar, New Delhi 110 076 who is presently employed with us and holding the position of **Director and Practice Leader - Urban Practice, CRISIL Infrastructure Advisory, a division of CRISIL Risk & Infrastructure Solutions Limited,** as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

Ravi Poddar

RAM NIWAS
GURGAON
Reg No 8224

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For CRISIL Risk and Infrastructure Solutions Limited

Bhatia

Sameer Bhatia
President
CRISIL Risk and Infrastructure Solutions Limited,
CRISIL House, Central Avenue, Hiranandani Business
Park, Powai, Mumbai 400076

Accepted

Ravi Poddar

Ravi Poddar
Director and Practice Leader - Urban Practice,
CRISIL Infrastructure Advisory,
CRISIL Risk & Infrastructure Solutions Limited,
CRISIL House, Plot No. 46, Sector 44, Opposite Provident Fund Office,
Gurgaon – 122003, Haryana, India.

RAM NIWAS
GURGAON
Reg. No. 8224

ATTESTED

RAM NIWAS, ADVOCATE
NOTARY GURGAON HR. (INDIA)

29 MAY 2017

3. Appendix 3: Format for Power of Attorney for Lead Member of Consortium

Enclosed in next page.

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ RY 533518

प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क्र. ८००००३
11 APR 2017
सक्षम अधिकारी

श्री. सु. का. पाटील

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

RAM NIWAS
GURGAON
Reg. No. 8224

NOW THIS POWER OF ATTORNEY WITNESSETH

We, M/s. CRISIL Risk and Infrastructure Solutions Limited having its registered office at CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076 (Lead Member), and M/s Hansa Research Group Private Limited, having its registered office at, Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W), Mumbai – 400086, do hereby designate M/s. CRISIL Risk and Infrastructure Solutions Limited having its registered office at CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076 being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the 24th Day of May 2017

For CRISIL Risk and Infrastructure Solutions Limited

Ravi Poddar

Ravi Poddar,
Director and Practice Leader – Urban Practice,
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India

NOTARY
RAM NIWAS
GURGAON
Reg. No. 8224
GOVT. OF INDIA

Srinivasan Raman

Mr. Srinivasan Raman
Executive Director
Hansa Research Group Private Limited

ATTESTED
RAM NIWAS, ADVOCATE
NOTARY GURGAON HR. (INDIA)

Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W), Mumbai – 400086
(consortium partner details)

4. Appendix 4: Format for Details of Applicant

4.1 Details of Applicant

4.1.1 CRISIL Risk and Infrastructure Solutions Limited

S. No	Details Required	Response
a.	Name of applicant with full address	CRISIL Risk and Infrastructure Solutions Limited Registered Office – Mumbai CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai- 400 076 Gurgaon Office: Plot No. - 46, Sector - 44, Opposite Provident Fund Office Gurgaon - 122003, India
b.	Tel. No.	0124 - 6722000
c.	Fax No.	0124 - 6722495
d.	Email	ravi.poddar@crisil.com
e.	Year of Incorporation	**CRISIL Infrastructure Advisory,** a division of CRISIL Risk and Infrastructure Solutions Ltd. (**A wholly owned subsidiary of CRISIL Limited**, an S&P Global company is a Public Limited Company registered in India. CRISIL was incorporated on January 29, 1987 and is in existence since last 24 years. CRISIL transferred its Advisory Division of the Company engaged in the business of Advisory Services in the area of Infrastructure, investment and risk management comprising of all its asset and ongoing business liabilities to CRISIL Marketwire Limited which was incorporated on Fourth day of August Two Thousand under the companies Act 1956 (No. 1 of 1956) as CRIS – RISK and Information Solution Company Limited having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956 and the approval of the Central Government signified in writing having been accorded thereto under Section 21 of the Companies act, 1956, read with Government of India, Department of Company Affairs, New Delhi Notification No. G.S.R 507 (E) dated 24/06/1985 vide SRN A11733938 dated 24/04/2007 the name of the said company is this day changed to CRISIL Risk and Infrastructure Solutions Limited. A certificate in respect to this is duly provided in **Annexure 2** of this document for your ready reference.
f.	Name and address of the person holding the Power of Attorney	Ravi Poddar, Practice Leader and Director – Urban Practice, CRISIL Infrastructure Advisory CRISIL Risk and Infrastructure Solutions Limited Plot No. - 46, Sector - 44, Opposite Provident Fund Office Gurgaon - 122003, India
g.	(i) Place of Business	**Gurgaon** Plot No. 46 (Opposite Provident Fund Office), Sector 44, Gurgaon 122 003, Haryana, India Phone : 91-124-672 2000 **Registered Office – Mumbai** CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076 Phone : 91-22-3342 3000 **Hyderabad** 3rd Floor, Uma Chambers Plot No. 9&10, Nagarjuna Hills, Near Punjagutta Cross Road Hyderabad - 500 082

		Fax : 91-124-672 2495	Fax : 91-22-3342 3810	Phone : 91-40-40328200 Fax : 91-40-2335 7507
		Bengaluru W-101, Sunrise Chambers, 22, Ulsoor Road, Bengaluru - 560 042 Phone : 91-80-2558 0899 Fax : 91-80-2559 4801	**Ahmedabad** 706, Venus Atlantis, Near Reliance Petrol Pump Prahladnagar, Ahmedabad - 380 015 Phone : 91-79-4024 4500 Fax : 91-79-4024 4520	
	(ii) Date of Registration	January 29, 1987		
h.	Name of Bankers with full address	A/c No. 001105000855, IFSC Code: ICIC0000011 Bank Name: ICICI Bank Limited, Branch Address: Sagar Avenue, Ground Floor, S. V. Road, Andheri (W), MUMBAI – 400 058		
i.	Service Tax Registration Number (copy)	Service Tax Registration Number AABCC4655MST001 **Please refer to Annexure 3 of document for copy of Service Tax Registration Certificate**		
j.	Are you presently debarred / Blacklisted by any Government Department /Public Sector Undertaking / Any Employer?	No		
k.	Name and details (Tel / Mobile / E mail) of contact persons	Ravi Poddar, Director and Practice Leader – Urban Practice, CRISIL Infrastructure Advisory CRISIL Risk and Infrastructure Solutions Limited Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India Phone No. (D) 0124 672 2484; (B) 0124 672 2000; Mobile: +91 9810234251; Fax: 0124-6722495 E-Mail: ravi.poddar@crisil.com		

4.1.2 Hansa Research Group

S. No	**Details Required**	**Response**		
a.	Name of applicant with full address	M/s. Hansa Research Group Private Limited, Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W), Mumbai – 400086		
b.	Tel. No.	+91 22 6179 8606		
c.	Fax No.	+91 22 2511 0932		
d.	Email	www.hansaresearch.com		
e.	Year of Incorporation	18th April 1994 A certificate in respect to this is duly provided in **Annexure 2** of this document for your ready reference.		
f.	Name and address of the person holding the Power of Attorney	Mr. Ashok Das, Mrs Vathsala Ravindran, Mr. Srinivasan Raman		
g.	(i) Place of Business	Head Office	Research Office	Research Office
		Mumbai	Delhi	Bangalore
	(ii) Date of Registration	18th April 1994		

h.	Name of Bankers with full address	ICICI Bank
i.	Service Tax Registration Number (copy)	AAACH9516MST002 **Please refer to Annexure 3 of document for copy of Service Tax Registration Certificate**
j.	Are you presently debarred / Blacklisted by any Government Department /Public Sector Undertaking / Any Employer?	NO
k.	Name and details (Tel / Mobile / E mail) of contact persons	Srinivasan Raman Executive Director Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W) Mumbai– 400086 Mobile : +91 9820064836, Office : +91 22 61798606 www.hansaresearch.com

4.2 In case of a Consortium

a) The information above should be provided for all the members of the consortium.
b) Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role (Specify Lead Member/ Other Member)**
1.	M/s CRISIL Risk and Infrastructure Solutions Limited	Lead Firm
2.	M/s Hansa Research Group	Consortium Firm

4.3 Organisational Strength (staff strength in numbers)

Details Required	**Response**
Total Staff Strength of Organisation	More than 100
Total Staff Strength of Organisation (Consortium Partner)	800
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR	Overall, our team consists of over 100 experienced professional staff with a wide range of expertise, including Post Graduate in Business Administration, Finance Specialist, Chartered Accountants, Economists, Engineers, Urban Planners, IT Professionals, and Management consultants. Our strength is further augmented by experienced associated consultants from a variety of disciplines. The professionals have in-depth experience in Infrastructure Planning, Urban Planning, Town Planning, Institutional Development, Finance, PPP, Project Development and Management, Municipal Engineering, Water Supply and Sewerage, Solid Waste Management, social and gender development, employment generation and women's empowerment to name a few among others. CRIS has worked extensively in projects which involved data collection, extensive stakeholder consultations, undertaking various kinds of surveys, data analysis as key components of assignments in the aforementioned sectors.

	CRIS has provided technical assistance and handholding support to Central Ministries, Parastatals, ULBs. Having worked on projects such as Preparation of smart city proposals, reform assessment for JNNURM, preparation of City Development plans, service level benchmarking for infrastructure services in various cities, CRIS is well equipped to carry out research and field surveys in urban areas and analyses the data collated to deliver required outputs.
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner)	Hansa Research has a vast experience in carrying out market research and field surveys in urban areas. The firm has carried out surveys for Ministry of Agriculture, Indian Railways, Reserve Bank of India, Indian Oil Corporation Limited among prominent institutions and also for media houses such as NDTV. Hansa Research has carried out citizen satisfaction survey for the Pune Municipal Corporation in the urban centres of Pune, Nagpur and Junagarh, which involved study of satisfaction levels of the residents with respect to the municipal services. Hansa Research has worked in various cities, towns and villages all across India and abroad. The employees hold certification of “Knowledge of market research data collection standards” from the Market Research Society of India (MRSI). The Certificate is enclosed in **Annexure 4** of this document

4.4 Turn-over of the Firm during last 3 years

Turnover Certificate of the Firm during last 3 years is provided in **Annexure 1** of this document

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Yours sincerely,

Ravi Poddar,
Director and Practice Leader – Urban Practice,
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India
Phone No. (D) 0124 672 2484; (B) 0124 672 2000; Mobile: +91 9810234251; Fax: 0124-6722495
E-Mail: ravi.poddar@crisil.com

5. Response to Evaluation Criteria

<table>
<tr><th>S. No</th><th>Evaluation Criteria</th><th colspan="2">Our Compliance</th></tr>
<tr><td>1.</td><td>General Experience of the Firm: Number of years' experience</td><td colspan="2">21 Years (Since 1995)

CRISIL Risk and Infrastructure Solutions Limited has partnered with M/s. Hansa Research Group Private Limited to form a consortium to bid for the assignment.
CRISIL Infrastructure Advisory has over 21 years of experience in providing Transaction Advisory for PPP projects in the Infrastructure sectors with State Governments / Central Government Agencies in India.
CRISIL Infrastructure Advisory's team of PPP Transaction Advisors work with clients in the following sectors:
• Urban Infrastructure- Municipal Solid Waste Management, Waster water, Water Supply, Sewerage, Urban Transport- MRTS, BRTS, Multilevel Car Parking
• Transport – Roads (National Highway, State Roads and City Roads), Railways, Ports and Airports
• Social Infrastructure: Health and Education
• Energy (electricity transmission and distribution)
• Special Economic Zones, Industrial Parks and IT Parks
• Real Estate – Residential Housing, Commercial, Entertainment and Tourism
• Rural Infrastructure

Hansa Research is a full service global market research agency headquartered in India, conducting market research in 77 countries globally with offices in India and US.
Hansa Research has carried out numerous surveys for Ministries, state governments, public sector enterprises and private institutions alike. With a specialization in data collection, data and field analytics, and data management, Hansa Research has worked in the urban, financial and technological sectors amongst other sectors.</td></tr>
<tr><td rowspan="5">2.</td><td rowspan="5">Financial Strength of the Firm</td><td colspan="2">The turnover of CRISIL Risk and Infrastructure Solutions Limited for the past three years is provided below for your ready reference a Certificate issued by Chartered Accountant certifying our Turnover has been provided in Annexure 1 of this document for your ready reference.</td></tr>
<tr><td>Year</td><td>Turnover in INR Crore</td></tr>
<tr><td>2016</td><td>75.81</td></tr>
<tr><td>2015</td><td>66.43</td></tr>
<tr><td>2014</td><td>63.52</td></tr>
<tr><td>3.</td><td>Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: Number of such staff.</td><td colspan="2">CRISIL Risk and Infrastructure Solutions Limited has a team of over 100 professionals who have a rich and diverse experience of working end to end on research, performance assessments, service level benchmarking, PPP, reforms, business assessment and financing matters in infrastructure sectors.</td></tr>
</table>

		The professional staff at CRIS includes with a wide range of expertise, including Post Graduate in Business Administration, Finance Specialist, Chartered Accountants, Economists, Engineers, Urban Planners, IT Professionals, and Management consultants; with in-depth knowledge in Infrastructure Planning, Urban Planning, Town Planning, Institutional Development, Finance, PPP, Project Development and Management, Municipal Engineering, Water Supply and Sewerage, Solid Waste Management, social and economic development, among other fields. **Hansa Research** has over 800 professionals with vast experience in data collection, data analysis and data management. The firm specializes in carrying out field researches, market surveys, case studies and has been delivering quality Industry Reports. White papers and articles amongst other publications. The industry expertise in Hansa Research included but is not limited to the urban sphere, financial markets, media, telecom and technology.
3.	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: Number of assignments.	CRISIL Risk and Infrastructure Solutions Limited has worked on numerous assignments with a focus on carrying out surveys and market research. CRIS has prepared city development plans for numerous cities across India such as Thane, Mumbai, Indore, Nagpur, Chandigarh, Shimla, Jammu, Guwahati, Varanasi, Allahabad amongst many other cities, which involved research and surveys at various stages, involving stakeholders both at the government side, private sectors, public sector enterprises and beneficiaries. CRIS has also worked on various assignments involving service level benchmarking for cities including Kalyan Dombivli, Thane, Municipal Corporation of Greater Mumbai, Nashik, Bhubaneswar, Berhampur, Chandigarh, Ujjain, Pimpri-Chinchwad, identified focus cities for Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) which focussed on data managment practices and procedures; and operationalising SLB framework in 20 pilot cities across the nation. Also, CRIS was involved in the rapid baseline assessment of Urban Managemnt Capacity in 30 ULBs across 21 stataes in India, which included data collection, analysis and questionnaire surveys. Hansa Research specializes in market research and field surveys in urban areas and has carried out surveys for Ministry of Agriculture, Indian Railways, Reserve Bank of India, Indian Oil Corporation Limited among prominent institutions and also for media houses such as NDTV. Hansa Research has worked in various cities, towns and villages all across India and abroad. The firm prepared questionnaires for various stakeholders including but not limited to management teams, government officials, beneficiaries, collated responses and data collected both from primary and secondary sources and analyzed the data to derive the outputs required. Such surveys were carried out for the National Horticulture Board; Indian Railway Catering and Tourism Corporation Ltd. among others.
4.	Specific experience of the Firm in implementing assignments related to surveys and field	The team of data collectors in Hansa Research Group private Limited are certified with The Market Research Society of India (MRSI). The employees hold certification of "Knowledge of market research data

	research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: Number of assignments	collection standards" Certificate from **MRSI** has been in enclosed in **Annexure 4** of this document.
5.	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; Number of assignments.	CRISIL Risk and Infrastructure Solutions Limited has undertaken many assignments involving analysis and assessment of data. CRIS has assisted nine cities (Solapur, Nagpur, Nashik, Thane, Kalyan-Dombivali, Agra, Jhansi, Karnal and Pimpri Chinchwad) in preparing their smart city proposals in the nationwide smart city challenge which involved collecting and collating data from various government and non-government stakeholders, beneficiaries, and other involved stakeholders through surveys, focus group discussions and secondary sources in the fields of governance, city specific planning, transportation, environment, housing and all aspects of physical infrastructure. CRISIL is empanelled by the MoUD for providing Technical Assistance to selected cities in generating revenue through Value Capture Financing (VCF) Tools for Smart City Development and for Municipal Tax and Fee Improvement. CRISIL is assisting Visakhapatnam in generating revenues through VCF tools and property tax collections for Pune and Panaji. These assignments involve major components of data collection and analysis in governance, institutional framework and revenue records. CRIS has also prepared city sanitation plans for various cities, performance assessment and service level benchmarking for infrastructure services and reforms which involved extensive analysis and assessment of data related to governance, housing and infrastructure. **Hansa Research** has carried out citizen satisfaction survey for the Pune Municipal Corporation in the urban centres of Pune, Nagpur and Junagarh, which involved study of satisfaction levels of the residents with respect to the municipal services.

6. Organisation Profile

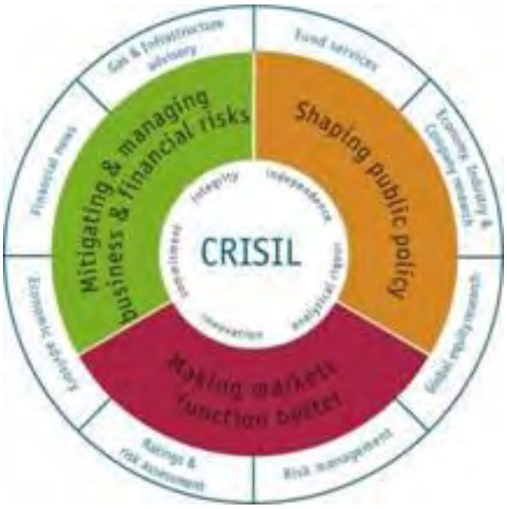
6.1 CRISIL Risk & Infrastructure Solutions Limited

CRISIL Ltd.

CRISIL is a global analytical company providing ratings, research, and risk and policy advisory services. We are India's leading rating agency. We are also the foremost provider of high-end research to world largest banks and leading corporates. Leveraging its core strengths of credibility, independence and analytical rigour, CRISIL delivers opinions and solutions that helps:

- Make markets function better
- Help clients mitigate and manage their business & financial risks
- Help shape public policy

CRISIL's majority shareholder is Standard & Poor's, the financial services business of The McGraw-Hill Companies and the world's foremost provider of independent credit ratings.


Gas & Infrastructure advisory
Fund services
Economy, Industry & Company research
Global equity research
Risk management
Ratings & risk assessment
Economic advisory
Financial news
Mitigating & managing business & financial risks
Shaping public policy
Making markets function better
integrity
independence
analytical rigour
innovation
commitment
CRISIL

CRISIL Risk & Infrastructure Solutions Limited

CRISIL Infrastructure Advisory is part of CRISIL Risk and Infrastructure Solutions Limited, a 100% subsidiary of CRISIL Limited. CRISIL Infrastructure Advisory works closely with the States and Central government, multilaterals, and private developers in shaping public policy, enabling institutional development, and structuring bankable projects.

CRISIL Infrastructure Advisory

CRISIL Infrastructure Advisory is a leading advisor to governments, multilateral agencies, large public and private sector firms, and investors. We help shape public policy, develop viable frameworks, and enable infrastructure development. We offer a wide array of services across the infrastructure development cycle. We aid creation of a vibrant ecosystem for infrastructure development through our work in areas of:

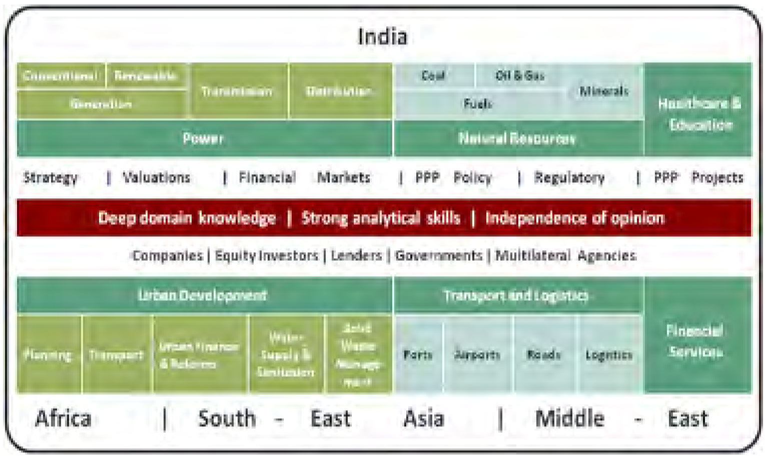
- Policy and regulatory advisory,
- Public-private partnership (PPP) frameworks and project advisory
- Business and commercial diligence, and strategic advice
- Business and project risk advisory
- Program management, including monitoring and evaluation services
- Capacity enhancement and institutional strengthening for government and infrastructure agencies
- Advice on infrastructure financing mechanisms
- Implementation assistance

We are involved in shaping public policy and regulatory reforms; fashioning bankable infrastructure projects and running the bid process management for government and public sector clients; and providing bid advisory services to the private sector. We have played a key role in the development of the power, ports, airports and urban infrastructure sectors in India. It has also provided its services in large markets in Africa and South-East Asia

Our **team of 100+ professionals** has rich and diverse experience of working end to end on PPP, reforms, business assessment and financing matters in infrastructure sectors. We excel in identifying and evaluating risk indicators and designing solutions to mitigate risks.

We operate in **India and 22 other emerging economies** in Asia, Africa, and the Middle East. CRISIL Infrastructure Advisory is a division of CRISIL Risk and Infrastructure Solutions Limited, a wholly owned subsidiary of CRISIL Limited.

How We Add Value

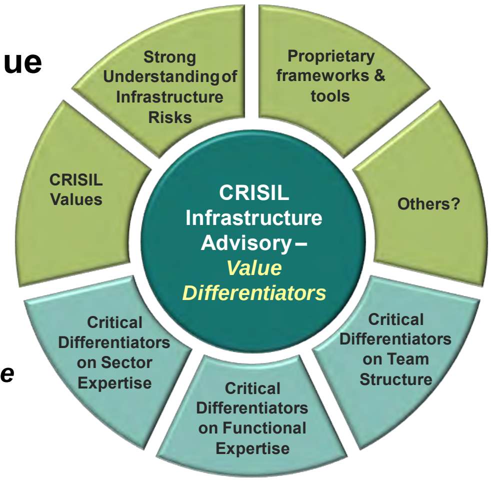

India
Conventional
Renewable
Generation
Transmission
Distribution
Power
Coal
Oil & Gas
Fuels
Minerals
Natural Resources
Healthcare & Education
Strategy | Valuations | Financial Markets | PPP Policy | Regulatory | PPP Projects
Deep domain knowledge | Strong analytical skills | Independence of opinion
Companies | Equity Investors | Lenders | Governments | Multilateral Agencies
Urban Development
Transport and Logistics
Planning
Transport
Urban Finance & Reforms
Water Supply & Sanitation
Solid Waste Management
Ports
Airports
Roads
Logistics
Financial Services
Africa | South - East Asia | Middle - East

Our services enable governments to create sustainable and transparent regulatory frameworks, carry out reforms, and create bankable infrastructure projects, thereby attracting investments in infrastructure. Our work enables creation of risk balanced, equitable and win-win frameworks and structures leading to successful PPPs. We enable mechanisms to ensure benefits of infrastructure development flow through to consumers of infrastructure services.

Our deep analysis enables clients to take progressive and pragmatic view on sector and their business. We deploy our proprietary diagnostic tools to aid strategic decision making from project planning, financing, and development to operations. We are known for our core values of independence and analytical rigour combined with deep domain expertise.

Our robust planning tools and program management frameworks ensure smooth implementation of projects and initiatives. Our monitoring and tracking frameworks help identify key issues and risks at an early stage, to enable corrective actions and mitigating strategy.

CRISIL Infrastructure Advisory – Value Differentiators


Strong Understanding of Infrastructure Risks
Proprietary frameworks & tools
CRISIL Values
Others?
CRISIL Infrastructure Advisory – Value Differentiators
Critical Differentiators on Sector Expertise
Critical Differentiators on Team Structure
Critical Differentiators on Functional Expertise

CRISIL Infrastructure Advisory has a deep focus on the infrastructure sector which ensures that our clients have an unmatched access to insights and best practices on the sector. We deliver credible and practical solutions, guided by CRISIL's core values of analytical rigour, independence, integrity, commitment and innovation.

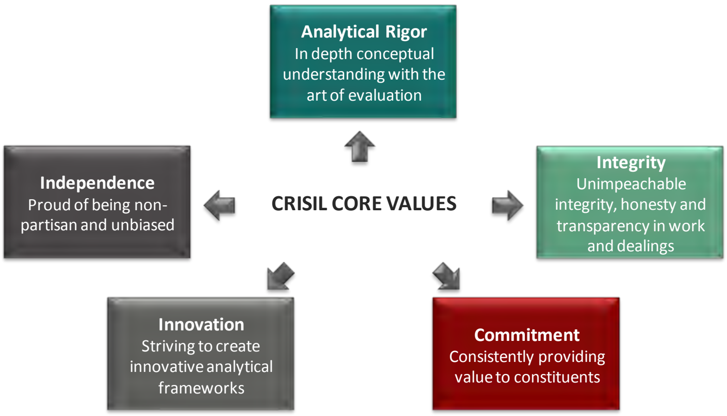
We believe CRISIL Infrastructure Advisory is best suited to deliver enhanced value to DMRC as we bring some of our unique ***value differentiators***, on this assignment.

Adherence to the CRISIL Value System

CRISIL inspires trust and confidence the world over. It redefines industry standards constantly, and sets new benchmarks year after year.

At the core of its credibility are CRISIL's values, built up assiduously over the years, is unimpeachable integrity and independence in thought and opinion.

Consistent adherence to these principles provides our clients the confidence of transparency and objectivity in our advice and solutions.



Analytical Rigor
In depth conceptual understanding with the art of evaluation

Independence
Proud of being non-partisan and unbiased

CRISIL CORE VALUES

Integrity
Unimpeachable integrity, honesty and transparency in work and dealings

Innovation
Striving to create innovative analytical frameworks

Commitment
Consistently providing value to constituents

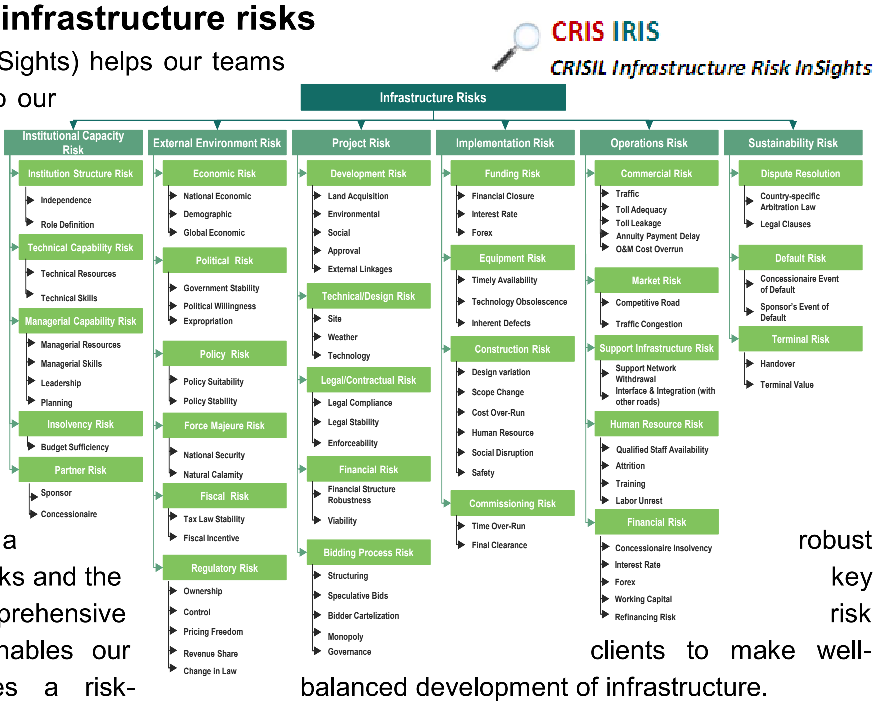
Use of proprietary frameworks and tools empowering our solutions

Drawing on our 20+ years of consulting experience, we have inculcated within our team an effective approach of using established frameworks and tools to ensure the requisite analytical rigour while executing mandates.

CRISIL Infrastructure Advisory has a library of such frameworks and tools that we routinely adopt while executing mandates for our clients. Adopting such frameworks ensures that are engagements are efficiently executed with a time-tested approach and analytical depth, thus providing maximum value to our clients.

Strong understanding of infrastructure risks

CRIS IRIS (Infrastructure Risks InSights) helps our teams bring a 'unique' risk perspective to our approach on any assignment. Based on our extensive experience in the infrastructure sector, we have developed our proprietary risk maps, comprising over
100 unique risks impacting any infrastructure development over the entire lifecycle. Our risk maps have been applied across all the key infrastructure sectors.
CRIS IRIS provides our teams a robust approach to identify and assess risks and the key associated risk drivers. Our comprehensive risk assessment using CRIS IRIS enables our clients to make well-informed decisions and ensures a risk-balanced development of infrastructure.


CRIS IRIS
CRISIL Infrastructure Risk InSights
Infrastructure Risks
Institutional Capacity Risk
Institution Structure Risk
Independence
Role Definition
Technical Capability Risk
Technical Resources
Technical Skills
Managerial Capability Risk
Managerial Resources
Managerial Skills
Leadership
Planning
Insolvency Risk
Budget Sufficiency
Partner Risk
Sponsor
Concessionaire
External Environment Risk
Economic Risk
National Economic
Demographic
Global Economic
Political Risk
Government Stability
Political Willingness
Expropriation
Policy Risk
Policy Suitability
Policy Stability
Force Majeure Risk
National Security
Natural Calamity
Fiscal Risk
Tax Law Stability
Fiscal Incentive
Regulatory Risk
Ownership
Control
Pricing Freedom
Revenue Share
Change in Law
Project Risk
Development Risk
Land Acquisition
Environmental
Social
Approval
External Linkages
Technical/Design Risk
Site
Weather
Technology
Legal/Contractual Risk
Legal Compliance
Legal Stability
Enforceability
Financial Risk
Financial Structure Robustness
Viability
Bidding Process Risk
Structuring
Speculative Bids
Bidder Cartelization
Monopoly
Governance
Implementation Risk
Funding Risk
Financial Closure
Interest Rate
Forex
Equipment Risk
Timely Availability
Technology Obsolescence
Inherent Defects
Construction Risk
Design variation
Scope Change
Cost Over-Run
Human Resource
Social Disruption
Safety
Commissioning Risk
Time Over-Run
Final Clearance
Operations Risk
Commercial Risk
Traffic
Toll Adequacy
Toll Leakage
Annuity Payment Delay
O&M Cost Overrun
Market Risk
Competitive Road
Traffic Congestion
Support Infrastructure Risk
Support Network Withdrawal
Interface & Integration (with other roads)
Human Resource Risk
Qualified Staff Availability
Attrition
Training
Labor Unrest
Financial Risk
Concessionaire Insolvency
Interest Rate
Forex
Working Capital
Refinancing Risk
Sustainability Risk
Dispute Resolution
Country-specific Arbitration Law
Legal Clauses
Default Risk
Concessionaire Event of Default
Sponsor's Event of Default
Terminal Risk
Handover
Terminal Value

Key strengths of CRISIL Infrastructure Advisory

- **Strong understanding of financial markets:** In the modern market economy, physical possibilities are closely intertwined with financial possibilities. Our strong understanding of financial markets due to our parentage ensures that our project solutions fully reflect this interplay of the physical with the financial aspects of investments.
- **Firm research base:** Any advice is only as good as the information and expertise that it is based on. While we pride ourselves on the skill of our team, their ability to deliver is magnified by the fact that they have ongoing access to the output of CRISIL's large research team. CRISIL's research team is staffed by close to 150 professionals who track macro-economic trends and micro developments in financial markets and more than 60 industries on a real-time basis. This research is commercially subscribed to by virtually all financial intermediaries in India, which is testament to its quality.
- **Superior ability to harness learnings across geographies**: Our domain teams operate in India as well as in developing countries in Africa and South-East Asia. This gives them richness and diversity of perspective that is more valuable to our clients than that of India-focused domain teams.
- **Ability to leverage experience across domains**: We place special emphasis on close interactions and collaborations between our domain-focused teams. This facilitates cross-sectoral and cross-functional learning. For instance, our water supply team draws lessons from the experience of the power distribution team.
- **Track record of competence, independence and objectivity**: Our work, over the years, with various governments at the central, state and municipal levels has reflected the CRISIL attributes of analytically researched, independent opinions. Therefore, public bodies are able to trust CRISIL's opinions as truly being in the public interest.
- **Deep appreciation of public policy and regulatory dynamics**: We have a strong appreciation of future evolutionary possibilities by virtue of our long-standing presence in India and our participation in the policy and regulatory evolution in the domains that we operate in, such as power, urban development and transport etc; we have a strong appreciation of future evolutionary possibilities. We use this to help our clients in both future policy design and strategic business positioning.

Our Capabilities

Urban Development

We are a leading advisor to urban development ministries, state governments and various urban local bodies (ULBs) in the area of managing urbanization and implementing projects and reforms. Our range of services cover policy advocacy, visioning city development, supporting ULB raise resources to implementing projects and reforms.

Assistance to Pimpri-Chinchwad Municipal Corporation for over 7 years now, for its development plan, reforms and handholding the corporation for implementation.	• *PCMC was presented Prime Minister's award for 'Best City' in 2012 under JNNURM*
We are the largest JnNURM reform appraisal agency, are advising on more than 50% of the water PPPs in India.	• *CRIS houses the largest Urban advisory practice with over 30 sector experts in varied domains likes Water, Urban planning, Sewerage, Urban finance and Tourism.*
Institutional, PPP and policy development in countries like Vietnam, Indonesia, Tanzania, Cambodia, etc.	• *We assist multilaters like ADB, World Bank, KFW, DFID across the developing nations.*

Energy & Resources

We are a leading advisor to ministries, state utilities and leading developers in the area of implementing projects and reforms, market, commercial and financial assessments. Our range of services cover policy advocacy, reforms implementation, business planning, strategic market and bid advisory.

Assistance to the Government of India appointed Shunglu Committee for reform on power distribution models, Advisory assistance to Ministry of Coal for developing valuation methodology for auction of Coal Blocks.	• *Across the energy value chain CRIS has been working on policy initiatives with MoP, MoC and MNRE which help promote competition, aid project development and support energy market development.*
Successfully advised on Bids across Power Generation, Transmission and Distribution .	• *Strategic bid advisory and risk based project planning has helped Clients on successful projects like Mundra UMPP, Rajasthan State Transmission projects and Bhiwandi Distribution Franchisee. .*
Policy and PPP assistance in countries like Tanzania, Indonesia, Rwanda, Philippines, etc.	• *We actively work with governments and international agencies in India and other developing markets to help shape the market and demonstrate success with 'first-of-its kind' PPPs in energy sector*

Transport & Logistics

We have a long and respected record of providing advice on a wide range of issues in the transport sector. We are a leading advisor to ministries, state utilities and leading developers in the area of implementing projects and reforms, market, commercial and financial assessments.

Advised on Policy and Project planning mandates across Ports, Highways, Airports, Railways, Elevated Transport and Logistics.	• *Enabled Tariff setting process in Ports, road development policy in AP and development of the first greenfield airport in India on PPP basis*
Pioneering role in developing the Partial Credit Guarantee (PCG) product which enables the infrastructure sector to access the bond market.	• *Innovative product is expected to transform the infrastructure financing landscape and bring us closer to achieving 1Tn$ infrastructure investment dream.*
CRIS is advising IIGF on financial and transaction advisory for the Puruk Cahu - Bangkuang Coal Rail Project in Indonesia .	• *Largest PPP project yet in Indonesia expected to open up supply avenues for coal rich Central Kalimantan area.*

Our Philosophy

CRISIL assigns utmost importance to the quality of outputs. The internal processes and procedures are stringent on output reviews, client management etiquette, and project management. With this orientation, we bring in maximum value to the engagement.

Years in Business

CRISIL Limited was incorporated with an equity stake from the Asian Development Bank and other financial institutions in 1987. Our mandate was to provide financial ratings to bond issues and thereby deepen the capital markets in India. Since its inception, CRISL has played a defining role in the very approach to risk analysis.

CRISIL has innovated continuously and has introduced a number of products including, ratings for government utilities, counterparty ratings, financial strength ratings for the insurance industry, rating of foreign structured obligations, rating of real estate developers, grading of healthcare institutions, grading of micro finance entities, to name a few. These ratings have enabled various businesses to access funds from the capital market at competitive rates.

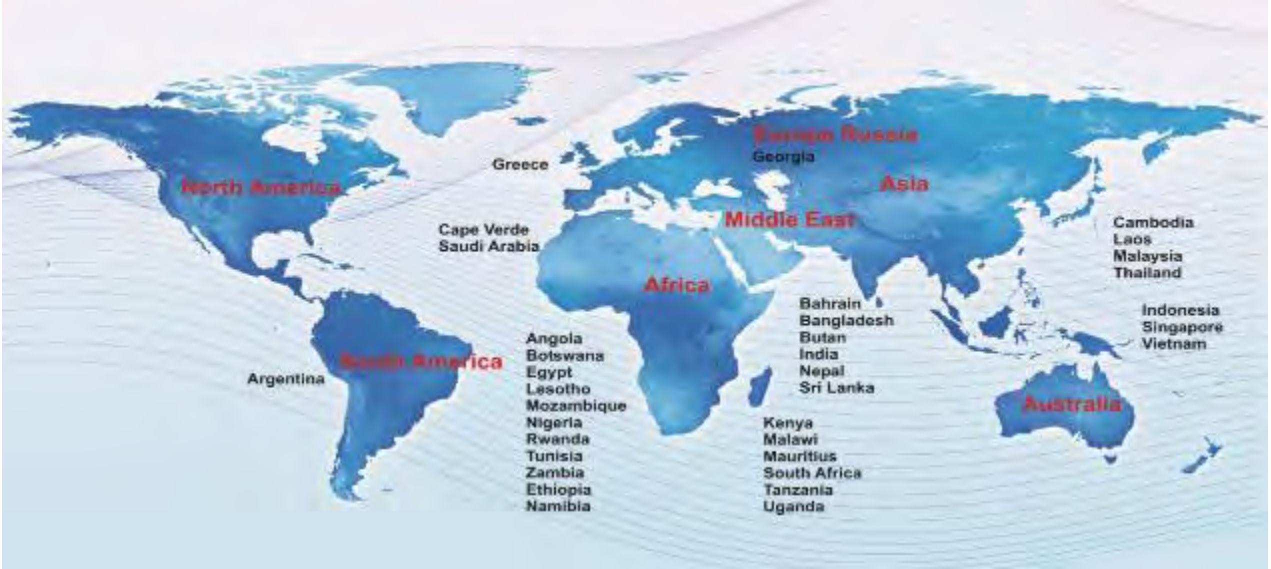
CRISIL's association with S&P dates back to 1996 when both companies started working together on rating methodologies and joint projects, in the same year. Since then, the two organizations have significantly broadened this relationship, working together on critical, cutting-edge assignments for global clients.

This partnership has now culminated in CRISIL being majority owned by Standard and Poor's, a division of The Mcgraw-Hill Companies, the world's foremost provider of financial market intelligence.

Ratings	**30 Years (Since 1987)**
Infrastructure Advisory	**21 Years (Since 1995)**
Risk Management	**14 Years (Since 2002)**
Research	**14 Years (Since 2002)**

Our Geographical Spread

CRISIL Group, while headquartered in India has been operating in multiple geographies. Offices are present in Asia-Pacific, Europe, North America and South America with several new ones in the pipelines. CRISIL Infrastructure Advisory has experience of working on engagements in several countries in across the globe. Following is a snapshot:


Europe Russia
Georgia
Greece
North America
Asia
Middle East
Cape Verde
Saudi Arabia
Cambodia
Laos
Malaysia
Thailand
Africa
Bahrain
Bangladesh
Butan
India
Nepal
Sri Lanka
Indonesia
Singapore
Vietnam
Angola
Botswana
Egypt
Lesotho
Mozambique
Nigeria
Rwanda
Tunisia
Zambia
Ethiopia
Namibia
South America
Argentina
Australia
Kenya
Malawi
Mauritius
South Africa
Tanzania
Uganda

Our global experience

PPP Projects Experience	Transport	Urban Transport	Energy	SEZ, Industrial Parks and IT Parks	Urban Infrastructure	Real Estate	Social Infrastructure	Rural Infrastructure
Africa	√		√	√				
South Asia	√	√	√	√	√	√	√	√
South East Asia	√				√			

6.2 Hansa Research Group

Hansa Research is a full service global market research agency conducting market research in 77 countries globally with offices in India and US. It is the ONLY global market research agency headquartered in India. Under the leadership of Mr. Ashok Das, Managing Director, Hansa Research became one of the fastest growing market research agencies in India. In 2006 it was the first Indian market research company to acquire a U.S.-based firm, GCR (formerly called Gartner Custom Research). With research offices across India and the U.S., Hansa Research's infrastructure is comparable to the best in the industry.

Hansa Research is a full service market research agency specializing in Media, Telecom, Financial Services, Consumer Products and Technology spaces. With an array of packaged and custom options, it draws the best suited talent from within to deliver answers to an enviable list of clients. Employees have been widely regarded as some of the best researchers, field and analysis executives in the country, and Hansa Research is seen as one of the most lively market research companies to work with.

7. Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria	Number and Name of Cities
1.	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas (Lead Firm)	49 cities • Preparation of revised CDP and providing onsite consultancy services for various reforms performance improvement and project development under JNNURM for Thane Municipal Corporation. • Providing Management Consultancy for Implementing Reforms Enhancing Municipal Finances and SLB of Kalyan Dombivli Municipal Corporation • Preparation of revised City Development Plan for Municipal Corporation of Greater Mumbai • Consultancy services for preparation of revised CDP for Indore Municipal Corporation • Consultancy Services for Updating the City Development Plan for Nagpur Municipal Corporation • Preparation and Revision of City Development Plans for 13 Selected Cities for Ministry of Urban Development - Yamuna Nagar, Kurukshetra, Jammu, Chandigarh, Allahabad, Varanasi, Dehradun, Haridwar, Shimla, Guwahati, Gangtok, Shillong and Aizwal • Consulting Services for Assessment of Data Management and SLB reporting Capacities of Focus Cities and States and Developing Improvement Mechanisms (for GIZ) • Rapid Baseline Assessment of Urban Management Capacity in 30 Urban Local Bodies – Panaji, Gangtok, Chhindwada, Shillong, Kurukshetra, Bharuch, Shimla, Puri, Haridwar, Dewas, Aizawl, Yamunanagar, Kollam, Udaipur, Jammu, Siliguri, Dehradun, Cuttack, Guntur, Hubli, Solapur, Chandigarh, Guwahati, Raipur, Jabalpur, Ranchi, Varanasi, Allahabad, Vishakhapatnam, Nagpur
2.	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas (Consortium Partner 1)	Pan India (• All India Cold storage capacity and technology survey for India cold chain; Name of States - Andaman And Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chandigarh, Chhattisgrah, Delhi, Goa, Gujarat, Harayana, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamilnadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal • On Board Customer Satisfaction survey for various Premium / Mail / Express Trains; Pan India

8. Appendix 5A: Format of Assignment Details of the Applicant

Assignment name: Preparation of revised CDP and providing onsite consultancy services for various reforms performance improvement and project development under JNNURM	Value of the contract (in current INR): Rs.13152000/-
Country: India Name of City / Cities: Thane	Duration of assignment (months): 24
Name of Client: Thane Municipal Corporation	Total No of staff-months of the assignment: 48
Address: Mahapalika Bhavan, Dr. Almeida Road, Panchpadhadi, Thane, Maharashtra, India	Value of the contract per city (in current INR): Rs.13152000/-
Start date (month/year): Feb 2014	Completion date (month/year): Feb 2016

Narrative description of Project:

CRISIL Infrastructure Advisory has been appointed by Thane Municipal Corporation to provide consultancy services for preparation of Revised City Development Plan (CDP).

The mandate also involves on-site consultancy services for 2 years for carrying out performance improvement planning for services covered under the Service Level Benchmarking program; implementation assistance for various projects and reforms under JNNURM scheme and also providing support in developing various PPP projects.

Description of actual services provided by your staff within the assignment:

Module I and II – Preparation of revised CDP and Critical review of 1st generation CDP

The revised CDP is based on the critical review of the CDP and the revised guidelines, broadly focusing on:

Module I – Reform Implementation Assistance

- Undertaking property tax reforms
- Increasing coverage of property tax
- Provide current reform wise implementation status.
- Identify road blocks to be addressed
- Assess the time and resources required (internal or external) to achieve the desired results.
- Draft an action plan for achieving each reform based on its current status and resource requirement.
- Undertake capacity building sessions for departmental official.

Module II - Oversee the implementation process and provide periodic updates.

- Identifying the investments for the sectors that were not covered in the earlier CDP;
- Having realistic estimate of project costing;
- Preparing a strategic plan for funding with major thrust on alternate financing sources- PPP, sub-sovereign funding, commercial borrowings etc;
- Identifying capacity constraints and strategy to address the same.

Module III – PPP Implementation support:

The scope of under this module is as follows:

- Review the preliminary concept note for the PPP projects prepared by TMC
- Develop the project concept, risk and responsibilities matrix for deliberations and finalization of the project PPP structure
- Prepare tender notice, request for proposal document, concession/ licence agreements and other transaction related documents in line with best practices
- Assist TMC in the transaction by participating in pre-bid meetings, modifying bidding documents as per queries raised etc.
- Prepare bid evaluation report, recommend successful bidder and assist TMC in negotiations, if required.

Module IV - Performance Improvement Planning

The following are the key objectives of this module:

- Review of the baseline SLB Indicators
- Assessment of the impact of JNNURM Projects and other projects under implementation on the SLB Indicators
- Assisting TMC in defining the SLB targets for the next 5 years
- Assisting TMC in identifying and planning for actions to improve the SLB Indicators

Module V – Project Implementation assistance

- Reviewing the timelines and preparing action plans for the projects sanctioned by JNNURM in consultation with the respective department heads
- Prepare project reporting formats in line with requirements of MoUD and SLNA from time to time
- Coordinate with department heads / staff and project management consultants for procuring project status and MIS.
- Micro level follow up with the department taking the stock of the project progress and suggesting course corrections in the tender packages which are lagging behind the schedule
- Progress review and advice on course correction for timely completion of the projects in accordance with JNNURM commitments.
- In case a project is not progressing due to administrative issues the team shall proactively flag issues that need immediate attention of Commissioner/Additional Commissioner.

Assignment name: Providing Management Consultancy for Implementing Reforms Enhancing Municipal Finances and SLB of Kalyan Dombivli Municipal Corporation	Value of the contract (in current INR): Rs.20340000/-
Country: India Name of City / Cities: Kalyan Dombivli	Duration of assignment (months): 24
Name of Client: Kalyan Dombivli Municipal Corporation	Total No of staff-months of the assignment: 48
Address: Kalyan Dombivli Municipal Corporation, Kalyan Dombivli, Maharashtra, India	Value of the contract per city (in current INR): Rs. 20340000/-
Start date (month/year): Mar 2012	Completion date (month/year): Aug 2014

Narrative description of Project:
Kalyan Dombivli Municipal Corporation has approached the Government of India (GoI) for funding under the JNNURM scheme of GoI. Kalyan Dombivli Municipal Corporation has appointed CRISIL Infrastructure Advisory to prepare the revised CDP and provide advisory assistance to NMC for implementation of Reform Agenda with respect to the time frame as agreed with Ministry of Urban Development.

Description of actual services provided by your staff within the assignment:
CRISIL was involved in:

- Review Municipal and State & Central legislations / regulations / policies considered to have an impact on JNNURM
- Examine the impact of reforms including decentralization and governance.
- Analyze various dimensions of infrastructure, land, and housing policies, identify gaps
- Engage in stakeholders consultations and identify key concerns as and when required
- Suggest concrete proposals, innovations and strategic framework to address the gaps, achieve improvement in services rendered by KDMC.
- Preparation of restricting plan for Property Tax department
- Implementation assistance in restructuring or Property tax department
- Implementation assistance for reforms for Accounting, Property tax, E-governance and User charges
- Review existing situation of parking in KDMC; analyse State parking policy and other best practices across India and abroad and prepare Parking policy for KDMC
- Review existing situation of revenues from advertisement charges/ tax and prepare Advertisement policy for KDMC
- Review MoA and Reform Agenda from time to time
- Collect all necessary information from various departments of KDMC, State & Central Government to achieve the time frame and milestones envisage in MoA and Reform
- Prepare required MIS from time to time. The reports should be submitted in well presentable form properly bound as may be required by the City Engineer KDMC from time to time.
- Prepare various Multimedia / power point presentations as may be required from time to time.
- Attend various meetings at State / Central Government level and to assist the Kalyan Dombivli Municipal Corporation in preparation the material required for the same.
- Impart adequate training to all Officers and staff of KDMC in connection with UIDSSMT as may be required.
- Provide PPP implementation support to KDMC
- Review existing PPP contracts that have been awarded on PPP model and provide strategic inputs to KDMC

Assignment name: Preparation of revised City Development Plan for Municipal Corporation of Greater Mumbai	Value of the contract (in current INR): Rs. 7695000.00
Country: India Name of City/ Cities: Greater Mumbai	Duration of assignment (months): 8
Name of Client: Municipal Corporation of Greater Mumbai	Total No of staff-months of the assignment: 8
Address: Municipal Corporation of Greater Mumbai, Mumbai, Maharashtra	Value of the contract per city (in current INR): Rs. 7695000.00
Start date (month/year): Feb 12	Completion date (month/year): Sep 12

Narrative description of Project:

The city of Mumbai was a cluster of seven islands, which were converted into a promontory of solid land, measuring about 4.8 km in width at the northern end and narrowing to a point of a rock at Colaba, its southern extremity. Mumbai is united at the southern limits with Salsette Island by means of causeways and railway embankments. Mumbai, the financial and commercial capital of India, is the administrative capital of Maharashtra. Government of India launched the Jawaharlal Nehru National Urban Renewal Mission (JnNURM) in December 2005. As per JnNURM guidelines, the formulation of a City Development Plan (CDP) is mandatory for accessing JnNURM funds. MCGM prepared their first generation CDP in 2006 and availed funding for various sectors to achieve service-level improvements. In continuance of its efforts of supporting and managing urban development, the Government of India is expected to announce the second phase of JnNURM. The five-year JnNURM-2 is expected to begin in 2014. As cities are required to prepare their revised City Development Plans, MCGM intends to prepare its revised CDP document in order to avail the funds. The revised city development plan for MCGM aims at conducting a critical review of the first generation CDP by reviewing the outcome of the projects on the service levels of the city.

Description of actual services provided by your staff within the assignment:

In the revised CDP, MCGM has undertaken to:

- Review the first generation CDP
- Review the CIP & DPR submitted by MCGM under JnNURM
- Revisit the costing or estimates of pending project components and prepare a realistic investment for the remaining projects
- Assess the current service levels with respect to performance targets and realign project requirements.
- Review the finances, with respect to forecast
- Assess the future sustainability and debt carrying capacity of the MCGM based on current revenue trends under different scenarios

Assignment name: Consultancy services for preparation of revised CDP for Indore as per new JNNURM guide lines	Value of the contract (in current INR): Rs. 24.50 lakh
Country: India Name of City/ Cities: Indore	Duration of assignment (months): 19
Name of Client: Indore Municipal Corporation	Total No of staff-months of the assignment: 30
Address: Indore Municipal Corporation, Indore, Madhya Pradesh	Value of the contract per city (in current INR): Rs. 24.50 lakh
Start date (month/year): May 2013	Completion date (month/year): Jan 2015

Narrative description of Project:

Indore Municipal Corporation (IMC) has prepared city development plan (CDP) in 2005-06. Now, since five years have passed IMC intends to revise the CDP. The revision will cover the status of infrastructure services in the light of investments made in the last few years. The infrastructure needs assessment will be conducted considering future development prospects of the city. It will also consider projects that were identified under CDP prepared in 2005-06 but that could not be taken up for implementation. Further, the revision exercise would focus on identifying PPPs for various projects and arrive at a sustainable financial plan for IMC. IMC also intends to gather citizen's feedback post JnNURM and involve them in decision-making.

In this context, IMC has appointed CRISIL Infrastructure Advisory to revise the CDP prepared by IMC in the year 2005-06.

Description of actual services provided by your staff within the assignment:

- Critically review the current CDP
    - Assessment of present CDP 2005-06 in terms of feasibility and viability
    - Impact assessment of works done under JnNURM and other schemes, and
    - Identification of shortcomings in the present CDP
- Assess the current situation
    - Analyse the proposed municipal limits of IMC
- Identify projects, including PPP projects and estimate their broad costs
- Prioritize projects, preparation of CIP and FOP
- Provide inputs for CDP revision
    - stake holder consultations during various stages of CDP preparation
    - Inputs from different sections of society
- Confirm to JNNURM (new) guidelines and amendments if any

Assignment name: Consultancy Services for Updating the City Development Plan	Value of the contract (in current INR): Rs 50 lacs
Country: India Name of City/ Cities: Nagpur	Duration of assignment (months): 15
Name of Client: Nagpur municipal corporation	Total No of staff-months of the assignment: 12
Address: Nagpur Municipal Corporation, Mahanagar Palika Marg Civil Lines,Nagpur, Maharashtra,India 440 001	Value of the contract per city (in current INR): Rs 50 lacs
Start date (month/year): Jan 2009	Completion date (month/year): Mar 2010

Narrative description of Project:

The Nagpur Municipal Corporation (NMC) in 2006 had prepared the City Development Plan under JNNURM. The CDP of 2006 identified capital investment requirements to be made in core urban infrastructure of the city till 2011-12. The CDP of 2006 focused on investment requirements for core urban infrastructure alone. NMC has since then taken up projects under JNNURM. The Corporation as a part of its financial commitments to the JNNURM projects is expected to undertake high investments till the JNNURM plan period.

NMC in this context intended to revisit the CDP prepared in 2006 and update the capital investment requirements for the city till a planning period of 2041. Also NMC has thought it necessary to make the CDP of 2006 more comprehensive and include the sectors for which capital investment requirements were not identified. In addition, outside of the JNNURM funded projects, NMC has laid out capital investment requirements in other sectors, and proposes to undertake investments in these sectors as well. The financial capacity of the Corporation to sustain its committed investment liabilities and the projects which it pursues to take up also needed to be reviewed there by requiring an updated Financial Operating Plan.

Description of actual services provided by your staff within the assignment:

CRISIL Infrastructure Advisory has implemented the following tasks towards the updation of the Nagpur CDP in 2009:

- Prepared a white paper analyzing the NMC's existing financial sustainability
- Prepared a Capital Investment Plan looking into the current and future investment requirements for two plan periods of 2020-21 and till 2041
- Prepared a Draft City Development Plan including the Financial Operating Plan for the current and proposed investments of NMC till 2020-21
- Prepared a Final and updated City Development Plan

Assignment name: **Preparation and Revision of City Development Plans for 13 Selected Cities**	Value of the contract (in current INR): Rs. 19949518.00
Country: India Name of City/ Cities: Yamuna Nagar, Kurukshetra, Jammu, Chandigarh, Allahabad, Varanasi, Dehradun, Haridwar, Shimla, Guwahati, Gangtok, Shillong and Aizwal	Duration of assignment (months): 36
Name of Client: Ministry of Urban Development	Total No of staff-months of the assignment: 100
Address: CBUD Ministry of Urban Development Room No 134, C Wing Nirman Bhawan, Maulana Azad road, New Delhi, New Delhi, India, 110108	Value of the contract per city (in current INR):
Start date (month/year): Jul 2013	Completion date (month/year): Aug 16

Narrative description of Project:

In order to identify broader issues for intervention and areas of assistance pertaining to development of city, City Development Plans (CDPs) which are already available for most of the cities under the JnNURM is required to be revised and those who don't have it need to be freshly prepared. The end result shall depend upon in-depth understanding of urban planning issues using participatory approaches, better land management practices, modernized physical planning approaches, improved land records management, and creation of property development plans, planned transit oriented development of periurban areas etc., with reference to the CDPs. Under this Packages, MoUD aims to undertake the preparation of fresh CDP (1 city – Yamuna Nagar) and revision of CDPs (12 Cities - Kurukshetra, Jammu, Chandigarh, Allahabad, Varanasi, Dehradun, Haridwar, Shimla, Guwahati, Gangtok, Shillong, and Aizwal).

Description of actual services provided by your staff within the assignment:

The scope of work for this assignment involves revising and updating the existing city development plan. This primarily aims at preparation of a more participative and inclusive plan, taking into account the views and suggestions of all relevant stakeholders in the city. Some of the key features which should be covered in the Revised CDP are as following :

- In-depth Analysis of City Economic & Socio-Economic Indicators (e.g. GDP Contribution of the City, Population Projections, and Shift of the Labour Class Pyramid from Primary to Tertiary/ or Quinquinary etc.)
- Analysis of the Spatial City Plans – Master Plans, Development Plans, Land use Plans, Local Areas Plans, Spatial growth trends etc. and its integration with CDP formulation
- Assessment of Current Service Levels – Water Supply, Sewerage and Sanitation, Storm Water Drainage, Solid Waste Management (Benchmarking of the service levels visa-vis SLBs as prescribed by MoUD, Gap Analysis in order to cater to the projected city population, listing & prioritization of specific projects and broad cost estimates)
- Comprehensive Mobility Plan (Goals and Service Outcomes of Transportation and benchmarking of city mobility indicators against salient service level benchmarks developed by MoUD)
- Housing and Basic Services for Urban Poor (Categorization of Slums, integrated development, rehabilitation, redevelopment, construction of housing for urban poor, access to health and education etc.)
- Preservation and Rejuvenation of Water Bodies (Eviction of encroachments from the land designated for water bodies; preservation of water bodies; requirement of linking of water bodies, if any; ground water recharge and development of amusement park/ water front development)
- Urban Environment (Air, Water and Noise Pollution Levels in the city, strategy to reduce the same; preservation of wetlands etc.)
- Cultural & Heritage Conservation (Listing of Cultural and Natural Heritage, Cultural, Natural and Social Heritage Assessment; Heritage Management Plan, Physical Restoration, Adaptive Re-use etc.)
- Local Economic Development (Generation and Promotion of Local economic activity, mapping of economic activities within the ULB and its peri urban areas to enhance city's contribution in GDP)
- Disaster Prevention and Management Plan (Critical analysis of the disaster resilience of the city and its preparedness, Both type of disasters – natural and antropogenic would require to be covered)

The broad activities to be covered shall include :

- The baseline surveys and socio-economic database in the already existing CDPs. The Consultant will have to ensure that the plan is based on an extensive and thorough analysis of data and that all relevant aspects of a particular sector as per the revised toolkit have been looked into when arriving at the plan and the vision of the city. The master plan and the other city specific sectoral plans developed along with the CDP also should be considered and understood, as a whole in order to get a full picture of the planning approach of the city.
- Consultative approach. To verify and to use consultative approach (if not used earlier for the preparation of CDP) involving all the relevant stakeholders groups to create an inclusive plan. Record and analyse the outcome of discussion with relevant community members (irrespective of their caste, class and creed, particularly women, disabled and poor in the community) and other active community groups working at the community level or the ward level.
- Environmental and Social aspects, including safeguards, heritage and cultural issues. Importance and assessment of environmental and social safeguard issues with emphasis on the heritage and cultural subjects along with review of relevant studies for value assessment of the natural and cultural environment including its implications and potentials.
- Sectoral Aspect of the plan: The Consultant will reassess and re-analyse all the relevant sectors discussed in the current plan, record the achievement & The CDP have to adhere to the latest revised toolkit prepared by the MOUD for CDP preparation published on its website www.jnnurm.nic.in in Dec 2009 or later. Failure during the plan period, and cover the untouched sectors, if any as per the revised toolkit. The Consultant would also assess and narrate plans impact on the quality of life of the citizens and natural, cultural & environment resources of the city, and would focus on the fresh strategic challenges the city is expected to confront in forthcoming years
- Financial aspects: Re-assess the financial health of the ULB, and realize its potential vis-a-vis its financial sustainability to implement sectoral plans and projects, management of O&M processes and sustainenance of urban infrastructure through effective cost recovery mechanisms. The Consultant will also assess the impact of the municipal reforms that have been undertaken to improve financial sustainability of the ULB.
- CIP and FOP

The Consultant will prepare a Capital Investment Plan (CIP) which will contain the following:

- A multi-year scheduling of physical investments that determines priority investments based on the gap analysis.
- An estimate of the level of investment needed to implement the revised CDP along with options and strategies for financing it.

A Financial Operating Plan (FOP) will basically contain:

- An outline of the revenues and expenses over the past years. (at least 5 years) A forecasted financial plan based on the past and recent trends, with well-defined goals for specific expenses. This will help the ULBs in mobilizing various financial resources to implement identified projects.

Therefore, the revised CDP shall essentially provide a comprehensive medium term strategy, based on which the concerned ULB will be able to access funds under central / state government schemes as well as from own and other sources based on priority actions and projects identified in the CDP. Post the assessment, the Consultant shall arrive at an updated city development plan which may re-emphasize or reinforce the needs spelt out in the existing plan.

Assignment name: Consulting Services for Assessment of Data Management and Service Level Benchmarking (SLB) reporting Capacities of Focus Cities and States and Developing Improvement Mechanisms	Value of the contract (in current INR): Rs.4587097.00/-
Country: India Name of City / Cities: New Delhi	Duration of assignment (months): 12
Name of Client: Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ)	Total No of staff-months of the assignment: 20
Address: GTZ Office India, B5/1 , Safdarjung Enclave, New Delhi, New Delhi, New Delhi, India	Value of the contract per city (in current INR): Rs.4587097.00/-
Start date (month/year): Dec 2012	Completion date (month/year): Dec 2013
Narrative description of Project: The project is entirely focused on the data management practices and procedures. The objective of the assignment is to support the improvement in data management capacities (GIS & MIS) and SLB reporting in select GIZ supported cities and states. Many of the efforts on policy and program front have not achieved success due to the fact that the correct on-ground situation could not be known during the analysis phase. This is due to lack of reliable datasets available with the utilities and practice of providing least attention in data generation, maintenance and transfer. Hence this assignment is an attempt in designing a system for the selected cities for efficient data management. The assignment will not only focus on service level benchmarking par say but it will be an over-arching design for integration of various data sources such as census data, Rajiv Awas Yojna related data, various numerical data, maps, surveys etc. The idea will be to have a single reliable data for any indicator which will be used by any number of organizations operating in the city. It will also include design of practices for data transfer from various organizations to the utility to have the correct picture of sector service levels. Towards the end, it will propose the practices for institutionalization of data management systems which will ultimately help in improving the service levels by knowing correctly the issues prevailing in the city.	
Description of actual services provided by your staff within the assignment: The assignment has the following tasks involved: • Review the current data management systems and proposed improvements at selected cities and states • Review the processes of deriving and reporting SLBs in the cities and states • Develop mechanisms and protocols for data generation, management and updation • Develop a mechanism for computing and reporting SLBs Roadmap for institutionalising data management and SLBs	

Assignment name: Rapid Baseline Assessment of Urban Management Capacity in 30 Urban Local Bodies	Value of the contract (in current INR): Rs.8338236.00/-
Country: India Name of City / Cities: 30 ULBs across 21 states in India	Duration of assignment (months): 9
Name of Client: Ministry of Urban Development	Total No of staff-months of the assignment: NA
Address: CBUD Ministry of Urban Development Room No 134, C Wing Nirman Bhawan, Maulana Azad road, New Delhi, New Delhi, India, 110108	Value of the contract per city (in current INR): Rs.8338236.00/-
Start date (month/year): Mar 2013	Completion date (month/year): Dec 2013

Narrative description of Project:

In order to give an impetus to reforms under JNNURM, the MoUD and Ministry of Housing and Urban Poverty Alleviation (MoHUPA) have launched a new project called “Capacity Building of Urban Development” (CBUD). The project has been launched with support from The World Bank (WB). The GoI has received the financing from the WB /International Development Association (IDA) towards CBUD project.

In order to provide a baseline for project implementation & too broadly identify the capacity gaps and need for training needs assessment/ training in different functional areas identified under the project, MoUD has decided to initiate the whole process with a Rapid Assessment of the status of the ULBs selected for participation in the CBUD project. MoUD has allocated part of these proceeds for this study under CBUD project.

This assignment aims to cut across the four major interrelated aspects mentioned below:

- Municipal Financial Management;
- Municipal Governance;
- Urban Planning and Land use; and
- Urban Service Delivery.

Description of actual services provided by your staff within the assignment:

- Secondary data collection – Desk Research: Information and data downloading for 30 ULBs has been initiated from various sources such as ULB website, JNNURM website. In fact, some of the ULBs data collection has been collected and completed.
- Literature review on the urban development and capacity building issues across the nation has been completed
- The questionnaire has been designed and it has been reviewed by internal sector experts as well as senior team members.
- The communication letters have been prepared. This would be communicated to ULBs soon and accordingly we shall visit the ULBs
- Based on the geographical location of the ULBs, group of ULBs have been clustered such as south, east, north, west and north east ULBs. In addition, the team is in place; and would be ready to visit to ULB as and when it is required
- We are planning to start the ULB visits from mid of 3rd week of April 2013. This may start little early as well.

Assignment name: All India Cold storage capacity and technology survey for India cold chain	Value of the contract (in current INR): 1,80,10,000.00
Country: INDIA Name of City / Cities: Andaman And Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal	Duration of assignment (months): 1 Year
Name of Client: National Horticulture Board, Ministry of Agriculture (NHB)	Total No of staff-months of the assignment: 120 Staff – 12 Month
Address: National Horticulture Board, Ministry of Agriculture, Govt. of India, 85, Institutional Area, Sector - 18,Gurgaon- 122015	Value of the contract per city (in current INR): Pan India - Total value = 1,80,100,00.00
Start date (month/year): March 2013	Completion date (month/year): February 2014

Narrative description of Project:

India is the largest producer of fruits and second largest producer of vegetables in the world. In spite of this per capita availability of fruits and vegetables is quite low due to lack of proper facilities of storage & transportation. It is estimated that between 25 % and 30 % of fruits and vegetables are wasted. Additional loss takes place due to deterioration in the quality of fresh produce by the time it reaches the end consumer. The development of cold storage industry has therefore an important role to play in reducing the wastages of the perishable commodities and thus providing remunerative prices to the farmers as well as better quality fruits and vegetables to the consumer.

The Govt., has now decided to conduct a comprehensive all India study, through a reputed private organization with adequate infrastructure, technology and domain to get primary data on the capacity, technology and common practices used at cold stores.

This study will gather primary base line data on the following aspects of cold chain infrastructure development and its management viz.,

Declared Installed Capacity (Number and Capacity as declared on records)
- Storage capacity
- Manpower capacity
- Refrigeration capacity

Usability (whether existing Infra is usable as per declared intent)
- Product matrix
- Productivity matrix
- Utilization of space
- Suitability of equipment
- Power Source and average cost of power
- Availability of trained human resources

Accessibility (whether easily accessible as per supply chain norms)
- Distance from highways, railways and ports
- Traffic handling capacity (space for truck movement)

Supply Chain integration (integration with other post harvest activities)
- Preconditioning zones – Pre-coolers, chillers
- Transit storage – buffer store capacity, adjoining or separate, mobile or static cooler
- Mother storage – linkage, outsourced or in-house
- Presence of Association and Affiliations to give voice and business

Technology
- Identify the type of technology used for the cooling equipment, size and capacity
- Equipment type, model, cooling range and supplier details.
- Maintenance practices and
- Power sources

The survey is interactive with the facility ownership and management teams and is intended to collate data and responses to pre-approved questionnaires.

Besides listing ownership patterns and base identifying data, it is also leading to catalogue the existing status of cold chain development in the country and lead to data evaluation in categorized in terms of-
Location-wise development status

- Capacity status in numbers and volume.
- Temperature Categorization
- Technology basics as deployed
- Business model categorization
- Storage type (as per NHB guidelines – single commodity, multi-commodity, special category).

Operational Capacity-wise development status

- Cooling capacity in kW/BTU
- Operational capability (compartmentalization, handling, docking)
- Contingency handling capability (AMC, spare parts)
- Human resources employed

Energy use and Technology development status

- ODU Refrigeration categorization
- IDU heat exchange coil and systems in use
- Energy consumption differentiation and pattern
- Breakdown days and loss to operating days matrix

Service type and integration status

- Matrix of storage service types provided
- Matrix of integration options provided
- Suitability for value addition to produce
- Operational integration and scope for EDI / IT based integration
- Cross-functionality matrix

Description of actual services provided by your staff within the assignment:

- Building the appropriate research query points, accessing that information/data procurement, building checks and verification on data collection, analyzing & processing procured information to the best of the knowledge/understanding.
- The data procurement and checks were done by interviews with relevant people and using technology to validate the information.
- An appropriate healthy mix of research approaches were utilized to create the knowledge-base:
  - Interview of key decision makers and experts on suitability and viability of questionnaire.
  - Hansa Research deployed and leveraged network of research professionals around the country for conducting field study.
  - Assessment of infrastructure developments based on published information from NHB, FCAOI, NABARD etc.
  - Regular interactions with NHB designees with online feedback mechanism of the survey status.
- In the instances where appointments were not immediately available, repeat visits were made. Out of the repeat visits made, an average of 4.5 attempts was undertaken. This is more than the minimum of 3 repeat calls as per the original project proposal.
- In the instances that no cold store was located at the address, a photograph of the location was recorded. In the cases where the address was not traceable, a process that included checks at the local post office, police station and municipal or other local authority was attempted before listing a database item as non-traceable.
- For each touch point (database address), the responses underwent systemic checks which included random recording and geo-tagged photographs.
- A web link was provided to NHB to enable daily checks of the status of the work done for enabling transparency and better coordination of efforts.

Assignment name: On Board Customer Satisfaction survey for various Premium / Mail / Express Trains	Value of the contract (in current INR): 27,09,123
Country: INDIA Name of City/ Cities: Pan India	Duration of assignment (months): 24 Month
Name of Client: Indian Railway Catering & Tourism Corporation Ltd.	Total No of staff-months of the assignment: 140 Staff – 12 Month
Address: IRCTC, 11th Floor, Statesman House, Barakhamba Road, New Delhi – 110001	Value of the contract per city (in current INR): Pan India - Total value = 27,09,123.00
Start date (month/year): June 2014	Completion date (month/year): March 2016
Narrative description of Project: Catering Services is being provided in various Rajdhani, Shatabdi, Duranto & other Mail/Express trains and various Food Plazas / Fast Food Units, NRC Units, Premium trains and Food Pick up Points over IRCTC network. Customer Satisfaction Survey is conducted at these network.	
Description of actual services provided by your staff within the assignment: • Questionnaire Design and formatting • Data collection • Data Punching • Data Cleaning and formatting • Data QC • Data Delivery • Study findings and report	

9. Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria	Number and Name of Cities
1.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Consortium Firm)	Pan India • Citizen Satisfaction Survey for Pune Municipal Corporation – 3 Urban Centres: Pune, Nagpur and Junagarh • Inflation Expectation Survey for Household in 18 cities - Ahmedabad, Bangalore, Bhopal, Bhubaneshwar, Chandigarh, Chennai, Delhi, Guwahati, Hyderabad, Jaipur, Kolkata , Lucknow, Mumbai, Nagpur, Patna, Raipur, Ranchi, & Thiruvananthapuram • Consumer Confidence Survey in 18 cities - Ahmedabad, Bangalore, Bhopal, Bhubaneshwar, Chandigarh, Chennai, Delhi, Guwahati, Hyderabad, Jaipur, Kolkata , Lucknow, Mumbai, Nagpur, Patna, Raipur, Ranchi, & Thiruvananthapuram • Industrial Outlook Survey - All India Data base of manufacturing companies • All India Cold storage capacity and technology survey for India cold chain in Andaman And Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal • On Board Customer Satisfaction survey for various Premium / Mail / Express Trains – Pan India • Opinion Poll and Exit Poll - in 373 Parliamentary constituencies in India • IOCL Survey – across 1470 retail outlets pan India • Indian Readership Survey (IRS) - across 742 Towns and 3100 Villages across the country • Confectionary Track Survey – in Delhi, Lucknow, Chennai, Bangalore, Mumbai, Kolkata, Hyderabad, Coimbatore, Ernakulum, Kolhapur, Madurai, Nashik, Trichy

10. Appendix 6A: Format of Assignment Details of the Applicant

Assignment name: Citizen Satisfaction Survey for Pune	Value of the contract (in current INR): 9,70,000
Country: INDIA Name of City/ Cities: 3 Centre Pune, Nagpur & Junagadh	Duration of assignment (months): 2.5 months
Name of Client: CRISIL for Pune Municipal Corporation	Total No of staff-months of the assignment: 40 Staff – 2.5 Months
Address: CRISIL HOUSE Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076	Value of the contract per city (in current INR): 400,000; 2,70,00 & 300,000
Start date (month/year): January 2006	Completion date (month/year): March 2006

Narrative description of Project:

The survey was carried out for the Municipal Corporation of Pune in the three cities of Pune, Nagpur and Junagarh. The key objectives of the survey were as follows:

- To study the satisfaction level of the residents in the city of Pune with respect to the municipal services
- Study to be conducted in the municipal limits of Pune Municipal Corporation
- To identify the satisfaction level of the residents of Pune with respect to the following municipal services
  - ➢ Water supply
  - ➢ Roads
  - ➢ Garbage collection
  - ➢ Gardens
- To identify the perception of the needs of the residents on the above mentioned services
- To identify the likes and dislikes about Pune as a city
- To identify what development w.r.t to infrastructure, respondents would like to see in Pune in the next 5 years

Description of actual services provided by your staff within the assignment:

The consultant was involved in carrying out the following activities in the due course of the assignment:

- Designing of the study
- Designing of the questionnaire
- Data collection
- Data Analysis
- Interpretation of the data
- Writing report
- Presentation of the findings

<table>
<tr><td>Assignment name:
Inflation Expectation Survey for Household</td><td>Value of the contract (in current INR):
1,29,36,000.00 (3 Years)</td></tr>
<tr><td>Country: INDIA
Name of City/ Cities: 18 Centres
Ahmedabad, Bangalore, Bhopal, Bhubaneshwar, Chandigarh,Chennai,Delhi,Guwahati,Hyderabad, Jaipur,Kolkata,Lucknow,Mumbai,Nagpur,Patna, Raipur, Ranchi, & Thiruvananthapuram</td><td>Duration of assignment (months):
3 Years (Bi-Monthly)</td></tr>
<tr><td>Name of Client:
Reserve Bank of India.</td><td>Total No of staff-months of the assignment:
130 Staff – 18 Months</td></tr>
<tr><td>Address:
Division of Household Surveys, C - 8, 6th floor, Department of Statistics and Information Management,
Reserve Bank of India,
Bandra-Kurla Complex, Mumbai – 400051</td><td>Value of the contract per city (in current INR):
4 Metro – Each Metro city – 60500 * 4 = 242000
Other 14 Cities - Each City – 30250 * 14 = 423500
Total value = 39,93,000.00 (Per year 6 rounds)</td></tr>
<tr><td>Start date (month/year): September 2013</td><td>Completion date (month/year): June 2019</td></tr>
<tr><td colspan="2">Narrative description of Project:
A household survey was carried out in 18 selected urban centers to assess inflation expectation.
• Price stability is one of the prime objectives of monetary policy. Both theoretical considerations and empirical evidence suggest that inflation expectations are a crucial ingredient for monetary policy.
• Measures of inflation expectations are therefore important to central banks to achieve their mandate towards price stability. In order to achieve their mandate for low and stable inflation, central banks seek to gain knowledge about the public expectations for inflation, in addition to the financial market based measures.
• Survey-based approach is one of the several ways of estimating inflation expectations.
• The survey measures of inflation expectations are important to policy makers and researchers because they provide data on an otherwise unobservable variable.</td></tr>
<tr><td colspan="2">Description of actual services provided by your staff within the assignment:
For the 18 selected cities, the following activities were undertaken.
• Questionnaire Scripting for CAPI
• Data collection
• Data Cleaning and formatting
• Data QC and Voice scrutiny
• Data Delivery</td></tr>
</table>

Assignment name: Consumer Confidence Survey	Value of the contract (in current INR): 10,59,4800.00 (3 years)
Country: INDIA Name of City/ Cities: 18 Centres Ahmedabad, Bangalore, Bhopal, Bhubaneshwar, Chandigarh,Chennai,Delhi,Guwahati,Hyderabad, Jaipur,Kolkata,Lucknow,Mumbai,Nagpur,Patna, Raipur, Ranchi, & Thiruvananthapuram	Duration of assignment (months): 3 Years (Bi-Monthly)
Name of Client: Reserve Bank of India.	Total No of staff-months of the assignment: 80 Staff – 18 Month
Address: Division of Household Surveys, C - 8, 6th floor, Department of Statistics and Information Management, Reserve Bank of India, Bandra-Kurla Complex, Mumbai – 400051	Value of the contract per city (in current INR): 6 Metro – Each Metro city – 588600 (Per round) 6 round in a Year = 35,31,600
Start date (month/year): September 2016	Completion date (month/year): June 2019

Narrative description of Project:

Consumer confidence is a key driver of economic growth.

Consumer Confidence Survey provides information on consumer sentiments based on economic and financial situation of households.

It is widely considered as an economic indicator of household consumption expenditure.

Consumers tend to increase consumption when they feel confident about the current and future economic situation of the country and their own financial situation.

The change in consumer confidence has the potential to affect real economic activities through changes in business sentiments.

In order to make effective decisions pertaining to future economic conditions, policymakers, businesses, and investors need an accurate and reliable assessment of consumer confidence in India.

Description of actual services provided by your staff within the assignment:

- Questionnaire Scripting for CAPI
- Data collection
- Data Cleaning and formatting
- Data QC and Voice scrutiny
- Data Delivery.

Assignment name: Industrial Outlook Survey	Value of the contract (in current INR): 43,44,000 (3 Years)
Country: INDIA Name of City/ Cities: All India Data base of manufacturing companies	Duration of assignment (months): 3 Years (Quarterly)
Name of Client: Reserve Bank of India.	Total No of staff-months of the assignment: 10 Staff – 18 Month
Address: Division of Household Surveys, C - 8, 6th floor, Department of Statistics and Information Management, Reserve Bank of India, Bandra-Kurla Complex, Mumbai – 400051	Value of the contract per city (in current INR): Pan India – 2,40,500 (Per round)
Start date (month/year): September 2016	Completion date (month/year): June 2019

Narrative description of Project:

The Survey gives insights into the perception of the private corporate sector engaged in manufacturing activities about their own performance and prospects.

The survey covers the assessment of business sentiments for the current quarter and expectations for the ensuing quarter are based on qualitative responses on 23 major indicators covering overall business situation, financial situation, demand indicators, price and employment expectations, profit margins, etc.

This survey collects information from senior management personnel or finance heads of the companies.

Description of actual services provided by your staff within the assignment:

- Questionnaire Scripting for CAPI
- Data collection
- Data Cleaning and formatting
- Data QC and Voice scrutiny
- Data Delivery

Assignment name: All India Cold storage capacity and technology survey for India cold chain	Value of the contract (in current INR): 1,80,10,000.00
Country: INDIA Name of States: Andaman And Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal	Duration of assignment (months): 1 Year
Name of Client: National Horticulture Board, Ministry of Agriculture (NHB)	Total No of staff-months of the assignment: 120 Staff – 12 Month
Address: National Horticulture Board, Ministry of Agriculture, Govt. of India, 85, Institutional Area, Sector - 18,Gurgaon- 122015	Value of the contract per city (in current INR): Pan India - Total value = 1,80,100,00.00
Start date (month/year): March 2013	Completion date (month/year): February 2014

Narrative description of Project:

India is the largest producer of fruits and second largest producer of vegetables in the world. In spite of this per capita availability of fruits and vegetables is quite low due to lack of proper facilities of storage & transportation. It is estimated that between 25 % and 30 % of fruits and vegetables are wasted. Additional loss takes place due to deterioration in the quality of fresh produce by the time it reaches the end consumer. The development of cold storage industry has therefore an important role to play in reducing the wastages of the perishable commodities and thus providing remunerative prices to the farmers as well as better quality fruits and vegetables to the consumer.

The Govt., has now decided to conduct a comprehensive all India study, through a reputed private organization with adequate infrastructure, technology and domain to get primary data on the capacity, technology and common practices used at cold stores.

This study will gather primary base line data on the following aspects of cold chain infrastructure development and its management viz.,

Declared Installed Capacity (Number and Capacity as declared on records)

- Storage capacity
- Manpower capacity
- Refrigeration capacity

Usability (whether existing Infra is usable as per declared intent)

- Product matrix
- Productivity matrix
- Utilization of space
- Suitability of equipment
- Power Source and average cost of power
- Availability of trained human resources

Accessibility (whether easily accessible as per supply chain norms)

- Distance from highways, railways and ports
- Traffic handling capacity (space for truck movement)

Supply Chain integration (integration with other post harvest activities)

- Preconditioning zones – Pre-coolers, chillers
- Transit storage – buffer store capacity, adjoining or separate, mobile or static cooler
- Mother storage – linkage, outsourced or in-house
- Presence of Association and Affiliations to give voice and business

Technology

- Identify the type of technology used for the cooling equipment, size and capacity
- Equipment type, model, cooling range and supplier details.
- Maintenance practices and
- Power sources

The survey is interactive with the facility ownership and management teams and is intended to collate data and responses to pre-approved questionnaires.

Besides listing ownership patterns and base identifying data, it is also leading to catalogue the existing status of cold chain development in the country and lead to data evaluation in categorized in terms of-

Location-wise development status
- Capacity status in numbers and volume.
- Temperature Categorization
- Technology basics as deployed
- Business model categorization
- Storage type (as per NHB guidelines – single commodity, multi-commodity, special category).

Operational Capacity-wise development status
- Cooling capacity in kW/BTU
- Operational capability (compartmentalization, handling, docking)
- Contingency handling capability (AMC, spare parts)
- Human resources employed

Energy use and Technology development status
- ODU Refrigeration categorization
- IDU heat exchange coil and systems in use
- Energy consumption differentiation and pattern
- Breakdown days and loss to operating days matrix

Service type and integration status
- Matrix of storage service types provided
- Matrix of integration options provided
- Suitability for value addition to produce
- Operational integration and scope for EDI / IT based integration
- Cross-functionality matrix

Description of actual services provided by your staff within the assignment:

- Building the appropriate research query points, accessing that information/data procurement, building checks and verification on data collection, analyzing & processing procured information to the best of the knowledge/understanding.
- The data procurement and checks were done by interviews with relevant people and using technology to validate the information.
- An appropriate healthy mix of research approaches were utilized to create the knowledge-base:
  - Interview of key decision makers and experts on suitability and viability of questionnaire.
  - Hansa Research deployed and leveraged network of research professionals around the country for conducting field study.
  - Assessment of infrastructure developments based on published information from NHB, FCAOI, NABARD etc.
  - Regular interactions with NHB designees with online feedback mechanism of the survey status.
- In the instances where appointments were not immediately available, repeat visits were made. Out of the repeat visits made, an average of 4.5 attempts was undertaken. This is more than the minimum of 3 repeat calls as per the original project proposal.
- In the instances that no cold store was located at the address, a photograph of the location was recorded. In the cases where the address was not traceable, a process that included checks at the local post office, police station and municipal or other local authority was attempted before listing a database item as non-traceable.
- For each touch point (database address), the responses underwent systemic checks which included random recording and geo-tagged photographs.
- A web link was provided to NHB to enable daily checks of the status of the work done for enabling transparency and better coordination of efforts.

Assignment name: On Board Customer Satisfaction survey for various Premium / Mail / Express Trains	Value of the contract (in current INR): 27,09,123
Country: INDIA Name of States: Pan India	Duration of assignment (months): 24 Month
Name of Client: Indian Railway Catering & Tourism Corporation Ltd.	Total No of staff-months of the assignment: 140 Staff – 12 Month
Address: IRCTC, 11th Floor, Statesman House, Barakhamba Road, New Delhi – 110001	Value of the contract per city (in current INR): Pan India - Total value = 27,09,123.00
Start date (month/year): June 2014	Completion date (month/year): March 2016
Narrative description of Project: Catering Services is being provided in various Rajdhani, Shatabdi, Duranto & other Mail/Express trains and various Food Plazas / Fast Food Units, NRC Units, Premium trains and Food Pick up Points over IRCTC network. Customer Satisfaction Survey is conducted at these network.	
Description of actual services provided by your staff within the assignment: • Questionnaire Design and formatting • Data collection • Data Punching • Data Cleaning and formatting • Data QC • Data Delivery • Study findings and report	

Assignment name: Opinion Poll and Exit Poll	Value of the contract (in current INR): 3,03,00,000
Country: INDIA Name of States: 373 Parliamentary constituencies in India	Duration of assignment (months): 5 Month
Name of Client: NDTV	Total No of staff-months of the assignment: 50 Staff – 5 Month
Address: IRCTC, 11th Floor, Statesman House, Barakhamba Road, New Delhi – 110001	Value of the contract per city (in current INR): Pan India - Total value = INR 3,03,00,000
Start date (month/year): Jan 2014	Completion date (month/year): May 2014
Narrative description of Project: Opinion Poll and Exit Poll in 373 Parliamentary constituencies in India	
Description of actual services provided by your staff within the assignment: • Study design, • Sampling of Parliamentary constituency • Data collection • Data punching • Data analysis • Reporting and presentation	

Assignment name: IOCL Survey	Value of the contract (in current INR): 27,50,000
Country: INDIA Name of States:	Duration of assignment (months): 4 Month
Name of Client: Indian Oil	Total No of staff-months of the assignment: 150 Staff – 4 Month
Address: Indian Oil G-9, Ali Yavar Jung Marg, Bandra (E), Mumbai 400051	Value of the contract per city (in current INR): Pan India - Total value = 27,50,000
Start date (month/year): May 2016	Completion date (month/year): September 2014

Narrative description of Project:

Indian Oil has been successfully meeting the energy demands of India for more than five decades. Indian Oil's business interests overlap the entire hydrocarbon value-chain—from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil. Indian Oil accounts for nearly half of India's petroleum products market share, with more than 24000 Retail Outlets spread over the entire country, of which more than 11,500 ROs have been upgraded over the last few years by provision/amendment of various facilities at an RO.

The upgrade was mainly to improve the “Look & Feel” of various facilities at the RO, and the RO itself.

In addition to this “Look & Feel” Upgrade, skill development of Customer Attendants at ROs was also emphasized upon by imparting the “Chetna” Training program.

These efforts are aimed to ultimately improve the service delivery to end consumers, and also to improve the perception of Indian Oil.

Description of actual services provided by your staff within the assignment:

Facility Audit

- Physical Verification by Interviewer (Checklist)
- Photographic Evaluation for Quality of Facilities

Respondent Surveys

- Dealer Survey – Aimed at understanding dealer views on Look & Feel, Chetna Impact and Customer Feedback
- Customer Survey – To evaluate the Look & Feel and Chetna Impact

Assessment of ‘Chetna’

- Interviewer verification of CA Activities (Checklist)
- Customer Attendant Survey – Recall of Chetna and Impact

Face to Face interviews for all segments were conducted based on CAPI format

- The ROs to be visited by Interviewer were pre-decided by random sampling (and approved by Indian Oil). The list of 1470 ROs was shared with the interviewers to create the most optimum field travel plan to cover maximum number of ROs in minimum time
- Each Interviewer has visited a different RO (pre-selected by Random Sampling) every day of fieldwork
- The Interviewer was advised to finish the Dealer, Customer Attendant and Customer Interviews in one manday. The Interviewer Observation Checklist and the Photograph Checklist were also fulfilled the same day by the interviewer

Data Analysis

- Reporting & presentation on the findings of the study to IOCL

Assignment name: Indian Readership Survey (IRS)	Value of the contract (in current INR): 11.19 Cr
Country: INDIA Name of City/ Cities: 742 Towns and 3100 Villages across the country	Duration of assignment (months): Quarterly survey conducted from 2003 to 2012
Name of Client: Market Research Users Council	Total No of staff-months of the assignment: 560 Staff – 12 Months
Address: 128 T V Industrial Estate, S K Ahire Marg, Worli Mumbai – 400030	Value of the contract per city (in current INR): 11.19 Cr
Start date (month/year): January 2012	Completion date (month/year): December 2012
Narrative description of Project: To Gauge the readership of Newspapers, Magazines, and brand consumption of FMCG, Durables and Farm equipment's in rural areas.	
Description of actual services provided by your staff within the assignment: • Questionnaire designing, • Data collection • Data Cleaning and formatting • Data QC • Data punching, • Data analysis, • Quarterly reports, • Menu driven user friendly software to use the data	

Assignment name: Confectionary Track	Value of the contract (in current INR): 70.27 Lakh
Country: INDIA Name of City/ Cities: Delhi, Lucknow, Chennai, Bangalore, Mumbai, Kolkata, Hyderabad, Coimbatore, Ernakulum, Kolhapur, Madurai, Nashik, Trichy	Duration of assignment (months): Annual Survey (weekly track)
Name of Client: Millward Brown Market Research Services India Pvt. Ltd	Total No of staff-months of the assignment: 78 Staff – 12 Months
Address: 202-A, Leela Business Park, Andheri Kurla Road Andheri East, Mumbai 400059 India	Value of the contract per city (in current INR): Pan India – 2,40,500 (Per round)
Start date (month/year): September 2016	Completion date (month/year): June 2019
Narrative description of Project: To gather information on consumption of confectionery item and track the advertisement of various brand. To check the brand health of the survey for the client brand vis a vis the competition on a weekly basis Sample size covered – weekly sample of 700 across the 13 centres	
Description of actual services provided by your staff within the assignment: • Questionnaire Scripting for CAPI • Data collection • Data Cleaning and formatting • Data QC and Voice scrutiny • Data Delivery	

11. Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	Criteria	Number and Name of Cities
1.	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. (Lead firm)	38 cities • Preparation of Smart City Proposal for Assisting Solapur city to Participate in the Smart Cities Challenge • Preparation of Smart City Proposal for assisting Pimpri Chinchwad to participate in the Smart Cities Challenge • Selection of Consulting Services for providing Technical Assistance to Selected Cities in generating revenue through Value Capture Financing Tools for Smart City Development for Visakhapatnam • Capability Building for Urban Development Selection of Consulting Services for Improvement in Property Tax Collection for Pune Smart City Development Corporation • Selection of Consulting Services for Municipal Tax and Fee Improvement- Improvement in property Tax Collections for Panaji Smart City • JICA assisted Consultancy Services for City Sanitation Plan (CSP) for Mumbai and Lucknow • Rapid Baseline Assessment of Urban Management Capacity in 30 Urban Local Bodies – Panaji, Gangtok, Chhindwada, Shillong, Kurukshetra, Bharuch, Shimla, Puri, Haridwar, Dewas, Aizawl, Yamunanagar, Kollam, Udaipur, Jammu, Siliguri, Dehradun, Cuttack, Guntur, Hubli, Solapur, Chandigarh, Guwahati, Raipur, Jabalpur, Ranchi, Varanasi, Allahabad, Vishakhapatnam, Nagpur • Technical assistance in implementation of urban reforms and projects under JNNURM for Pimpri-Chinchwad Municipal Corporation
2.	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. (Consortium partner 1)	Pan India • Citizen Satisfaction Survey for Pune - Pune, Nagpur & Junagadh • IOCL Survey – across 1470 retail outlets; Pan India

12. Appendix 7A: Format of Assignment Details of the Applicant

Assignment name: Preparation of Smart City Proposal for Assisting Solapur city to Participate in the Smart Cities Challenge	Value of the contract (in current INR): Rs. 14754450 /-
Country: India Name of City / Cities: Solapur	Duration of assignment (months): 4
Name of Client: Ministry of Urban Development	Total No of staff-months of the assignment: 20
Address: CBUD Ministry of Urban Development Room No 134, C Wing Nirman Bhawan, Maulana Azad road, New Delhi, New Delhi, India, 110108	Value of the contract per city (in current INR): Solapur – Rs. 14754450
Start date (month/year): Sep 2015	Completion date (month/year): Dec 2015
Narrative description of Project: The Ministry of Urban Development has shortlisted 98 cities from all across the country based on the credibility of past project implementations and pro-activeness in communicating with the residents of the cities. These 98 cities had to prepare 'Smart City Proposal (SCP)' to participate in the nation-wide challenge to obtain funds from the central and state government to develop as 'smart city'. These potential smart cities are entitled to receive Rs. 500 crores from the central government, Rs. 250 crores from the respective state governments and the ULB share in the project implementation is another Rs. 250 crore. Under the smart cities mission, these cities will have to create a SPV for the funds disbursements and project implementation once approved by the central government.	
Description of actual services provided by your staff within the assignment: • Under the smart city proposal preparation, CRIS was involved in the documentation of city profile. This included operational efficiency of the ULB, transportation situation, basic service delivery, administrative efficiency etc. • Stakeholders' consultation was one of the key components in the process. In this, we conducted meetings at various locations of the project cities, with various focus groups • Selection of an area based on the need of the city and stakeholder consultation outcomes. A plan has been prepared for the area and further detailed out at various stages • IT based solutions have been provided for all the cities including database management, ICT based solid waste management, automation of water supply systems, safety measures etc.	

Assignment name: Preparation of Smart City Proposal for assisting Pimpri Chinchwad to participate in the Smart Cities Challenge	Value of the contract (in current INR): Rs. 5500000/-
Country: India Name of City / Cities: Pimpri Chinchwad	Duration of assignment (months): Ongoing
Name of Client: Ministry of Urban Development	Total No of staff-months of the assignment: 20
Address: CBUD Ministry of Urban Development Room No 134, C Wing Nirman Bhawan, Maulana Azad road, New Delhi, New Delhi, India, 110108	Value of the contract per city (in current INR): Pimpri Chinchwad – Rs. 5500000
Start date (month/year): Feb 2017	Completion date (month/year): Ongoing
Narrative description of Project: The Ministry of Urban Development has shortlisted 98 cities from all across the country based on the credibility of past project implementations and pro-activeness in communicating with the residents of the cities. These 98 cities had to prepare ‘Smart City Proposal (SCP)’ to participate in the nation-wide challenge to obtain funds from the central and state government to develop as ‘smart city’. These potential smart cities are entitled to receive Rs. 500 crores from the central government, Rs. 250 crores from the respective state governments and the ULB share in the project implementation is another Rs. 250 crore. Under the smart cities mission, these cities will have to create a SPV for the funds disbursements and project implementation once approved by the central government.	
Description of actual services provided by your staff within the assignment: • Under the smart city proposal preparation, CRIS was involved in the documentation of city profile. This included operational efficiency of the ULB, transportation situation, basic service delivery, administrative efficiency etc. • Stakeholders’ consultation was one of the key components in the process. In this, we conducted meetings at various locations of the project cities, with various focus groups • Selection of an area based on the need of the city and stakeholder consultation outcomes. A plan has been prepared for the area and further detailed out at various stages • IT based solutions have been provided for all the cities including database management, ICT based solid waste management, automation of water supply systems, safety measures etc.	

Assignment name: Selection of Consulting Services for providing Technical Assistance to Selected Cities in generating revenue through Value Capture Financing Tools for Smart City Development Visakhapatnam	Value of the contract (in current INR): Rs. 7126500/-
Country: India Name of City / Cities: Visakhapatnam	Duration of assignment (months): 12
Name of Client: Greater Visakhapatnam Smart City Corporation Limited, India	Total No of staff-months of the assignment: 24
Address: Room no - 306, Greater Visakhapatnam Smart city Corporation Ltd, O/o Greater Visakhapatnam Municipal Corporation, Visakhapatnam, Andhra Pradesh, India, 530003	Value of the contract per city (in current INR): Rs. 71,26,500/-
Start date (month/year): Feb 2017	Completion date (month/year): Ongoing

Narrative description of Project:

The objective of this assignment is to provide technical assistance to Smart Cities for developing a Value Capture Finance (VCF) framework (including procedural, legal and institutional aspects), so as to effectively capture the additional land/ property value being generated through public investments made as a part of the implementation of the Smart Cities Mission.

Description of actual services provided by your staff within the assignment:

CRIS is involved in performing the following tasks:

- Literature review of land based fiscal tools by thoroughly studying the MoUD report on LBFT and other reports.
- Evaluate the current Value Capture Infrastructure in the state by assessing the existing VCF tools in the State and identify areas where VCF can be applied.
- Provide technical assistance to the state and its ULB to customize suitable VCF methods. This will include preparation of legal/executive orders, amendments to regulations/rules, contract agreement etc. to enable quick roll-out of VCF methods.
- Evaluate land based fiscal tools including urban land tax, land value increment tax, development charges, and indirect fiscal tools like Transfer of Development Rights (TDR), premium or chargeable FSI and charges for regularization of unauthorized development.
- Conduct cost benefit analysis for each tool in terms of existing status, potential value, efficiency, equity, adequacy, manageability, legal feasibility and timelines.
- Formulate a value capture financing framework to operationalize recovery of the share of the increment in land valuation caused due to change in public policy or construction of a public asset.
- Provide handholding support to the ULB including legal and contractual support for implementation and effective roll out of the VCF Framework.
- Recommend VCF Methods to be incorporated in the DPRs and FOPs of proposed smart city projects.

Assignment name: Capability Building for Urban Development Selection of Consulting Services for Improvement in Property Tax Collection	Value of the contract (in current INR): Rs. 8950500/-
Country: India Name of City / Cities: Pune	Duration of assignment (months): 12
Name of Client: Pune Smart City Development Corporation	Total No of staff-months of the assignment: 36
Address: Office of the Deputy Municipal Commissioner (Special) and Chief Coordinator Smart City, 2nd floor, Pune Municipal Corporation, Shivaji Nagar, Pune, Maharashtra, India - 411005	Value of the contract per city (in current INR): Rs. 8950500/-
Start date (month/year): Feb 2017	Completion date (month/year): Ongoing

Narrative description of Project:

The objective of the consulting engagement is to improve the revenue of Pune from Property Tax by carrying out the following:

a) Identifying under-assessed and un-assessed properties so as to increase coverage to 100%
b) Computerization of Property Tax records and Tax management system, display Demand Collection Book on the Web, putting in place an on-line system for assessment and collection of Property Tax, and
c) Recommend improvements in existing administrative system to achieve at least 100% in Property Tax collection along with a grievances redressal system.
d) Study report on shifting from existing ready-recknor based assessment to capital value based assessment

Description of actual services provided by your staff within the assignment:

CRIS is involved in:

Task I - Widening of the tax base by identification of un-assessed and under-assessed properties through cross verification with other data bases and bringing them under the Property Tax net so as to achieve upto 100% coverage.

Task II – Preparation of A modern computerised property tax data base on existing e-governance platforms in States/PMCs and GIS interface; display of assessment records and Demand and Collection registers on Website; Introduction of computerized on-line system for self-assessment/assessment and payment with multiple payment options including use of Mobile application.

Task III - Measures to be taken in improvement in existing property tax administration so as to increase Property Tax collections to upto 100% of the estimated total property tax demand in the PMC.

Task IV - Study report on the shift from ready reckoner assessment to capital value based assessment for the PMC.

Assignment name: Selection of Consulting Services for Municipal Tax and Fee Improvement- Improvement in property Tax Collections	Value of the contract (in current INR): Rs. 9500000/-
Country: India Name of City / Cities: Panaji	Duration of assignment (months): Ongoing
Name of Client: Imagine Panaji Smart City Development Limited	Total No of staff-months of the assignment: 24
Address: Swayandipta Pal Chaudhuri Managing Director & Chief Executive Officer Imagine Panaji Smart City Development Limited Panaji, Goa	Value of the contract per city (in current INR): Rs. 9500000/-
Start date (month/year): Dec 2016	Completion date (month/year): Ongoing

Narrative description of Project:

The terms of reference of the assignment list out the objective of the consulting engagement to improve the revenue of Panaji city from Property Tax by carrying out the following:

a. Identifying under-assessed and un-assessed properties so as to increase coverage from existing 60% to at least 90%
b. Computerization of Property Tax records and Tax management system, display Demand Collection Book on the Web, putting in place an on-line system for assessment and collection of Property Tax, and
c. Recommend improvements in existing administrative system to achieve at least 90% in Property Tax collection along with a grievances redressal system.

Description of actual services provided by your staff within the assignment:

The three objectives of the assignment are being achieved through the following activities:

- Identification of under assessed and unassessed properties
  - Door to door survey
  - Review of existing reports on fiscal tools
  - Evaluation and updation of tax database
- Computerization
  - Support in hardware installation
  - Design of system architecture
- Improved tax administration
  - Situational analysis
  - Benchmarking with other cities
  - Issues and roadmap for efficiency improvement
  - Training needs assessment
  - Capacity building workshop

Assignment name: JICA assisted City Sanitation Plans for Mumbai and Lucknow	Value of the contract (in current INR): 7714382.00
Country: India Name of City / Cities: Mumbai and Lucknow	Duration of assignment (months): 12
Name of Client: Japan International Cooperation Agency	Total No of staff-months of the assignment: 8
Address: JICA India Office 2nd Floor, Dr. Gopal Das Bhawan, 28 Barakhamba Road, New Delhi, New Delhi, India, 110001	Value of the contract per city (in current INR): -
Start date (month/year): Jun 2010	Completion date (month/year): Jul 2011

Narrative description of Project:

Preparation of City Sanitation Plan for Mumbai and Lucknow city, as envisaged in NUSP, by taking into consideration the ground realities, local conditions, and assessment of the present situation in consultation with citizens and key decision makers to meet the objectives of the NUSP with respect to access to sanitation for all, and the safe collection, transportation, treatment and disposal of both solid and liquid wastes. The plan will also include a study of various options such as Sewerage technology, low cost community based options such as decentralized waste water treatment systems etc., tentative capital investments required, monitoring, implementation methods and possibility for involving community groups and the private sector.

Description of actual services provided by your staff within the assignment:

Scope of work under this assignment included the following among other:

- Review and collect available data on sanitation including in its ambit sewerage coverage, sewer treatment capacity, public toilets, and access to sanitation for the urban poor, and Solid waste management with special emphasis on slums
- Assist the ULB in designing and testing (the implementation of) a sanitation awareness campaign
- Assist the ULB in capacity building and training of personnel, liaise with NGOs and community groups.
- Facilitate a limited number of orientation and training programs/workshops during the process of preparation of the Situation Analysis Report and CSP.
- Conduct workshops in each city- 2-3 for stakeholder consultations and 1 for presentation of draft CSP to key decision makers.

Assignment name: Rapid Baseline Assessment of Urban Management Capacity in 30 Urban Local Bodies	Value of the contract (in current INR): Rs.8338236.00/-
Country: India Name of City / Cities: 30 ULBs across 21 states in India	Duration of assignment (months): 9
Name of Client: Ministry of Urban Development	Total No of staff-months of the assignment: NA
Address: CBUD Ministry of Urban Development Room No 134, C Wing Nirman Bhawan, Maulana Azad road, New Delhi, New Delhi, India, 110108	Value of the contract per city (in current INR): Rs.8338236.00/-
Start date (month/year): Mar 2013	Completion date (month/year): Dec 2013

Narrative description of Project:

In order to give an impetus to reforms under JNNURM, the MoUD and Ministry of Housing and Urban Poverty Alleviation (MoHUPA) have launched a new project called “Capacity Building of Urban Development” (CBUD). The project has been launched with support from The World Bank (WB). The GoI has received the financing from the WB /International Development Association (IDA) towards CBUD project.

In order to provide a baseline for project implementation & too broadly identify the capacity gaps and need for training needs assessment/ training in different functional areas identified under the project, MoUD has decided to initiate the whole process with a Rapid Assessment of the status of the ULBs selected for participation in the CBUD project. MoUD has allocated part of these proceeds for this study under CBUD project.

The project was carried out in the cities of Panaji, Gangtok, Chhindwada, Shillong, Kurukshetra, Bharuch, Shimla, Puri, Haridwar, Dewas, Aizawl, Yamunanagar, Kollam, Udaipur, Jammu, Siliguri, Dehradun, Cuttack, Guntur, Hubli, Solapur, Chandigarh, Guwahati, Raipur, Jabalpur, Ranchi, Varanasi, Allahabad, Vishakhapatnam and Nagpur

This assignment aims to cut across the four major interrelated aspects mentioned below:

- Municipal Financial Management;
- Municipal Governance;
- Urban Planning and Land use; and
- Urban Service Delivery.

Description of actual services provided by your staff within the assignment:

- Secondary data collection – Desk Research: Information and data downloading for 30 ULBs has been initiated from various sources such as ULB website, JNNURM website. In fact, some of the ULBs data collection has been collected and completed.
- Literature review on the urban development and capacity building issues across the nation has been completed
- The questionnaire has been designed and it has been reviewed by internal sector experts as well as senior team members.
- The communication letters have been prepared. This would be communicated to ULBs soon and accordingly we shall visit the ULBs
- Based on the geographical location of the ULBs, group of ULBs have been clustered such as south, east, north, west and north east ULBs. In addition, the team is in place; and would be ready to visit to ULB as and when it is required
- We are planning to start the ULB visits from mid of 3rd week of April 2013. This may start little early as well.

Assignment name: Technical assistance in implementation of urban reforms and projects under JNNURM; Pimpri-Chinchwad Municipal Corporation	Value of the contract (in current INR): Rs. 75600000/-
Country: India Name of City / Cities: Pimpri, Pune	Duration of assignment (months): Ongoing
Name of Client: Pimpri Chinchwad Municipal Corporation	Total No of staff-months of the assignment: 150
Address: Mumbai-Pune Road, Pimpri, Pune, Maharashtra, India, 411018	Value of the contract per city (in current INR): Rs. 75600000/-
Start date (month/year): May 2007	Completion date (month/year): Ongoing

Narrative description of Project:

Module 1 – Project implementation assistance - PCMC implemented projects sanctioned by the JNNURM. These projects were to be implemented within specified timeframes for timely release of funds. These projects were implemented through the regular contracting route and hence handled by respective departments. The role for the Project Implementation Cell was limited to the following activities that were conducted by Consultant:

- Preparing timelines and action plans for the projects sanctioned by JNNURM in consultation with the respective department heads
- Provide project initiation support to the department and if required prepare the general terms and conditions for appointment of Project Management Consultants for implementing projects.
- Identify risks in project implementation and advice on measures to mitigate risks.
- Prepare project reporting formats in line with requirements of MoUD and SLNA
- Coordinate with department heads and project management consultants for procuring project status and MIS.
- Exploring PPP options for project implementation and if possible introducing performance based contracting models.
- Progress review and advise on course correction for timely completion of the projects in accordance with JNNURM commitments

Module 2 – Reform implementation assistance - This covered assistance in mandatory and optional reforms. E-governance, municipal accounting, property tax, user charges, internal earmarking of funds for urban poor and provision of basic services for urban poor are the mandatory reforms. The optional reforms are staggered over the reform period and involves interface with the state government.

Module 3 –JNNURM support assistance - This module ran concurrently with the modules mentioned above. The tasks provided support to PCMC in various JNNURM related MIS and reporting activities. The scope of work for consultant under this module were as follows:

- Prepare regular MIS and progress reports for projects sanctioned by JNNURM and reforms commitments.
- Support PCMC through interactions with respective department heads and drafting action agenda for implementation by PCMC in the following reform areas:
- User charges – Achieving service standards, reducing non revenue water and unaccounted for water, quantification of subsidies, timelines on O&M cost recovery.
- Internal earmarking of funds for urban poor – budgeting and accounting processes
- Provision of basic services to urban poor – support in appointing agencies for preparation of database on beneficiaries and plans for achieving access.
- Revision of building byelaws to streamline approval process – support in appointing agencies for leading the effort.
- Advice on the balance projects to be taken up for sanction from MoUD.

Description of actual services provided by your staff within the assignment:

Provide City Development Plan and PCMC's financial sustainability related information to support the project application preparation by DPR consultants. Note – individual project feasibility would need to be established by the DPR consultant. Under this task Consultant will only bring to perspective the financial sustainability of PCMC to absorb the proposed capital investments and capacity to provide for recurring O&M expenses. Represent PCMC at MoUD and SLNA and appraise these agencies on the status of projects and reforms for release of funds. Note – follow-ups with any of the agencies would need to be undertaken by the PCMC officials.

Assignment name: Citizen Satisfaction Survey for Pune	Value of the contract (in current INR): 9,70,000
Country: INDIA Name of City/ Cities: 3 Centre Pune, Nagpur & Junagadh	Duration of assignment (months): 2.5 months
Name of Client: CRISIL for Pune Municipal Corporation	Total No of staff-months of the assignment: 40 Staff – 2.5 Months
Address: CRISIL HOUSE Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076	Value of the contract per city (in current INR): 400,000, 2,70,00 & 300,000
Start date (month/year): January 2006	Completion date (month/year): March 2006

Narrative description of Project:

The survey was carried out for the Municipal Corporation of Pune in the three cities of Pune, Nagpur and Junagarh. The key objectives of the survey were as follows:

- To study the satisfaction level of the residents in the city of Pune with respect to the municipal services
- Study to be conducted in the municipal limits of Pune Municipal Corporation
- To identify the satisfaction level of the residents of Pune with respect to the following municipal services
    - Water supply
    - Roads
    - Garbage collection
    - Gardens
- To identify the perception of the needs of the residents on the above mentioned services
- To identify the likes and dislikes about Pune as a city
- To identify what development w.r.t to infrastructure, respondents would like to see in Pune in the next 5 years

Description of actual services provided by your staff within the assignment:

The consultant was involved in carrying out the following activities in the due course of the assignment:

- Designing of the study
- Designing of the questionnaire
- Data collection
- Data Analysis
- Interpretation of the data
- Writing report
- Presentation of the findings

Assignment name: IOCL Survey	Value of the contract (in current INR): 27,50,000
Country: INDIA Name of States:	Duration of assignment (months): 4 Month
Name of Client: Indian Oil	Total No of staff-months of the assignment: 150 Staff – 4 Month
Address: Indian Oil G-9, Ali Yavar Jung Marg, Bandra (E), Mumbai 400051	Value of the contract per city (in current INR): Pan India - Total value = 27,50,000
Start date (month/year): May 2016	Completion date (month/year): September 2014

Narrative description of Project:

Indian Oil has been successfully meeting the energy demands of India for more than five decades. Indian Oil's business interests overlap the entire hydrocarbon value-chain—from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil.

Indian Oil accounts for nearly half of India's petroleum products market share, with more than 24000 Retail Outlets spread over the entire country, of which more than 11,500 ROs have been upgraded over the last few years by provision/amendment of various facilities at an RO.

The upgrade was mainly to improve the “Look & Feel” of various facilities at the RO, and the RO itself.

In addition to this “Look & Feel” Upgrade, skill development of Customer Attendants at ROs was also emphasized upon by imparting the “Chetna” Training program.

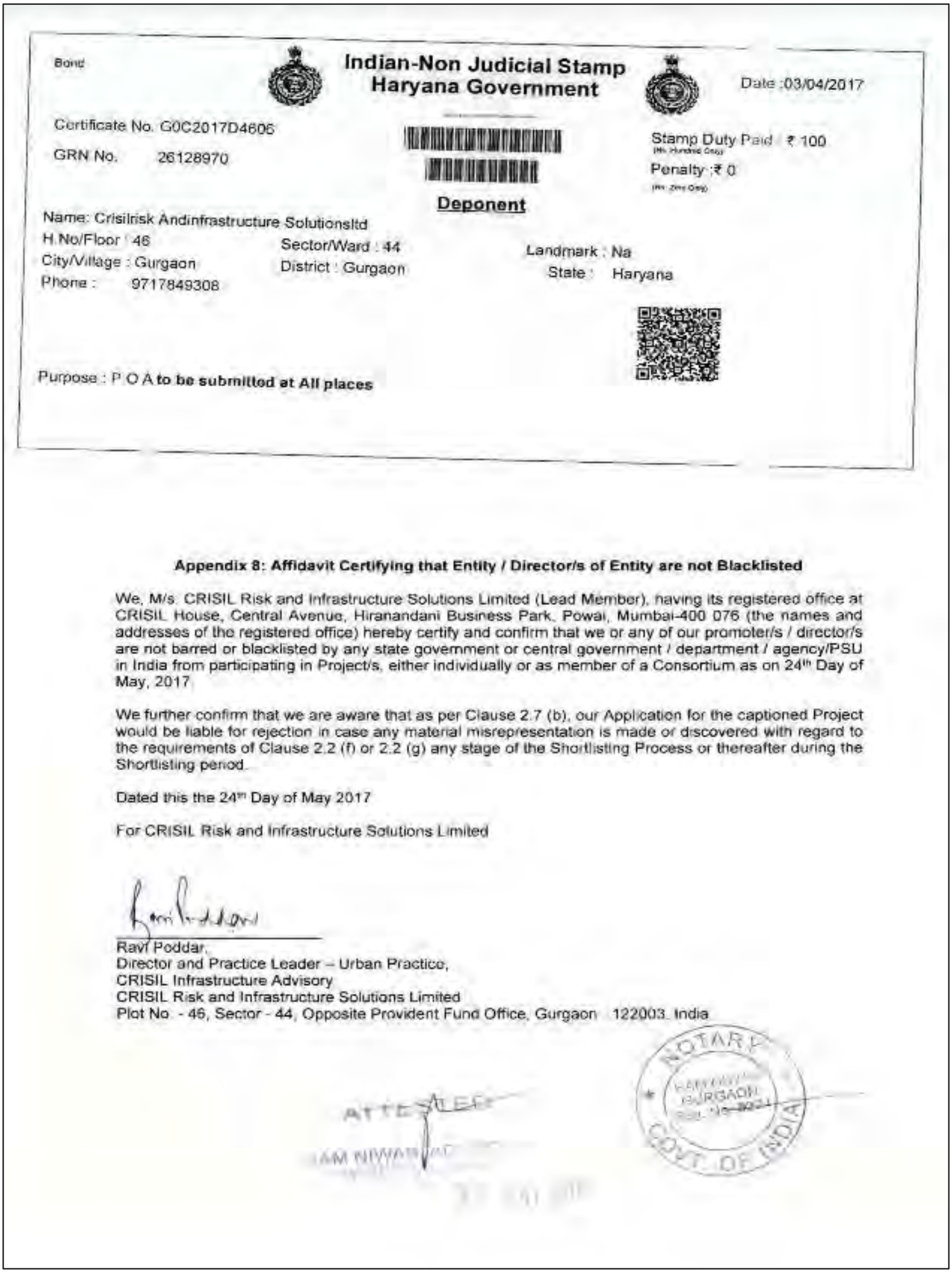
These efforts are aimed to ultimately improve the service delivery to end consumers, and also to improve the perception of Indian Oil.

Description of actual services provided by your staff within the assignment:

- Facility Audit
    - Physical Verification by Interviewer (Checklist)
    - Photographic Evaluation for Quality of Facilities
- Respondent Surveys
    - Dealer Survey – Aimed at understanding dealer views on Look & Feel, Chetna Impact and Customer Feedback
    - Customer Survey – To evaluate the Look & Feel and Chetna Impact
- Assessment of ‘Chetna’
    - Interviewer verification of CA Activities (Checklist)
    - Customer Attendant Survey – Recall of Chetna and Impact
- Face to Face interviews for all segments were conducted based on CAPI format
- The ROs to be visited by Interviewer were pre-decided by random sampling (and approved by Indian Oil). The list of 1470 ROs was shared with the interviewers to create the most optimum field travel plan to cover maximum number of ROs in minimum time
- Each Interviewer has visited a different RO (pre-selected by Random Sampling) every day of fieldwork
- The Interviewer was advised to finish the Dealer, Customer Attendant and Customer Interviews in one manday. The Interviewer Observation Checklist and the Photograph Checklist were also fulfilled the same day by the interviewer
- Data Analysis
- Reporting & presentation on the findings of the study to IOCL

13. Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

13.1 CRISIL Risk and Infrastructure Solutions Limited



Bond

Indian-Non Judicial Stamp
Haryana Government

Date : 03/04/2017

Certificate No. G0C2017D4606
GRN No. 26128970

Stamp Duty Paid : ₹ 100
(Rs. Hundred Only)
Penalty : ₹ 0
(Rs. Zero Only)

Deponent

Name: Crisilrisk Andinfrastructure Solutionsltd
H.No/Floor : 46
Sector/Ward : 44
Landmark : Na
City/Village : Gurgaon
District : Gurgaon
State : Haryana
Phone : 9717849308

Purpose : P O A to be submitted at All places

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

We, M/s. CRISIL Risk and Infrastructure Solutions Limited (Lead Member), having its registered office at CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076 (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 24th Day of May, 2017

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

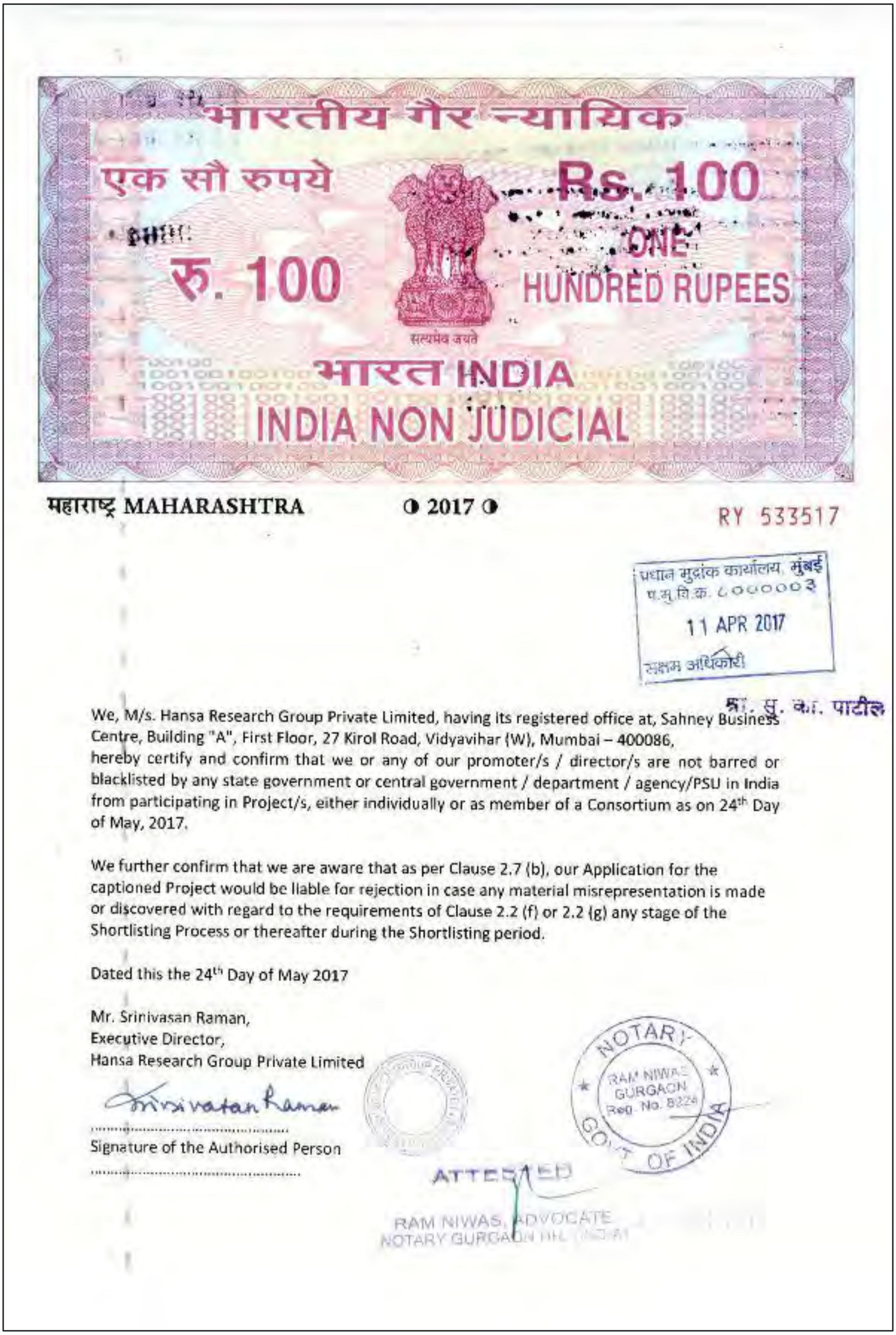
Dated this the 24th Day of May 2017

For CRISIL Risk and Infrastructure Solutions Limited

Ravi Poddar,
Director and Practice Leader – Urban Practice,
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon 122003, India

ATTESTED

13.2 Hansa Research Group



भारतीय गैर न्यायिक

एक सौ रुपये

रु. 100

Rs. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ RY 533517

प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क्र. ८००००३
11 APR 2017
सक्षम अधिकारी

श्री. सु. का. पाटील

We, M/s. Hansa Research Group Private Limited, having its registered office at, Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W), Mumbai – 400086, hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 24th Day of May, 2017.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this the 24th Day of May 2017

Mr. Srinivasan Raman,
Executive Director,
Hansa Research Group Private Limited

Srinivasan Raman
……………………………………………
Signature of the Authorised Person
……………………………………………

RAM NIWAS
GURGAON
Reg. No. 8224

ATTESTED

RAM NIWAS, ADVOCATE
NOTARY GURGAON

14. Appendix 9: Memorandum of Understanding (MOU)

Enclosed in next page.

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ RY 533516

प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क्र. ८००००२
11 APR 2017
सक्षम अधिकारी

कं. पाटील

This Memorandum of Understanding (MoU) entered into this 24th day of May 2017 at Gurgaon among M/s. CRISIL Risk and Infrastructure Solutions Limited and having its registered office at CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai-400 076, (hereinafter referred as "FIRST PARTY", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

M/s. Hansa Research Group Private Limited and having its registered office at Sahney Business Centre, Building "A", First Floor, 27 Kirol Road, Vidyavihar (W), Mumbai – 400086,(hereinafter referred as "SECOND PARTY", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

RAM NIWAS
GURGAON
Reg. No 8224

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

S. No.	Name of Member	Role (Specify Lead member / Other Member)
1.	CRISIL Risk and Infrastructure Solutions Limited	Lead Member
2.	M/s. Hansa Research Group Private Limited	Consortium Member

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

For CRISIL Risk and Infrastructure Solutions Limited

Ravi Poddar

Name of Authorise Signatory
Mr. Ravi Poddar
Ravi Poddar,
Director and Practice Leader – Urban Practice,
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India

For M/s. Hansa Research Group Private Limited

Srinivasan Raman

Name of Authorised Signatory
Mr. Srinivasan Raman
Executive Director
Hansa Research Group Private Limited
Sahney Business Centre, Building "A", First Floor,
27 Kirol Road, Vidyavihar (W), Mumbai – 400086

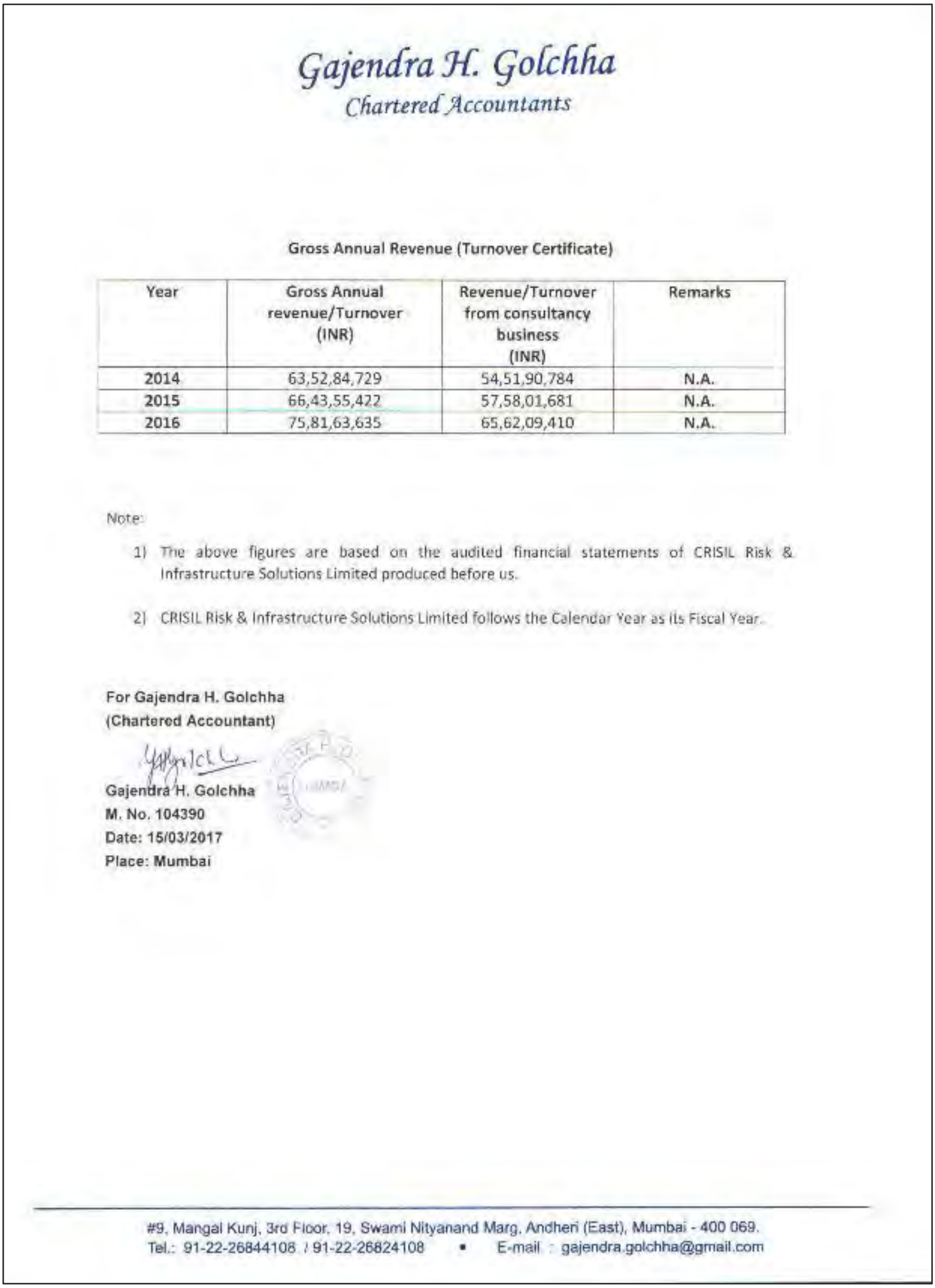
RAM NIWAS GURGAON Reg. No. 8224

ATTESTED
RAM NIWAS, ADVOCATE
NOTARY GURGAON HR. (INDIA)

29 MAY 2017

15. Annexures

15.1 Annexure 1 - Turnover Certificate



Gajendra H. Golchha
Chartered Accountants

Gross Annual Revenue (Turnover Certificate)

Year	Gross Annual revenue/Turnover (INR)	Revenue/Turnover from consultancy business (INR)	Remarks
2014	63,52,84,729	54,51,90,784	N.A.
2015	66,43,55,422	57,58,01,681	N.A.
2016	75,81,63,635	65,62,09,410	N.A.

Note:

1) The above figures are based on the audited financial statements of CRISIL Risk & Infrastructure Solutions Limited produced before us.

2) CRISIL Risk & Infrastructure Solutions Limited follows the Calendar Year as its Fiscal Year.

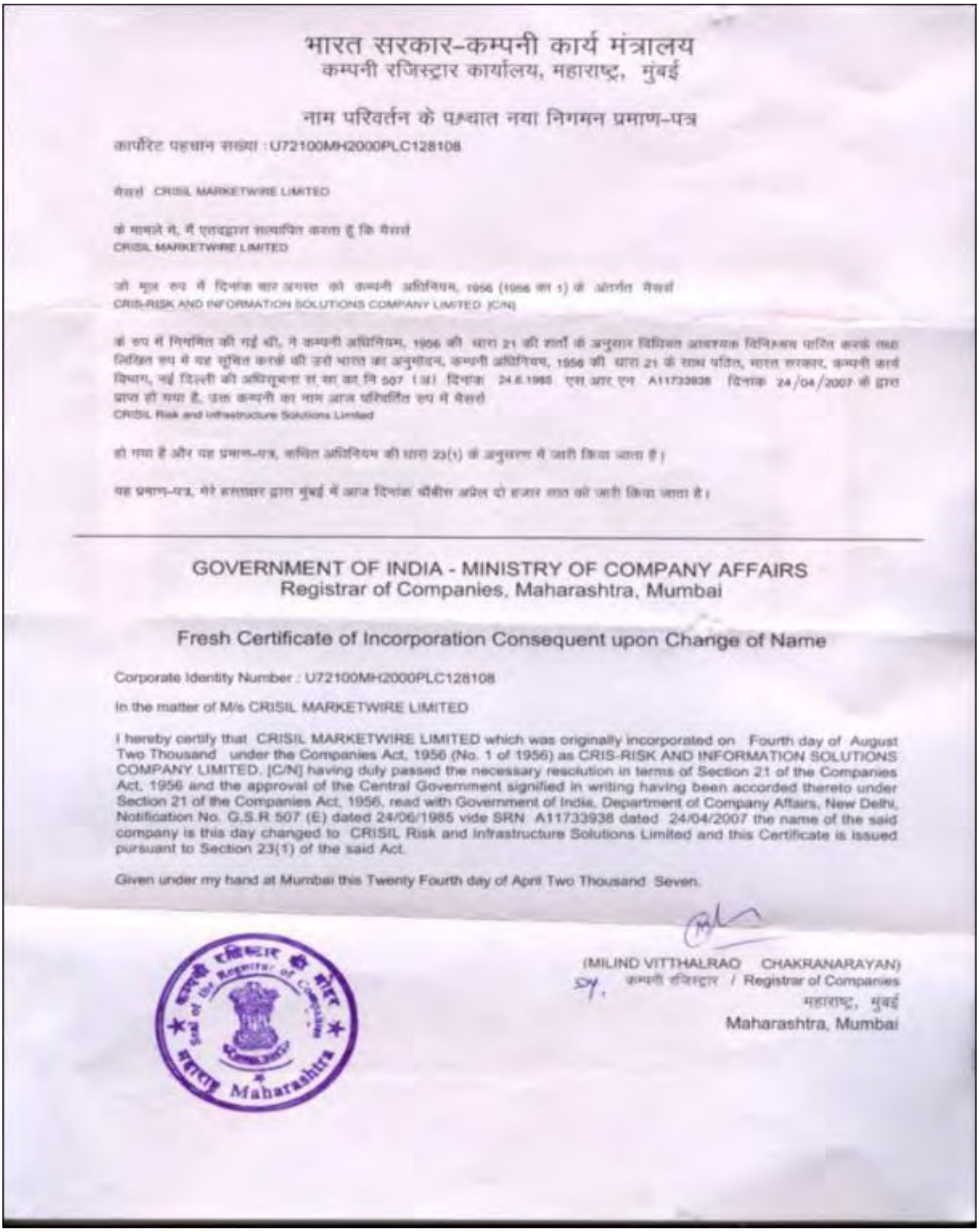
For Gajendra H. Golchha
(Chartered Accountant)

Gajendra H. Golchha
M. No. 104390
Date: 15/03/2017
Place: Mumbai

#9, Mangal Kunj, 3rd Floor, 19, Swami Nityanand Marg, Andheri (East), Mumbai - 400 069.
Tel.: 91-22-26844108 / 91-22-26824108 • E-mail : gajendra.golchha@gmail.com

15.2 Annexure 2 - Certificate of Incorporation

15.2.1 CRISIL Risk and Infrastructure Solutions Limited



भारत सरकार-कम्पनी कार्य मंत्रालय
कम्पनी रजिस्ट्रार कार्यालय, महाराष्ट्र, मुंबई

नाम परिवर्तन के पश्चात नया निगमन प्रमाण-पत्र

कॉर्पोरेट पहचान संख्या : U72100MH2000PLC128108

मैसर्स CRISIL MARKETWIRE LIMITED

के मामले में, मैं एतदद्वारा सत्यापित करता हूं कि मैसर्स
CRISIL MARKETWIRE LIMITED

जो मूल रूप में दिनांक चार अगस्त को कम्पनी अधिनियम, 1956 (1956 का 1) के अंतर्गत मैसर्स
CRIS-RISK AND INFORMATION SOLUTIONS COMPANY LIMITED [C/N]

के रूप में निगमित की गई थी, ने कम्पनी अधिनियम, 1956 की धारा 21 की शर्तों के अनुसार विधिवत आवश्यक विनिश्चय पारित करके तथा लिखित रूप में यह सूचित करके की उसे भारत का अनुमोदन, कम्पनी अधिनियम, 1956 की धारा 21 के साथ पठित, भारत सरकार, कम्पनी कार्य विभाग, नई दिल्ली की अधिसूचना सं सा का नि 507 (अ) दिनांक 24.6.1985 एस आर एन A11733938 दिनांक 24/04/2007 के द्वारा प्राप्त हो गया है, उक्त कम्पनी का नाम आज परिवर्तित रूप में मैसर्स
CRISIL Risk and Infrastructure Solutions Limited

हो गया है और यह प्रमाण-पत्र, कथित अधिनियम की धारा 23(1) के अनुसरण में जारी किया जाता है।

यह प्रमाण-पत्र, मेरे हस्ताक्षर द्वारा मुंबई में आज दिनांक चौबीस अप्रैल दो हजार सात को जारी किया जाता है।

GOVERNMENT OF INDIA - MINISTRY OF COMPANY AFFAIRS
Registrar of Companies, Maharashtra, Mumbai

Fresh Certificate of Incorporation Consequent upon Change of Name

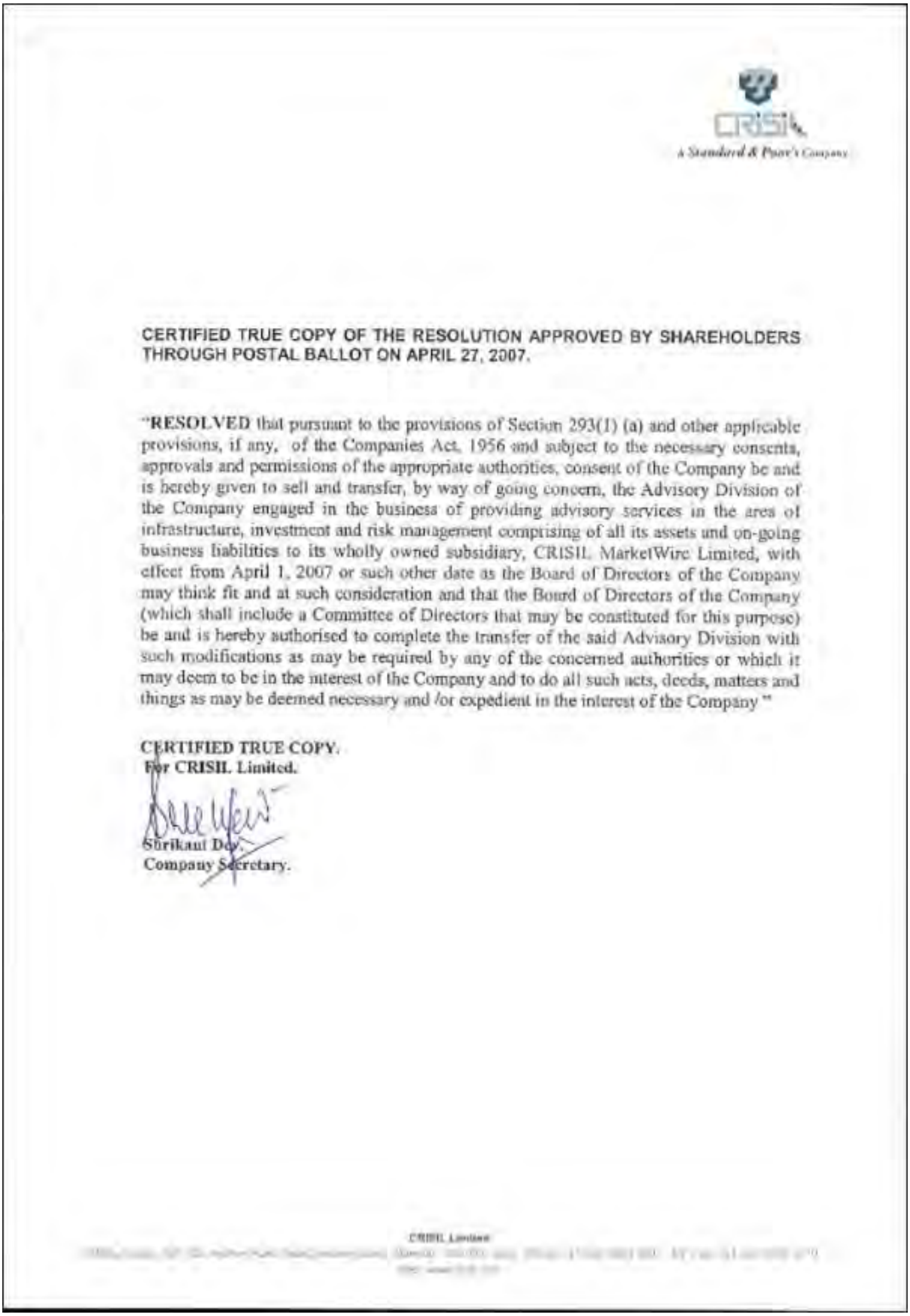
Corporate Identity Number : U72100MH2000PLC128108

In the matter of M/s CRISIL MARKETWIRE LIMITED

I hereby certify that CRISIL MARKETWIRE LIMITED which was originally incorporated on Fourth day of August Two Thousand under the Companies Act, 1956 (No. 1 of 1956) as CRIS-RISK AND INFORMATION SOLUTIONS COMPANY LIMITED. [C/N] having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956 and the approval of the Central Government signified in writing having been accorded thereto under Section 21 of the Companies Act, 1956, read with Government of India, Department of Company Affairs, New Delhi, Notification No. G.S.R 507 (E) dated 24/06/1985 vide SRN A11733938 dated 24/04/2007 the name of the said company is this day changed to CRISIL Risk and Infrastructure Solutions Limited and this Certificate is issued pursuant to Section 23(1) of the said Act.

Given under my hand at Mumbai this Twenty Fourth day of April Two Thousand Seven.

(MILIND VITTHALRAO CHAKRANARAYAN)
कम्पनी रजिस्ट्रार / Registrar of Companies
महाराष्ट्र, मुंबई
Maharashtra, Mumbai



A Standard & Poor's Company

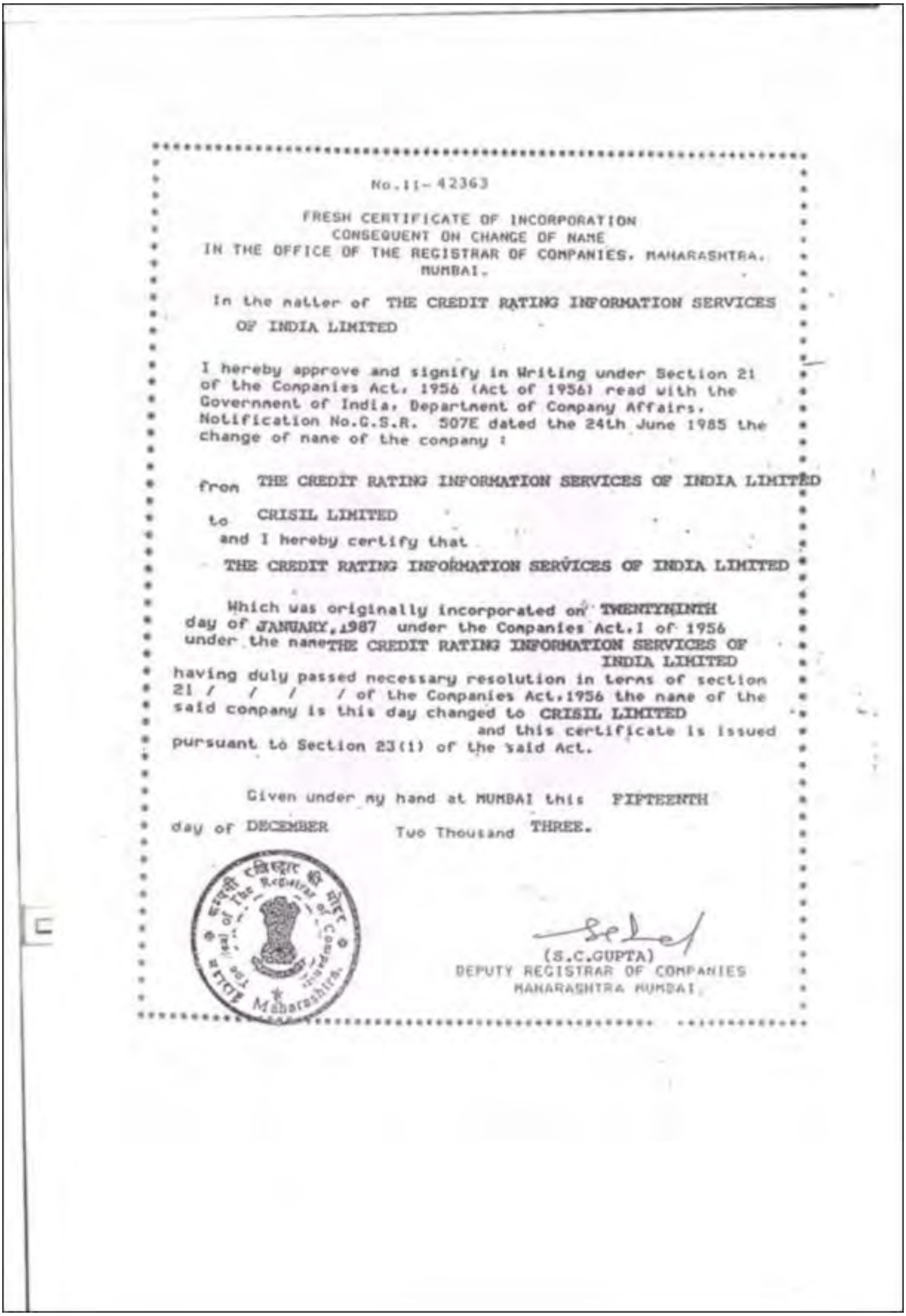
CERTIFIED TRUE COPY OF THE RESOLUTION APPROVED BY SHAREHOLDERS THROUGH POSTAL BALLOT ON APRIL 27, 2007.

"**RESOLVED** that pursuant to the provisions of Section 293(1) (a) and other applicable provisions, if any, of the Companies Act, 1956 and subject to the necessary consents, approvals and permissions of the appropriate authorities, consent of the Company be and is hereby given to sell and transfer, by way of going concern, the Advisory Division of the Company engaged in the business of providing advisory services in the area of infrastructure, investment and risk management comprising of all its assets and on-going business liabilities to its wholly owned subsidiary, CRISIL MarketWire Limited, with effect from April 1, 2007 or such other date as the Board of Directors of the Company may think fit and at such consideration and that the Board of Directors of the Company (which shall include a Committee of Directors that may be constituted for this purpose) be and is hereby authorised to complete the transfer of the said Advisory Division with such modifications as may be required by any of the concerned authorities or which it may deem to be in the interest of the Company and to do all such acts, deeds, matters and things as may be deemed necessary and /or expedient in the interest of the Company."

CERTIFIED TRUE COPY.
For CRISIL Limited.

Shrikant Dev.
Company Secretary.

CRISIL Limited



No.11- 42363

FRESH CERTIFICATE OF INCORPORATION
CONSEQUENT ON CHANGE OF NAME
IN THE OFFICE OF THE REGISTRAR OF COMPANIES, MAHARASHTRA,
MUMBAI.

In the matter of THE CREDIT RATING INFORMATION SERVICES OF INDIA LIMITED

I hereby approve and signify in Writing under Section 21 of the Companies Act, 1956 (Act of 1956) read with the Government of India, Department of Company Affairs, Notification No.G.S.R. 507E dated the 24th June 1985 the change of name of the company :

from THE CREDIT RATING INFORMATION SERVICES OF INDIA LIMITED

to CRISIL LIMITED

and I hereby certify that

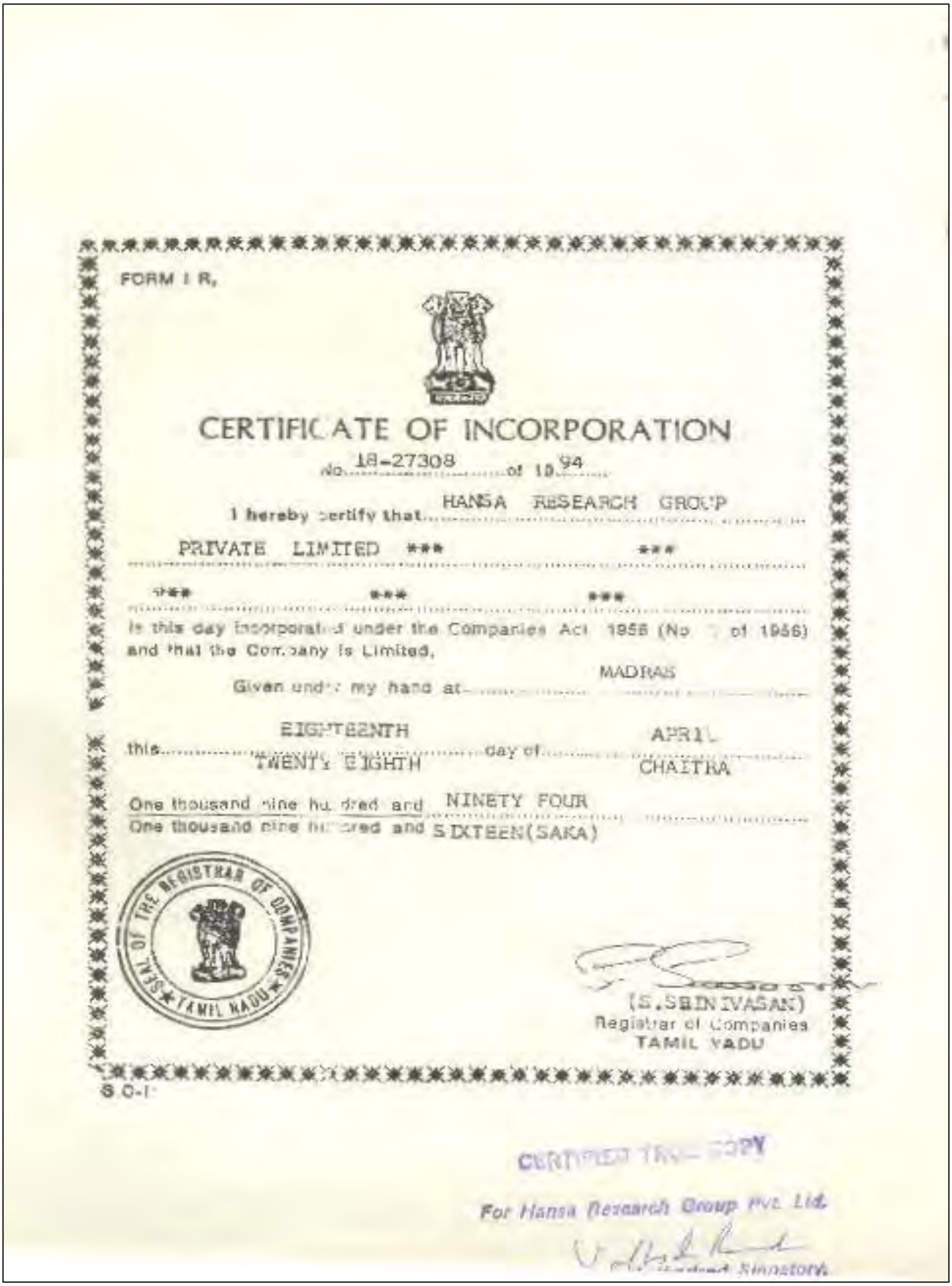
THE CREDIT RATING INFORMATION SERVICES OF INDIA LIMITED

Which was originally incorporated on TWENTYNINTH day of JANUARY,1987 under the Companies Act,I of 1956 under the name THE CREDIT RATING INFORMATION SERVICES OF INDIA LIMITED having duly passed necessary resolution in terms of section 21 / / / / of the Companies Act,1956 the name of the said company is this day changed to CRISIL LIMITED and this certificate is issued pursuant to Section 23(1) of the said Act.

Given under my hand at MUMBAI this FIFTEENTH day of DECEMBER Two Thousand THREE.

Scd/-
(S.C.GUPTA)
DEPUTY REGISTRAR OF COMPANIES
MAHARASHTRA MUMBAI.

15.2.2 Hansa Research Group



FORM I R.

CERTIFICATE OF INCORPORATION

No. 18-27308 of 19 94

I hereby certify that HANSA RESEARCH GROUP PRIVATE LIMITED *** *** *** *** ***

is this day incorporated under the Companies Act 1956 (No 1 of 1956) and that the Company is Limited.

Given under my hand at MADRAS

this EIGHTEENTH day of APRIL
TWENTY EIGHTH CHAITRA

One thousand nine hundred and NINETY FOUR
One thousand nine hundred and SIXTEEN(SAKA)

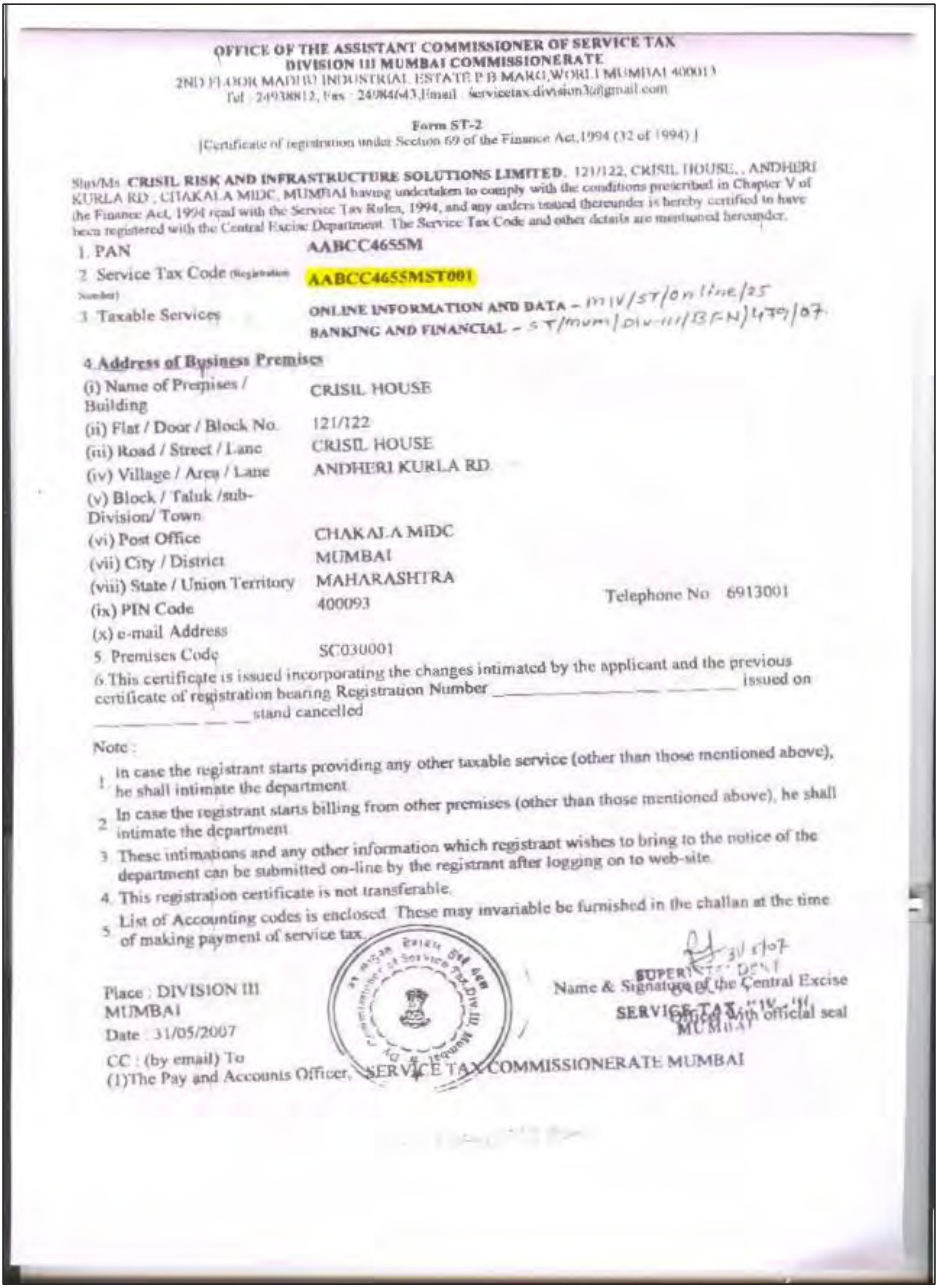
(S.SRINIVASAN)
Registrar of Companies
TAMIL NADU

S.C-I

CERTIFIED TRUE COPY
For Hansa Research Group Pvt. Ltd.
Authorised Signatory

15.3 Annexure 3 - Service Tax Registration Certificate

15.3.1 CRISIL Risk and Infrastructure Solutions Limited



OFFICE OF THE ASSISTANT COMMISSIONER OF SERVICE TAX
DIVISION III MUMBAI COMMISSIONERATE
2ND FLOOR MADHU INDUSTRIAL ESTATE P B MARG,WORLI MUMBAI 400013
Tel : 24938812, Fax : 24984643,Email : servicetax.division3@gmail.com

Form ST-2
[Certificate of registration under Section 69 of the Finance Act,1994 (32 of 1994)]

Shri/Ms **CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LIMITED**, 121/122, CRISIL HOUSE, , ANDHERI KURLA RD , CHAKALA MIDC, MUMBAI having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act, 1994 read with the Service Tax Rules, 1994, and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department. The Service Tax Code and other details are mentioned hereunder.

1. PAN	AABCC4655M
2. Service Tax Code (Registration Number)	AABCC4655MST001
3. Taxable Services	ONLINE INFORMATION AND DATA – MIV/ST/online/25 BANKING AND FINANCIAL – ST/mum/Div-III/(BFN)479/07

4. Address of Business Premises

(i) Name of Premises / Building	CRISIL HOUSE		
(ii) Flat / Door / Block No.	121/122		
(iii) Road / Street / Lane	CRISIL HOUSE		
(iv) Village / Area / Lane	ANDHERI KURLA RD		
(v) Block / Taluk /sub-Division/ Town			
(vi) Post Office	CHAKALA MIDC		
(vii) City / District	MUMBAI		
(viii) State / Union Territory	MAHARASHTRA		
(ix) PIN Code	400093	Telephone No	6913001
(x) e-mail Address			
5. Premises Code	SC030001		

6. This certificate is issued incorporating the changes intimated by the applicant and the previous certificate of registration bearing Registration Number ________________ issued on ____________ stand cancelled

Note :

1. In case the registrant starts providing any other taxable service (other than those mentioned above), he shall intimate the department
2. In case the registrant starts billing from other premises (other than those mentioned above), he shall intimate the department
3. These intimations and any other information which registrant wishes to bring to the notice of the department can be submitted on-line by the registrant after logging on to web-site
4. This registration certificate is not transferable.
5. List of Accounting codes is enclosed. These may invariable be furnished in the challan at the time of making payment of service tax.

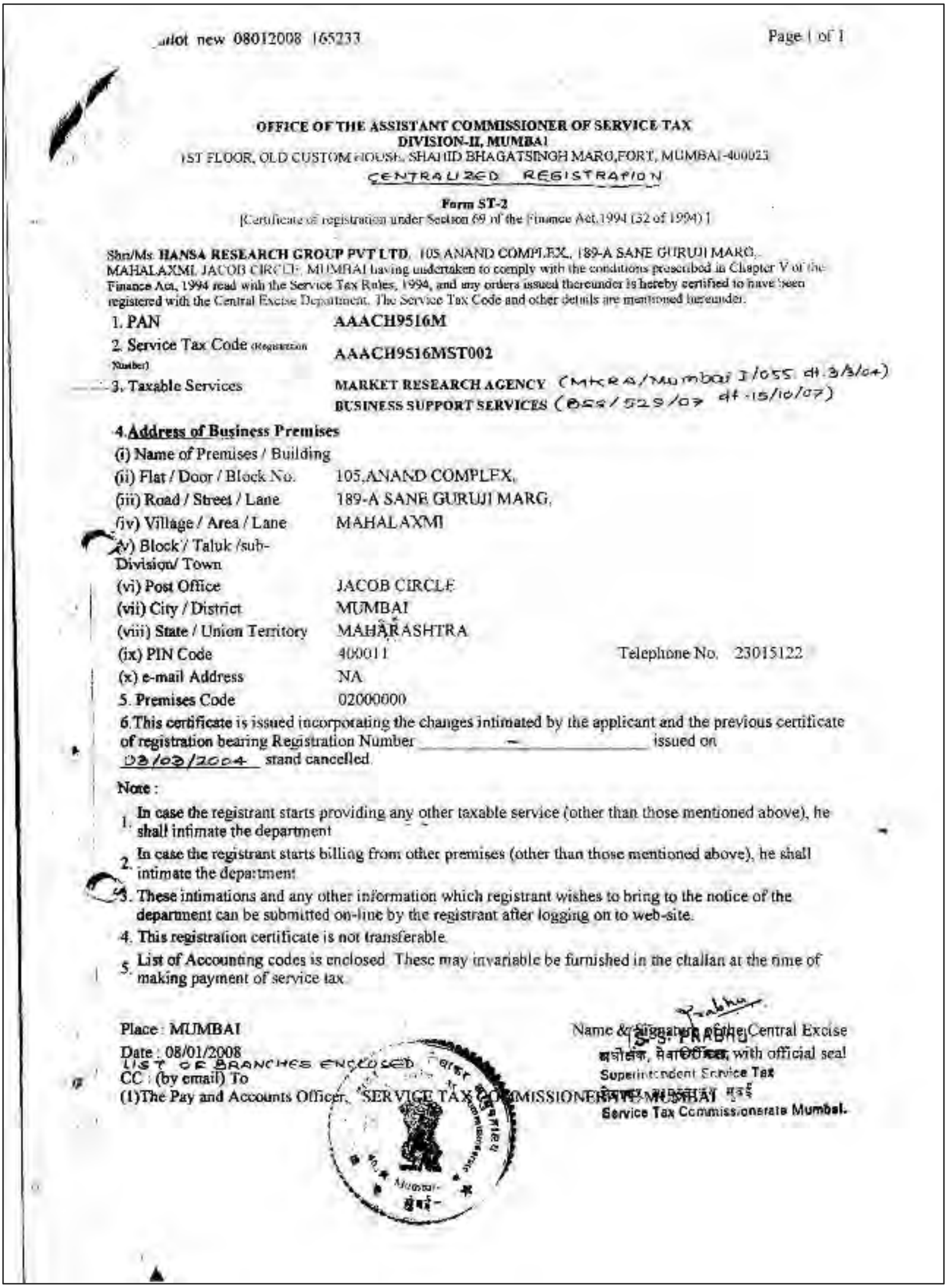
31/5/07
SUPERINTENDENT
SERVICE TAX, DIV.-III
MUMBAI

Name & Signature of the Central Excise Officer with official seal

Place : DIVISION III MUMBAI
Date : 31/05/2007

CC : (by email) To
(1)The Pay and Accounts Officer, SERVICE TAX COMMISSIONERATE MUMBAI

15.3.2 Hansa Research Group



..ulot new 08012008 165233 Page 1 of 1

OFFICE OF THE ASSISTANT COMMISSIONER OF SERVICE TAX
DIVISION-II, MUMBAI
1ST FLOOR, OLD CUSTOM HOUSE, SHAHID BHAGATSINGH MARG,FORT, MUMBAI-400023
CENTRALIZED REGISTRATION

Form ST-2
[Certificate of registration under Section 69 of the Finance Act,1994 (32 of 1994)]

Shri/Ms **HANSA RESEARCH GROUP PVT LTD**, 105 ANAND COMPLEX, 189-A SANE GURUJI MARG, MAHALAXMI, JACOB CIRCLE, MUMBAI having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act, 1994 read with the Service Tax Rules, 1994, and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department. The Service Tax Code and other details are mentioned hereunder.

1. PAN	**AAACH9516M**
2. Service Tax Code (Registration Number)	**AAACH9516MST002**
3. Taxable Services	**MARKET RESEARCH AGENCY** (MKRA/Mumbai I/055 dt. 3/3/04) **BUSINESS SUPPORT SERVICES** (BSS/529/07 dt. 15/10/07)
4. **Address of Business Premises**	
(i) Name of Premises / Building	
(ii) Flat / Door / Block No.	105,ANAND COMPLEX,
(iii) Road / Street / Lane	189-A SANE GURUJI MARG,
(iv) Village / Area / Lane	MAHALAXMI
(v) Block / Taluk /sub-Division/ Town	
(vi) Post Office	JACOB CIRCLE
(vii) City / District	MUMBAI
(viii) State / Union Territory	MAHARASHTRA
(ix) PIN Code	400011 Telephone No. 23015122
(x) e-mail Address	NA
5. Premises Code	02000000

6.This certificate is issued incorporating the changes intimated by the applicant and the previous certificate of registration bearing Registration Number ______-______ issued on 03/03/2004 stand cancelled.

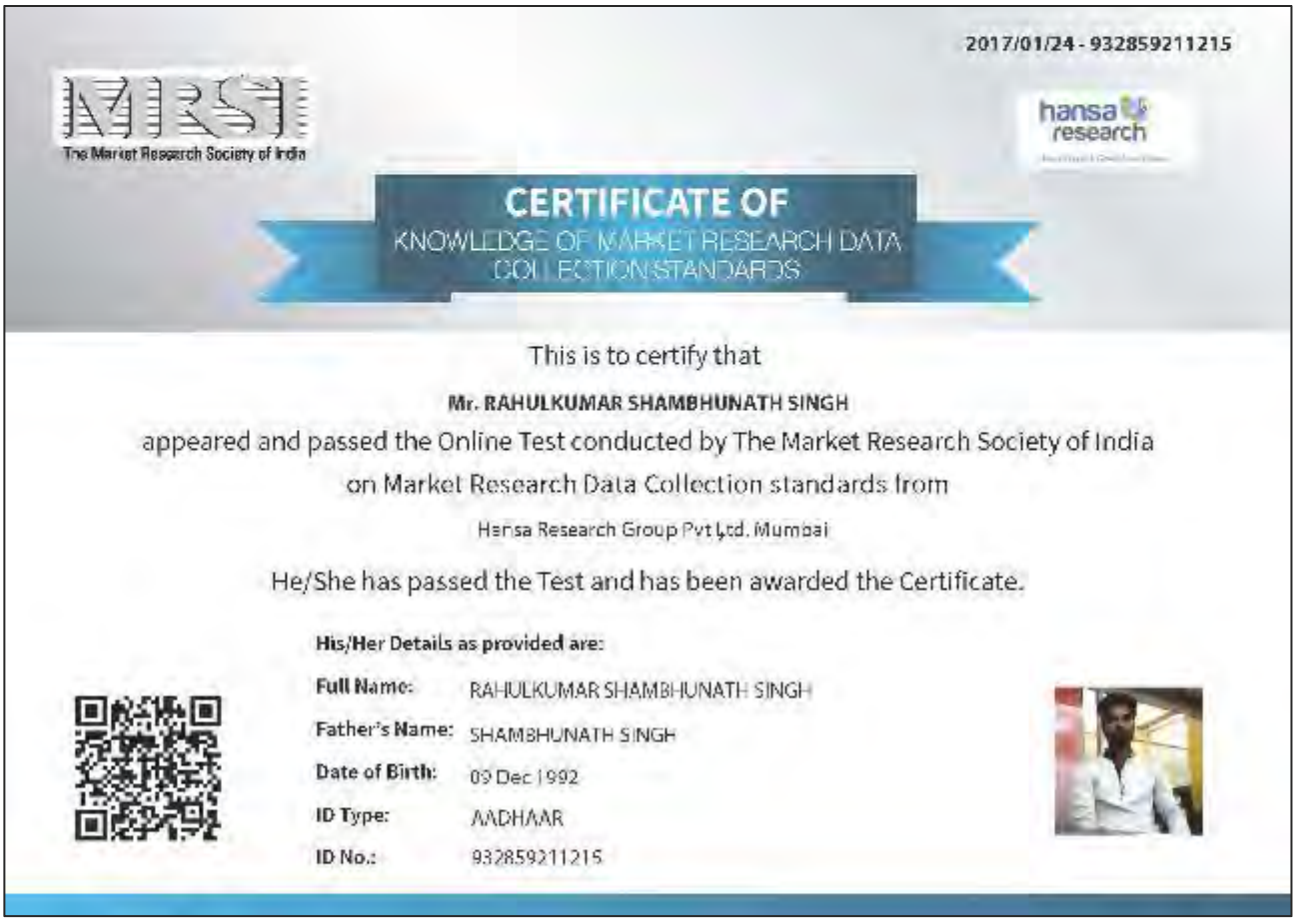
Note :

1. In case the registrant starts providing any other taxable service (other than those mentioned above), he shall intimate the department
2. In case the registrant starts billing from other premises (other than those mentioned above), he shall intimate the department
3. These intimations and any other information which registrant wishes to bring to the notice of the department can be submitted on-line by the registrant after logging on to web-site.
4. This registration certificate is not transferable.
5. List of Accounting codes is enclosed. These may invariable be furnished in the challan at the time of making payment of service tax.

Place : MUMBAI
Date : 08/01/2008
LIST OF BRANCHES ENCLOSED
CC : (by email) To
(1)The Pay and Accounts Officer, SERVICE TAX COMMISSIONERATE-MUMBAI

Prabhu
Name & Signature of the Central Excise Officer, with official seal
S. S. PRABHU
अधीक्षक, सेवा कर
Superintendent Service Tax
सेवा कर आयुक्तालय मुंबई
Service Tax Commissionerate Mumbai.

15.4 Annexure 4 – Certification with the Market Research Society of India (MRSI)



2017/01/24 - 932859211215

MRSI
The Market Research Society of India

hansa research

CERTIFICATE OF
KNOWLEDGE OF MARKET RESEARCH DATA COLLECTION STANDARDS

This is to certify that

Mr. RAHULKUMAR SHAMBHUNATH SINGH

appeared and passed the Online Test conducted by The Market Research Society of India on Market Research Data Collection standards from

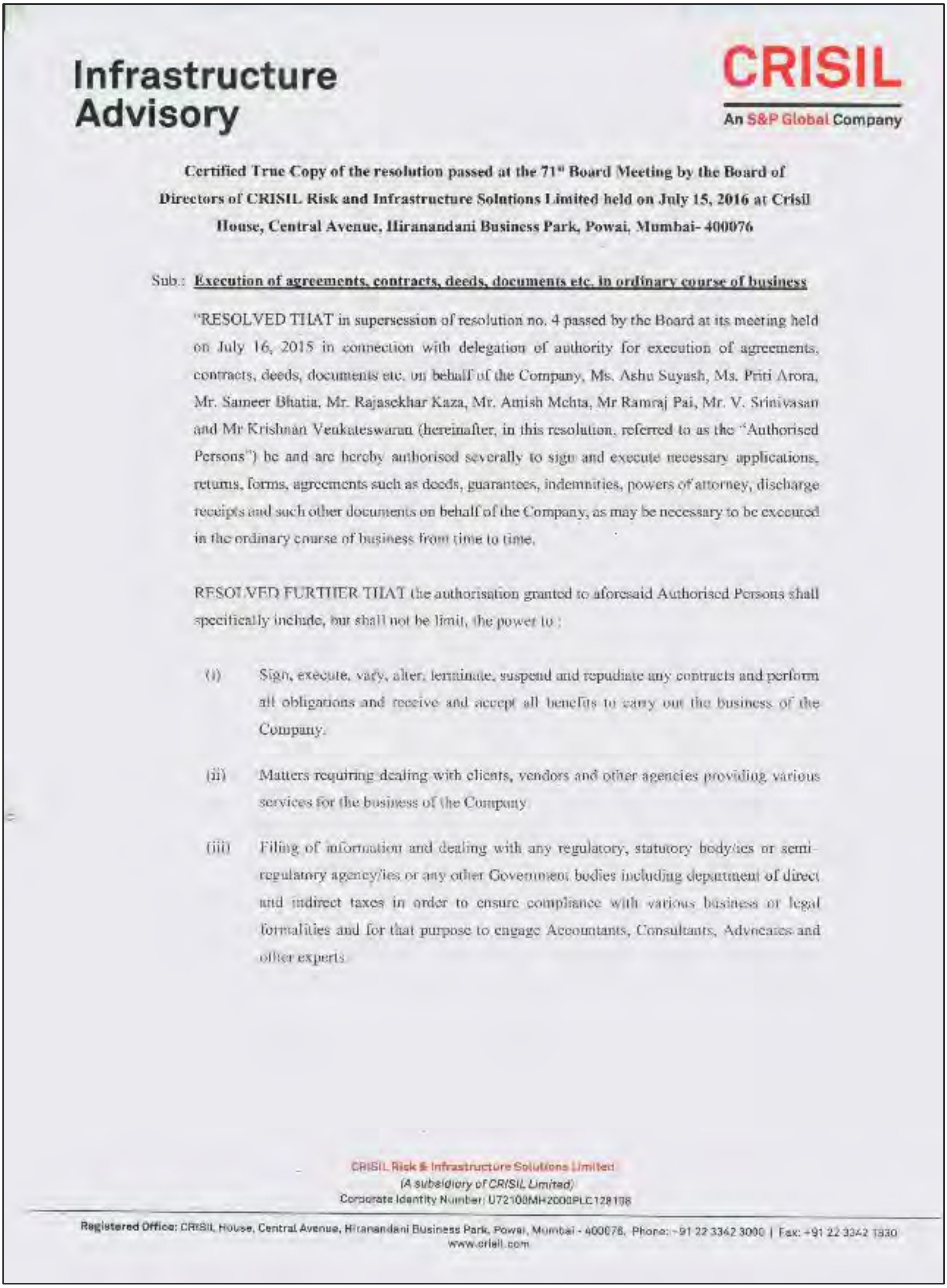
Hansa Research Group Pvt Ltd, Mumbai

He/She has passed the Test and has been awarded the Certificate.

His/Her Details as provided are:

Full Name:	RAHULKUMAR SHAMBHUNATH SINGH
Father's Name:	SHAMBHUNATH SINGH
Date of Birth:	09 Dec 1992
ID Type:	AADHAAR
ID No.:	932859211215

15.5 Annexure 5 – Board Resolution



Infrastructure Advisory

CRISIL
An S&P Global Company

Certified True Copy of the resolution passed at the 71st Board Meeting by the Board of Directors of CRISIL Risk and Infrastructure Solutions Limited held on July 15, 2016 at Crisil House, Central Avenue, Hiranandani Business Park, Powai, Mumbai- 400076

Sub.: **Execution of agreements, contracts, deeds, documents etc. in ordinary course of business**

"RESOLVED THAT in supersession of resolution no. 4 passed by the Board at its meeting held on July 16, 2015 in connection with delegation of authority for execution of agreements, contracts, deeds, documents etc. on behalf of the Company, Ms. Ashu Suyash, Ms. Priti Arora, Mr. Sameer Bhatia, Mr. Rajasekhar Kaza, Mr. Amish Mehta, Mr Ramraj Pai, Mr. V. Srinivasan and Mr Krishnan Venkateswaran (hereinafter, in this resolution, referred to as the "Authorised Persons") be and are hereby authorised severally to sign and execute necessary applications, returns, forms, agreements such as deeds, guarantees, indemnities, powers of attorney, discharge receipts and such other documents on behalf of the Company, as may be necessary to be executed in the ordinary course of business from time to time.

RESOLVED FURTHER THAT the authorisation granted to aforesaid Authorised Persons shall specifically include, but shall not be limit, the power to :

(i) Sign, execute, vary, alter, terminate, suspend and repudiate any contracts and perform all obligations and receive and accept all benefits to carry out the business of the Company.

(ii) Matters requiring dealing with clients, vendors and other agencies providing various services for the business of the Company.

(iii) Filing of information and dealing with any regulatory, statutory body/ies or semi-regulatory agency/ies or any other Government bodies including department of direct and indirect taxes in order to ensure compliance with various business or legal formalities and for that purpose to engage Accountants, Consultants, Advocates and other experts.

CRISIL Risk & Infrastructure Solutions Limited
(A subsidiary of CRISIL Limited)
Corporate Identity Number: U72100MH2000PLC128108

Registered Office: CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai - 400076, Phone: +91 22 3342 3000 | Fax: +91 22 3342 1830
www.crisil.com

Infrastructure Advisory

CRISIL
An S&P Global Company

(iv) To delegate all or any of the powers vested in her/him to any officer or executive of the Company by way of delegation in general or for specific transaction from time to time as she/he may consider appropriate."

For CRISIL Risk and Infrastructure Solutions Limited

Hiresh Dhakan

Hiresh Dhakan
Company Secretary
ACS 24568

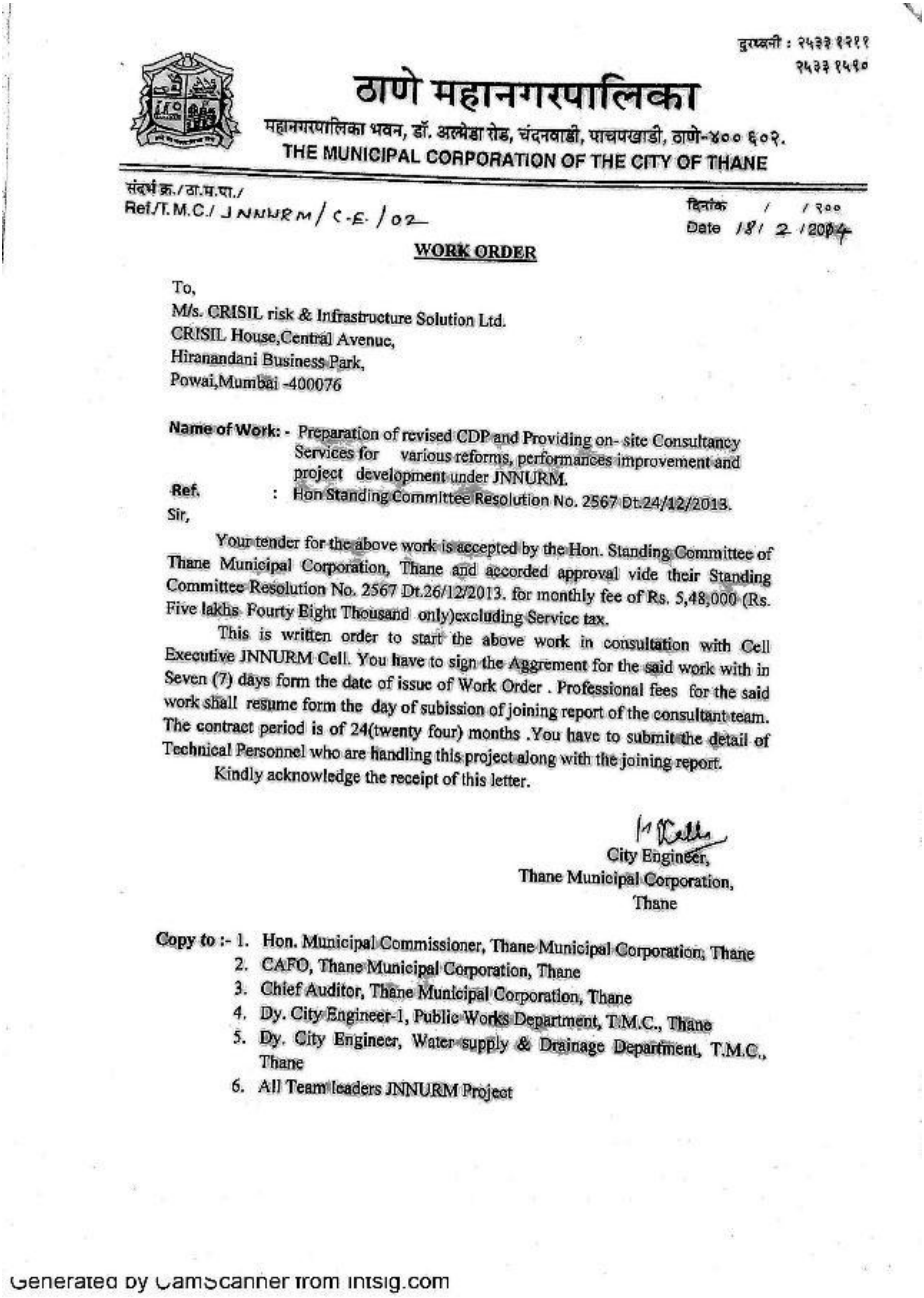
Mumbai, August 30, 2016

15.6 Annexure 6 - Supporting Documents (Mandate Letter / Completion Certificates etc.)

Category No.	Assignment Name	Client	Supporting Document type
1.	Preparation of revised CDP and providing onsite consultancy services for various reforms performance improvement and project development under JNNURM	Thane Municipal Corporation	Work Order
2.	Providing Management Consultancy for Implementing Reforms Enhancing Municipal Finances and SLB	Kalyan Dombivli Municipal Corporation	Work Order
3.	Preparation of revised City Development Plan	Municipal Corporation of Greater Mumbai	Mandate Letter
4.	Consultancy services for preparation of revised CDP	Indore Municipal Corporation	Work Order
5.	Consultancy Services for Updating the City Development Plan	Nagpur Municipal Corporation	Agreement
6.	Preparation and Revision of City Development Plans for 13 Selected Cities	Ministry of Urban Development	Agreement
7.	Consulting Services for Assessment of Data Management and SLB reporting Capacities of Focus Cities and States and Developing Improvement Mechanisms	GIZ	Completion Certificate
8.	Rapid Baseline Assessment of Urban Management Capacity in 30 Urban Local Bodies	Ministry of Urban Development	Contract
9.	All India Cold storage capacity and technology survey for India cold chain	National Horticulture Board, Ministry of Agriculture	Award Letter
10.	On Board Customer Satisfaction survey for various Premium / Mail / Express Trains	Indian Railway Catering & Tourism Corporation Ltd.	Work Order
11.	Inflation Expectation Survey for Household in 18 cities	Reserve Bank of India	Award Letter
12.	Consumer Confidence Survey in 18 cities	Reserve Bank of India	Award Letter
13.	Industrial Outlook Survey - All India Data base of manufacturing companies	Reserve Bank of India	Award Letter
14.	On Board Customer Satisfaction survey for various Premium / Mail / Express Trains – Pan India	Indian Railway Catering & Tourism Corporation Ltd.	Work Order

15.	Opinion Poll and Exit Poll - in 373 Parliamentary constituencies in India	NDTV	Completion Certificate
16.	IOCL Survey – across 1470 retail outlets pan India	Indian Oil	Work Order
17.	Preparation of Smart City Proposal for Assisting Solapur city to Participate in the Smart Cities Challenge	Ministry of Urban Development	Completion Certificate
18.	Preparation of Smart City Proposal for assisting Pimpri Chinchwad to participate in the Smart Cities Challenge	Ministry of Urban Development	Contract
19.	Selection of Consulting Services for providing Technical Assistance to Selected Cities in generating revenue through Value Capture Financing Tools	Greater Visakhapatnam Smart City Corporation Limited	Letter of Award
20.	Capability Building for Urban Development Selection of Consulting Services for Improvement in Property Tax Collection	Pune Smart City Development Corporation	Letter of Intent
21.	Selection of Consulting Services for Municipal Tax and Fee Improvement- Improvement in property Tax Collections for Panaji Smart City	Imagine Panaji Smart City Development Limited	Letter of Award
22.	JICA assisted Consultancy Services for City Sanitation Plan (CSP) for Mumbai and Lucknow	Japan International Cooperation Agency	Mandate Letter
23.	Technical assistance in implementation of urban reforms and projects under JNNURM	Pimpri Chinchwad Municipal Corporation	Completion Certificate

Supporting Documents (Mandate Letter / Completion Certificates etc.) are enclosed in next page.



दुरध्वनी : २५३३ १२११
२५३३ १५१०

ठाणे महानगरपालिका
महानगरपालिका भवन, डॉ. अल्मेडा रोड, चंदनवाडी, पाचपखाडी, ठाणे-४०० ६०२.
THE MUNICIPAL CORPORATION OF THE CITY OF THANE

संदर्भ क्र./ठा.म.पा./
Ref./T.M.C./ JNNURM / C.E. / 02

दिनांक / /२००
Date 18/ 2 /2014

WORK ORDER

To,
M/s. CRISIL risk & Infrastructure Solution Ltd.
CRISIL House,Central Avenue,
Hiranandani Business Park,
Powai,Mumbai -400076

Name of Work: - Preparation of revised CDP and Providing on- site Consultancy Services for various reforms, performances improvement and project development under JNNURM.

Ref. : Hon Standing Committee Resolution No. 2567 Dt.24/12/2013.

Sir,

Your tender for the above work is accepted by the Hon. Standing Committee of Thane Municipal Corporation, Thane and accorded approval vide their Standing Committee Resolution No. 2567 Dt.26/12/2013. for monthly fee of Rs. 5,48,000 (Rs. Five lakhs Fourty Eight Thousand only)excluding Service tax.

This is written order to start the above work in consultation with Cell Executive JNNURM Cell. You have to sign the Aggrement for the said work with in Seven (7) days form the date of issue of Work Order . Professional fees for the said work shall resume form the day of subission of joining report of the consultant team. The contract period is of 24(twenty four) months .You have to submit the detail of Technical Personnel who are handling this project along with the joining report.

Kindly acknowledge the receipt of this letter.

City Engineer,
Thane Municipal Corporation,
Thane

Copy to :-
1. Hon. Municipal Commissioner, Thane Municipal Corporation, Thane
2. CAFO, Thane Municipal Corporation, Thane
3. Chief Auditor, Thane Municipal Corporation, Thane
4. Dy. City Engineer-1, Public Works Department, T.M.C., Thane
5. Dy. City Engineer, Water supply & Drainage Department, T.M.C., Thane
6. All Team leaders JNNURM Project

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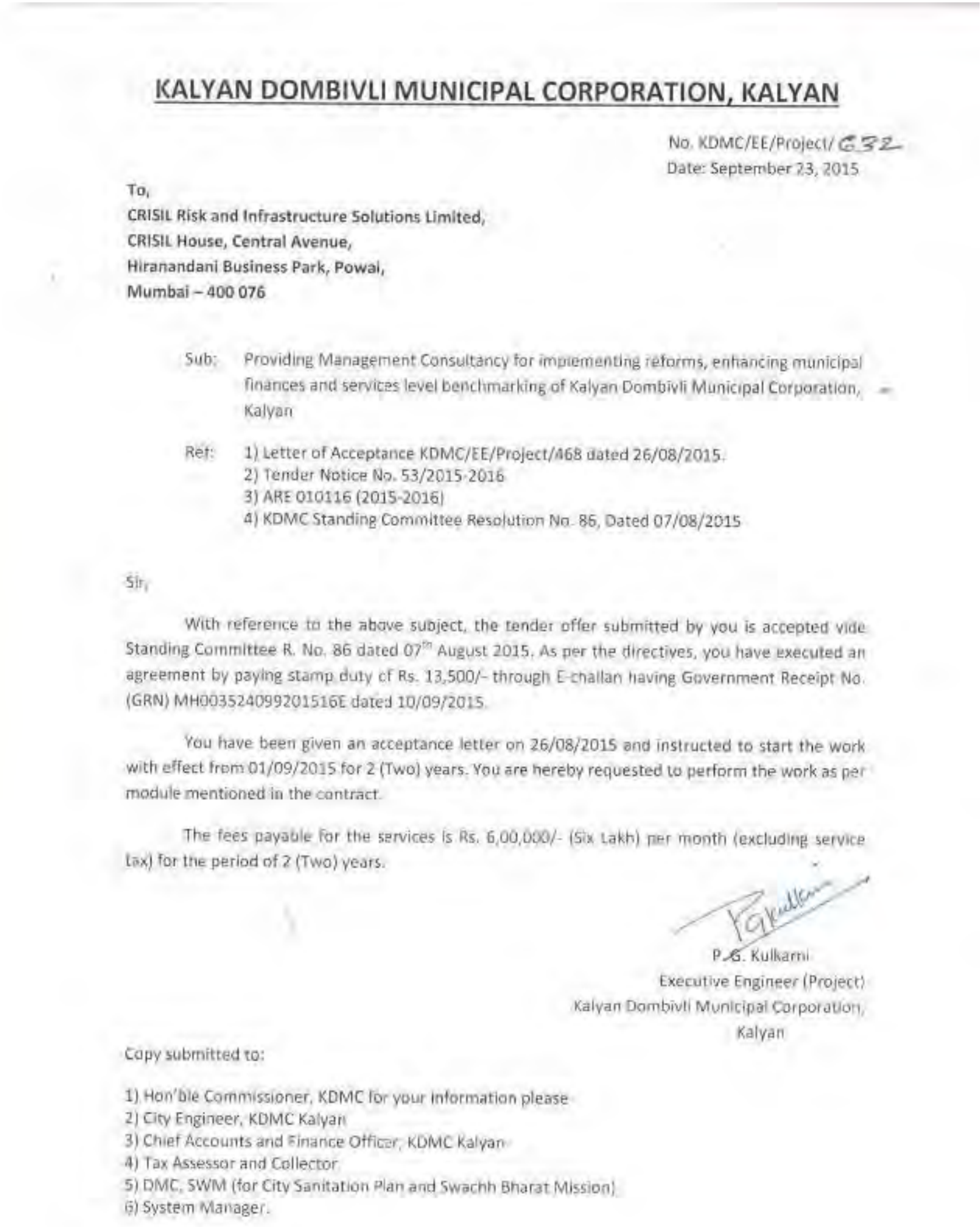


KALYAN DOMBIVLI MUNICIPAL CORPORATION, KALYAN

No. KDMC/EE/Project/ 632
Date: September 23, 2015

To,
CRISIL Risk and Infrastructure Solutions Limited,
CRISIL House, Central Avenue,
Hiranandani Business Park, Powai,
Mumbai – 400 076

Sub: Providing Management Consultancy for implementing reforms, enhancing municipal finances and services level benchmarking of Kalyan Dombivli Municipal Corporation, Kalyan

Ref:
1) Letter of Acceptance KDMC/EE/Project/468 dated 26/08/2015.
2) Tender Notice No. 53/2015-2016
3) ARE 010116 (2015-2016)
4) KDMC Standing Committee Resolution No. 86, Dated 07/08/2015

Sir,

With reference to the above subject, the tender offer submitted by you is accepted vide Standing Committee R. No. 86 dated 07th August 2015. As per the directives, you have executed an agreement by paying stamp duty of Rs. 13,500/- through E-challan having Government Receipt No. (GRN) MH003524099201516E dated 10/09/2015.

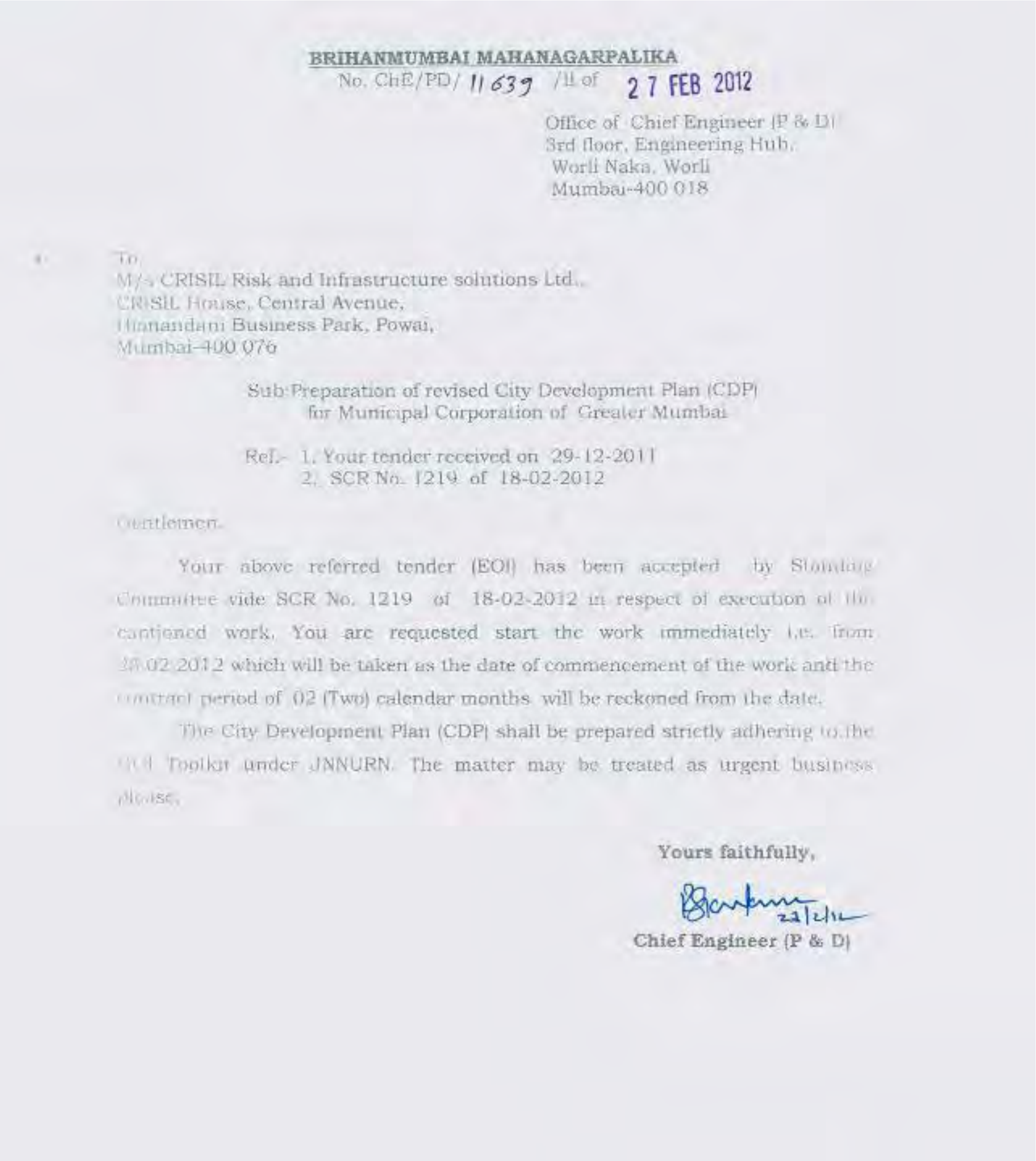
You have been given an acceptance letter on 26/08/2015 and instructed to start the work with effect from 01/09/2015 for 2 (Two) years. You are hereby requested to perform the work as per module mentioned in the contract.

The fees payable for the services is Rs. 6,00,000/- (Six Lakh) per month (excluding service tax) for the period of 2 (Two) years.

P. G. Kulkarni
Executive Engineer (Project)
Kalyan Dombivli Municipal Corporation,
Kalyan

Copy submitted to:

1) Hon'ble Commissioner, KDMC for your information please
2) City Engineer, KDMC Kalyan
3) Chief Accounts and Finance Officer, KDMC Kalyan
4) Tax Assessor and Collector
5) DMC, SWM (for City Sanitation Plan and Swachh Bharat Mission)
6) System Manager.



BRIHANMUMBAI MAHANAGARPALIKA
No. ChE/PD/ 11639 /II of 27 FEB 2012

Office of Chief Engineer (P & D)
3rd floor, Engineering Hub,
Worli Naka, Worli
Mumbai-400 018

To,
M/s CRISIL Risk and Infrastructure solutions Ltd.,
CRISIL House, Central Avenue,
Hiranandani Business Park, Powai,
Mumbai-400 076

Sub:Preparation of revised City Development Plan (CDP) for Municipal Corporation of Greater Mumbai

Ref.- 1. Your tender received on 29-12-2011
2. SCR No. 1219 of 18-02-2012

Gentlemen,

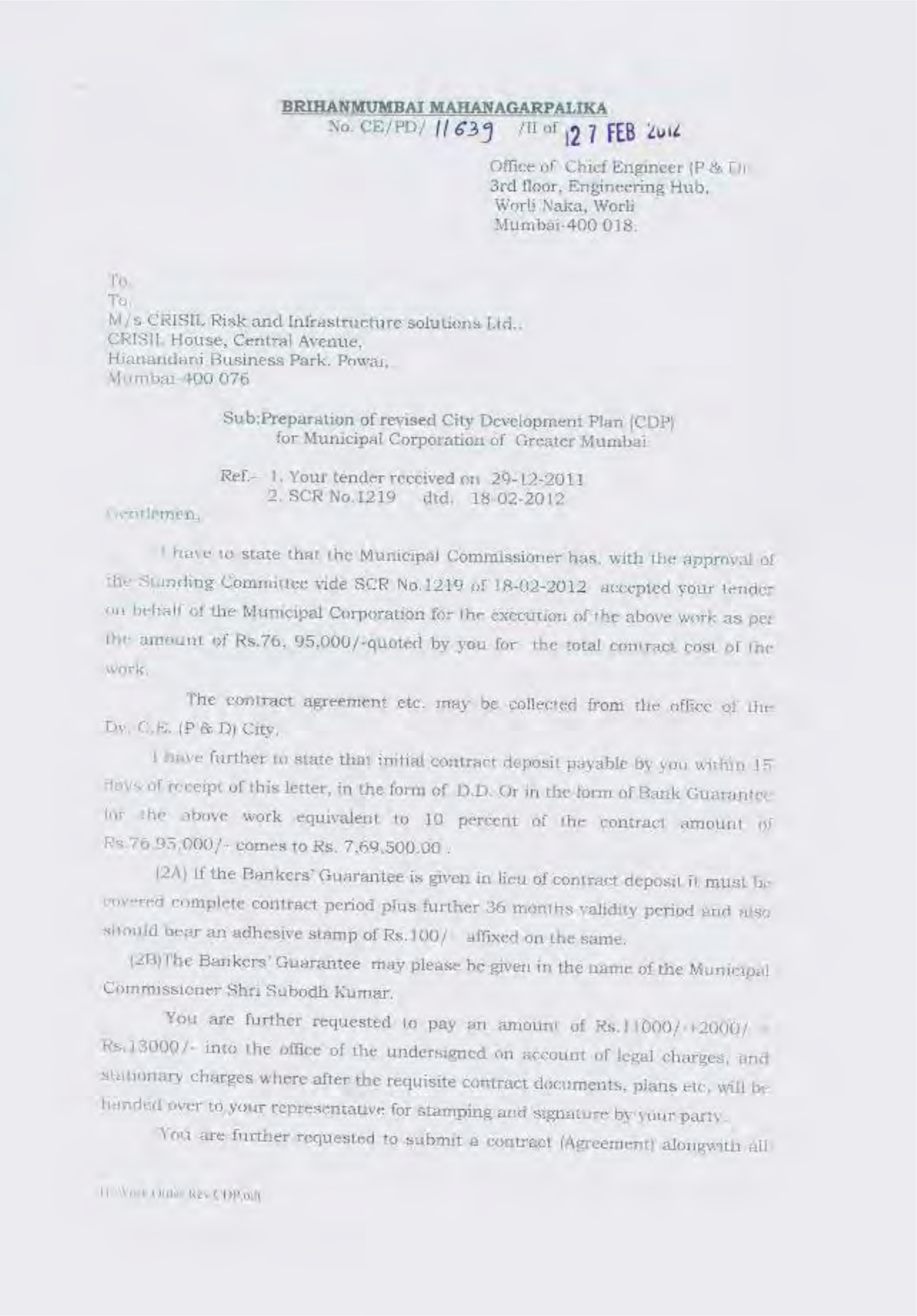
Your above referred tender (EOI) has been accepted by Standing Committee vide SCR No. 1219 of 18-02-2012 in respect of execution of the captioned work. You are requested start the work immediately i.e. from 28.02.2012 which will be taken as the date of commencement of the work and the contract period of 02 (Two) calendar months will be reckoned from the date.

The City Development Plan (CDP) shall be prepared strictly adhering to the CDP Toolkit under JNNURN. The matter may be treated as urgent business please.

Yours faithfully,

22/2/12

Chief Engineer (P & D)



BRIHANMUMBAI MAHANAGARPALIKA
No. CE/PD/ 11639 /II of 27 FEB 2012

Office of Chief Engineer (P & D)
3rd floor, Engineering Hub,
Worli Naka, Worli
Mumbai-400 018.

To,
To,
M/s CRISIL Risk and Infrastructure solutions Ltd.,
CRISIL House, Central Avenue,
Hiranandani Business Park, Powai,
Mumbai-400 076

Sub:Preparation of revised City Development Plan (CDP)
for Municipal Corporation of Greater Mumbai

Ref.- 1. Your tender received on 29-12-2011
2. SCR No.1219 dtd. 18-02-2012

Gentlemen,

I have to state that the Municipal Commissioner has, with the approval of the Standing Committee vide SCR No.1219 of 18-02-2012 accepted your tender on behalf of the Municipal Corporation for the execution of the above work as per the amount of Rs.76, 95,000/-quoted by you for the total contract cost of the work.

The contract agreement etc. may be collected from the office of the Dy. C.E. (P & D) City.

I have further to state that initial contract deposit payable by you within 15 days of receipt of this letter, in the form of D.D. Or in the form of Bank Guarantee for the above work equivalent to 10 percent of the contract amount of Rs.76,95,000/- comes to Rs. 7,69,500.00 .

(2A) If the Bankers' Guarantee is given in lieu of contract deposit it must be covered complete contract period plus further 36 months validity period and also should bear an adhesive stamp of Rs.100/- affixed on the same.

(2B)The Bankers' Guarantee may please be given in the name of the Municipal Commissioner Shri Subodh Kumar.

You are further requested to pay an amount of Rs.11000/-+2000/- = Rs.13000/- into the office of the undersigned on account of legal charges, and stationary charges where after the requisite contract documents, plans etc, will be handed over to your representative for stamping and signature by your party.

You are further requested to submit a contract (Agreement) alongwith all

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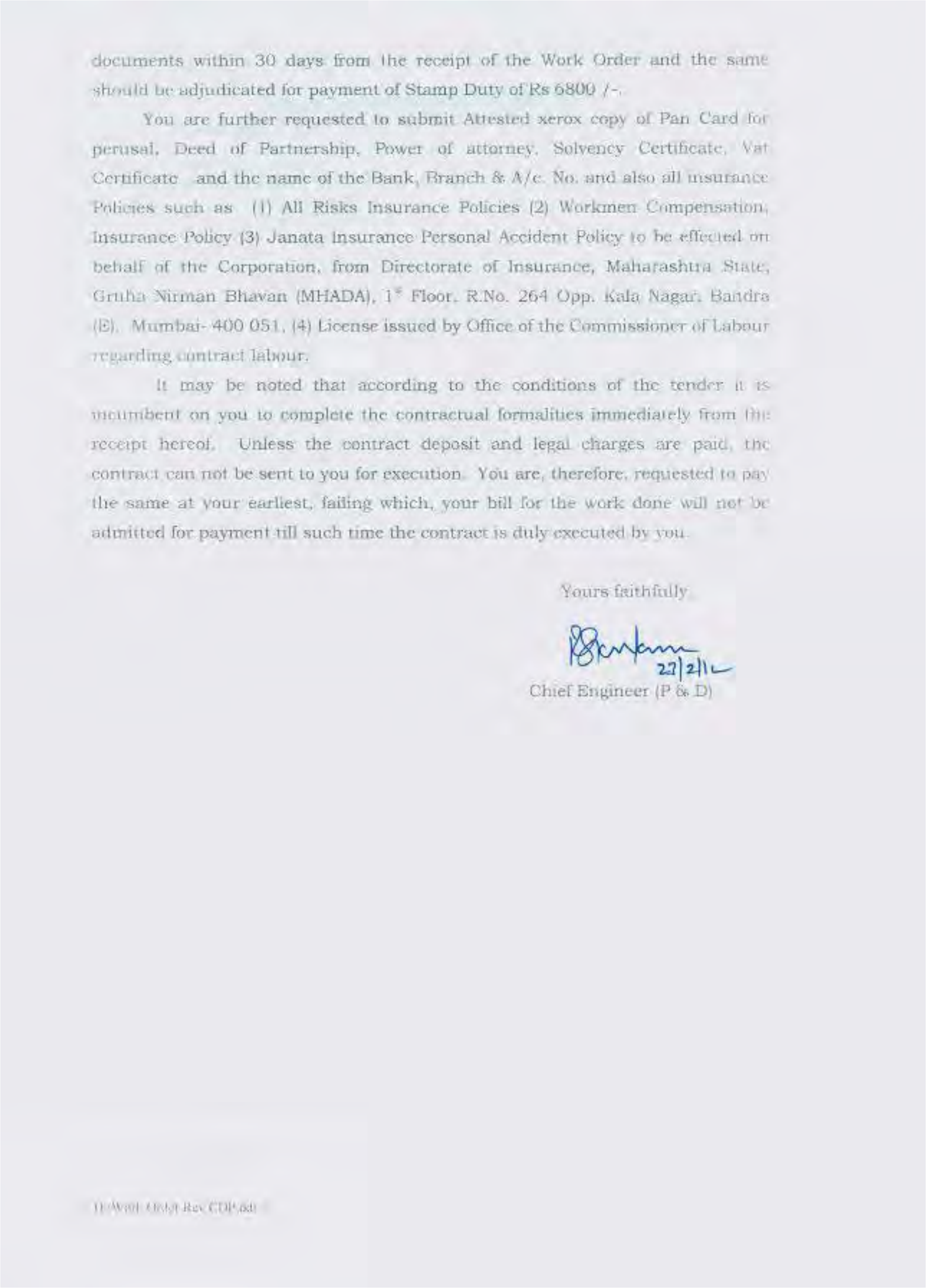

documents within 30 days from the receipt of the Work Order and the same should be adjudicated for payment of Stamp Duty of Rs 6800 /-.

You are further requested to submit Attested xerox copy of Pan Card for perusal, Deed of Partnership, Power of attorney, Solvency Certificate, Vat Certificate and the name of the Bank, Branch & A/c. No. and also all insurance Policies such as (1) All Risks Insurance Policies (2) Workmen Compensation, Insurance Policy (3) Janata Insurance Personal Accident Policy to be effected on behalf of the Corporation, from Directorate of Insurance, Maharashtra State, Gruha Nirman Bhavan (MHADA), 1st Floor, R.No. 264 Opp. Kala Nagar, Bandra (E), Mumbai- 400 051. (4) License issued by Office of the Commissioner of Labour regarding contract labour.

It may be noted that according to the conditions of the tender it is incumbent on you to complete the contractual formalities immediately from the receipt hereof. Unless the contract deposit and legal charges are paid, the contract can not be sent to you for execution. You are, therefore, requested to pay the same at your earliest, failing which, your bill for the work done will not be admitted for payment till such time the contract is duly executed by you.

Yours faithfully

22/2/16
Chief Engineer (P & D)

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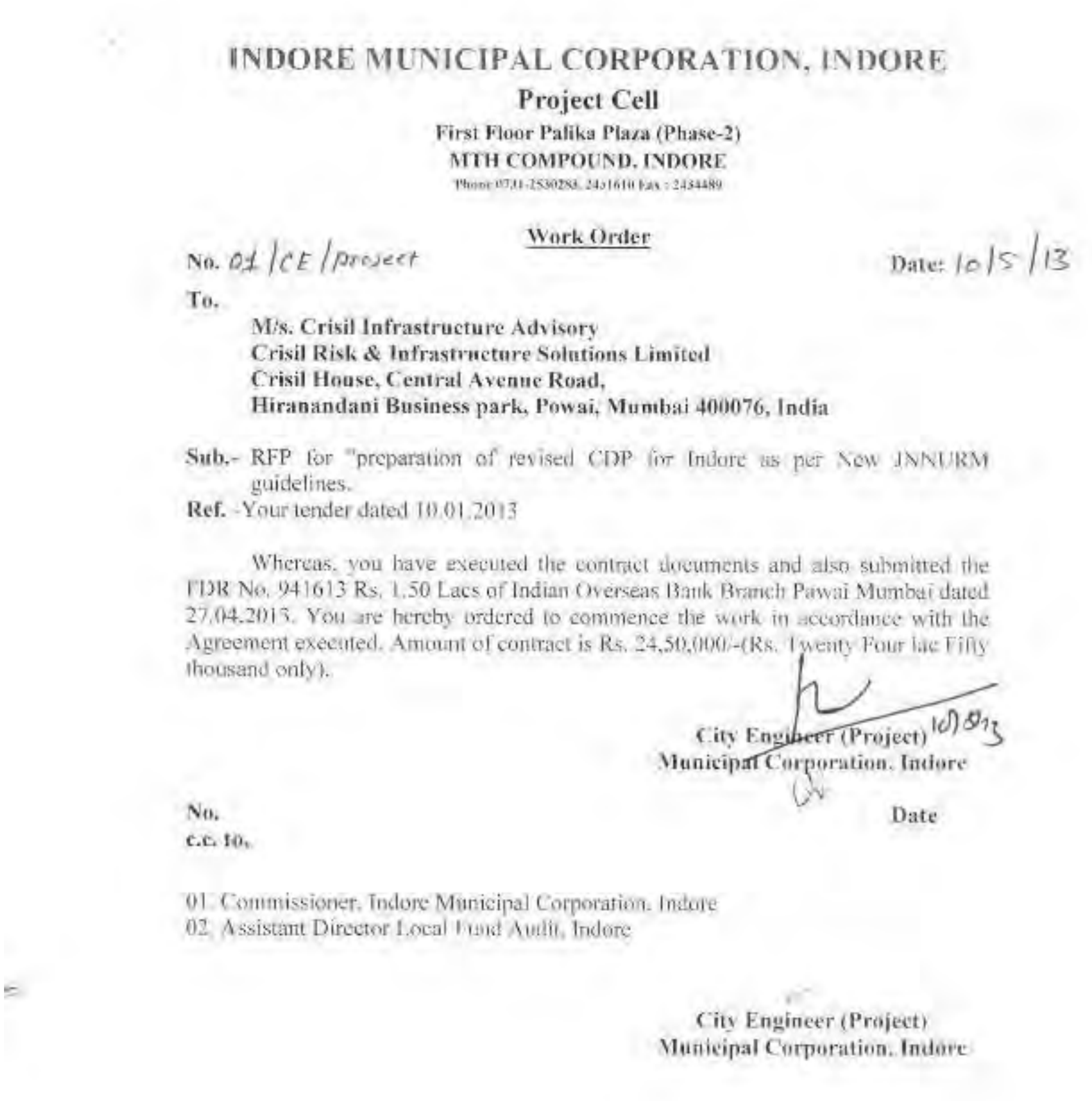


INDORE MUNICIPAL CORPORATION, INDORE

Project Cell

First Floor Palika Plaza (Phase-2)
MTH COMPOUND, INDORE
Phone 0731-2530283, 2431610 Fax : 2434489

Work Order

No. 01/CE/Project Date: 10/5/13

To,

M/s. Crisil Infrastructure Advisory
Crisil Risk & Infrastructure Solutions Limited
Crisil House, Central Avenue Road,
Hiranandani Business park, Powai, Mumbai 400076, India

Sub.- RFP for "preparation of revised CDP for Indore as per New JNNURM guidelines.

Ref. -Your tender dated 10.01.2013

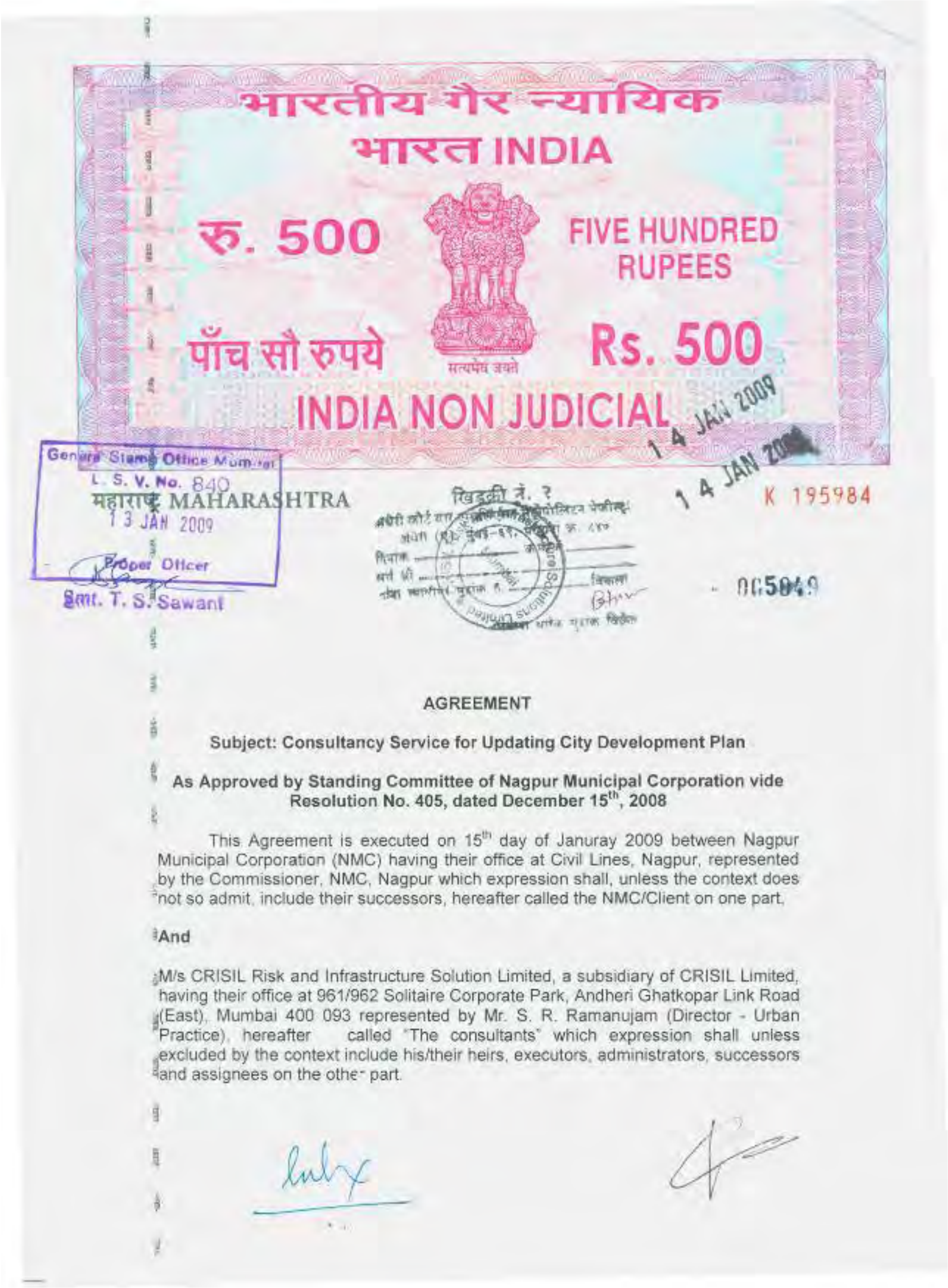
Whereas, you have executed the contract documents and also submitted the FDR No. 941613 Rs. 1.50 Lacs of Indian Overseas Bank Branch Pawai Mumbai dated 27.04.2013. You are hereby ordered to commence the work in accordance with the Agreement executed. Amount of contract is Rs. 24,50,000/-(Rs. Twenty Four lac Fifty thousand only).

10/5/13
City Engineer (Project)
Municipal Corporation, Indore

No. Date
c.c. to,

01. Commissioner, Indore Municipal Corporation, Indore
02. Assistant Director Local Fund Audit, Indore

City Engineer (Project)
Municipal Corporation, Indore



भारतीय गैर न्यायिक
भारत INDIA
रु. 500
FIVE HUNDRED RUPEES
पाँच सौ रुपये
सत्यमेव जयते
Rs. 500
INDIA NON JUDICIAL

14 JAN 2009
14 JAN 2009

K 195984

General Stamp Office Mumbai
L. S. V. No. 840
महाराष्ट्र MAHARASHTRA
13 JAN 2009
Proper Officer
Smt. T. S. Sawant

खिडकी नं. २
[illegible]

005049

AGREEMENT

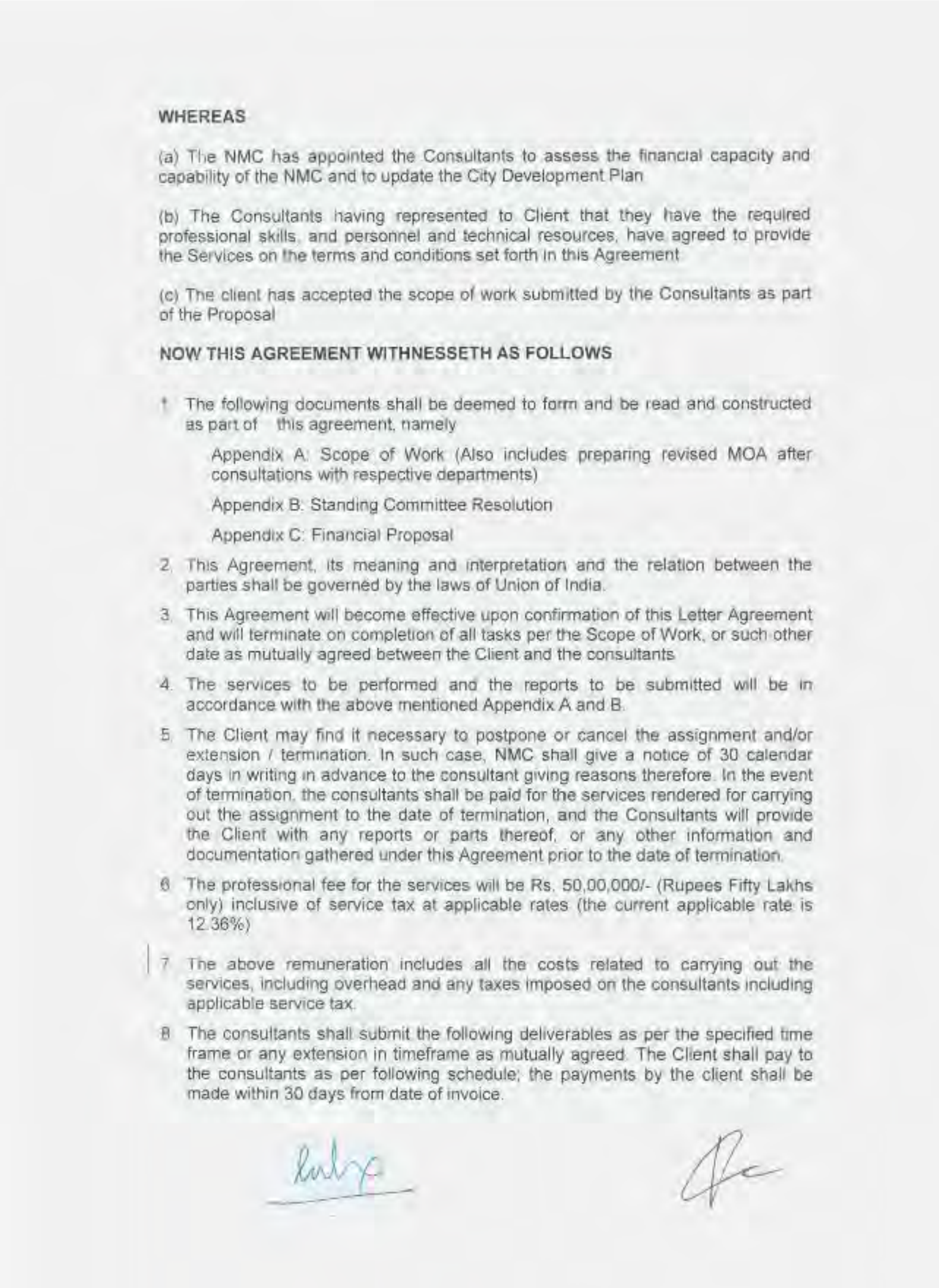
Subject: Consultancy Service for Updating City Development Plan

As Approved by Standing Committee of Nagpur Municipal Corporation vide Resolution No. 405, dated December 15th, 2008

This Agreement is executed on 15th day of Januray 2009 between Nagpur Municipal Corporation (NMC) having their office at Civil Lines, Nagpur, represented by the Commissioner, NMC, Nagpur which expression shall, unless the context does not so admit, include their successors, hereafter called the NMC/Client on one part.

And

M/s CRISIL Risk and Infrastructure Solution Limited, a subsidiary of CRISIL Limited, having their office at 961/962 Solitaire Corporate Park, Andheri Ghatkopar Link Road (East), Mumbai 400 093 represented by Mr. S. R. Ramanujam (Director - Urban Practice), hereafter called "The consultants" which expression shall unless excluded by the context include his/their heirs, executors, administrators, successors and assignees on the othe- part.



WHEREAS

(a) The NMC has appointed the Consultants to assess the financial capacity and capability of the NMC and to update the City Development Plan

(b) The Consultants having represented to Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Agreement

(c) The client has accepted the scope of work submitted by the Consultants as part of the Proposal

NOW THIS AGREEMENT WITHNESSETH AS FOLLOWS

1. The following documents shall be deemed to form and be read and constructed as part of this agreement, namely

   Appendix A: Scope of Work (Also includes preparing revised MOA after consultations with respective departments)

   Appendix B: Standing Committee Resolution

   Appendix C: Financial Proposal

2. This Agreement, its meaning and interpretation and the relation between the parties shall be governed by the laws of Union of India.

3. This Agreement will become effective upon confirmation of this Letter Agreement and will terminate on completion of all tasks per the Scope of Work, or such other date as mutually agreed between the Client and the consultants

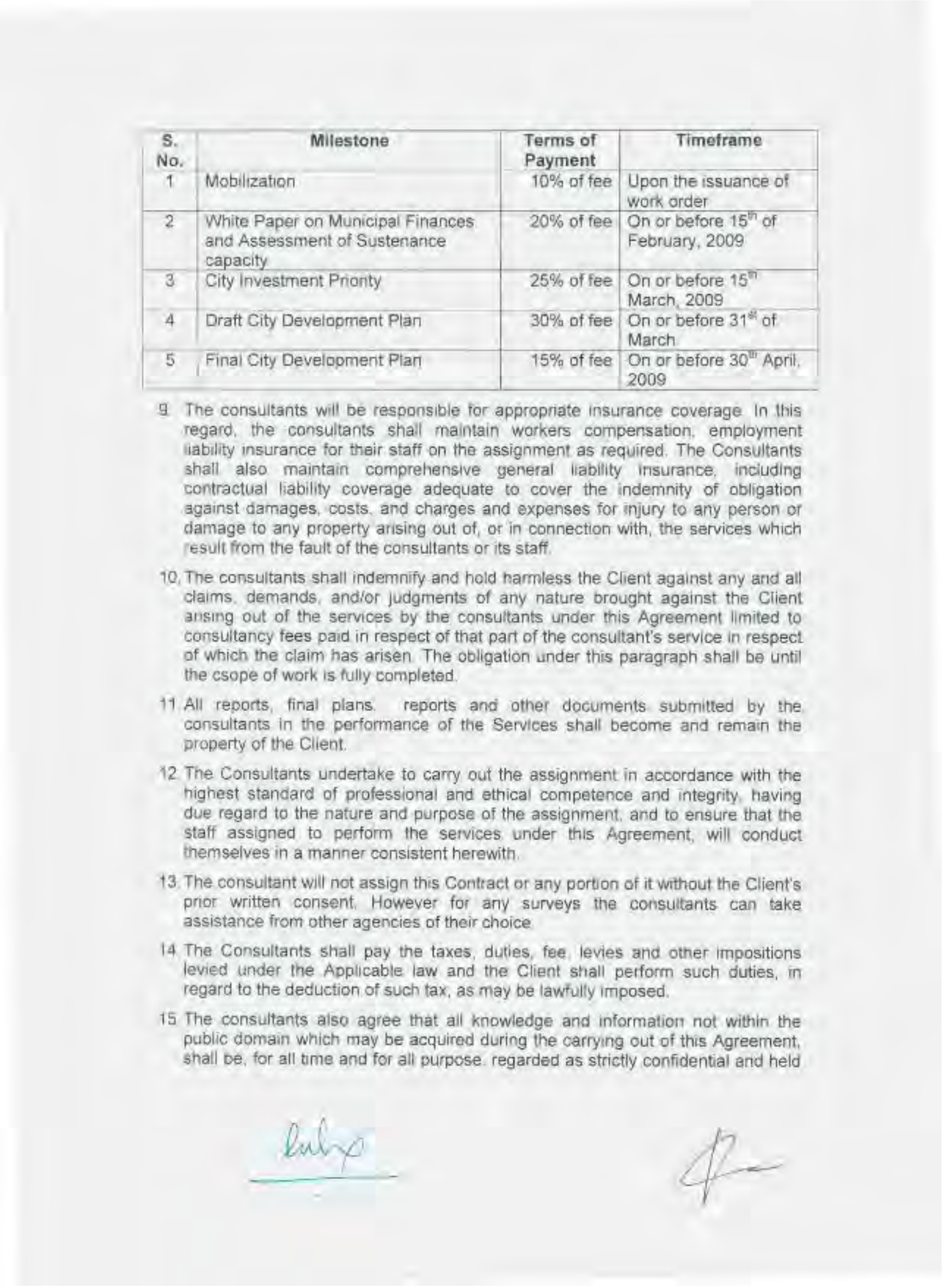
4. The services to be performed and the reports to be submitted will be in accordance with the above mentioned Appendix A and B.

5. The Client may find it necessary to postpone or cancel the assignment and/or extension / termination. In such case, NMC shall give a notice of 30 calendar days in writing in advance to the consultant giving reasons therefore. In the event of termination, the consultants shall be paid for the services rendered for carrying out the assignment to the date of termination, and the Consultants will provide the Client with any reports or parts thereof, or any other information and documentation gathered under this Agreement prior to the date of termination.

6. The professional fee for the services will be Rs. 50,00,000/- (Rupees Fifty Lakhs only) inclusive of service tax at applicable rates (the current applicable rate is 12.36%)

7. The above remuneration includes all the costs related to carrying out the services, including overhead and any taxes imposed on the consultants including applicable service tax.

8. The consultants shall submit the following deliverables as per the specified time frame or any extension in timeframe as mutually agreed. The Client shall pay to the consultants as per following schedule; the payments by the client shall be made within 30 days from date of invoice.



S. No.	Milestone	Terms of Payment	Timeframe
1	Mobilization	10% of fee	Upon the issuance of work order
2	White Paper on Municipal Finances and Assessment of Sustenance capacity	20% of fee	On or before 15th of February, 2009
3	City Investment Priority	25% of fee	On or before 15th March, 2009
4	Draft City Development Plan	30% of fee	On or before 31st of March
5	Final City Development Plan	15% of fee	On or before 30th April, 2009

9. The consultants will be responsible for appropriate insurance coverage. In this regard, the consultants shall maintain workers compensation, employment liability insurance for their staff on the assignment as required. The Consultants shall also maintain comprehensive general liability insurance, including contractual liability coverage adequate to cover the indemnity of obligation against damages, costs, and charges and expenses for injury to any person or damage to any property arising out of, or in connection with, the services which result from the fault of the consultants or its staff.

10. The consultants shall indemnify and hold harmless the Client against any and all claims, demands, and/or judgments of any nature brought against the Client arising out of the services by the consultants under this Agreement limited to consultancy fees paid in respect of that part of the consultant's service in respect of which the claim has arisen. The obligation under this paragraph shall be until the csope of work is fully completed.

11. All reports, final plans, reports and other documents submitted by the consultants in the performance of the Services shall become and remain the property of the Client.

12. The Consultants undertake to carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and to ensure that the staff assigned to perform the services under this Agreement, will conduct themselves in a manner consistent herewith.

13. The consultant will not assign this Contract or any portion of it without the Client's prior written consent. However for any surveys the consultants can take assistance from other agencies of their choice.

14. The Consultants shall pay the taxes, duties, fee, levies and other impositions levied under the Applicable law and the Client shall perform such duties, in regard to the deduction of such tax, as may be lawfully imposed.

15. The consultants also agree that all knowledge and information not within the public domain which may be acquired during the carrying out of this Agreement, shall be, for all time and for all purpose, regarded as strictly confidential and held

in confidence, and shall not be directly or indirectly disclosed to any person whatsoever, except with the Clients written permission.

- The consultancy work will be completed within 16 week of receipt of work order. Unless mutually agreed for any extension.

16. Any dispute arising out of the Agreement, which cannot be amicably settled between the Parties shall be referred to arbitration in accordance with the Arbitration & Conciliation Act 1996. The place of arbitration shall be at Nagpur.

The said enclosures are part of the agreement and both parties abide by the terms and condition of the aforementioned documents.

Place: Nagpur
Date: 15 January 2009

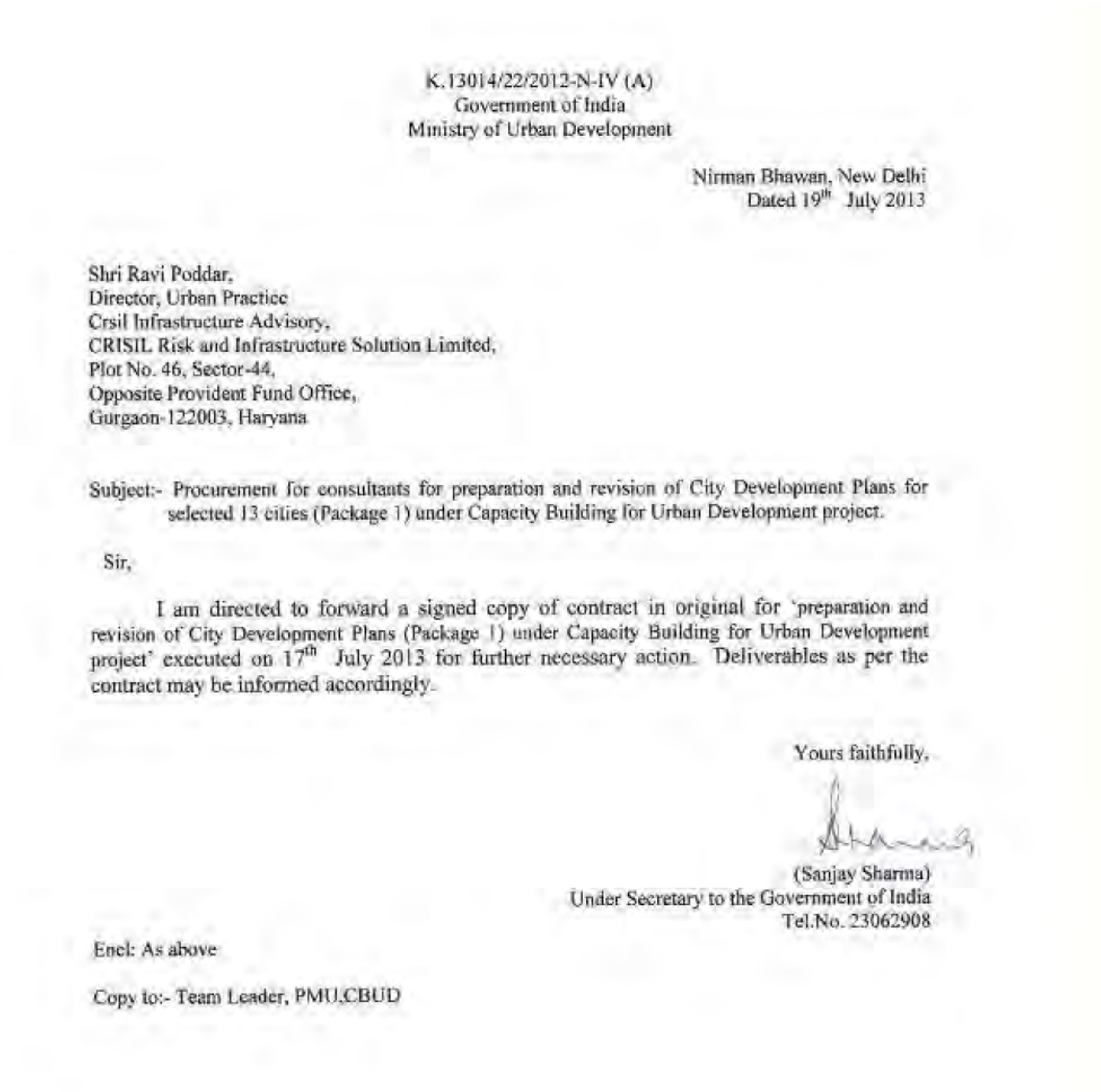
Seal & Signature
Mr. S.R.Ramanujam
Director - Urban Practice
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solution Limited

Seal & Signature
Mr. P.D.Urade
Executive Engineer (PPC)
Nagpur Municipal Corporation
Nagpur

Witness

1.

2.



K.13014/22/2012-N-IV (A)
Government of India
Ministry of Urban Development

Nirman Bhawan, New Delhi
Dated 19th July 2013

Shri Ravi Poddar,
Director, Urban Practice
Crsil Infrastructure Advisory,
CRISIL Risk and Infrastructure Solution Limited,
Plot No. 46, Sector-44,
Opposite Provident Fund Office,
Gurgaon-122003, Haryana

Subject:- Procurement for consultants for preparation and revision of City Development Plans for selected 13 cities (Package 1) under Capacity Building for Urban Development project.

Sir,

I am directed to forward a signed copy of contract in original for 'preparation and revision of City Development Plans (Package 1) under Capacity Building for Urban Development project' executed on 17th July 2013 for further necessary action. Deliverables as per the contract may be informed accordingly.

Yours faithfully,

(Sanjay Sharma)
Under Secretary to the Government of India
Tel.No. 23062908

Encl: As above

Copy to:- Team Leader, PMU,CBUD

CONTRACT AGREEMENT

RFP No.: CBUD/UP/18

Country: India

***Project Name*: Capacity Building for Urban Development**

Credit #: 4997-IN

***Title of Consulting Services*:**
Preparation and Revision of City Development Plans for 13 Selected Cities

CONTRACT FOR CONSULTANTS' SERVICES

Lump-Sum

between

Ministry of Urban Development, Government of India,
New Delhi 110011

and

CRISIL Risk and Infrastructure Solutions Limited

Dated: 17|07|2013

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

9 MAY 2013

महाराष्ट्र MAHARASHTRA

प्रधान मुद्रांक कार्यालय, मुंबई
प. मु. विक्रेता क्र. १४०
7 MAY 2013
सक्षम अधिकारी

एल. चव्हाण

HF 672339

मुद्रांक विक्रेता
Credit Risk & Infrastructure Solutions Limited
CRISIL House, 5th Floor, Central Avenue Road,
Hiranandani Business Park, Opp. D'Mart, Powai,
Mumbai - 400 076.

06406

I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the 17 day of the month of July, 2013, between, on the one hand, *Ministry of Urban Development, Government of India, Nirman Bhawan, Maulana Azad Road, New Delhi* (hereinafter called the "Client") and, on the other hand, *CRISIL Risk and Infrastructure Solutions Limited* (hereinafter called the "Consultant").

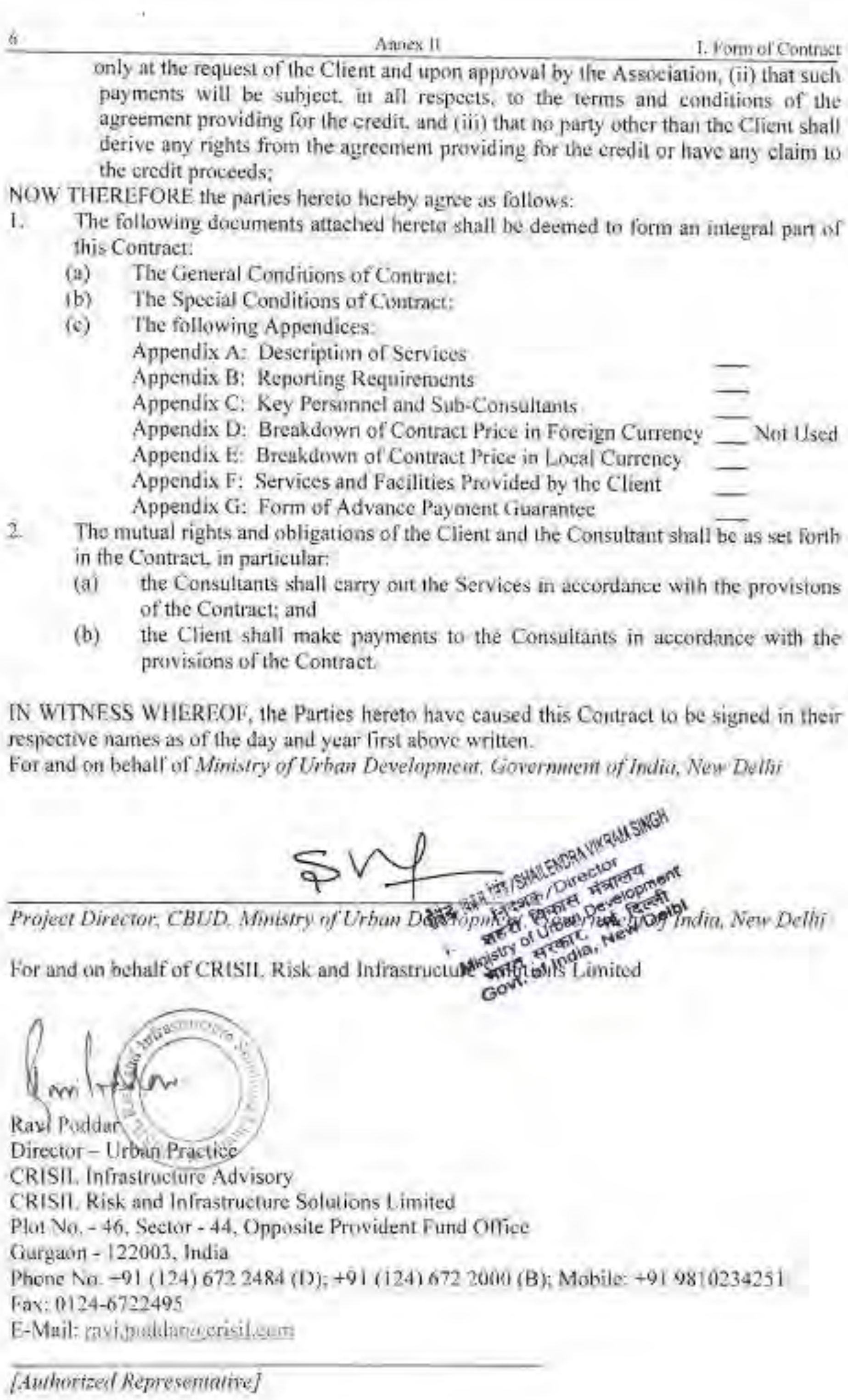
WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, and personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the International Development Association (hereinafter called the "Association")] towards the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood (i) that payments by the Association will be made

SVP



only at the request of the Client and upon approval by the Association, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the credit, and (iii) that no party other than the Client shall derive any rights from the agreement providing for the credit or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
   - (a) The General Conditions of Contract;
   - (b) The Special Conditions of Contract;
   - (c) The following Appendices:
     - Appendix A: Description of Services ___
     - Appendix B: Reporting Requirements ___
     - Appendix C: Key Personnel and Sub-Consultants ___
     - Appendix D: Breakdown of Contract Price in Foreign Currency ___ Not Used
     - Appendix E: Breakdown of Contract Price in Local Currency ___
     - Appendix F: Services and Facilities Provided by the Client ___
     - Appendix G: Form of Advance Payment Guarantee ___
2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
   - (a) the Consultants shall carry out the Services in accordance with the provisions of the Contract; and
   - (b) the Client shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *Ministry of Urban Development, Government of India, New Delhi*

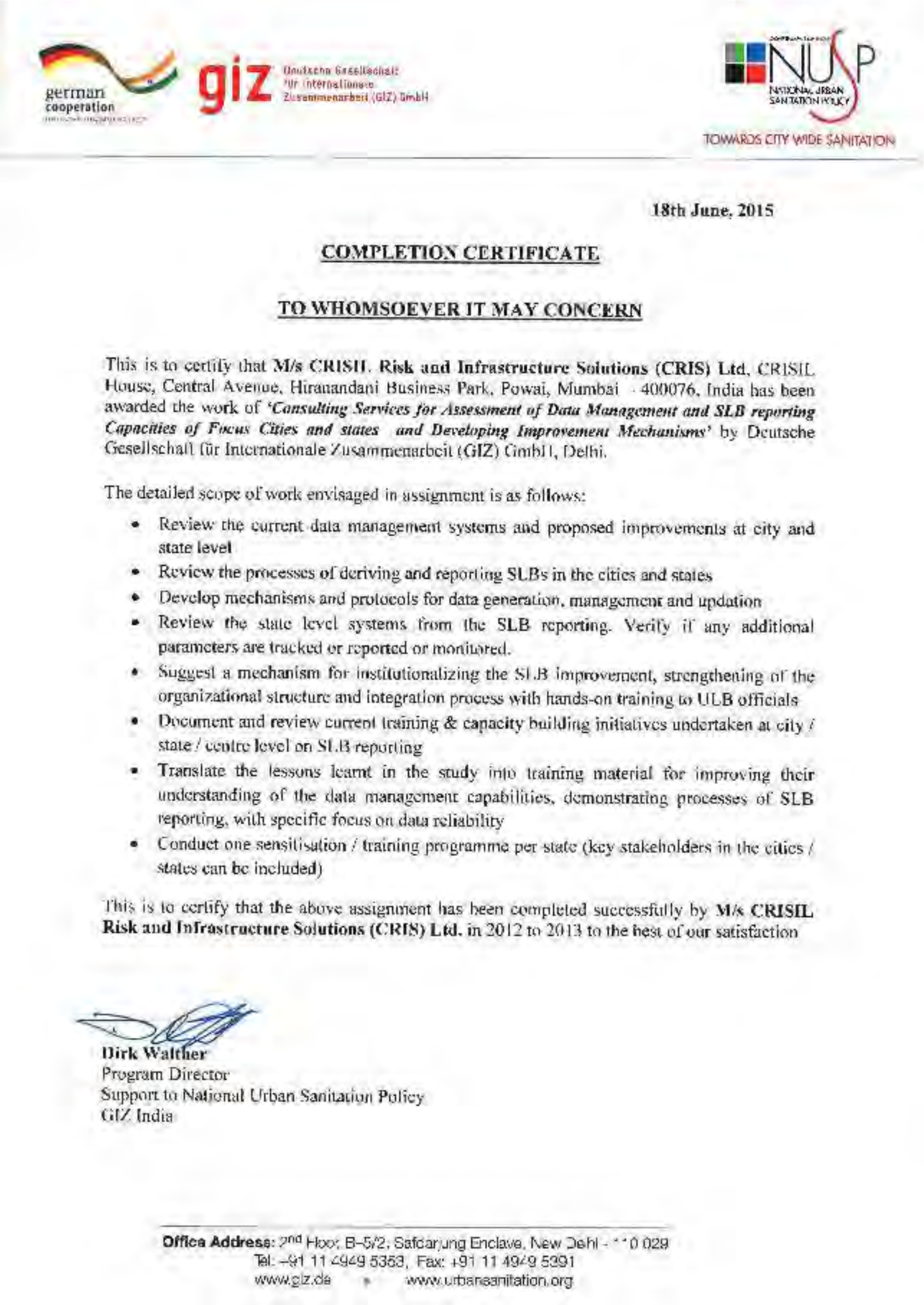
शैलेन्द्र विक्रम सिंह/SHAILENDRA VIKRAM SINGH
निदेशक/Director
शहरी विकास मंत्रालय
Ministry of Urban Development
भारत सरकार, नई दिल्ली
Govt. of India, New Delhi

Project Director, CBUD, Ministry of Urban Development, Government of India, New Delhi

For and on behalf of CRISIL Risk and Infrastructure Solutions Limited

Ravi Poddar
Director – Urban Practice
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44, Opposite Provident Fund Office
Gurgaon - 122003, India
Phone No. +91 (124) 672 2484 (D); +91 (124) 672 2000 (B); Mobile: +91 9810234251
Fax: 0124-6722495
E-Mail: ravi.poddar@crisil.com

[Authorized Representative]



german cooperation
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
NUSP NATIONAL URBAN SANITATION POLICY
TOWARDS CITY WIDE SANITATION

18th June, 2015

COMPLETION CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **M/s CRISIL Risk and Infrastructure Solutions (CRIS) Ltd**, CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai - 400076, India has been awarded the work of ***'Consulting Services for Assessment of Data Management and SLB reporting Capacities of Focus Cities and states and Developing Improvement Mechanisms'*** by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Delhi.

The detailed scope of work envisaged in assignment is as follows:

- Review the current data management systems and proposed improvements at city and state level
- Review the processes of deriving and reporting SLBs in the cities and states
- Develop mechanisms and protocols for data generation, management and updation
- Review the state level systems from the SLB reporting. Verify if any additional parameters are tracked or reported or monitored.
- Suggest a mechanism for institutionalizing the SLB improvement, strengthening of the organizational structure and integration process with hands-on training to ULB officials
- Document and review current training & capacity building initiatives undertaken at city / state / centre level on SLB reporting
- Translate the lessons learnt in the study into training material for improving their understanding of the data management capabilities, demonstrating processes of SLB reporting, with specific focus on data reliability
- Conduct one sensitisation / training programme per state (key stakeholders in the cities / states can be included)

This is to certify that the above assignment has been completed successfully by **M/s CRISIL Risk and Infrastructure Solutions (CRIS) Ltd.** in 2012 to 2013 to the best of our satisfaction

Dirk Walther
Program Director
Support to National Urban Sanitation Policy
GIZ India

भारतीय गैर न्यायिक
एक सौ रुपये Rs. 100
रु. 100 ONE HUNDRED RUPEES
भारत INDIA
INDIA NON JUDICIAL
17 DEC 2012

महाराष्ट्र MAHARASHTRA

GM 655070

प्र. मुद्रांक कार्यालय, मुंबई
प. मु. विक्रेता क्र. २२२
12 DEC 2012
सक्षम अधिकारी

श्री. ल. शि. कांबळे

सा. कांचन हर्षद बोंगाळे
परवाना क्रमांक २२२/९८
वांद्रे कोर्टासमोर, अ. का., वांद्रे (पूर्व)
17 DEC 2012
श्री/श्रीमती CRISIL Risk & Infrastructure Solutions Limited, CRISIL House, 5th Floor, Central Avenue Road, Hiranandani Business Park, Opp. D'Mart, Powai, Mumbai
...आर्थोत्तर मुद्रांक पेपर विकत्या.

29313

परवाना धारक मुद्रांक विक्रेता

I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ~~19th~~ 28th day of the month of *March, 2013*, between, on the one hand, *Ministry of Urban Development, Government of India, Nirman Bhawan, Maulana Azad Road, New Delhi* (hereinafter called the "Client") and, on the other hand, *CRISIL Risk and Infrastructure Solutions Limited* (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, and personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the International Development Association (hereinafter called the "Association")] towards the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood (i) that payments by the Association will be made only at the request of the Client and upon approval by the Association, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the credit, and (iii) that no party other than the Client shall derive any rights from the agreement providing for the credit or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
   (a) The General Conditions of Contract;
   (b) The Special Conditions of Contract;
   (c) The following Appendices:
   Appendix A: Description of Services ___
   Appendix B: Reporting Requirements ___
   Appendix C: Key Personnel and Sub-Consultants ___
   Appendix D: Breakdown of Contract Price in Foreign Currency ___ Not Used
   Appendix E: Breakdown of Contract Price in Local Currency ___
   Appendix F: Services and Facilities Provided by the Client ___
   Appendix G: Form of Advance Payment Guarantee ___
2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
   (a) the Consultants shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

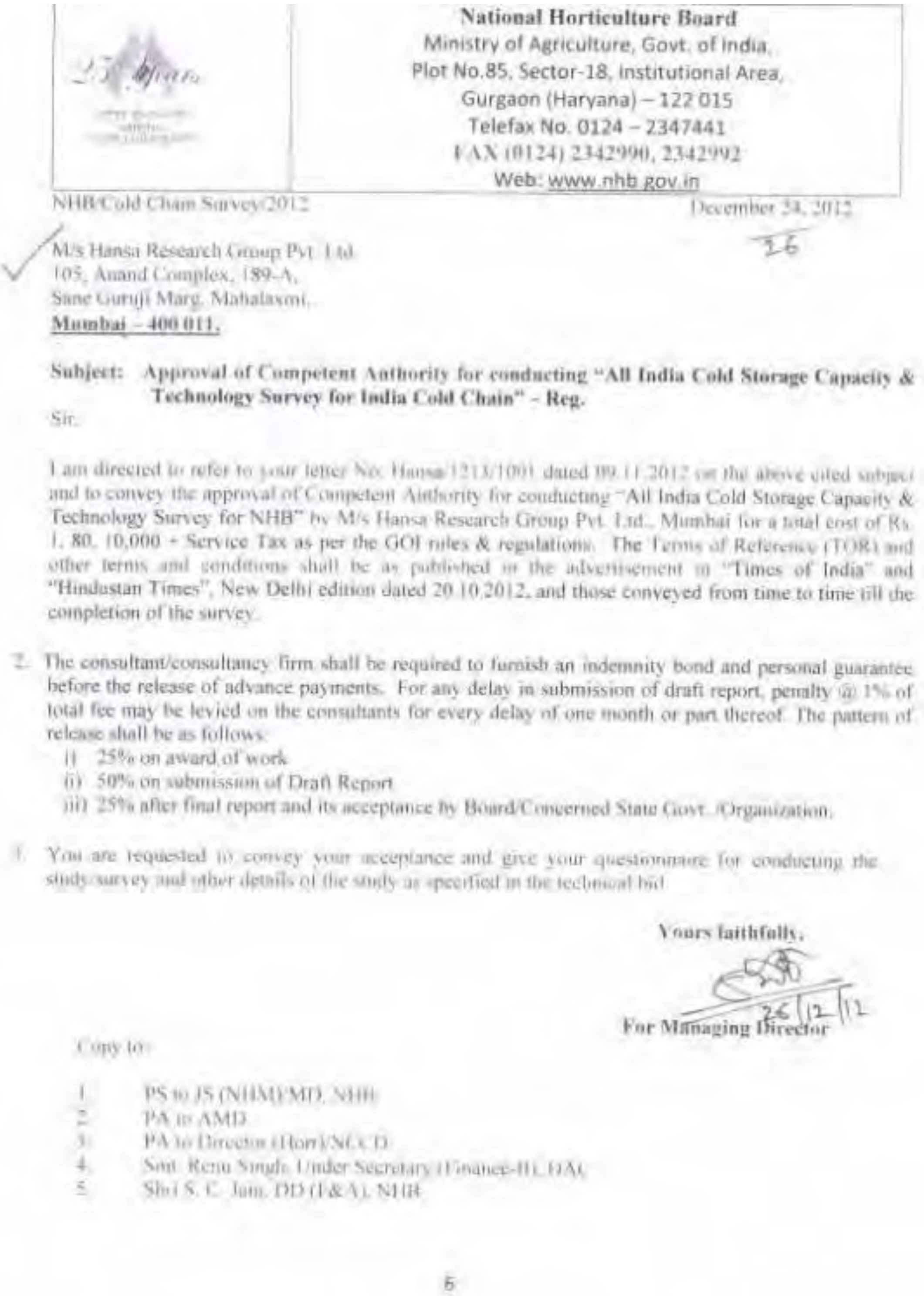
For and on behalf of *Ministry of Urban Development, Government of India, New Delhi*

Project Director, CBUD, Ministry of Urban Development, Government of India, New Delhi

For and on behalf of CRISIL Risk and Infrastructure Solutions Limited

Ravi Poddar
Director – Urban Practice
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
Plot No. - 46, Sector - 44,
Opposite Provident Fund Office
Gurgaon - 122003, India
Phone No. +91 (124) 672 2484 (D); +91 (124) 672 2000 (B); Mobile: +91 9810234251
Fax: 0124-6722495
E-Mail: ravi.poddar@crisil.com

[Authorized Representative]



National Horticulture Board
Ministry of Agriculture, Govt. of India,
Plot No.85, Sector-18, Institutional Area,
Gurgaon (Haryana) – 122 015
Telefax No. 0124 – 2347441
FAX (0124) 2342990, 2342992
Web: www.nhb.gov.in

NHB/Cold Chain Survey/2012 December 24, 2012
26

M/s Hansa Research Group Pvt. Ltd.
105, Anand Complex, 189-A,
Sane Guruji Marg, Mahalaxmi,
Mumbai – 400 011.

Subject: Approval of Competent Authority for conducting "All India Cold Storage Capacity & Technology Survey for India Cold Chain" – Reg.

Sir,

I am directed to refer to your letter No. Hansa/1213/1001 dated 09.11.2012 on the above cited subject and to convey the approval of Competent Authority for conducting "All India Cold Storage Capacity & Technology Survey for NHB" by M/s Hansa Research Group Pvt. Ltd., Mumbai for a total cost of Rs. 1, 80, 10,000 + Service Tax as per the GOI rules & regulations. The Terms of Reference (TOR) and other terms and conditions shall be as published in the advertisement in "Times of India" and "Hindustan Times", New Delhi edition dated 20.10.2012, and those conveyed from time to time till the completion of the survey.

2. The consultant/consultancy firm shall be required to furnish an indemnity bond and personal guarantee before the release of advance payments. For any delay in submission of draft report, penalty @ 1% of total fee may be levied on the consultants for every delay of one month or part thereof. The pattern of release shall be as follows:
   i) 25% on award of work
   ii) 50% on submission of Draft Report
   iii) 25% after final report and its acceptance by Board/Concerned State Govt./Organization.

3. You are requested to convey your acceptance and give your questionnaire for conducting the study/survey and other details of the study as specified in the technical bid.

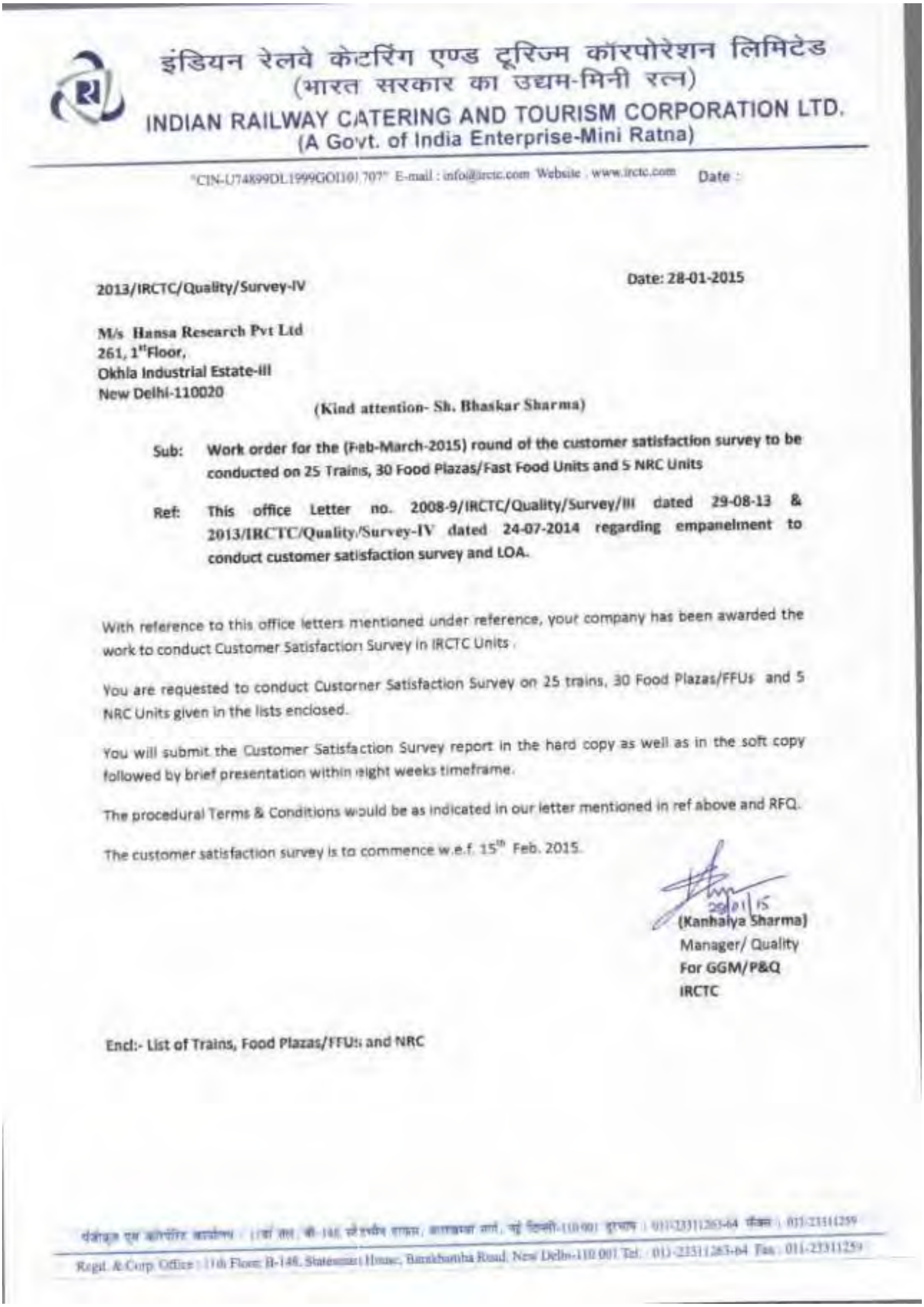
Yours faithfully,

26/12/12
For Managing Director

Copy to:

1. PS to JS (NHM)/MD, NHB
2. PA to AMD
3. PA to Director (Hort)/NCCD
4. Smt. Renu Singh, Under Secretary (Finance-II), DAC
5. Shri S. C. Jain, DD (F&A), NHB

5



इंडियन रेलवे केटरिंग एण्ड टूरिज्म कॉरपोरेशन लिमिटेड
(भारत सरकार का उद्यम-मिनी रत्न)
INDIAN RAILWAY CATERING AND TOURISM CORPORATION LTD.
(A Govt. of India Enterprise-Mini Ratna)
"CIN-U74899DL1999GOI101707" E-mail : info@irctc.com Website : www.irctc.com

Date :

2013/IRCTC/Quality/Survey-IV

Date: 28-01-2015

M/s Hansa Research Pvt Ltd
261, 1st Floor,
Okhla Industrial Estate-III
New Delhi-110020

(Kind attention- Sh. Bhaskar Sharma)

Sub: Work order for the (Feb-March-2015) round of the customer satisfaction survey to be conducted on 25 Trains, 30 Food Plazas/Fast Food Units and 5 NRC Units

Ref: This office Letter no. 2008-9/IRCTC/Quality/Survey/III dated 29-08-13 & 2013/IRCTC/Quality/Survey-IV dated 24-07-2014 regarding empanelment to conduct customer satisfaction survey and LOA.

With reference to this office letters mentioned under reference, your company has been awarded the work to conduct Customer Satisfaction Survey in IRCTC Units .

You are requested to conduct Customer Satisfaction Survey on 25 trains, 30 Food Plazas/FFUs and 5 NRC Units given in the lists enclosed.

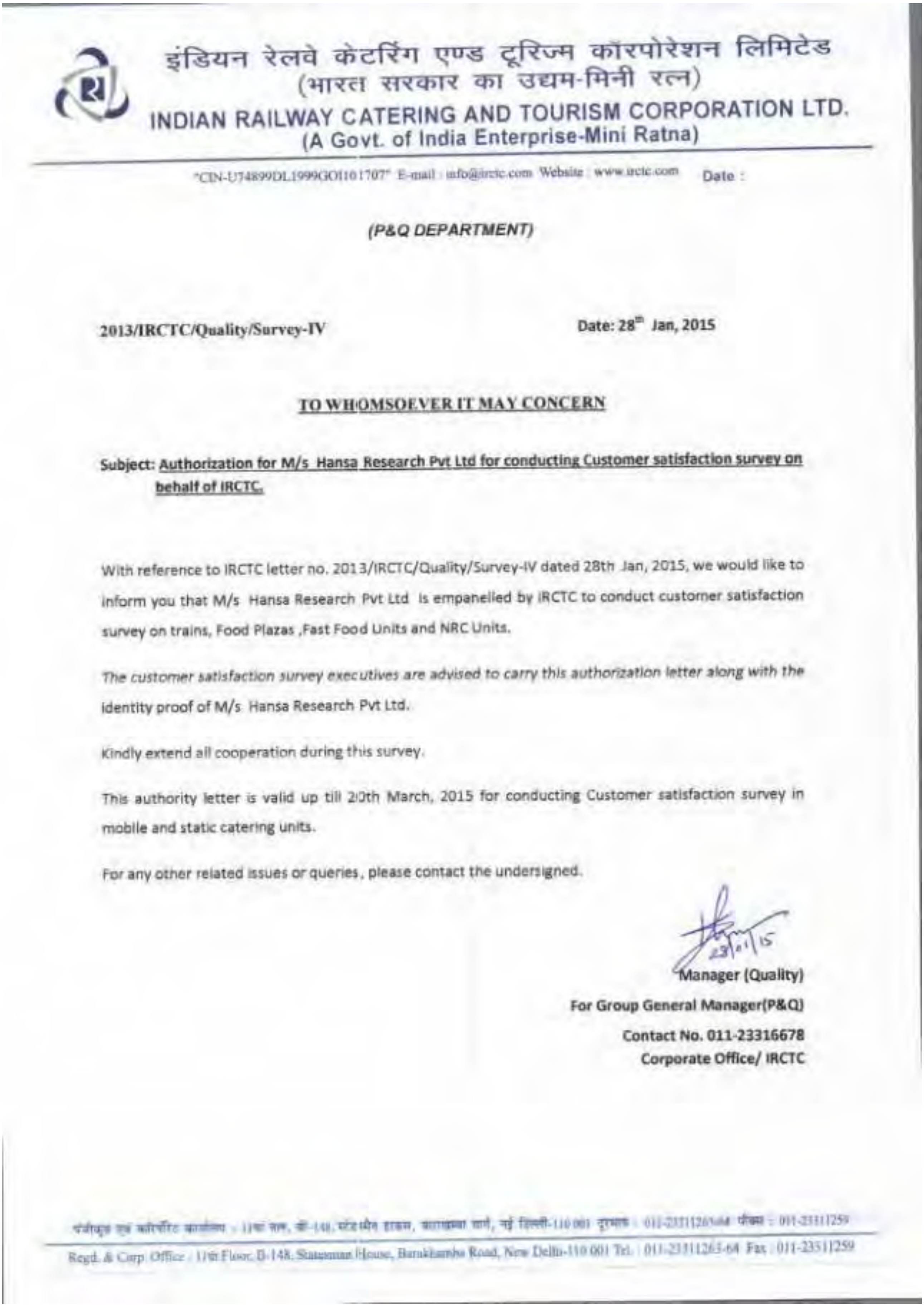
You will submit the Customer Satisfaction Survey report in the hard copy as well as in the soft copy followed by brief presentation within eight weeks timeframe.

The procedural Terms & Conditions would be as indicated in our letter mentioned in ref above and RFQ.

The customer satisfaction survey is to commence w.e.f. 15th Feb. 2015.

28/01/15
(Kanhaiya Sharma)
Manager/ Quality
For GGM/P&Q
IRCTC

Encl:- List of Trains, Food Plazas/FFUs and NRC



इंडियन रेलवे केटरिंग एण्ड टूरिज्म कॉरपोरेशन लिमिटेड
(भारत सरकार का उद्यम-मिनी रत्न)
INDIAN RAILWAY CATERING AND TOURISM CORPORATION LTD.
(A Govt. of India Enterprise-Mini Ratna)
"CIN-U74899DL1999GOI101707" E-mail : info@irctc.com Website : www.irctc.com Date :

(P&Q DEPARTMENT)

2013/IRCTC/Quality/Survey-IV

Date: 28th Jan, 2015

TO WHOMSOEVER IT MAY CONCERN

Subject: Authorization for M/s Hansa Research Pvt Ltd for conducting Customer satisfaction survey on behalf of IRCTC.

With reference to IRCTC letter no. 2013/IRCTC/Quality/Survey-IV dated 28th Jan, 2015, we would like to inform you that M/s Hansa Research Pvt Ltd is empanelled by IRCTC to conduct customer satisfaction survey on trains, Food Plazas ,Fast Food Units and NRC Units.

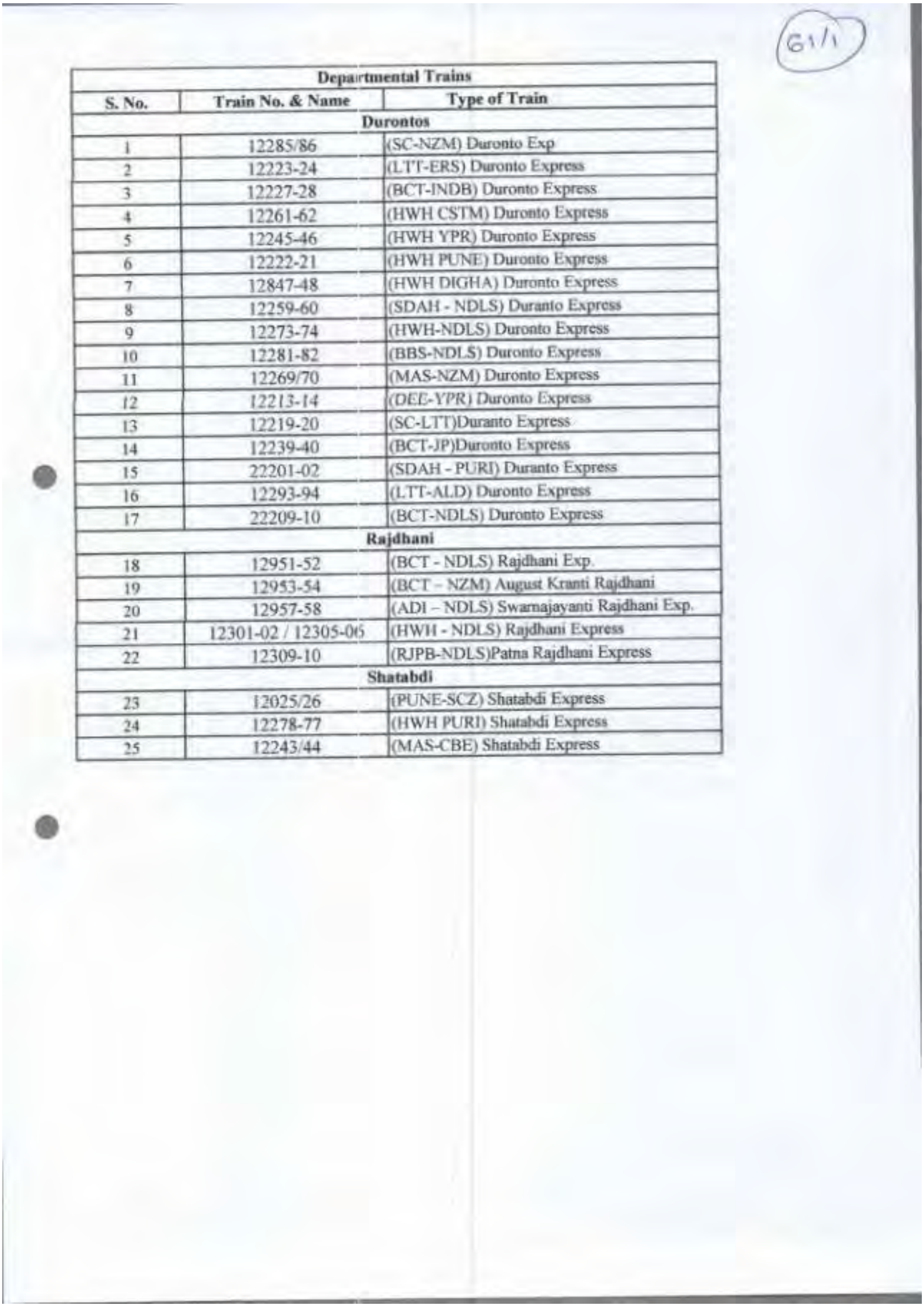
The customer satisfaction survey executives are advised to carry this authorization letter along with the identity proof of M/s Hansa Research Pvt Ltd.

Kindly extend all cooperation during this survey.

This authority letter is valid up till 20th March, 2015 for conducting Customer satisfaction survey in mobile and static catering units.

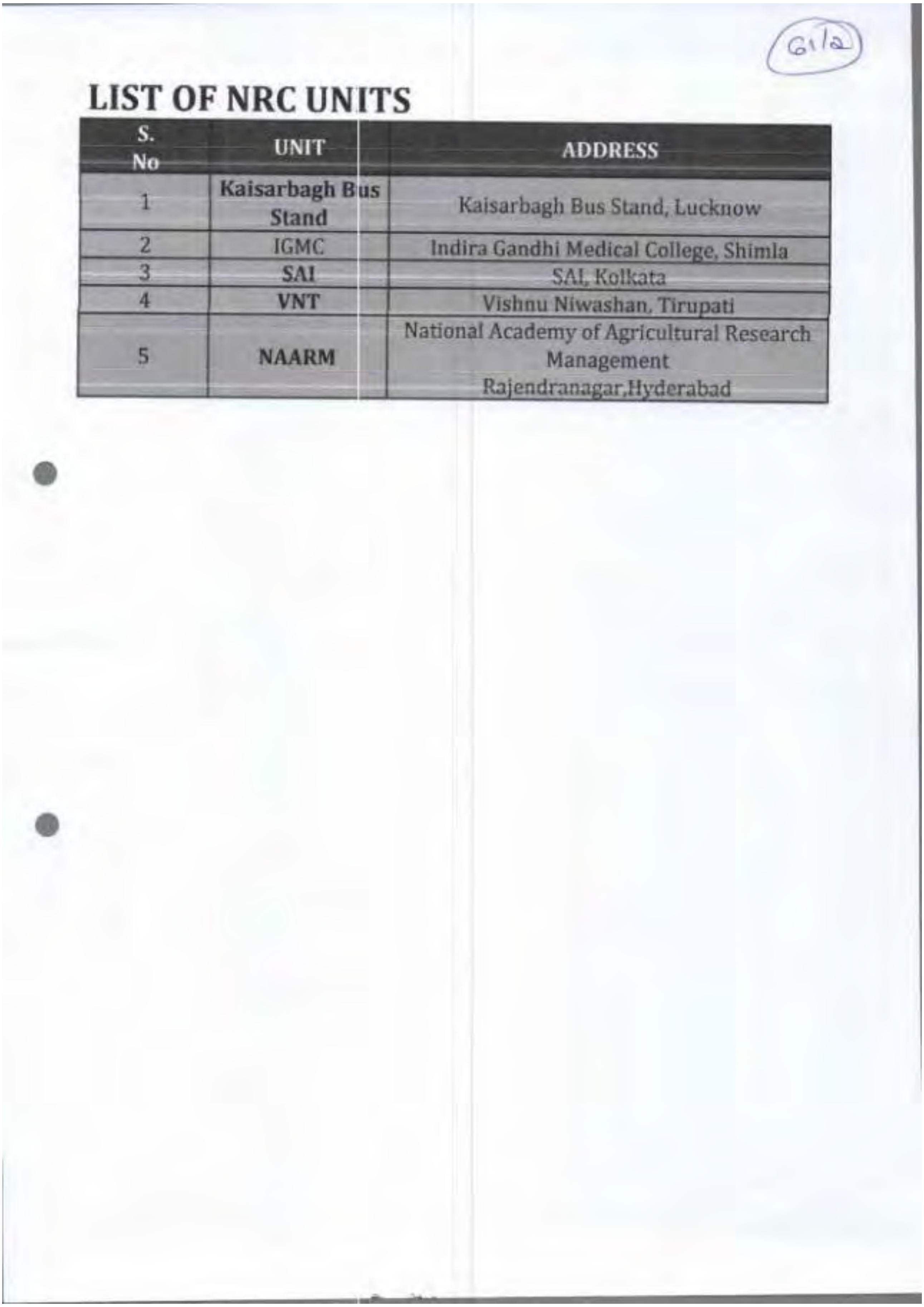
For any other related issues or queries, please contact the undersigned.

23/01/15
Manager (Quality)
For Group General Manager(P&Q)
Contact No. 011-23316678
Corporate Office/ IRCTC



61/1

Departmental Trains		
S. No.	**Train No. & Name**	**Type of Train**
Durontos		
1	12285/86	(SC-NZM) Duronto Exp
2	12223-24	(LTT-ERS) Duronto Express
3	12227-28	(BCT-INDB) Duronto Express
4	12261-62	(HWH CSTM) Duronto Express
5	12245-46	(HWH YPR) Duronto Express
6	12222-21	(HWH PUNE) Duronto Express
7	12847-48	(HWH DIGHA) Duronto Express
8	12259-60	(SDAH - NDLS) Duranto Express
9	12273-74	(HWH-NDLS) Duronto Express
10	12281-82	(BBS-NDLS) Duronto Express
11	12269/70	(MAS-NZM) Duronto Express
12	12213-14	(DEE-YPR) Duronto Express
13	12219-20	(SC-LTT)Duranto Express
14	12239-40	(BCT-JP)Duronto Express
15	22201-02	(SDAH - PURI) Duranto Express
16	12293-94	(LTT-ALD) Duronto Express
17	22209-10	(BCT-NDLS) Duronto Express
Rajdhani		
18	12951-52	(BCT - NDLS) Rajdhani Exp.
19	12953-54	(BCT – NZM) August Kranti Rajdhani
20	12957-58	(ADI – NDLS) Swarnajayanti Rajdhani Exp.
21	12301-02 / 12305-06	(HWH - NDLS) Rajdhani Express
22	12309-10	(RJPB-NDLS)Patna Rajdhani Express
Shatabdi		
23	12025/26	(PUNE-SCZ) Shatabdi Express
24	12278-77	(HWH PURI) Shatabdi Express
25	12243/44	(MAS-CBE) Shatabdi Express



61/2

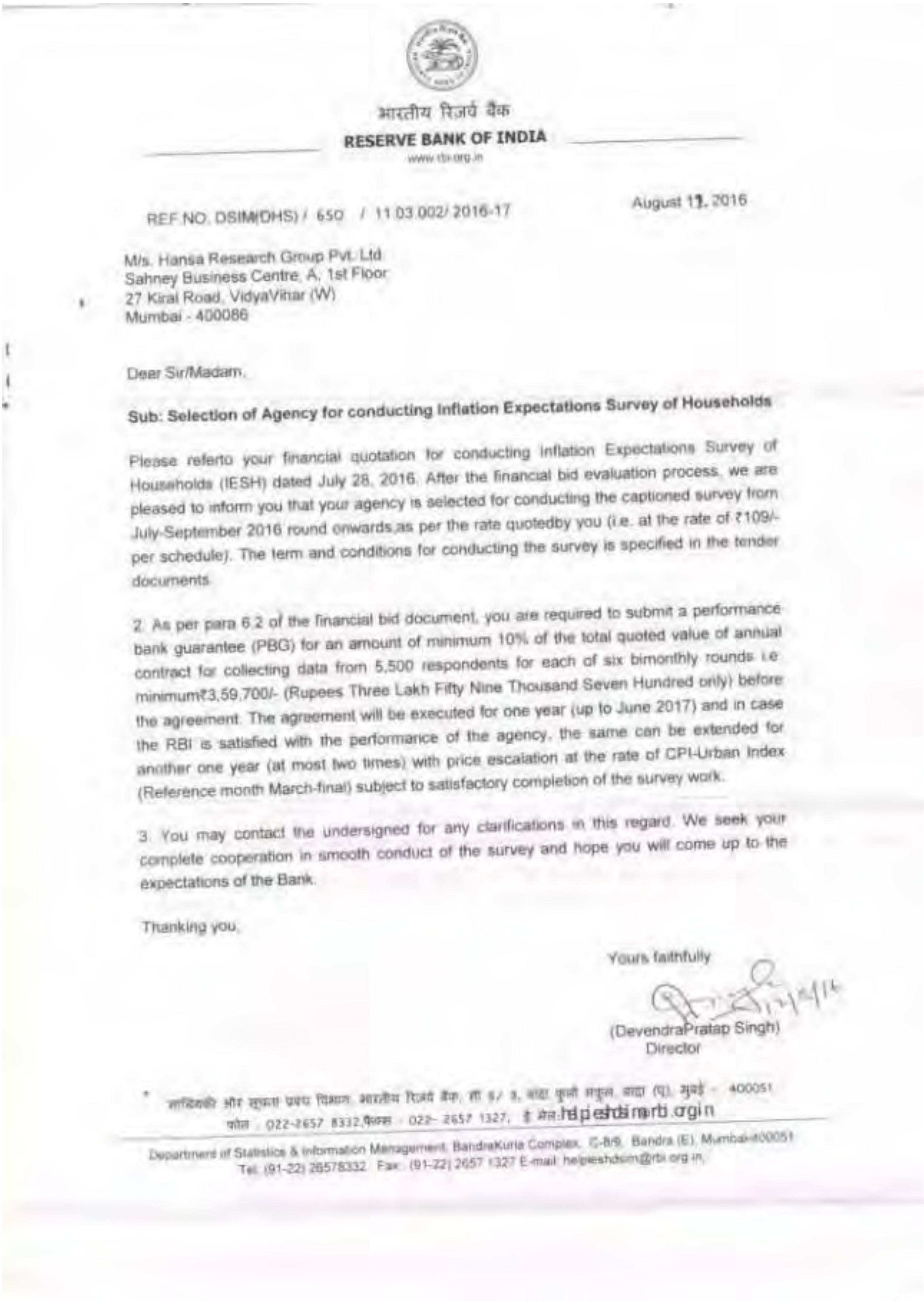
LIST OF NRC UNITS

S. No	UNIT	ADDRESS
1	**Kaisarbagh Bus Stand**	Kaisarbagh Bus Stand, Lucknow
2	IGMC	Indira Gandhi Medical College, Shimla
3	**SAI**	SAI, Kolkata
4	**VNT**	Vishnu Niwashan, Tirupati
5	**NAARM**	National Academy of Agricultural Research Management Rajendranagar,Hyderabad

61/3

LIST OF FOOD PLAZA/ FAST FOOD UNIT

SI. No.	Name of Station	Type of Unit	Licensee	IRCTC-Zone
1	Malkapur	FFU	M/s R&K Associates	WZ
2	Shahdol (KTE End)	FFU	M/s S.L. Kachhwaha & Sons	EZ
3	Raigarh	FP	M/s.Hotel Aryan	EZ
4	NJP-BJ-GVM	FP	M/s Raman Deka	EZ
5	Arakonam	FFU	M/s S.Haribabu	SZ
6	Bhatapara	FFU	M/s S.L. Kachhwaha & Sons	EZ
7	Kopargaon	FP/FR	M/s Sunshine Caterers Pvt. Ltd.	WZ
8	Gadag	FFU	M/s Joshi&Co	SZ
9	Luckeesarai	FP	M/s Dream Hotel	EZ
10	Hubli	FP/FR	M/s Sunshine Caterers Pvt. Ltd.	SZ
11	Raigarh (HWH End)	FFU	M/s S.L. Kachhwaha & Sons	EZ
12	Bilaspur (PF-1 & 2/3)	FFU	M/s Sai Balaji Food Corporation	EZ
13	Dimapur	FP	M/s Alak Kumar Ghosh	EZ
14	Kathgodam	FP	M/s Vrindavan Enterprises	NZ
15	Tadepalligudem	FFU	M/s Sai Balaji Food Corporation	SCZ
16	Dhanbad	FFU	M/s Brandavan Food Products	EZ
17	Tuni	FFU	M/s Sai Balaji Food & Beverages (I) Pvt Ltd	SCZ
18	Madhubani	FFU	M/s Golden Caterers	EZ
19	Surendernagar	FFU	M/s Express Food Services	WZ
20	Sultanganj	FFU	M/s Amazing India Contractors (P) Ltd.	EZ
21	Rajnandgaon	FFU	M/s Shubham Awasthi	EZ
22	Gulbarga-1	FP	M/s Fine Caterers and Suppliers	WZ
23	Cudappa	FFU	M/s S. Hajee Peeran	SCZ
24	Badnera	FFU	M/s Srinathji Caterers	WZ
25	Pratapgarh	FFU	M/s Express Food Services	NZ
26	Sahibganj	FFU	M/s Amazing India Contractors(P)	EZ
27	Asansol	FFU	M/s Griham Food & Hotel Pvt Ltd	EZ
28	Jamalpur	FFU	M/s Express Food Services	EZ
29	Hatia	FFU	M/s B.M. Singh	EZ
30	Betul	FFU	M/s Shegaon Kachori Centre	WZ



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
www.rbi.org.in

REF NO. DSIM(DHS) / 650 / 11.03.002/ 2016-17 August 12, 2016

M/s. Hansa Research Group Pvt. Ltd
Sahney Business Centre, A, 1st Floor
27 Kiral Road, VidyaVihar (W)
Mumbai - 400086

Dear Sir/Madam,

Sub: Selection of Agency for conducting Inflation Expectations Survey of Households

Please referto your financial quotation for conducting Inflation Expectations Survey of Households (IESH) dated July 28, 2016. After the financial bid evaluation process, we are pleased to inform you that your agency is selected for conducting the captioned survey from July-September 2016 round onwards,as per the rate quotedby you (i.e. at the rate of ₹109/- per schedule). The term and conditions for conducting the survey is specified in the tender documents.

2. As per para 6.2 of the financial bid document, you are required to submit a performance bank guarantee (PBG) for an amount of minimum 10% of the total quoted value of annual contract for collecting data from 5,500 respondents for each of six bimonthly rounds i.e minimum₹3,59,700/- (Rupees Three Lakh Fifty Nine Thousand Seven Hundred only) before the agreement. The agreement will be executed for one year (up to June 2017) and in case the RBI is satisfied with the performance of the agency, the same can be extended for another one year (at most two times) with price escalation at the rate of CPI-Urban Index (Reference month March-final) subject to satisfactory completion of the survey work.

3. You may contact the undersigned for any clarifications in this regard. We seek your complete cooperation in smooth conduct of the survey and hope you will come up to the expectations of the Bank.

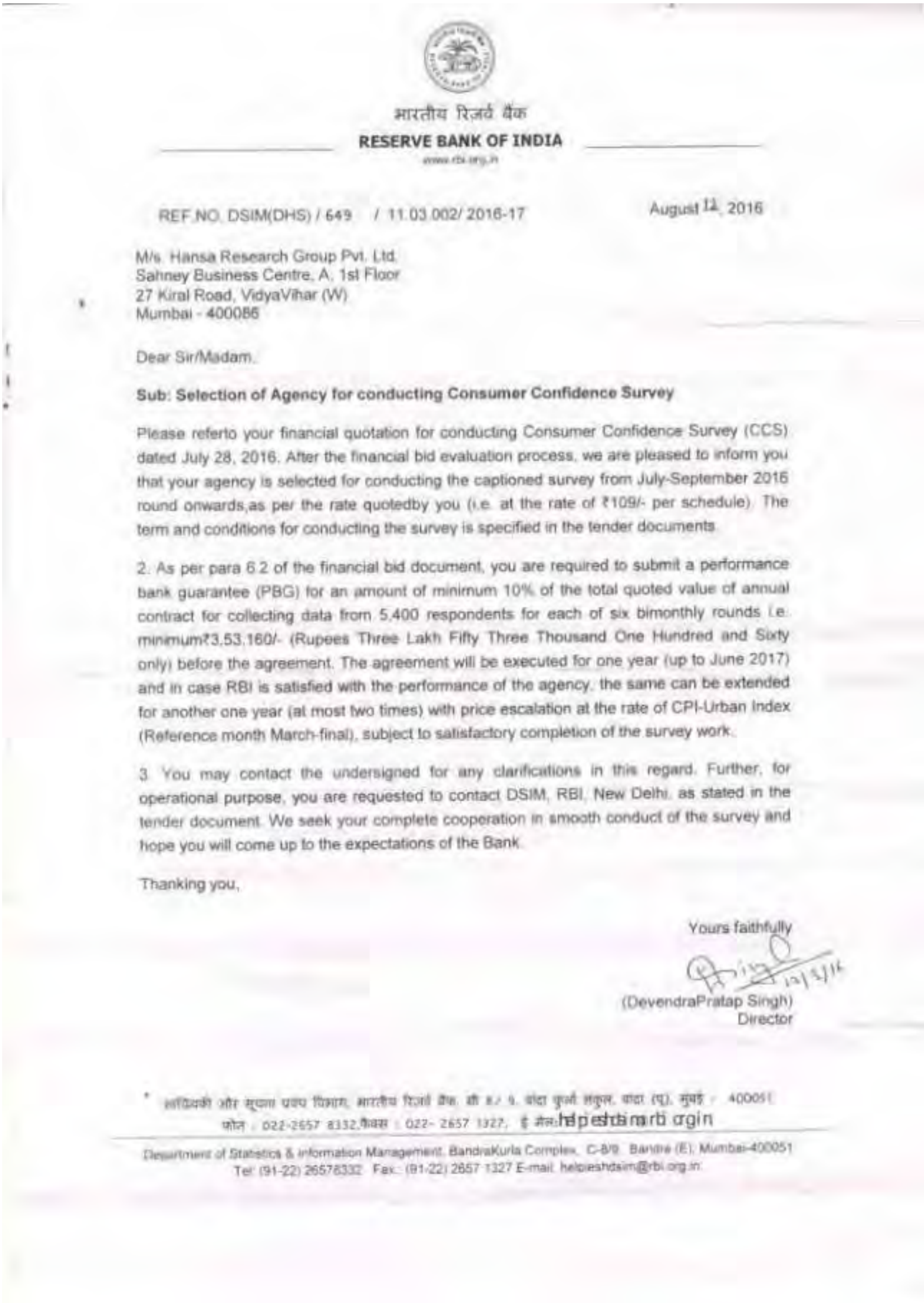
Thanking you,

Yours faithfully

12/8/16
(DevendraPratap Singh)
Director

सांख्यिकी और सूचना प्रबंध विभाग, भारतीय रिज़र्व बैंक, सी 8/ 9, बांद्रा कुर्ला संकुल, बांद्रा (पू), मुंबई - 400051
फोन : 022-2657 8332,फैक्स : 022- 2657 1327, ई मेल:helpieshdsim@rbi.org.in

Department of Statistics & Information Management, BandraKurla Complex, C-8/9, Bandra (E), Mumbai-400051
Tel: (91-22) 26578332 Fax: (91-22) 2657 1327 E-mail: helpieshdsim@rbi.org.in,



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
www.rbi.org.in

REF.NO. DSIM(DHS) / 649 / 11.03.002/ 2016-17 August 11, 2016

M/s. Hansa Research Group Pvt. Ltd.
Sahney Business Centre, A, 1st Floor
27 Kiral Road, VidyaVihar (W)
Mumbai - 400086

Dear Sir/Madam,

Sub: Selection of Agency for conducting Consumer Confidence Survey

Please referto your financial quotation for conducting Consumer Confidence Survey (CCS) dated July 28, 2016. After the financial bid evaluation process, we are pleased to inform you that your agency is selected for conducting the captioned survey from July-September 2016 round onwards,as per the rate quotedby you (i.e. at the rate of ₹109/- per schedule). The term and conditions for conducting the survey is specified in the tender documents.

2. As per para 6.2 of the financial bid document, you are required to submit a performance bank guarantee (PBG) for an amount of minimum 10% of the total quoted value of annual contract for collecting data from 5,400 respondents for each of six bimonthly rounds i.e. minimum₹3,53,160/- (Rupees Three Lakh Fifty Three Thousand One Hundred and Sixty only) before the agreement. The agreement will be executed for one year (up to June 2017) and in case RBI is satisfied with the performance of the agency, the same can be extended for another one year (at most two times) with price escalation at the rate of CPI-Urban Index (Reference month March-final), subject to satisfactory completion of the survey work.

3. You may contact the undersigned for any clarifications in this regard. Further, for operational purpose, you are requested to contact DSIM, RBI, New Delhi, as stated in the tender document. We seek your complete cooperation in smooth conduct of the survey and hope you will come up to the expectations of the Bank.

Thanking you,

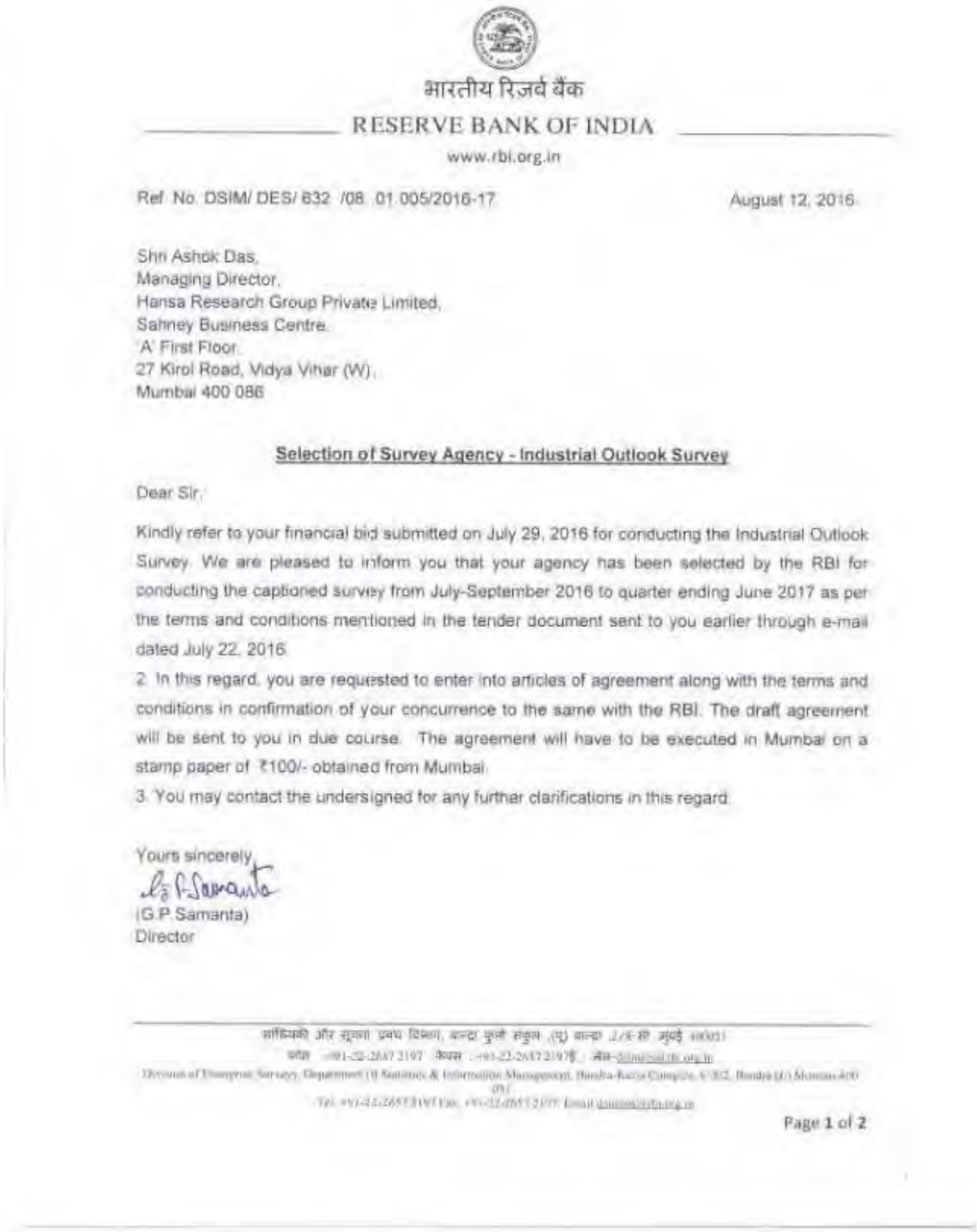
Yours faithfully

12/8/16

(DevendraPratap Singh)
Director

सांख्यिकी और सूचना प्रबंध विभाग, भारतीय रिज़र्व बैंक, सी 8/9, बांद्रा कुर्ला संकुल, बांद्रा (पू), मुंबई - 400051
फोन : 022-2657 8332, फैक्स : 022- 2657 1327, ई मेल: helpeshdsim@rbi.org.in

Department of Statistics & Information Management, BandraKurla Complex, C-8/9, Bandra (E), Mumbai-400051
Tel: (91-22) 26578332 Fax: (91-22) 2657 1327 E-mail: helpeshdsim@rbi.org.in



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
www.rbi.org.in

Ref. No. DSIM/ DES/ 632 /08. 01.005/2016-17 August 12, 2016

Shri Ashok Das,
Managing Director,
Hansa Research Group Private Limited,
Sahney Business Centre,
'A' First Floor,
27 Kirol Road, Vidya Vihar (W),
Mumbai 400 086

Selection of Survey Agency - Industrial Outlook Survey

Dear Sir,

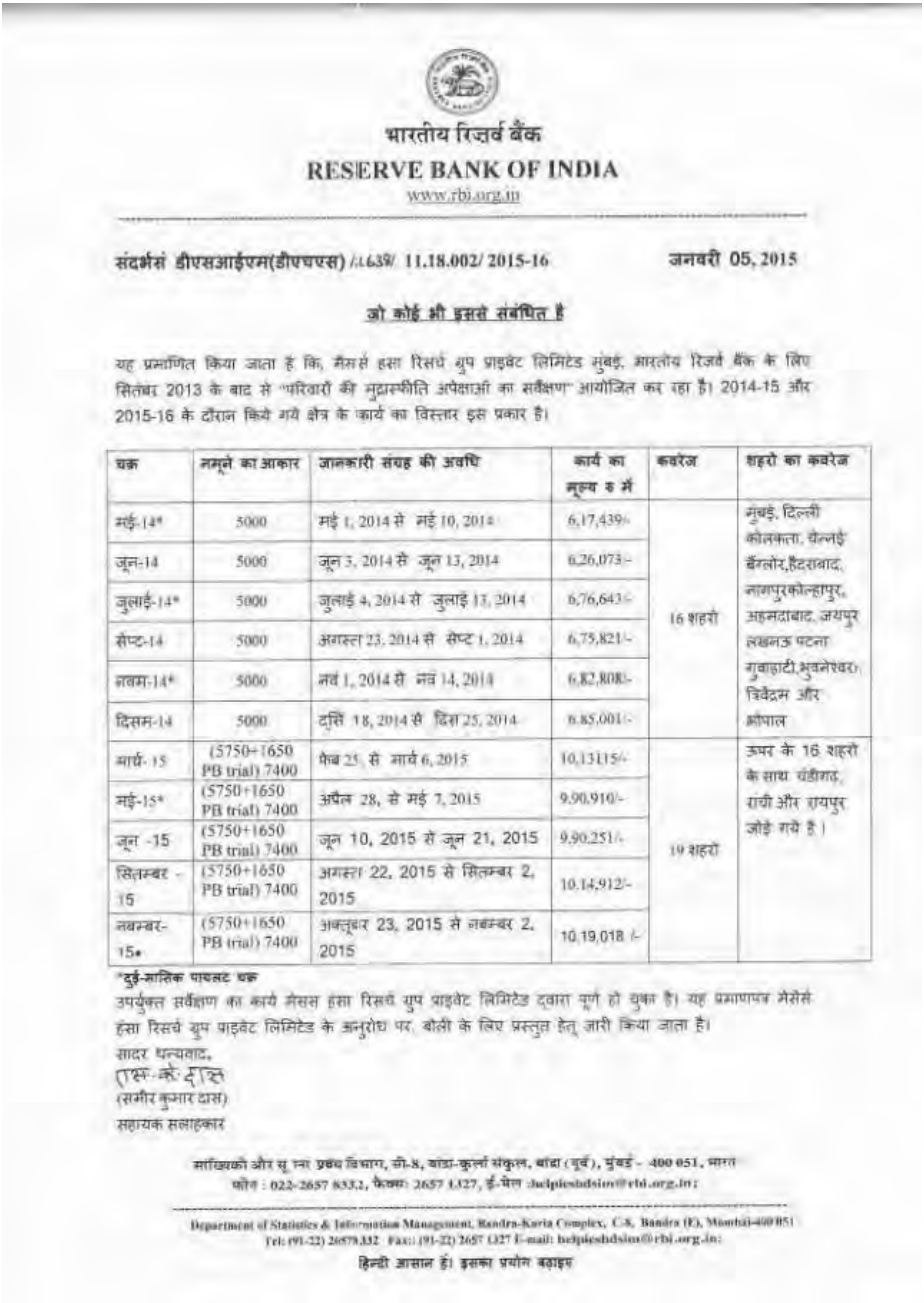
Kindly refer to your financial bid submitted on July 29, 2016 for conducting the Industrial Outlook Survey. We are pleased to inform you that your agency has been selected by the RBI for conducting the captioned survey from July-September 2016 to quarter ending June 2017 as per the terms and conditions mentioned in the tender document sent to you earlier through e-mail dated July 22, 2016.

2. In this regard, you are requested to enter into articles of agreement along with the terms and conditions in confirmation of your concurrence to the same with the RBI. The draft agreement will be sent to you in due course. The agreement will have to be executed in Mumbai on a stamp paper of ₹100/- obtained from Mumbai.

3. You may contact the undersigned for any further clarifications in this regard.

Yours sincerely,
G. P. Samanta
(G.P.Samanta)
Director

Page 1 of 2



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
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संदर्भसं डीएसआईएम(डीएचएस) /1639/ 11.18.002/ 2015-16 जनवरी 05, 2015

जो कोई भी इससे संबंधित है

यह प्रमाणित किया जाता है कि, मैसर्स हंसा रिसर्च ग्रुप प्राइवेट लिमिटेड मुंबई, भारतीय रिज़र्व बैंक के लिए सितंबर 2013 के बाद से "परिवारों की मुद्रास्फीति अपेक्षाओं का सर्वेक्षण" आयोजित कर रहा है। 2014-15 और 2015-16 के दौरान किये गये क्षेत्र के कार्य का विस्तार इस प्रकार है।

चक्र	नमूने का आकार	जानकारी संग्रह की अवधि	कार्य का मूल्य रु में	कवरेज	शहरो का कवरेज
मई-14*	5000	मई 1, 2014 से मई 10, 2014	6,17,439/-	16 शहरों	मुंबई, दिल्ली कोलकता, चेन्नई बैंगलोर,हैदराबाद, नागपुरकोल्हापुर, अहमदाबाद, जयपुर लखनऊ पटना गुवाहाटी,भुवनेश्वर, त्रिवेंद्रम और भोपाल
जून-14	5000	जून 3, 2014 से जून 13, 2014	6,26,073/-		
जुलाई-14*	5000	जुलाई 4, 2014 से जुलाई 13, 2014	6,76,643/-		
सेप्ट-14	5000	अगस्त 23, 2014 से सेप्ट 1, 2014	6,75,821/-		
नवम-14*	5000	नवं 1, 2014 से नवं 14, 2014	6,82,808/-		
दिसम-14	5000	दिसि 18, 2014 से दिस 25, 2014	6,85,001/-		
मार्च-15	(5750+1650 PB trial) 7400	फैब 25, से मार्च 6, 2015	10,13115/-	19 शहरों	ऊपर के 16 शहरों के साथ चंडीगढ़, रांची और रायपुर जोड़े गये है।
मई-15*	(5750+1650 PB trial) 7400	अप्रैल 28, से मई 7, 2015	9,90,910/-		
जून -15	(5750+1650 PB trial) 7400	जून 10, 2015 से जून 21, 2015	9,90,251/-		
सितम्बर -15	(5750+1650 PB trial) 7400	अगस्त 22, 2015 से सितम्बर 2, 2015	10,14,912/-		
नवम्बर-15*	(5750+1650 PB trial) 7400	अक्तूबर 23, 2015 से नवम्बर 2, 2015	10,19,018 /-		

*दुई-मासिक पायलट चक्र

उपर्युक्त सर्वेक्षण का कार्य मैसर्स हंसा रिसर्च ग्रुप प्राइवेट लिमिटेड द्वारा पूर्ण हो चुका है। यह प्रमाणपत्र मैसर्स हंसा रिसर्च ग्रुप प्राइवेट लिमिटेड के अनुरोध पर, बोली के लिए प्रस्तुत हेतु जारी किया जाता है।

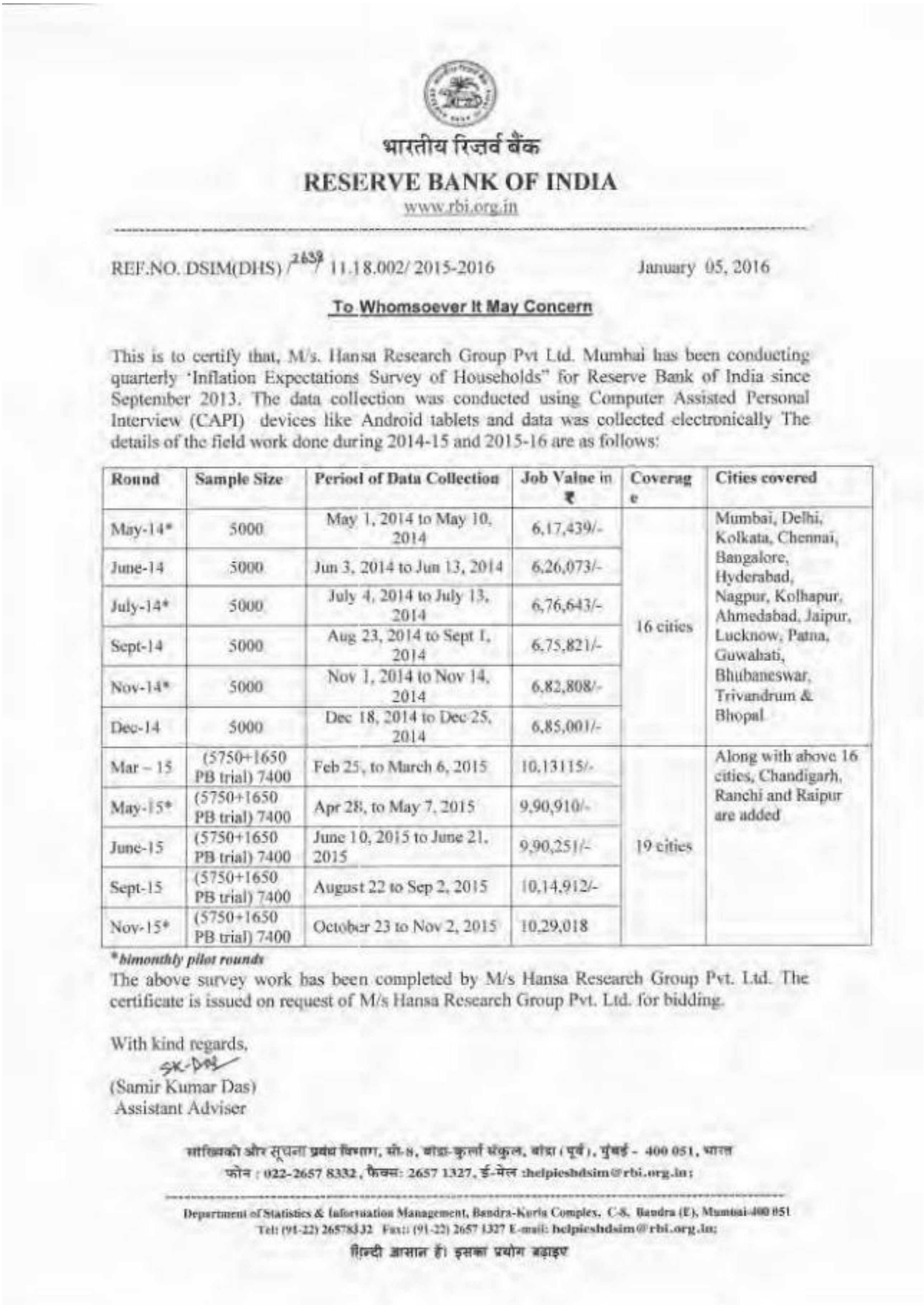
सादर धन्यवाद,

एस. के. दास
(समीर कुमार दास)
सहायक सलाहकार

सांख्यिकी और सूचना प्रबंध विभाग, सी-8, बांद्रा-कुर्ला संकुल, बांद्रा (पूर्व), मुंबई - 400 051, भारत
फोन : 022-2657 8332, फैक्स: 2657 1327, ई-मेल :helpleshdsim@rbi.org.in;

Department of Statistics & Information Management, Bandra-Kurla Complex, C-8, Bandra (E), Mumbai-400 051
Tel: (91-22) 26578332 Fax: (91-22) 2657 1327 E-mail: helpleshdsim@rbi.org.in;

हिन्दी आसान है। इसका प्रयोग बढ़ाइए



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
www.rbi.org.in

REF.NO. DSIM(DHS) / 2639 / 11.18.002/ 2015-2016 January 05, 2016

To Whomsoever It May Concern

This is to certify that, M/s. Hansa Research Group Pvt Ltd. Mumbai has been conducting quarterly 'Inflation Expectations Survey of Households" for Reserve Bank of India since September 2013. The data collection was conducted using Computer Assisted Personal Interview (CAPI) devices like Android tablets and data was collected electronically The details of the field work done during 2014-15 and 2015-16 are as follows:

Round	Sample Size	Period of Data Collection	Job Value in ₹	Coverage	Cities covered
May-14*	5000	May 1, 2014 to May 10, 2014	6,17,439/-	16 cities	Mumbai, Delhi, Kolkata, Chennai, Bangalore, Hyderabad, Nagpur, Kolhapur, Ahmedabad, Jaipur, Lucknow, Patna, Guwahati, Bhubaneswar, Trivandrum & Bhopal
June-14	5000	Jun 3, 2014 to Jun 13, 2014	6,26,073/-		
July-14*	5000	July 4, 2014 to July 13, 2014	6,76,643/-		
Sept-14	5000	Aug 23, 2014 to Sept 1, 2014	6,75,821/-		
Nov-14*	5000	Nov 1, 2014 to Nov 14, 2014	6,82,808/-		
Dec-14	5000	Dec 18, 2014 to Dec 25, 2014	6,85,001/-		
Mar – 15	(5750+1650 PB trial) 7400	Feb 25, to March 6, 2015	10,13115/-	19 cities	Along with above 16 cities, Chandigarh, Ranchi and Raipur are added
May-15*	(5750+1650 PB trial) 7400	Apr 28, to May 7, 2015	9,90,910/-		
June-15	(5750+1650 PB trial) 7400	June 10, 2015 to June 21, 2015	9,90,251/-		
Sept-15	(5750+1650 PB trial) 7400	August 22 to Sep 2, 2015	10,14,912/-		
Nov-15*	(5750+1650 PB trial) 7400	October 23 to Nov 2, 2015	10,29,018		

bimonthly pilot rounds

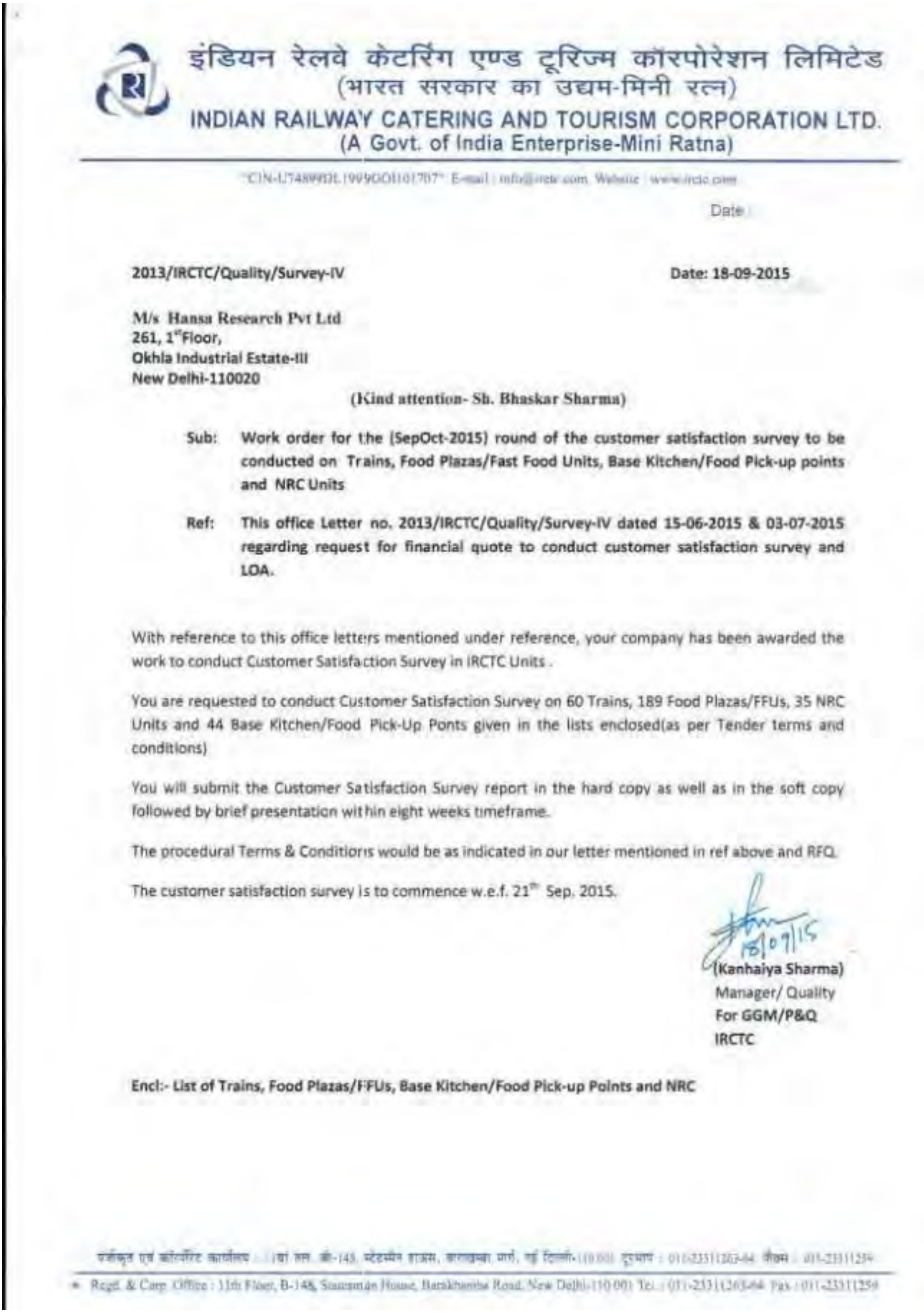
The above survey work has been completed by M/s Hansa Research Group Pvt. Ltd. The certificate is issued on request of M/s Hansa Research Group Pvt. Ltd. for bidding.

With kind regards,
SK-Das
(Samir Kumar Das)
Assistant Adviser

सांख्यिकी और सूचना प्रबंध विभाग, सी-8, बांद्रा-कुर्ला संकुल, बांद्रा (पूर्व), मुंबई - 400 051, भारत
फोन : 022-2657 8332, फैक्स: 2657 1327, ई-मेल :helpieshdsim@rbi.org.in;

Department of Statistics & Information Management, Bandra-Kurla Complex, C-8, Bandra (E), Mumbai-400 051
Tel: (91-22) 26578332 Fax: (91-22) 2657 1327 E-mail: helpieshdsim@rbi.org.in;

हिन्दी आसान है। इसका प्रयोग बढ़ाइए



इंडियन रेलवे केटरिंग एण्ड टूरिज्म कॉरपोरेशन लिमिटेड
(भारत सरकार का उद्यम-मिनी रत्न)
INDIAN RAILWAY CATERING AND TOURISM CORPORATION LTD.
(A Govt. of India Enterprise-Mini Ratna)
"CIN-U74899DL1999GOI101707" E-mail : info@irctc.com Website : www.irctc.com

Date :

2013/IRCTC/Quality/Survey-IV **Date: 18-09-2015**

M/s Hansa Research Pvt Ltd
261, 1st Floor,
Okhla Industrial Estate-III
New Delhi-110020

(Kind attention- Sh. Bhaskar Sharma)

Sub: **Work order for the (SepOct-2015) round of the customer satisfaction survey to be conducted on Trains, Food Plazas/Fast Food Units, Base Kitchen/Food Pick-up points and NRC Units**

Ref: **This office Letter no. 2013/IRCTC/Quality/Survey-IV dated 15-06-2015 & 03-07-2015 regarding request for financial quote to conduct customer satisfaction survey and LOA.**

With reference to this office letters mentioned under reference, your company has been awarded the work to conduct Customer Satisfaction Survey in IRCTC Units .

You are requested to conduct Customer Satisfaction Survey on 60 Trains, 189 Food Plazas/FFUs, 35 NRC Units and 44 Base Kitchen/Food Pick-Up Ponts given in the lists enclosed(as per Tender terms and conditions)

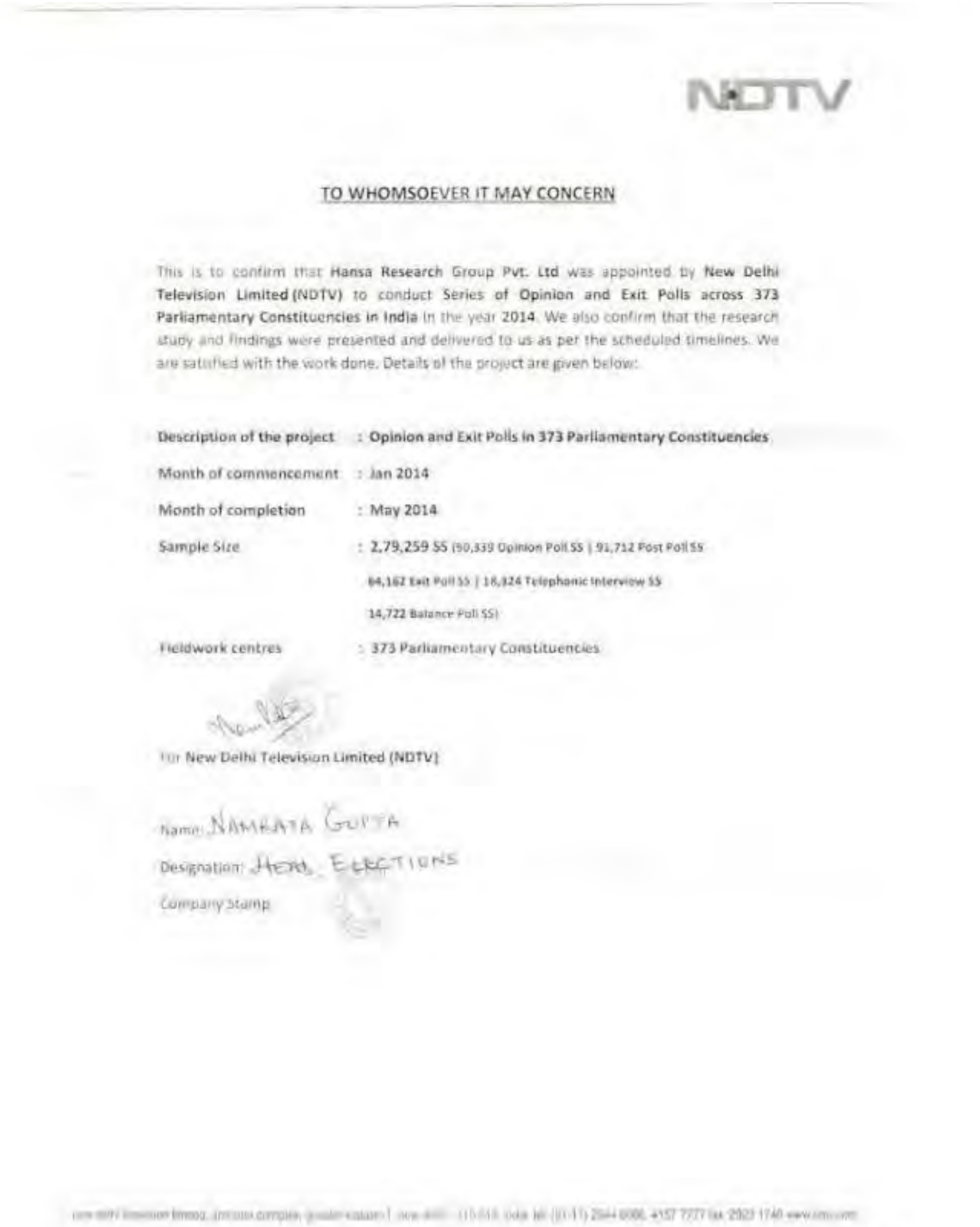
You will submit the Customer Satisfaction Survey report in the hard copy as well as in the soft copy followed by brief presentation within eight weeks timeframe.

The procedural Terms & Conditions would be as indicated in our letter mentioned in ref above and RFQ.

The customer satisfaction survey is to commence w.e.f. 21st Sep. 2015.

18/09/15
(Kanhaiya Sharma)
Manager/ Quality
For GGM/P&Q
IRCTC

Encl:- List of Trains, Food Plazas/FFUs, Base Kitchen/Food Pick-up Points and NRC



NDTV

TO WHOMSOEVER IT MAY CONCERN

This is to confirm that **Hansa Research Group Pvt. Ltd** was appointed by **New Delhi Television Limited (NDTV)** to conduct **Series of Opinion and Exit Polls across 373 Parliamentary Constituencies in India** in the year **2014**. We also confirm that the research study and findings were presented and delivered to us as per the scheduled timelines. We are satisfied with the work done. Details of the project are given below:

Description of the project	: **Opinion and Exit Polls in 373 Parliamentary Constituencies**
Month of commencement	: Jan 2014
Month of completion	: May 2014
Sample Size	: 2,79,259 SS (90,339 Opinion Poll SS | 91,712 Post Poll SS 64,162 Exit Poll SS | 18,324 Telephonic Interview SS 14,722 Balance Poll SS)
Fieldwork centres	: 373 Parliamentary Constituencies

For New Delhi Television Limited (NDTV)

Name: NAMRATA GUPTA

Designation: HEAD, ELECTIONS

Company Stamp

[illegible] (91-11) 2644 6666, 4157 7777 fax 2923 1740 www.ndtv.com

CC006

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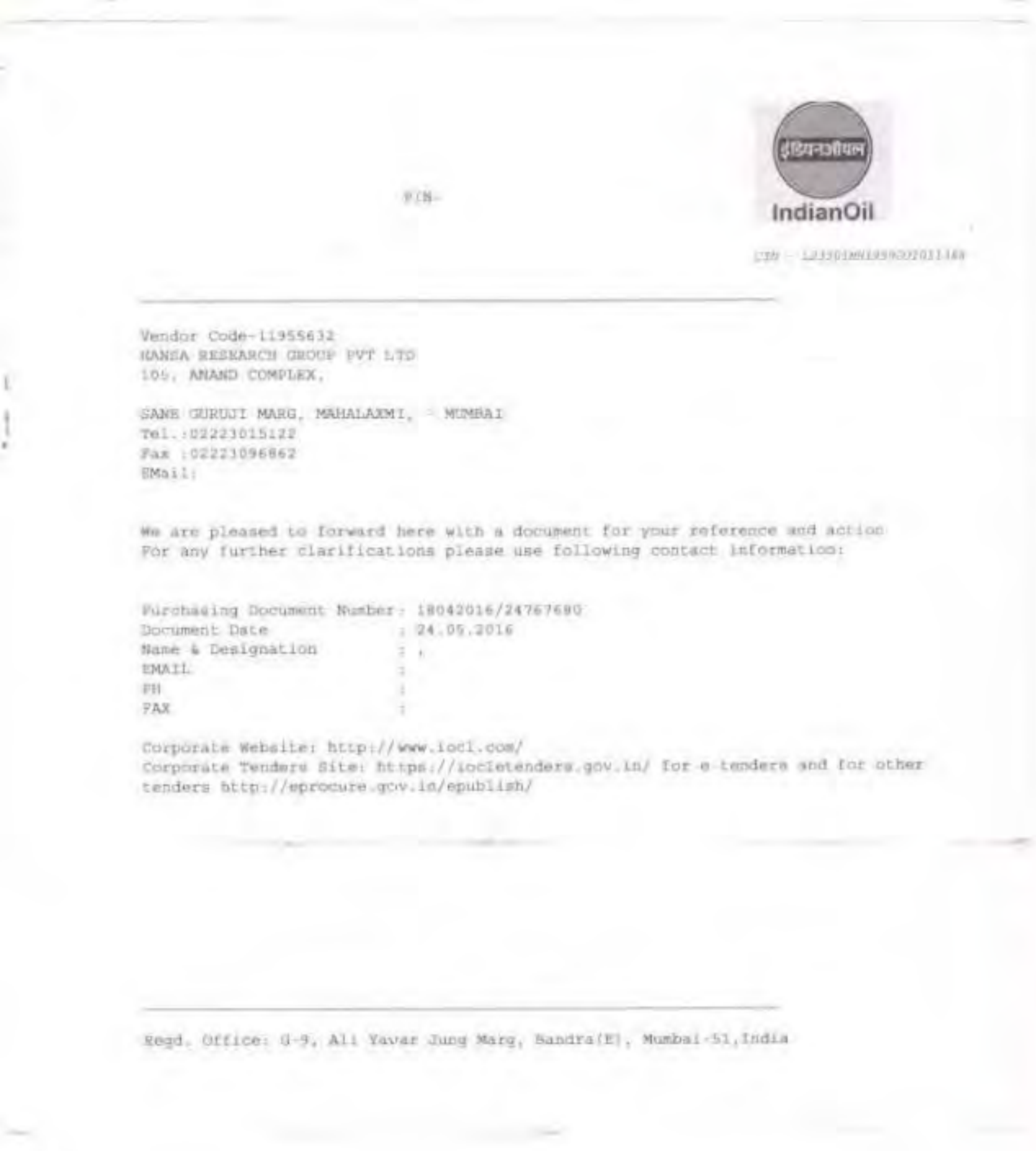


PIN-

IndianOil

CIN - L23201MH1959GOI011388

Vendor Code-11955632
HANSA RESEARCH GROUP PVT LTD
105, ANAND COMPLEX,

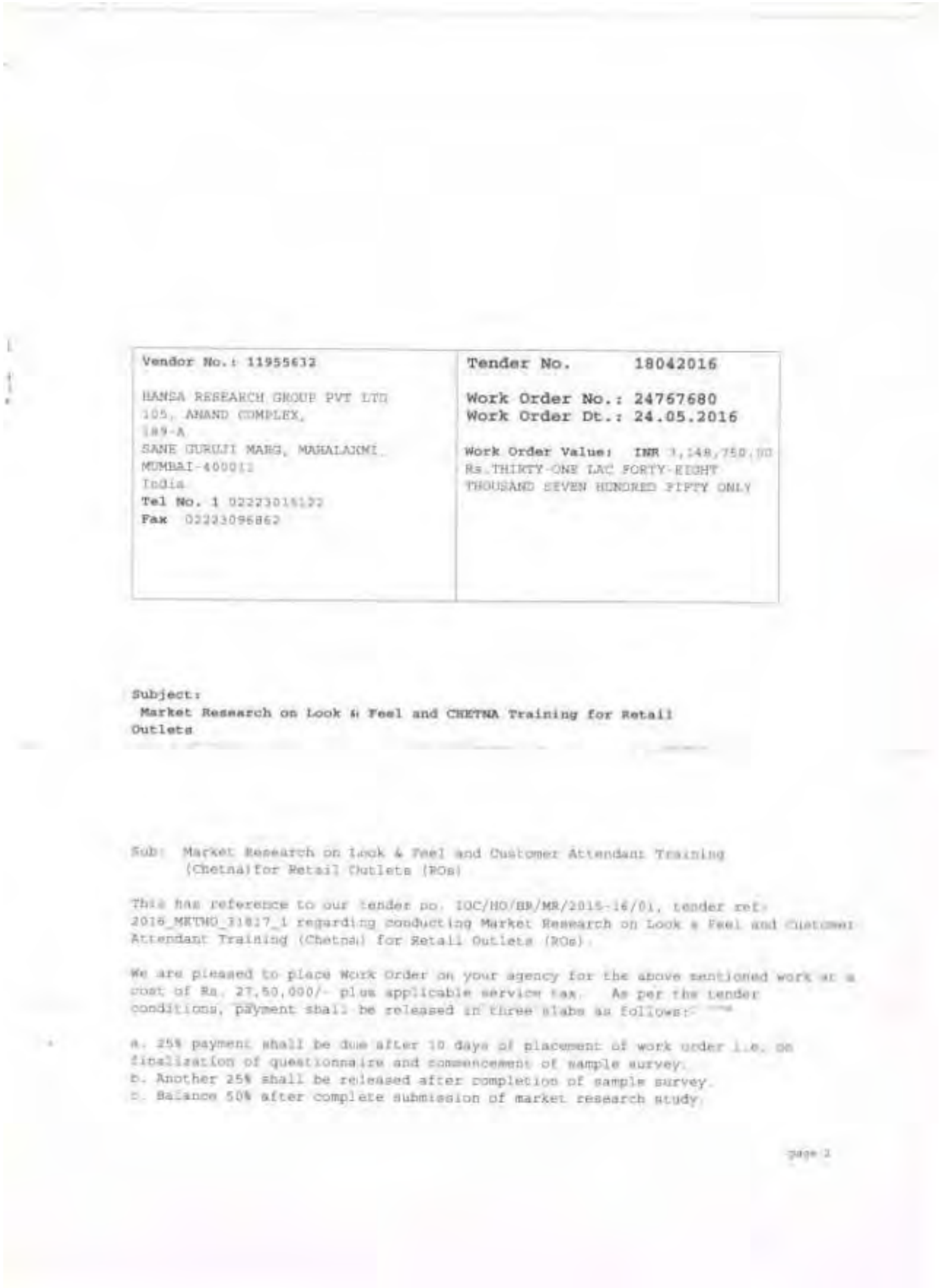
SANE GURUJI MARG, MAHALAXMI, - MUMBAI
Tel.:02223015122
Fax :02223096862
EMail:

We are pleased to forward here with a document for your reference and action
For any further clarifications please use following contact information:

Purchasing Document Number: 18042016/24767690
Document Date : 24.05.2016
Name & Designation : ,
EMAIL :
PH :
FAX :

Corporate Website: http://www.iocl.com/
Corporate Tenders Site: https://iocletenders.gov.in/ for e-tenders and for other tenders http://eprocure.gov.in/epublish/

Regd. Office: G-9, Ali Yavar Jung Marg, Bandra(E), Mumbai-51,India



Vendor No.: 11955632 HANSA RESEARCH GROUP PVT LTD 105, ANAND COMPLEX, 189-A SANE GURUJI MARG, MAHALAXMI, MUMBAI-400011 India **Tel No. 1** 02223018122 **Fax** 02223096862	**Tender No.** 18042016 **Work Order No.:** 24767680 **Work Order Dt.:** 24.05.2016 **Work Order Value:** INR 3,148,750.00 Rs.THIRTY-ONE LAC FORTY-EIGHT THOUSAND SEVEN HUNDRED FIFTY ONLY

Subject:
Market Research on Look & Feel and CHETNA Training for Retail Outlets

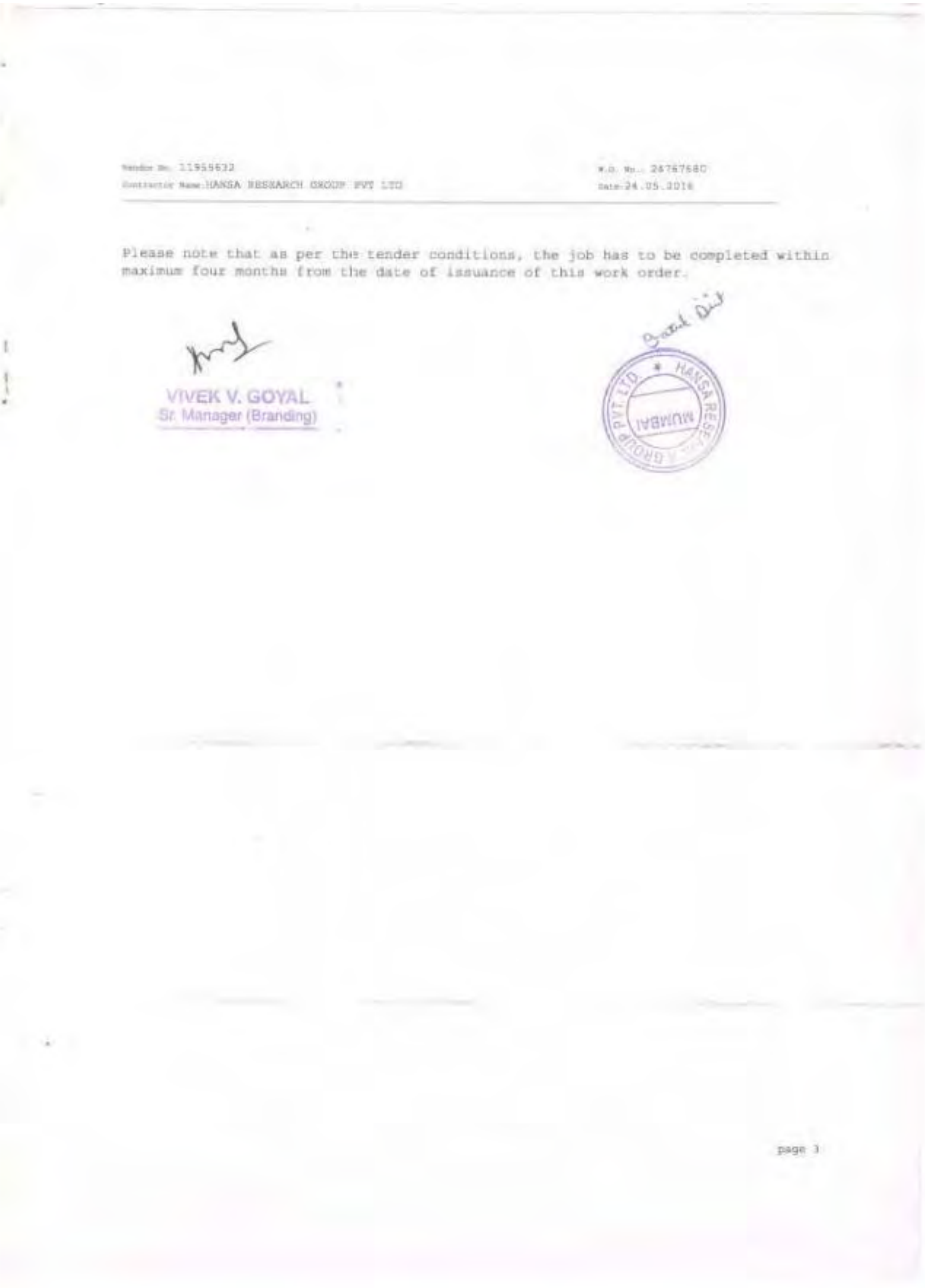
Sub: Market Research on Look & Feel and Customer Attendant Training (Chetna)for Retail Outlets (ROs)

This has reference to our tender no. IOC/HO/BR/MR/2015-16/01, tender ref: 2016_MKTHO_31817_1 regarding conducting Market Research on Look & Feel and Customer Attendant Training (Chetna) for Retail Outlets (ROs).

We are pleased to place Work Order on your agency for the above mentioned work at a cost of Rs. 27,50,000/- plus applicable service tax. As per the tender conditions, payment shall be released in three slabs as follows:-

a. 25% payment shall be due after 10 days of placement of work order i.e. on finalization of questionnaire and commencement of sample survey.
b. Another 25% shall be released after completion of sample survey.
c. Balance 50% after complete submission of market research study.

page 1



Vendor No. 11955632
Contractor Name:HANSA RESEARCH GROUP PVT LTD

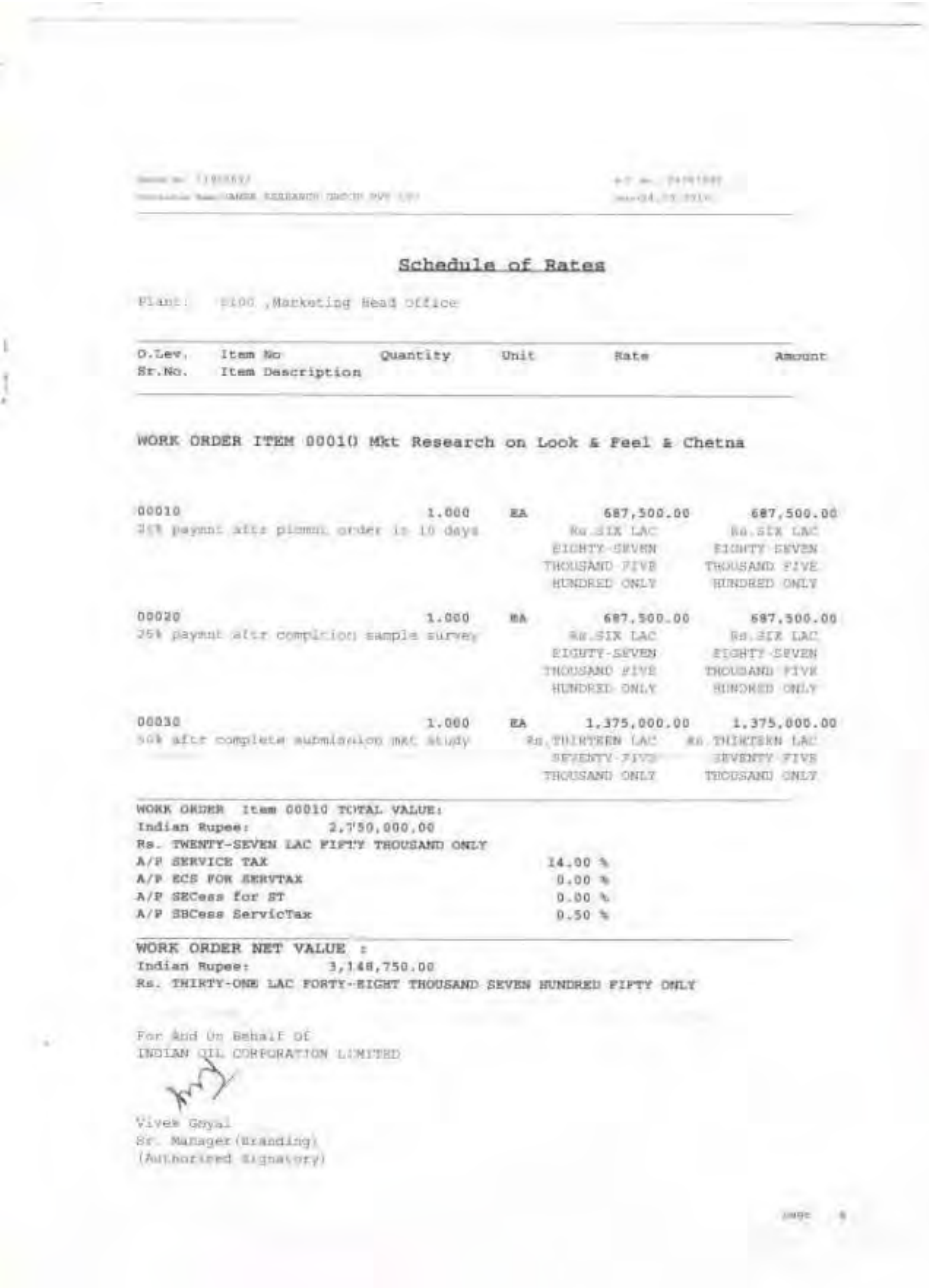
W.O. No.. 26767680
Date:24.05.2016

Please note that as per the tender conditions, the job has to be completed within maximum four months from the date of issuance of this work order.

VIVEK V. GOYAL
Sr. Manager (Branding)

MUMBAI

page 3



Schedule of Rates

Plant: 5100 ,Marketing Head office

O.Lev. Sr.No.	Item No Item Description	Quantity	Unit	Rate	Amount
	WORK ORDER ITEM 0001() Mkt Research on Look & Feel & Chetna				
00010	25% paymnt aftr plcmnt order in 10 days	1.000	EA	687,500.00 Rs.SIX LAC EIGHTY-SEVEN THOUSAND FIVE HUNDRED ONLY	687,500.00 Rs.SIX LAC EIGHTY SEVEN THOUSAND FIVE HUNDRED ONLY
00020	25% paymnt aftr complction sample survey	1.000	EA	687,500.00 Rs.SIX LAC EIGHTY-SEVEN THOUSAND FIVE HUNDRED ONLY	687,500.00 Rs.SIX LAC EIGHTY-SEVEN THOUSAND FIVE HUNDRED ONLY
00030	50% aftr complete submission mkt study	1.000	EA	1,375,000.00 Rs.THIRTEEN LAC SEVENTY-FIVE THOUSAND ONLY	1,375,000.00 Rs.THIRTEEN LAC SEVENTY FIVE THOUSAND ONLY

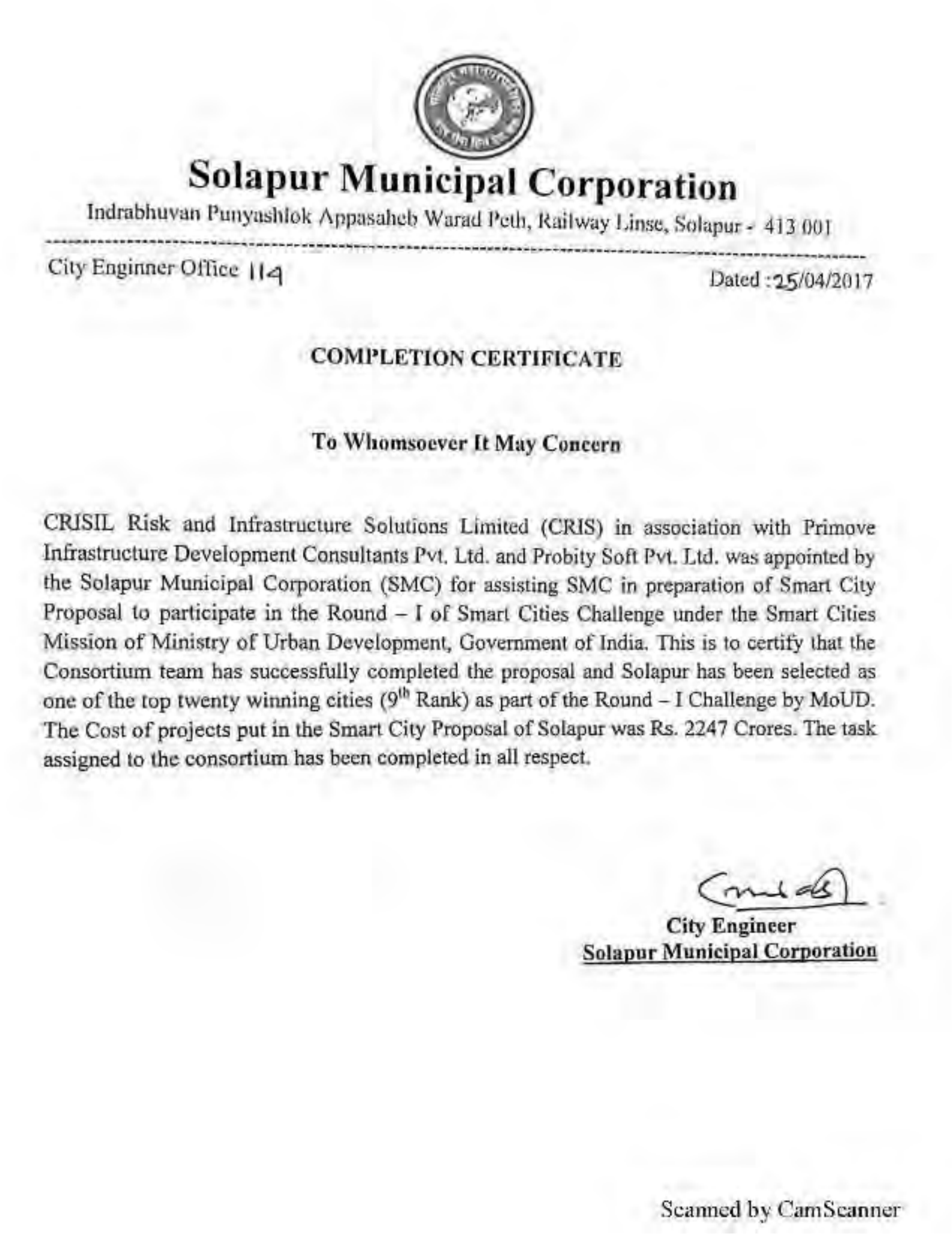
WORK ORDER Item 00010 TOTAL VALUE:
Indian Rupee: 2,750,000.00
Rs. TWENTY-SEVEN LAC FIFTY THOUSAND ONLY

A/P SERVICE TAX	14.00 %
A/P ECS FOR SERVTAX	0.00 %
A/P SECess for ST	0.00 %
A/P SBCess ServicTax	0.50 %

WORK ORDER NET VALUE :
Indian Rupee: 3,148,750.00
Rs. THIRTY-ONE LAC FORTY-EIGHT THOUSAND SEVEN HUNDRED FIFTY ONLY

For And On Behalf Of
INDIAN OIL CORPORATION LIMITED

Vivek Goyal
Sr. Manager(Branding)
(Authorized Signatory)



Solapur Municipal Corporation
Indrabhuvan Punyashlok Appasaheb Warad Peth, Railway Linse, Solapur - 413 001

City Enginner Office 114

Dated :25/04/2017

COMPLETION CERTIFICATE

To Whomsoever It May Concern

CRISIL Risk and Infrastructure Solutions Limited (CRIS) in association with Primove Infrastructure Development Consultants Pvt. Ltd. and Probity Soft Pvt. Ltd. was appointed by the Solapur Municipal Corporation (SMC) for assisting SMC in preparation of Smart City Proposal to participate in the Round – I of Smart Cities Challenge under the Smart Cities Mission of Ministry of Urban Development, Government of India. This is to certify that the Consortium team has successfully completed the proposal and Solapur has been selected as one of the top twenty winning cities (9th Rank) as part of the Round – I Challenge by MoUD. The Cost of projects put in the Smart City Proposal of Solapur was Rs. 2247 Crores. The task assigned to the consortium has been completed in all respect.

City Engineer
Solapur Municipal Corporation

Scanned by CamScanner

AGREEMENT

For

Preparation of Proposal for Assisting Pimpri Chinchwad Municipal Corporation to Participate in the Smart Cities Challenge

This Agreement is entered into this ____day of February 2017 by and between the Pimpri Chinchwad Municipal Corporation, a statutory body under the Maharashtra Municipal Corporation Act, 1949 and having its registered office at Pimpri Chinchwad Municipal Corporation, Mumbai Pune Road, Pimpri, Pune 411018, Maharashtra and represented by **Shri Tanaji Shinde, Additional Commissioner**, herein after called "the CLIENT" (which expression shall mean and include its successors and permitted assigns) of the one part

And

CRISIL Risk and Infrastructure Solutions Limited having its Registered Office at CRISIL House, Central Avenue Road, Hiranandani Business Park, Powai, Mumbai- 400076 represented by **Shri Abhay Kantak, Director - Urban Practice**, hereinafter called 'CONSULTANT' (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its successors and assigns) of the other part.

WHEREAS

a) the Client desires to appoint the consultant for Preparation of Proposal for Assisting Pimpri Chinchwad Municipal Corporation to Participate in the Smart Cities Challenge Government of India's Urban Development Mission at PCMC (hereinafter referred to as the Assignment); and in that context, the Client had invited competitive proposals through tender no. CBUD/UP/50/Pimpri Chinchwad dated 09th January 2017 from eligible Bidders for undertaking the assignment,

b) the Client, after evaluating the proposals, accepted the Proposal submitted by CRISIL Risk & Infrastructure Solutions Limited for undertaking the Assignment.

c) the Standing Committee of the Client has accepted the above proposal of the Consultant vide its resolution number dated /02/2017 for a period of 35 days starting from ____ February 2017;

d) the Client vide its letter dated /02/2017 advised the Consultant to enter into an Agreement for the said Assignment.

The Parties hereto are required to enter into the Agreement being these presents to record the terms, conditions and covenants.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

The objective of the Assignment is to assist the Client in Preparation of Proposal under Government of India's Urban Development Smart City Mission and provide support to the Client.

1. Consultant shall perform the Assignment pursuant to the Scope of Work enclosed vide Annexure A to this Agreement. This Scope of Work is intended to be implemented over a period of contract.

2. Client shall pay to the Consultant a professional fee of Rs. 55,00,000/- (Rupees Fifty Five lakhs only) for 35 days period of the Assignment from the date of Work Order. Service tax and other statutory levies (as applicable) shall be paid extra for its services at the rate prevailing at the time of raising the invoice by the Consultant in accordance with the schedule of payment mentioned herein.

3. The Client hereby agrees to pay the Consultant in consideration of the performance of the Services such amounts as may become payable as per time schedule and in the manner prescribed in this Agreement.

4. In consideration of the payment to be made by the Client to the Consultant as hereinafter mentioned, Consultant hereby agrees with the Client to perform/provide its services in conformity with the provisions of the Agreement and as per the Scope of Work.

5. No amendments, modifications or supplements to the Scope of work shall be effective except in writing, signed by the authorized signatories of the Consultant and the Client, except the communication regarding similar Government of India's Urban Development Mission activities that will be considered as a part of this Agreement.

6. In case, the Client requests that the Consultant alters the scope of work after the date of signing of this Agreement, the Consultant may consider doing so (at its discretion) on the basis that it may make an additional charge reasonable in the circumstances.

7. Deliverables

a) The Deliverables for the Assignment will be delivered partially or fully as achievable within a time period of 35 days of the Scope of Work enclosed vide Annexure A to this Agreement. The Client and Consultant have mutually agreed upon a detailed set of

Deliverables for the Assignment enclosed vide Annexure B covering areas that are reasonably achievable within the said time frame.

b) The Consultant shall report on a monthly basis to the Client its performance of the Scope of Work and Deliverables along with tasks undertaken on monthly basis, meetings conducted with PCMC staff and manpower employed and the Client shall accept deliverables, which conform to the requirements as mentioned in the Scope of Work.

c) In case the Deliverables are not in conformity with the Scope of Work, the Client shall raise a non-conformity issue and the Consultant shall have fifteen calendar days to rectify it. The Deliverable shall be deemed accepted by the Client on redelivery.

d) The Consultant will provide the Client with details of the staff employed on the Assignment comprising of their Bio data, their telephone numbers, mobile phone numbers, email address, photographs etc. for the office record of the Coordinator.

e) The Client shall ensure that the use of the deliverables shall be accompanied by the following acknowledgement and disclaimer:

a) Copyright @ CRISIL Risk and Infrastructure Solutions Limited and the Client

b) This material was prepared for Client and CRISIL Risk and Infrastructure Solutions Limited accepts no liability from any other party in relation to it. No party other than the Client should rely on this Report as it was prepared for the specific internal requirements of the Client only.

8. Payment Schedule

a) The Client shall pay to the Consultant a professional fee of Rs. 55,00,000/- (Rupees Fifty Five Lakhs only) for the 35 days of the Assignment; the service tax shall be paid extra for its services at the rate prevailing at the time of raising the invoice by the Consultant.

b) The schedule of payment is indicated below:

Milestone	**Fee (Excluding service tax and other statutory levies (as applicable))**
At the end of 1st Deliverable: City Wide Concept Plan	Rs. 5,50,000/-
At the end of 2nd Deliverable: Draft Smart City Plan	Rs. 27,50,000/-
At the end of 3rd Deliverable: Final Smart City Plan	Rs. 22,00,000/-
Total	**Rs. 55,00,000/-**

9. **Commencement date:** The Consultant shall commence its services from the date of issue of work order by Client for a period of 35 days starting from __/___/2017

10. It is envisaged that the Assignment would be successfully completed within a period of 35 days starting from the Commencement Date. The Client may extend the Assignment, on mutually acceptable terms and conditions.

11. In case the Assignment gets extended for more than 15 days after end of 35 days and the Client has not extended the Assignment further, for reasons beyond the control of the Consultant, Client shall proportionately compensate the Consultant for the extended time subject to approval of Standing Committee.

12. **TDS Certificate:** For income tax deduction at source by the Client pursuant to the Income Tax Act, Client shall forward to the Consultant its Tax Deduction Certificates, as soon as possible (and in any case within the time limit set out under law).

13. Other Terms and Conditions of Offer

a. **Confidentiality:** The Consultant acknowledges that during the execution of this engagement, it may receive/obtain information from the Client, which is confidential or is designated by the Client as confidential. The Consultant agrees that (i) it shall keep in trust and confidence all such confidential information; and (ii) use/ reproduce confidential information only to perform its obligation under this Assignment. This section shall not apply to information which is (i) publicly known, (ii) already known to the recipient, (iii) disclosed to the third party without restriction (iv) independently developed, or (v) disclosed pursuant to legal requirement or order.

b. **Knowledge Management:** The Consultant shall retain all right, title and interest in and to the reports, methodologies, processes, techniques, ideas, concepts, trade secrets and know-how (all collectively referred to as the knowledge material) embodied in the deliverables developed or supplied in connection with this Agreement. Subject to the confidentiality restrictions contained in section 15 (a) above, the Consultant may use the knowledge material for any purpose.

c. **Non Disclosure:** The Client agrees not to divulge to third parties, publicly quote or make reference to at any time, without the prior written consent of the Consultant i) the deliverables specifically described in the scope of work (the "Deliverables"); and ii) all methodologies, processes, techniques, ideas, concepts, trade secrets and know how embodied in the deliverables or that the Consultant may have developed or supplied in connection with the execution of this Assignment, to the extent any of them contains Client's confidential information.

d. **Risk Allocation:** The Client agrees with the Consultant that it shall indemnify and hold harmless the Consultant and its affiliates and group entities, and their respective shareholders, officers, directors, employees and agents (each, an "Indemnified Person") from and against all claims, actions, proceedings, demands, liabilities, losses, damages, costs and expenses (including without limitation legal fees) arising out of or in connection with the Assignment or otherwise by reason of any other matter or activities referred to or contemplated by this Agreement which any Indemnified Person may suffer or incur in any jurisdiction and all costs and expenses (including without any limitation legal fees) incurred by any Indemnified Person shall be reimbursed by the Client promptly on demand, including those incurred in connection with the investigation of, preparation for or defence of any pending or threatened litigation or claim within the terms of this indemnity or any matter incidental thereto. Provided that the Client shall not be responsible for any liabilities, losses, damages, costs or expenses which are determined by final judgement of a Court of competent jurisdiction to have resulted from willful default or gross negligence on the part of the Indemnified Person; and sums already paid by the Client under this Indemnity but which fall within this proviso, shall be reimbursed in full and repaid to the Client.

e. In the event that the Consultant is requested, pursuant to any legal process, to produce its documents relating to the assignment for Client in judicial or administrative proceedings, the Client shall reimburse Consultant, at above mentioned rates for its professional time and fees including reasonable attorney fees incurred in responding to such requests.

f. **Drop Dead and Termination Fee:** If for any reason, the project is suspended/ deferred/ cancelled, the payments made to Consultant shall not be refundable and shall be treated as drop dead fee. The Client shall also pay to the Consultant all amounts of bills/ claims raised/ to be raised subsequent to this event for the work already done by the Consultant upto the date of cessation of services by Consultant.

g. **Non-refundable fees:** All fees paid to the Consultant are non-refundable.

14. Dispute Resolution:

a. In all cases of dispute or disagreement between the parties hereto as to any matter arising out of or relating to engagement under this Assignment and provided no understanding between the parties can be reached for the settlement of the difference, the matter shall be finally settled by arbitration as per the provisions of the Indian Arbitration and Conciliation Act, 1996 or any modifications or substitutions thereof.

b. The Client and the Consultant shall appoint one arbitrator each and the two arbitrators shall appoint a third arbitrator or upon disagreement, the third arbitrator shall be appointed as per the provisions of the Indian Arbitration and Conciliation Act, 1996. The third arbitrator shall act as the presiding arbitrator and the decision of the majority of the arbitrators shall be final and binding upon the parties. The arbitration proceedings shall be held at Pimpri or at any other place mutually agreed upon by the parties. The language of arbitration shall be English.

c. Notwithstanding any pending reference to arbitration, both parties shall continue to perform their respective obligations under this Agreement and the parties shall not withhold, for any reason whatsoever, including pendency of arbitration proceedings, payment of any amount which has become due under this Assignment.

15. The following documents attached hereto shall be deemed to form an integral part of Agreement:

a. Annexure A - Scope of Work for the Assignment
b. Annexure B - Deliverables for the Assignment
c. Annexure C - Curriculum Vitae of Key Personnel

16. Termination:

a. This Agreement may be terminated at any time by either party upon thirty (30) calendar days written notice to the other. The notice is validly given if it is writing and sent by fax, email or post to the correct fax number, email address or postal address of the relevant party as contained hereinabove, or subsequently notified to the other party.

b. A notice of termination may take effect immediately or on such later date as it may specify as the date of termination. The parties shall be relieved from future performance of their rights and obligations under this Agreement, other than those rights or obligations, which have accrued at the date of termination. The provisions of this Assignment relating to confidentiality obligations, indemnification, reimbursements to the Consultant for expenses incurred and payments of the Consultant's fees in the event of termination will survive any termination as set out in this section of the Assignment.

c. Full payments shall be made to the Consultant for services performed prior to the date of termination, in accordance with Clause 9 & Clause 10.

d. For the compensation towards work in progress, towards the deliverables as per Clause 7, the payment shall be computed up to the effective date of termination on a pro rata basis of the actual time expended on the services as against the estimated time as per "time estimates" under Clause 7, subject to self certification submitted by the Consultant on actual time expended on the assignment.

17. General

a. Except as specified elsewhere in this Agreement, Client shall furnish all the information such as data, documents, maps, statistics, information at the disposal of the Client including the strategies and discussions relevant to the project to the Consultant.

b. This Agreement shall constitute the entire understanding of the parties concerning the subject matter hereof and supersede any and all prior oral or written representation, understanding or other contracts relating thereto.

c. All documents pertaining to the engagement including correspondence, reports and other submittals by consultants shall be in English and by the client shall be in English or Marathi language.

d. This Agreement shall not be assigned either fully or in part or otherwise transferred without the consent, in writing, of the other party and only upon such terms as are mutually agreed upon by both the parties hereto, except that the Consultant may, in whole or in part, assign this Agreement to its affiliate or use subcontractor to provide services.

e. Neither Party shall be considered in default in the performance of its obligation under this Assignment because of the following reasons (Force Majeure); war, hostilities, epidemics, riots, earthquake, typhoon, cyclone, fire, explosion, strike or Acts of God.

f. If any term or provision of this Agreement is determined to be illegal or unenforceable, such term or provision shall be deemed stricken, and all other terms and provisions shall remain in full force and effect.

g. The aggregate liability of Consultant shall not under any circumstance exceed the fees received by the Consultant under this Agreement.

h. Consultant may mention to its prospective clients the fact that it has agreed to provide services to the Client under this Agreement and for that purpose use Client's name.

18. The Consultant shall supply two copies of each document. Client will have copyright on the documents submitted.

19. The Standing Committee resolution for the Assignment, the Work Order issued by the Client, this Agreement and all documents executed by the parties in relation to this Agreement after this Agreement shall form part and parcel of this Agreement and shall be binding on both the Parties to this Agreement.

IN WITNESS THEREOF, the parties hereto have caused this Agreement to be executed

FOR AND ON BEHALF OF	**PIMPRI CHINCHWAD MUNICIPAL CORPORATION**

By

(Tanaji Shinde)

Title Addl. Commissioner
Pimpri Chinchwad Municipal Corporation
Pune– 411 018

Witnessed by 1)

2)

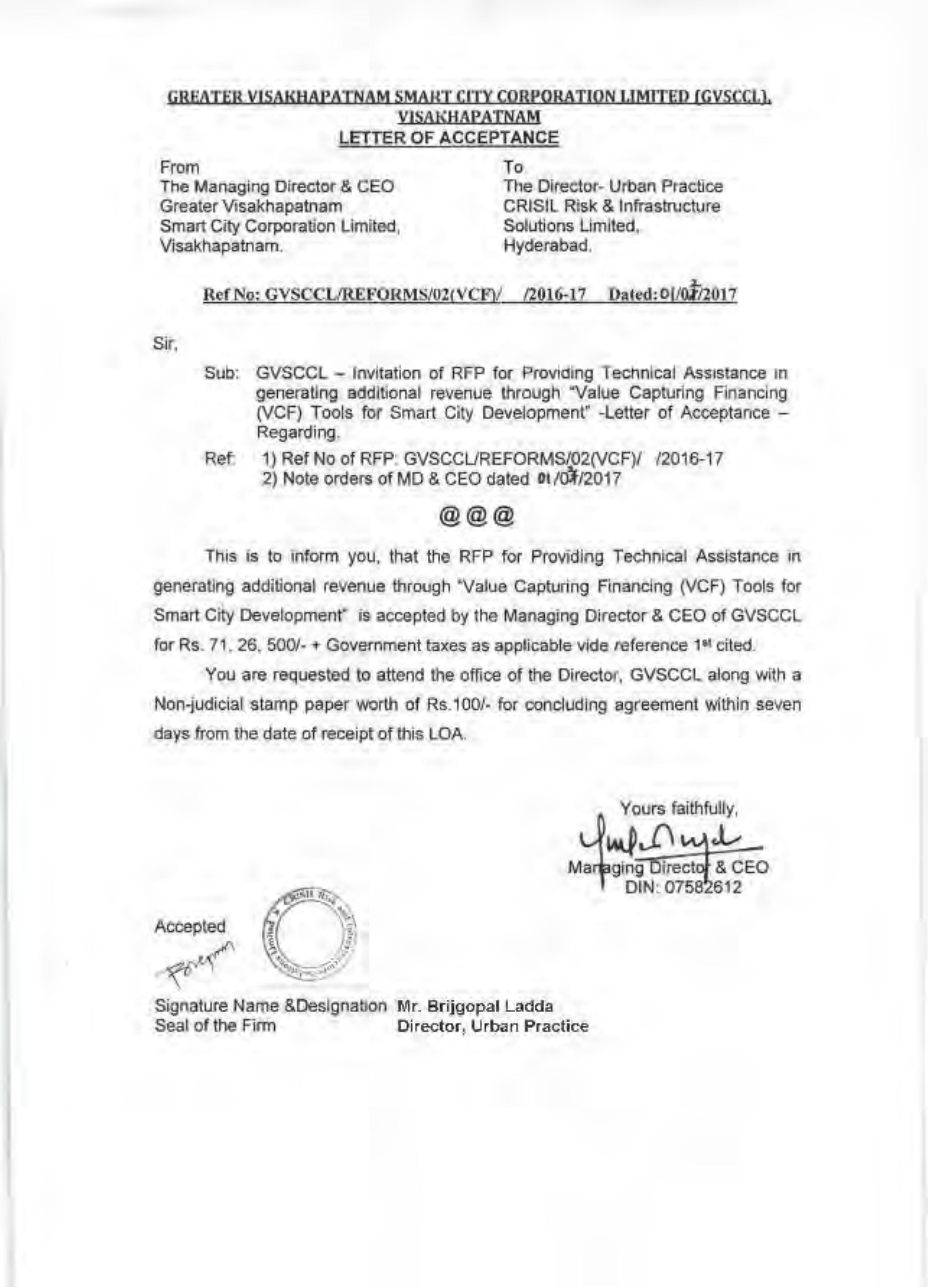
FOR AND ON BEHALF OF **CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LIMITED.**

By

(Abhay Kantak)
Title Director - Urban Practice
CRISIL Infrastructure Advisory

Witnessed by 1)

2)



GREATER VISAKHAPATNAM SMART CITY CORPORATION LIMITED (GVSCCL), VISAKHAPATNAM

LETTER OF ACCEPTANCE

From
The Managing Director & CEO
Greater Visakhapatnam
Smart City Corporation Limited,
Visakhapatnam.

To
The Director- Urban Practice
CRISIL Risk & Infrastructure
Solutions Limited,
Hyderabad.

Ref No: GVSCCL/REFORMS/02(VCF)/ /2016-17 Dated: 01/03/2017

Sir,

Sub: GVSCCL – Invitation of RFP for Providing Technical Assistance in generating additional revenue through "Value Capturing Financing (VCF) Tools for Smart City Development" -Letter of Acceptance – Regarding.

Ref: 1) Ref No of RFP: GVSCCL/REFORMS/02(VCF)/ /2016-17
2) Note orders of MD & CEO dated 01/03/2017

@@@

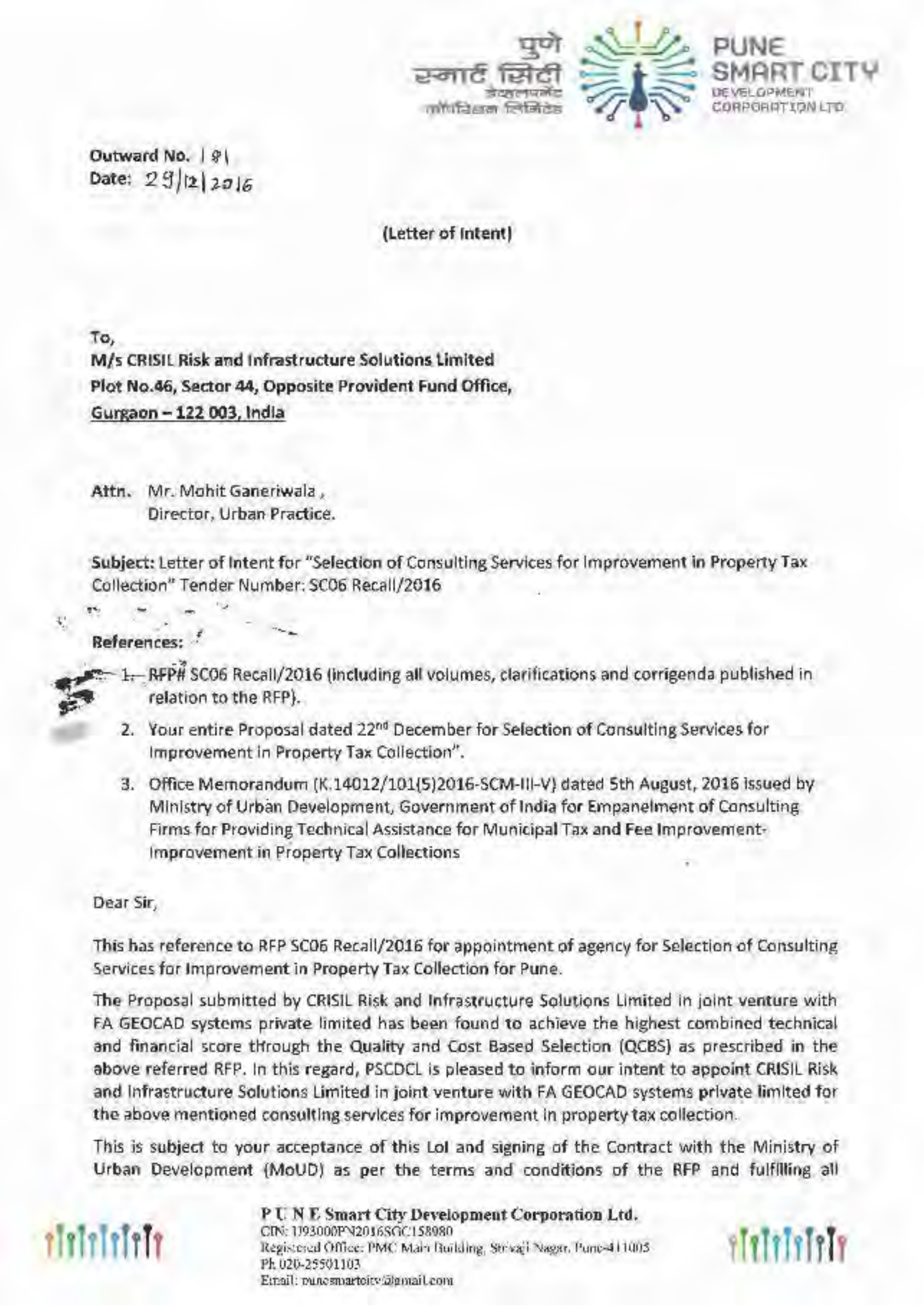
This is to inform you, that the RFP for Providing Technical Assistance in generating additional revenue through "Value Capturing Financing (VCF) Tools for Smart City Development" is accepted by the Managing Director & CEO of GVSCCL for Rs. 71, 26, 500/- + Government taxes as applicable vide reference 1st cited.

You are requested to attend the office of the Director, GVSCCL along with a Non-judicial stamp paper worth of Rs.100/- for concluding agreement within seven days from the date of receipt of this LOA.

Yours faithfully,
Managing Director & CEO
DIN: 07582612

Accepted

Signature Name &Designation Mr. Brijgopal Ladda
Seal of the Firm Director, Urban Practice



पुणे स्मार्ट सिटी डेव्हलपमेंट कॉर्पोरेशन लिमिटेड
PUNE SMART CITY DEVELOPMENT CORPORATION LTD

Outward No. 181
Date: 29/12/2016

(Letter of Intent)

To,
M/s CRISIL Risk and Infrastructure Solutions Limited
Plot No.46, Sector 44, Opposite Provident Fund Office,
Gurgaon – 122 003, India

Attn. Mr. Mohit Ganeriwala ,
Director, Urban Practice.

Subject: Letter of Intent for "Selection of Consulting Services for Improvement in Property Tax Collection" Tender Number: SC06 Recall/2016

References:

1. RFP# SC06 Recall/2016 (including all volumes, clarifications and corrigenda published in relation to the RFP).
2. Your entire Proposal dated 22nd December for Selection of Consulting Services for Improvement in Property Tax Collection".
3. Office Memorandum (K.14012/101(5)2016-SCM-III-V) dated 5th August, 2016 issued by Ministry of Urban Development, Government of India for Empanelment of Consulting Firms for Providing Technical Assistance for Municipal Tax and Fee Improvement-Improvement in Property Tax Collections

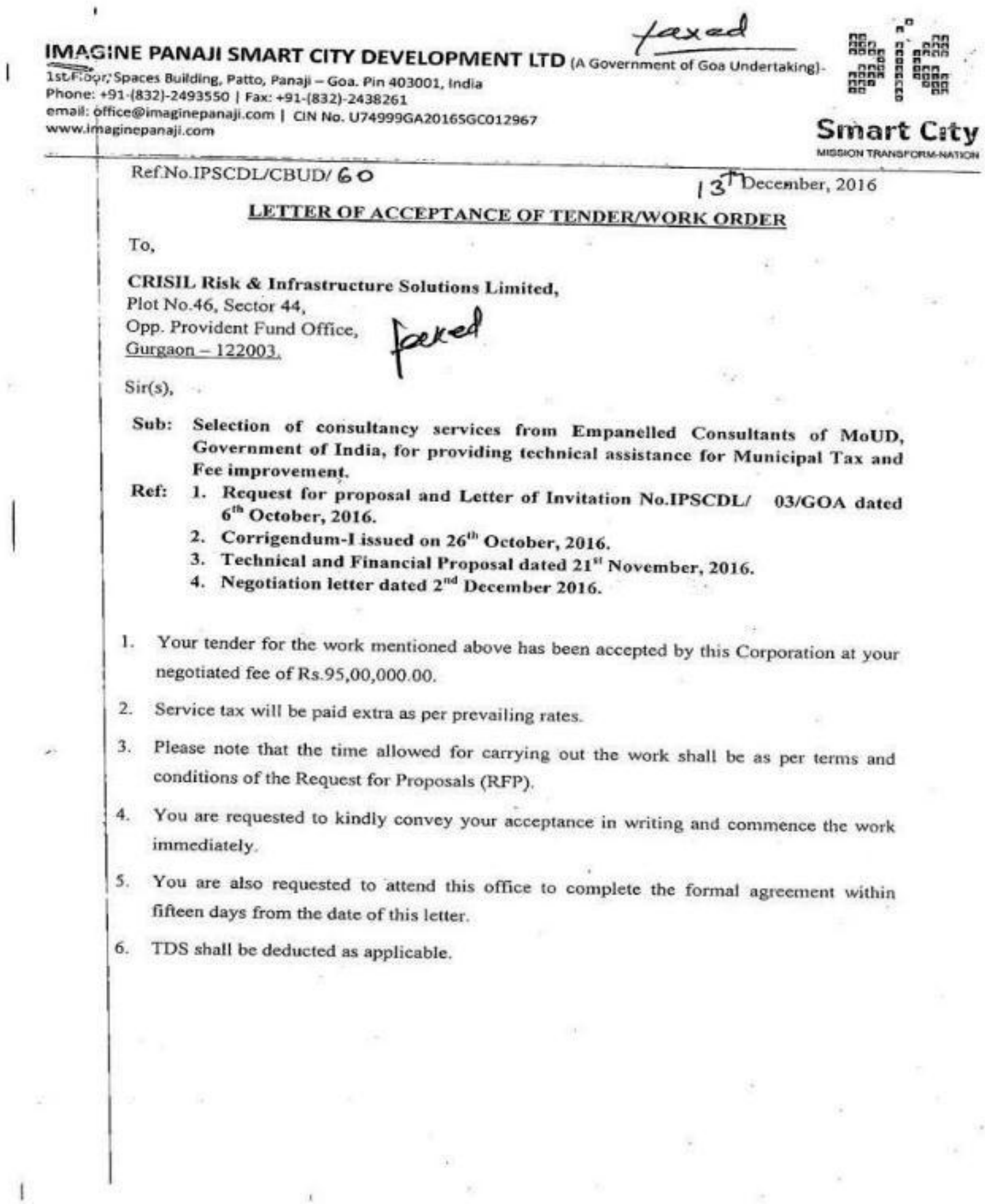
Dear Sir,

This has reference to RFP SC06 Recall/2016 for appointment of agency for Selection of Consulting Services for Improvement in Property Tax Collection for Pune.

The Proposal submitted by CRISIL Risk and Infrastructure Solutions Limited in joint venture with FA GEOCAD systems private limited has been found to achieve the highest combined technical and financial score through the Quality and Cost Based Selection (QCBS) as prescribed in the above referred RFP. In this regard, PSCDCL is pleased to inform our intent to appoint CRISIL Risk and Infrastructure Solutions Limited in joint venture with FA GEOCAD systems private limited for the above mentioned consulting services for improvement in property tax collection.

This is subject to your acceptance of this LoI and signing of the Contract with the Ministry of Urban Development (MoUD) as per the terms and conditions of the RFP and fulfilling all necessary processes within the stipulated time. Please note that all payments under the Contract will be made by MoUD as per the terms of the RFP and Contract.

Kunal Kumar
CEO and Director
Pune Smart City Development Corporation Ltd.



faxed

IMAGINE PANAJI SMART CITY DEVELOPMENT LTD (A Government of Goa Undertaking)
1st Floor, Spaces Building, Patto, Panaji – Goa. Pin 403001, India
Phone: +91-(832)-2493550 | Fax: +91-(832)-2438261
email: office@imaginepanaji.com | CIN No. U74999GA2016SGC012967
www.imaginepanaji.com
Smart City
MISSION TRANSFORM-NATION

Ref.No.IPSCDL/CBUD/ 60

13th December, 2016

LETTER OF ACCEPTANCE OF TENDER/WORK ORDER

To,

CRISIL Risk & Infrastructure Solutions Limited,
Plot No.46, Sector 44,
Opp. Provident Fund Office,
Gurgaon – 122003.

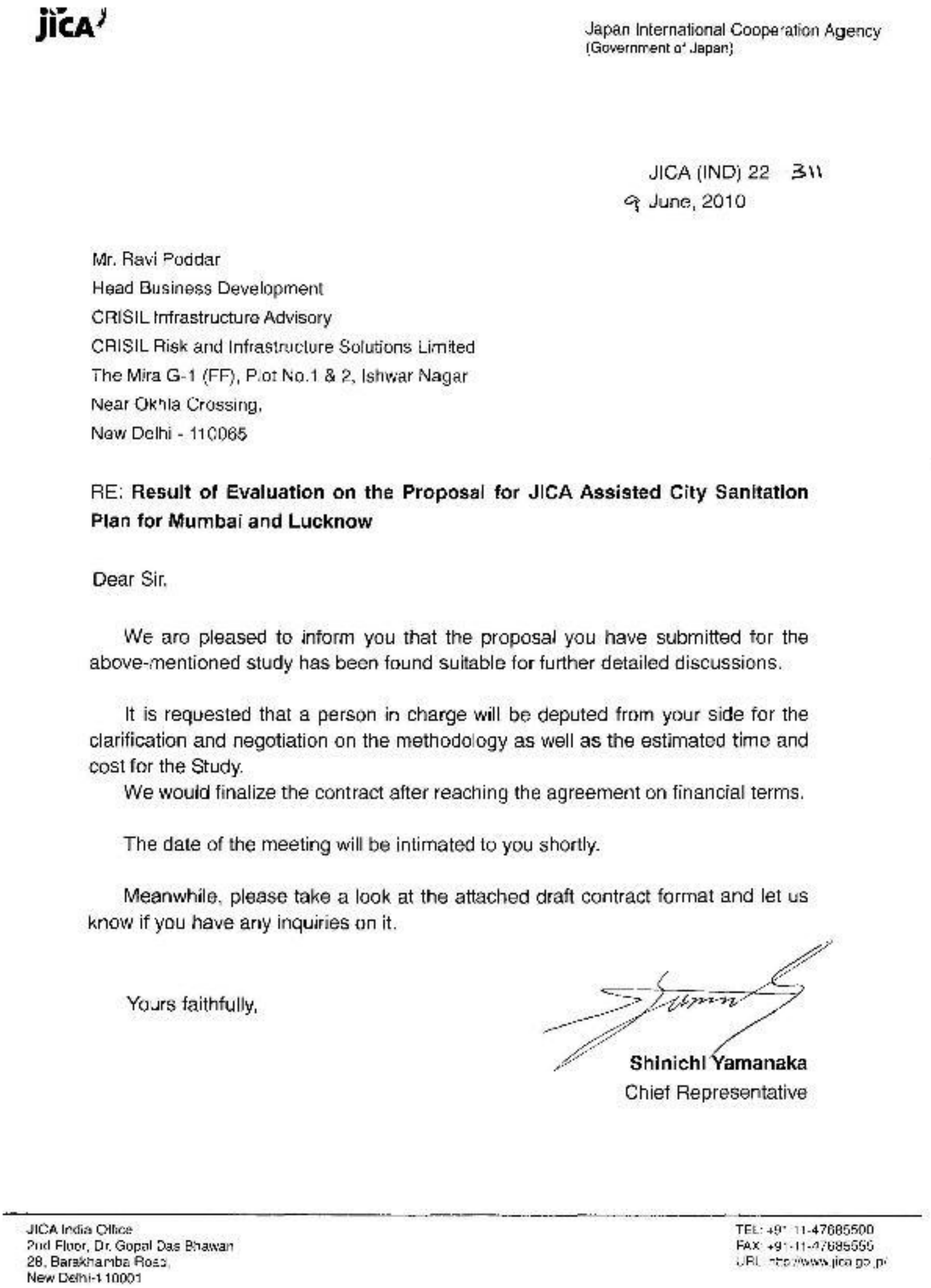
faxed

Sir(s),

Sub: Selection of consultancy services from Empanelled Consultants of MoUD, Government of India, for providing technical assistance for Municipal Tax and Fee improvement.

Ref:
1. **Request for proposal and Letter of Invitation No.IPSCDL/ 03/GOA dated 6th October, 2016.**
2. **Corrigendum-I issued on 26th October, 2016.**
3. **Technical and Financial Proposal dated 21st November, 2016.**
4. **Negotiation letter dated 2nd December 2016.**

1. Your tender for the work mentioned above has been accepted by this Corporation at your negotiated fee of Rs.95,00,000.00.
2. Service tax will be paid extra as per prevailing rates.
3. Please note that the time allowed for carrying out the work shall be as per terms and conditions of the Request for Proposals (RFP).
4. You are requested to kindly convey your acceptance in writing and commence the work immediately.
5. You are also requested to attend this office to complete the formal agreement within fifteen days from the date of this letter.
6. TDS shall be deducted as applicable.



JICA

Japan International Cooperation Agency
(Government of Japan)

JICA (IND) 22 311
9 June, 2010

Mr. Ravi Poddar
Head Business Development
CRISIL Infrastructure Advisory
CRISIL Risk and Infrastructure Solutions Limited
The Mira G-1 (FF), Plot No.1 & 2, Ishwar Nagar
Near Okhla Crossing,
New Delhi - 110065

RE: **Result of Evaluation on the Proposal for JICA Assisted City Sanitation Plan for Mumbai and Lucknow**

Dear Sir,

We are pleased to inform you that the proposal you have submitted for the above-mentioned study has been found suitable for further detailed discussions.

It is requested that a person in charge will be deputed from your side for the clarification and negotiation on the methodology as well as the estimated time and cost for the Study.

We would finalize the contract after reaching the agreement on financial terms.

The date of the meeting will be intimated to you shortly.

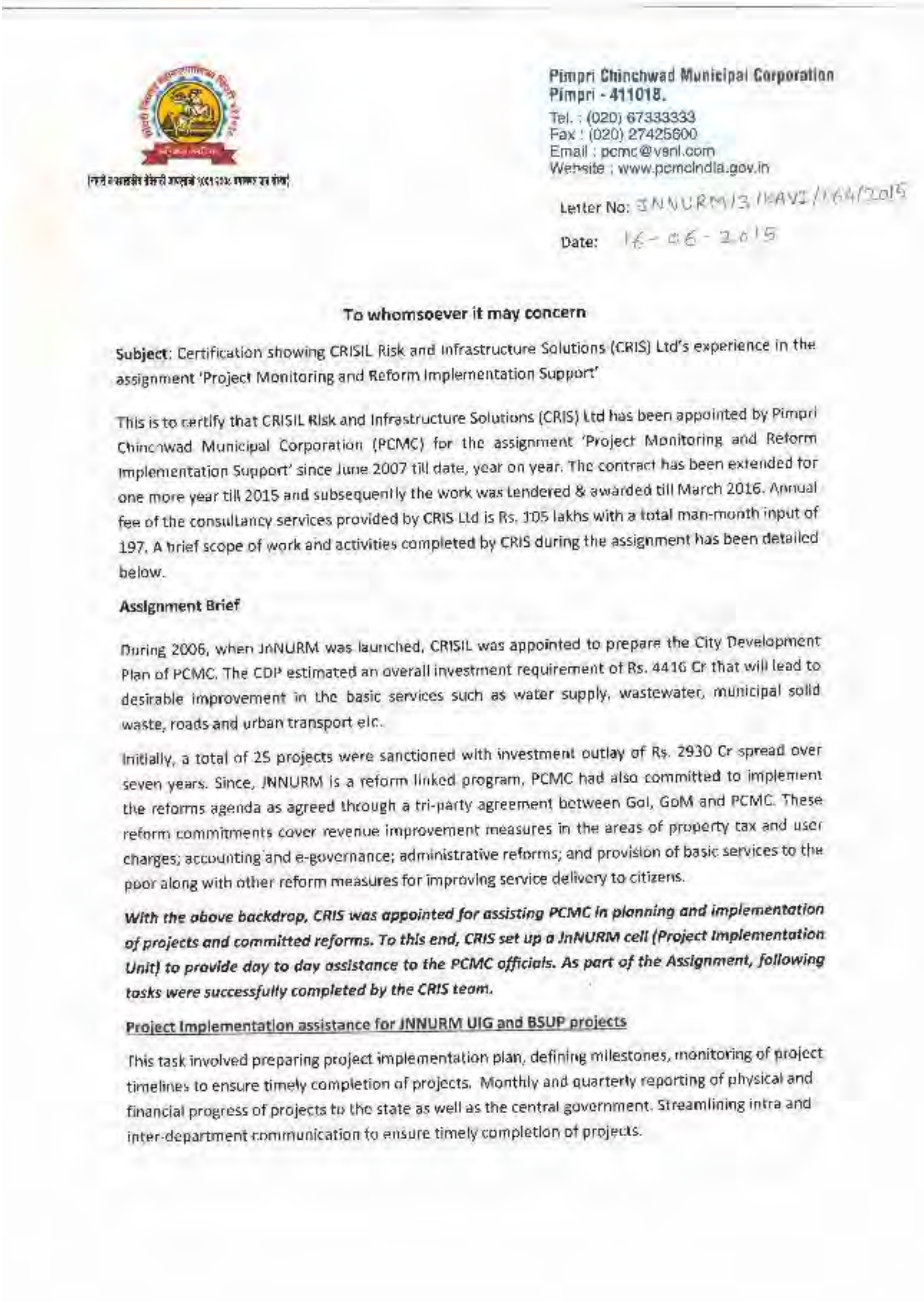
Meanwhile, please take a look at the attached draft contract format and let us know if you have any inquiries on it.

Yours faithfully,

Shinichi Yamanaka
Chief Representative

JICA India Office
2nd Floor, Dr. Gopal Das Bhawan
28, Barakhamba Road,
New Delhi-110001

TEL: +91-11-47685500
FAX: +91-11-47685555
URL: http://www.jica.go.jp/



Pimpri Chinchwad Municipal Corporation
Pimpri - 411018.
Tel. : (020) 67333333
Fax : (020) 27425600
Email : pcmc@vsnl.com
Website : www.pcmcindia.gov.in

Letter No: JNNURM/3/KAVI/164/2015

Date: 16-06-2015

To whomsoever it may concern

Subject: Certification showing CRISIL Risk and Infrastructure Solutions (CRIS) Ltd's experience in the assignment 'Project Monitoring and Reform Implementation Support'

This is to certify that CRISIL Risk and Infrastructure Solutions (CRIS) Ltd has been appointed by Pimpri Chinchwad Municipal Corporation (PCMC) for the assignment 'Project Monitoring and Reform Implementation Support' since June 2007 till date, year on year. The contract has been extended for one more year till 2015 and subsequently the work was tendered & awarded till March 2016. Annual fee of the consultancy services provided by CRIS Ltd is Rs. 105 lakhs with a total man-month input of 197. A brief scope of work and activities completed by CRIS during the assignment has been detailed below.

Assignment Brief

During 2006, when JnNURM was launched, CRISIL was appointed to prepare the City Development Plan of PCMC. The CDP estimated an overall investment requirement of Rs. 4416 Cr that will lead to desirable improvement in the basic services such as water supply, wastewater, municipal solid waste, roads and urban transport etc.

Initially, a total of 25 projects were sanctioned with investment outlay of Rs. 2930 Cr spread over seven years. Since, JNNURM is a reform linked program, PCMC had also committed to implement the reforms agenda as agreed through a tri-party agreement between GoI, GoM and PCMC. These reform commitments cover revenue improvement measures in the areas of property tax and user charges; accounting and e-governance; administrative reforms; and provision of basic services to the poor along with other reform measures for improving service delivery to citizens.

With the above backdrop, CRIS was appointed for assisting PCMC in planning and implementation of projects and committed reforms. To this end, CRIS set up a JnNURM cell (Project Implementation Unit) to provide day to day assistance to the PCMC officials. As part of the Assignment, following tasks were successfully completed by the CRIS team.

Project Implementation assistance for JNNURM UIG and BSUP projects

This task involved preparing project implementation plan, defining milestones, monitoring of project timelines to ensure timely completion of projects. Monthly and quarterly reporting of physical and financial progress of projects to the state as well as the central government. Streamlining intra and inter-department communication to ensure timely completion of projects.

Reform Implementation Support

Providing implementation assistance for all reforms committed under JNNURM i.e. property tax, accounting, service level benchmarking, e-governance, accounting, budgetary reforms, administrative and structural reforms, and provision of basic services to the poor etc.

Strengthening of Organisation Structure

CRIS helped the PCMC in organisation structure strengthening for two key services i.e. (i) water supply and sewerage and (ii) solid waste management.

For water supply services, CRIS undertook an assessment of the gaps in the existing water supply system, deficiencies in consumer data management, water billing, distribution and collection. CRIS proposed Interventions for improving the billing cycles, data management process and organisation restructuring. CRIS also undertook the bid process management for selection of operator for bill generation and distribution.

To improve the service levels of solid waste management services in the city, CRIS studied the deficiencies in existing system and suggested improvements in roles and responsibilities related to manpower management, operational planning, operation and maintenance costing. CRIS also undertook focused stakeholder consultations and developed a refined organisation structure. This new arrangement also focused upon utilising private sector services for efficiency in service provisioning. CRIS also assisted PCMC in procurement and appointment of private sector operator for SWM services.

Training & Capacity Development Plan

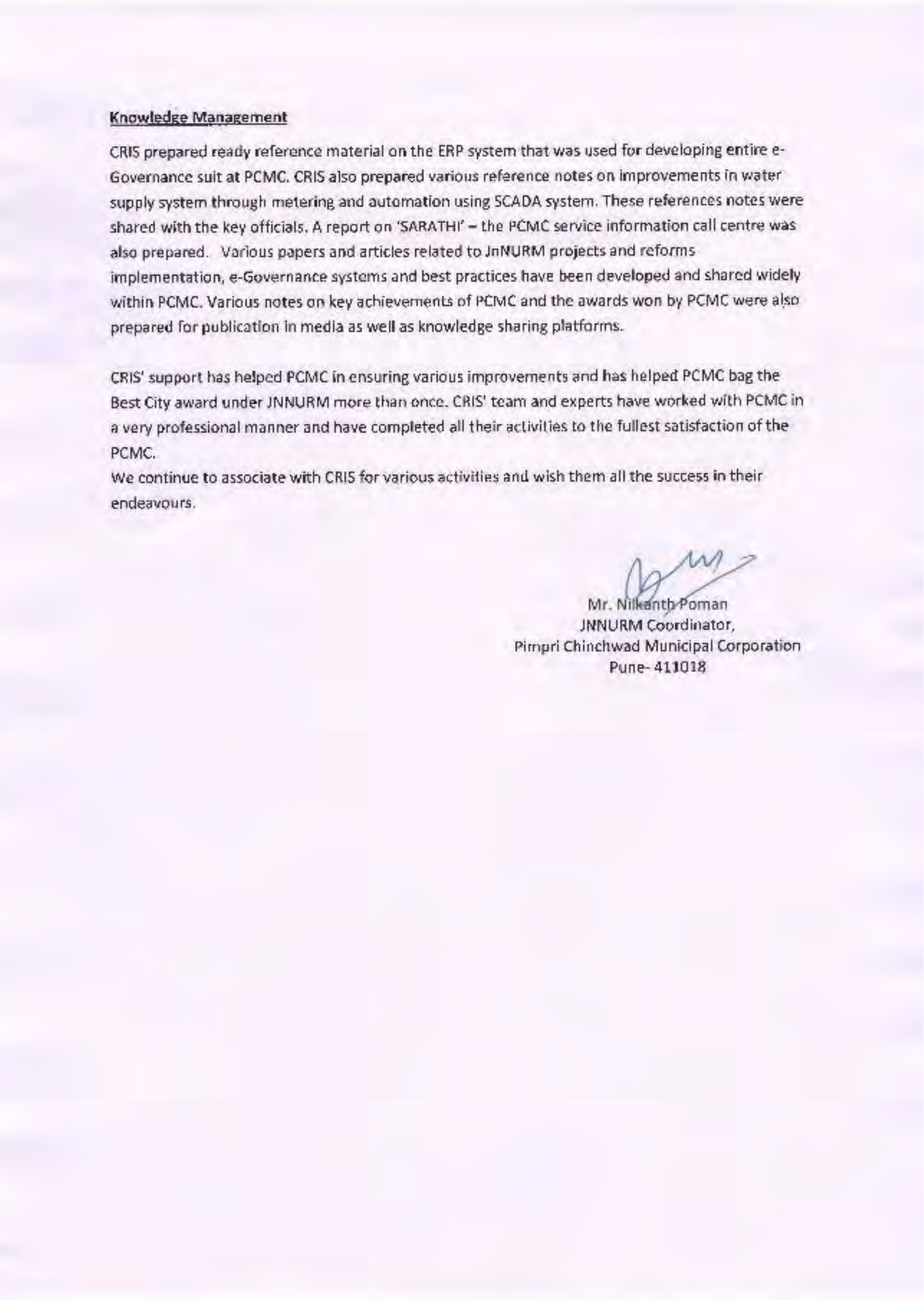
As part of the Administrative reform implementation and to enhance effectiveness of project and reform implementation, CRIS undertook a Training Needs Assessment study of all major departments. Based on the study, a training calendar and capacity building plan was prepared for mid-level, senior level and Head of Department level staff.

Training programs for capacity development

CRIS undertook various training programmes for capacity building. One of the core areas was accounting budgetary and financial reporting. CRIS provided handholding support and has also conducted various training workshops for PCMC officials in development and implementation of double entry accounting system and functional budget. CRIS also assisted PCMC in change management during the shift from cash based to accrual based accounting practice.

Support for the procurement of soft and hard infrastructure and equipment's

CRIS has provided procurement support for various activities such as for selection of agencies/operator for preparation of Detailed Project Report, for development, procurement, installation & maintenance of IT infrastructure, managing OPD services in 750 bedded YCM hospital, procurement of services for IT asset operation and maintenance, procurement of hardware for establishing networking in of municipal offices, procurement of networking services (WAN) for connecting municipal offices in Pimpri Chinchwad.



Knowledge Management

CRIS prepared ready reference material on the ERP system that was used for developing entire e-Governance suit at PCMC. CRIS also prepared various reference notes on improvements in water supply system through metering and automation using SCADA system. These references notes were shared with the key officials. A report on 'SARATHI' – the PCMC service information call centre was also prepared. Various papers and articles related to JnNURM projects and reforms implementation, e-Governance systems and best practices have been developed and shared widely within PCMC. Various notes on key achievements of PCMC and the awards won by PCMC were also prepared for publication in media as well as knowledge sharing platforms.

CRIS' support has helped PCMC in ensuring various improvements and has helped PCMC bag the Best City award under JNNURM more than once. CRIS' team and experts have worked with PCMC in a very professional manner and have completed all their activities to the fullest satisfaction of the PCMC.
We continue to associate with CRIS for various activities and wish them all the success in their endeavours.

Mr. Nilkanth Poman
JNNURM Coordinator,
Pimpri Chinchwad Municipal Corporation
Pune- 411018

About CRISIL

CRISIL is a global analytical company providing ratings, research, and risk and policy advisory services. We are India's leading ratings agency. We are also the foremost provider of high-end research to the world's largest banks and leading corporations.

CRISIL is majority owned by S&P Global Inc., a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

About Infrastructure Advisory

CRISIL Infrastructure Advisory is a leading advisor to regulators and governments, multilateral agencies, investors, and large public and private sector firms. We help shape public policy and enable infrastructure development. Our services span a wide array of infrastructure development activities. Our work in the areas of policy formulation, regulation, design and implementation of public-private partnership (PPP) frameworks and infrastructure financing mechanisms helps create a vibrant ecosystem for infrastructure development. Our services at the project level include bid process management, valuations and due diligence to enable investment decisions. We are known for our core values of independence and analytical rigour combined with deep domain expertise. Our teams have expertise across the complete range of infrastructure sectors - urban development, energy, transport and logistics, natural resources, education, and healthcare. We have a rich understanding of PPP and financing related issues. We operate in India and 22 other emerging economies in Asia, Africa, and the Middle East. CRISIL Infrastructure Advisory is a division of CRISIL Risk and Infrastructure Solutions Limited, a wholly owned subsidiary of CRISIL Limited.

CRISIL Privacy Notice

CRISIL respects your privacy. We use your contact information, such as your name, address, and email id, to fulfil your request and service your account and to provide you with additional information from CRISIL and other parts of S&P Global Inc. and its subsidiaries (collectively, the "Company") you may find of interest.
For further information, or to let us know your preferences with respect to receiving marketing materials, please visit www.crisil.com/privacy. You can view the Company's Customer Privacy at https://www.spglobal.com/privacy.

Argentina | China | Hong Kong | **India** | Poland | Singapore | UK | USA
CRISIL Risk and Infrastructure Solutions Limited *(A subsidiary of CRISIL Limited)*
CRISIL House, Central Avenue, Hiranandani Business Park, Powai, Mumbai – 400076. India
Phone: + 91 22 3342 3000 | Fax: + 91 22 3342 3001 | www.crisil.com
in /company/crisil @CRISILLimited f /CRISILLimited /user/CRISILLimited

CRISIL
An S&P Global Company

Deloitte.

Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities

Expression of Interest

May 30, 2017

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Deloitte.

Deloitte Touche Tohmatsu
India LLP
7th Floor, Building 10, Tower B
DLF Cyber City Complex
DLF City, Phase II
Gurgaon-122002
Haryana
India
Tel.: +91 (124) 6792000
Fax: +91 (124) 6792012

Appendix 1: Letter of Application

Gurgaon, Date: May 30, 2017

To,
The Director,
National Institute of Urban Affairs,
1st and 2nd Floor, Core 4B,
India Habitat Centre, Lodhi Road,
New Delhi, Delhi 110003

Reference: EOI for Assessment of Liveability standards in selected Cities

Dear Sir,

Being duly authorized to represent and act on behalf of **Deloitte Touche Tohmatsu India LLP** (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

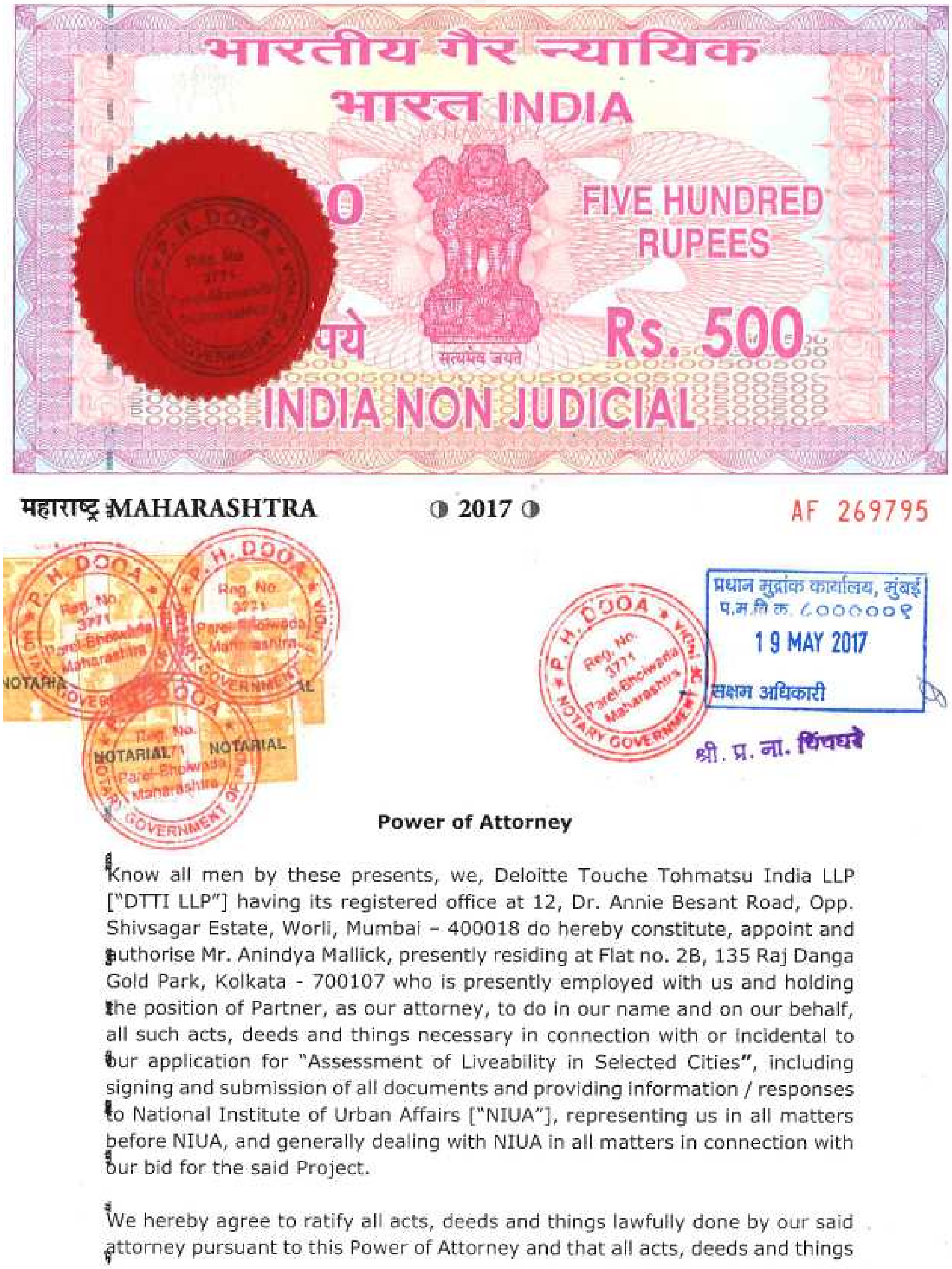
We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from 30 May 2017. (Application Due Date)

Yours faithfully,

Anindya Mallick

Authorized Signature:
Name and Title of Signatory: **Anindya Mallick, Partner,**
Name of Consultant: **Deloitte Touche Tohmatsu India LLP**
In the capacity of: **Authorized Signatory**
Address: **7th Floor, Building 10, Tower B, DLF Cyber City Complex, DLF City, Phase II, Gurgaon 122 002, Haryana, India**
Contact Information: Phone: +91 (124) 679 2000; Email: anmallick@deloitte.com

Appendix 2: Power of Attorney for Signing of Application



भारतीय गैर न्यायिक

भारत INDIA

FIVE HUNDRED RUPEES

Rs. 500

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ AF 269795

प्रधान मुद्रांक कार्यालय, मुंबई
प.म.वि.क. ८००००० ९
19 MAY 2017
सक्षम अधिकारी
श्री. प्र. ना. पिंचघरे

Power of Attorney

Know all men by these presents, we, Deloitte Touche Tohmatsu India LLP ["DTTI LLP"] having its registered office at 12, Dr. Annie Besant Road, Opp. Shivsagar Estate, Worli, Mumbai – 400018 do hereby constitute, appoint and authorise Mr. Anindya Mallick, presently residing at Flat no. 2B, 135 Raj Danga Gold Park, Kolkata - 700107 who is presently employed with us and holding the position of Partner, as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "Assessment of Liveability in Selected Cities", including signing and submission of all documents and providing information / responses to National Institute of Urban Affairs ["NIUA"], representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

This Power of Attorney shall automatically stand revoked if Mr. Anindya Mallick, ceases to be Partner of DTTI LLP.

IN WITNESS WHEREOF THIS POWER OF ATTORNEY IS EXECUTED ON THE 26th DAY OF MAY 2017.

For **Deloitte Touche Tohmatsu India LLP**

Vijaykumar

Vijaykumar Iyer
Designated Partner

Accepted

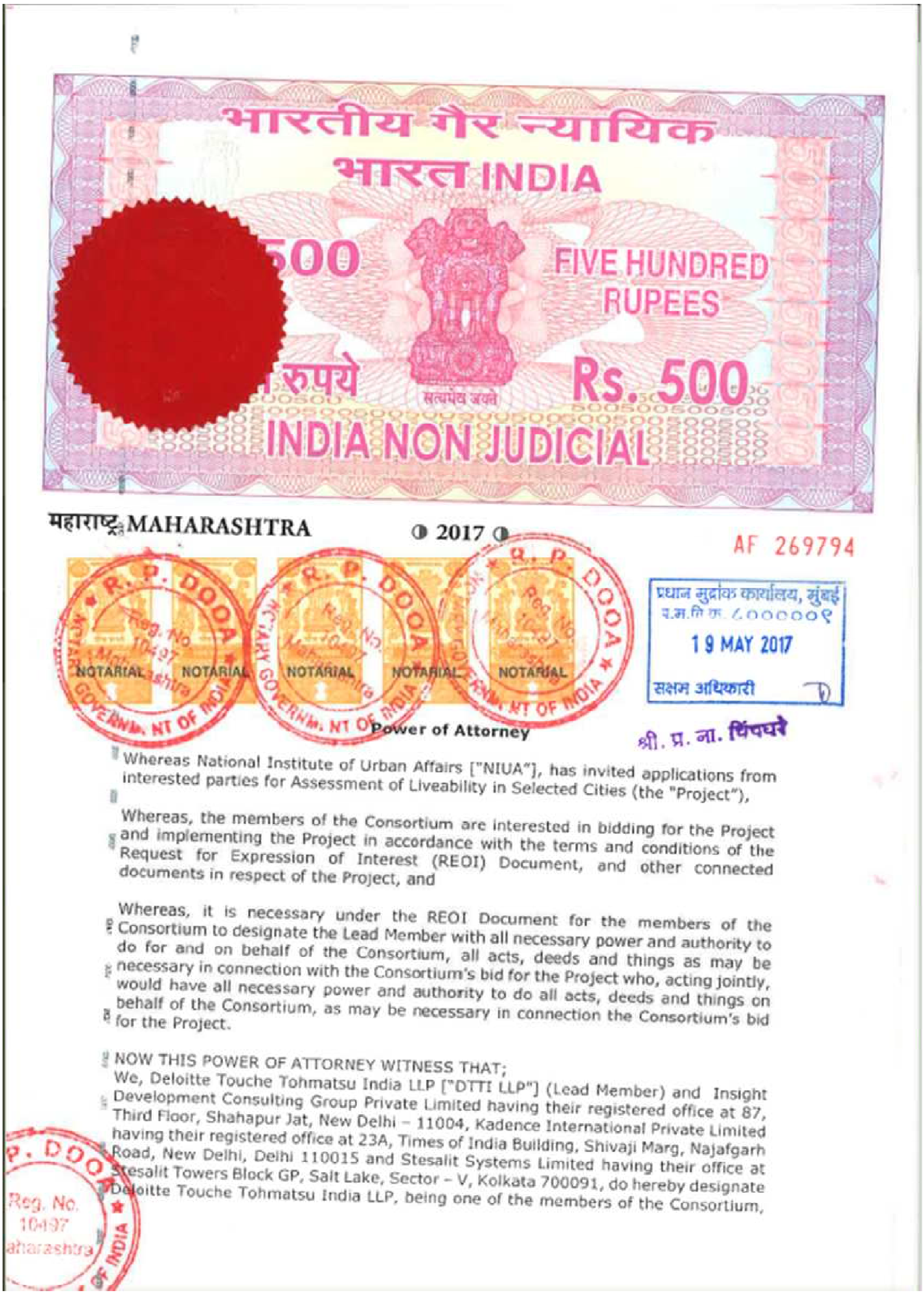
Anindya Mallick

Anindya Mallick
Partner

Attested by me
Prakash Dooa
26/05/2017
PRAKASH H. DOOA
B.A.LL.B.
Advocate High Court,
Notary Government of India,
8, Kondaji Bldg. No. 3,
Behind Tata Hospital, Parel,
Mumbai-400012

P. H. DOOA
Reg. No. 3771

Appendix 3: Power of Attorney for Lead Member of Consortium



भारतीय गैर न्यायिक
भारत INDIA
500
FIVE HUNDRED RUPEES
रुपये
Rs. 500
सत्यमेव जयते
INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ AF 269794

प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क्र. ८००००९
19 MAY 2017
सक्षम अधिकारी

श्री. प्र. ना. थिंपघरे

NOTARIAL NOTARIAL NOTARIAL NOTARIAL NOTARIAL

R. P. DOOA Reg. No. 10497

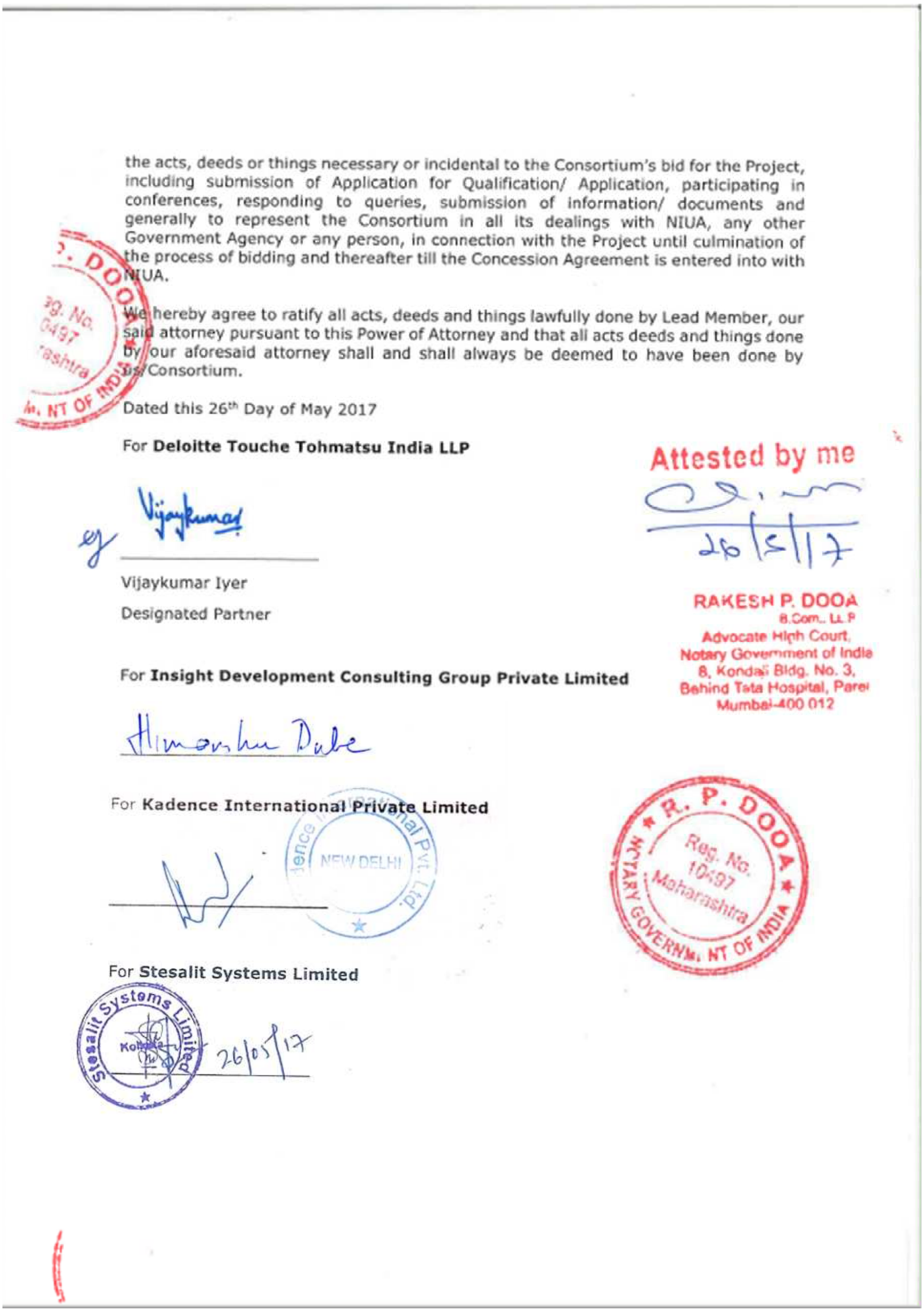
Power of Attorney

Whereas National Institute of Urban Affairs ["NIUA"], has invited applications from interested parties for Assessment of Liveability in Selected Cities (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;
We, Deloitte Touche Tohmatsu India LLP ["DTTI LLP"] (Lead Member) and Insight Development Consulting Group Private Limited having their registered office at 87, Third Floor, Shahapur Jat, New Delhi – 11004, Kadence International Private Limited having their registered office at 23A, Times of India Building, Shivaji Marg, Najafgarh Road, New Delhi, Delhi 110015 and Stesalit Systems Limited having their office at Stesalit Towers Block GP, Salt Lake, Sector – V, Kolkata 700091, do hereby designate Deloitte Touche Tohmatsu India LLP, being one of the members of the Consortium,



the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this 26th Day of May 2017

For **Deloitte Touche Tohmatsu India LLP**

Vijaykumar

Vijaykumar Iyer

Designated Partner

Attested by me

26/5/17

RAKESH P. DOOA
B.Com., LL.B
Advocate High Court,
Notary Government of India
8, Kondaji Bldg. No. 3,
Behind Tata Hospital, Parel
Mumbai-400 012

For **Insight Development Consulting Group Private Limited**

Himanshu Dube

For **Kadence International Private Limited**

R. P. DOOA
Reg. No. 10497

For **Stesalit Systems Limited**

26/05/17

Appendix 4: Details of Applicant

1. Details of Applicant

Deloitte Touche Tohmatsu India LLP

a.	**Name of applicant with full address**		Deloitte Touche Tohmatsu India LLP (formerly known as Deloitte Touche Tohmatsu India Private Limited) **Registered address:** 12, Dr. Annie Besant Road, Opp. Shiv Sagar Estate, Worli, Mumbai – 400 018 India
b.	**Tel. No.**		+91 (124) 679 2000 +91 9831175247
c.	**Fax No.**		+91 (124) 679 2012
d.	**Email**		**anmallick@deloitte.com**
e.	Year of Incorporation.		1995
f.	Name and address of the person holding the Power of Attorney.		Name: Mr. Anindya Mallick Designation: Partner Company: Deloitte Touche Tohmatsu India LLP Address: 7th Floor, Building 10, Tower B, DLF Cyber City Complex, DLF City, Phase II, Gurgaon 122 002, Haryana, India Phone No: +91 (124) 679 2000 Fax: +91 (124) 679 2012 Email address: anmallick@deloitte.com
g.	(i) Place of Business		Registered address (Mumbai Office): 12, Dr. Annie Besant Road, Opp. Shiv Sagar Estate, Worli, Mumbai – 400 018, India Delhi-NCR Office address: 7th Floor, Building 10, Tower B, DLF Cyber City Complex, DLF City, Phase II, Gurgaon 122 002, Haryana, India, Phone No: +91 (124) 679 2895, Fax: +91 (124) 679 2012
	(ii) Date of Registration.		From 6th October 1995 as Deloitte Touche Tohmatsu India Private Limited (DTTIPL), and from 1st October 2015 as Deloitte Touche Tohmatsu India LLP (DTTILLP).
h.	Name of Bankers with full address.		Bank of Baroda, Sector 53, Gurgaon branch, Golf Course Road, Ground Floor, Gurgaon - 122002
i.	Service Tax Registration Number (copy).		AALFD7157JSD001 Copy enclosed in Annexure 1
j.	Are you presently debarred / Black listed by any Government Department /Public		No. Copy of Affidavit enclosed in Appendix 8

	Sector Undertaking /Any Employer? (If Yes, please furnish details)		
k.	Name and details (Tel / Mobile / E mail) of contact persons		Name: Mr. Anindya Mallick Designation: Partner Phone No: +91 (124) 679 2000 Email address: anmallick@deloitte.com

Insight Development Consulting Group (IDCG) Private Limited

a.	**Name of applicant with full address**		Insight Development Consulting Group Pvt. Ltd. (IDCG) **Registered address:** 87, Third Floor, Shahpur Jat, New Delhi 110049
b.	**Tel. No.**		Tel-fax: +91-11-41753315
c.	**Fax No.**		Tel-fax: +91-11-41753315
d.	**Email**		aneesh@idcg.co.in
e.	Year of Incorporation.		1995
f.	Name and address of the person holding the Power of Attorney.		Himanshu Dube, Director 87, Third Floor, Shahpur Jat, New Delhi 110049
g.	(i) Place of Business		87, Third Floor, Shahpur Jat, New Delhi 110049
	(ii) Date of Registration.		12th June 1995
h.	Name of Bankers with full address.		HDFC Bank Ltd., A-24, Hauz Khas, New Delhi 110016
i.	Service Tax Registration Number (copy).		AABCI5655HST001 Copy enclosed in Annexure 1
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnish details)		No. Copy of Affidavit enclosed in Appendix 8

k.	Name and details (Tel / Mobile / E mail) of contact persons		Mr. Aneesh Vijayan Managing Consultant Mob: +91-99108-36888 aneesh@idcg.co.in

Stesalit Systems Limited

a.	**Name of applicant with full address**		Stesalit Systems Limited E-2/3, Stesalit Towers, 1st Floor, Block EP & GP, Sector V, Salt Lake, Kolkata, West Bengal – 700091
b.	**Tel. No.**		033 – 66529064
c.	**Fax No.**		033 – 22495305
d.	**Email**		info@stesalitsystems.com
e.	Year of Incorporation.		2010
f.	Name and address of the person holding the Power of Attorney.		Mr. Jayanta Narayan Som Halishahar Purbachal Road,P.O naba Nagar,Dist- 24 Paraganas(N), West Bengal - 743136
g.	(i) Place of Business		E-2/3, Stesalit Towers, 1st Floor, Block EP & GP, Sector V, Salt Lake, Kolkata, West Bengal – 700091
	(ii) Date of Registration.		07 December 2010
h.	Name of Bankers with full address.		State Bank Of India Fairlie Branch, 14 NS Road, Kolkata- 700001
i.	Service Tax Registration Number (copy).		AAPCS 0096RSD001 Copy enclosed in Annexure 1
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnish details)		No Copy of Affidavit enclosed in Appendix 8
k.	Name and details (Tel / Mobile / E		Mr. Jayanta Narayan Som

	mail) of contact persons		Halishahar Purbachal Road,P.O naba Nagar,Dist- 24 Paraganas(N), West Bengal - 743136

Kadence International Private Limited

a.	**Name of applicant with full address**		Kadence International Pvt. Ltd. 23A, Times of India Building, Shivaji Marg, Main Najafgarh Road, New Delhi-110015, India
b.	**Tel. No.**		+91-11-48525500
c.	**Fax No.**		+91-11-48525525
d.	**Email**		www.kadence.com
e.	Year of Incorporation.		2006
f.	Name and address of the person holding the Power of Attorney.		Mr Aman Makkar 418-419, International Trade Tower, Opposite Satyam Cineplex, Nehru Place, New Delhi – 110019
g.	(i) Place of Business		India
	(ii) Date of Registration.		August 2006
h.	Name of Bankers with full address.		HSBC Bank, 25, Barakhamba Road,New Delhi
i.	Service Tax Registration Number (copy).		AACCK8504AST001 Copy enclosed in Annexure 1
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnish details)		No. Copy of Affidavit enclosed in Appendix 8
k.	Name and details (Tel / Mobile / E mail) of contact persons		Mr Soumya Sinha, Vice President, +91-99990 29495 ssinha@kadence.com Mr Aman Makkar, Managing Director, +91-99101 61530, amakkar@kadence.com

2. In case of a Consortium:

S. No.	Name of Member	Role
1	Deloitte Touche Tohmatsu India LLP	**Lead Member** Overall responsibility for program design and implementation methodology and delivery of engagement as per scope of work; Inputs for design of survey questionnaire and data formats, Data analysis, city scoring & ranking as per framework prescribed by Client and report development. Training and capacity building of Field level staff of the Consortium on survey methodology.
2	Insight Development Consulting Group Private Limited	**Other Member** Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources, data validation, structuring & analysis
3	Stesalit Systems limited	**Other Member** Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources, data validation, structuring & analysis
4	Kadence International Private Limited	**Other Member** Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources, data validation, structuring & analysis across all states.

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm - Deloitte Touche Tohmatsu India LLP)	250 (India Public Sector Practice only)
Total Staff Strength of Organisation (Consortium Partner- Insight Development Consulting Group Private Limited)	22
Total Staff Strength of Organisation (Consortium Partner- Stesalit Systems Limited)	206
Total Staff Strength of Organisation (Consortium Partner - Kadence International Private Limited)	112 (Global)

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	52

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Insight Development Consulting Group Private Limited)	18
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Stesalit Systems Limited)	70
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Kadence International Private Limited)	55

4. Turn-over of the Firm during last 3 years[1]

Financial Year	**Turn Over in INR**			
	DTTI LLP (Lead Partner)	Insight Development Consulting Group Private Limited	Stesalit Systems Limited	Kadence International Private Limited
2013-14	594,92,90,037	72,49,012	50,00,000	16,90,01,97,969
2014-15	950,17,88,756	1,20,52,602	3,34,00,000	20,40,58,913
2015-16	881,70,39,215	1,37,57,957	15,48,00,000	26,85,45,827

**Figures for Financial Year 2016-17 are not available*

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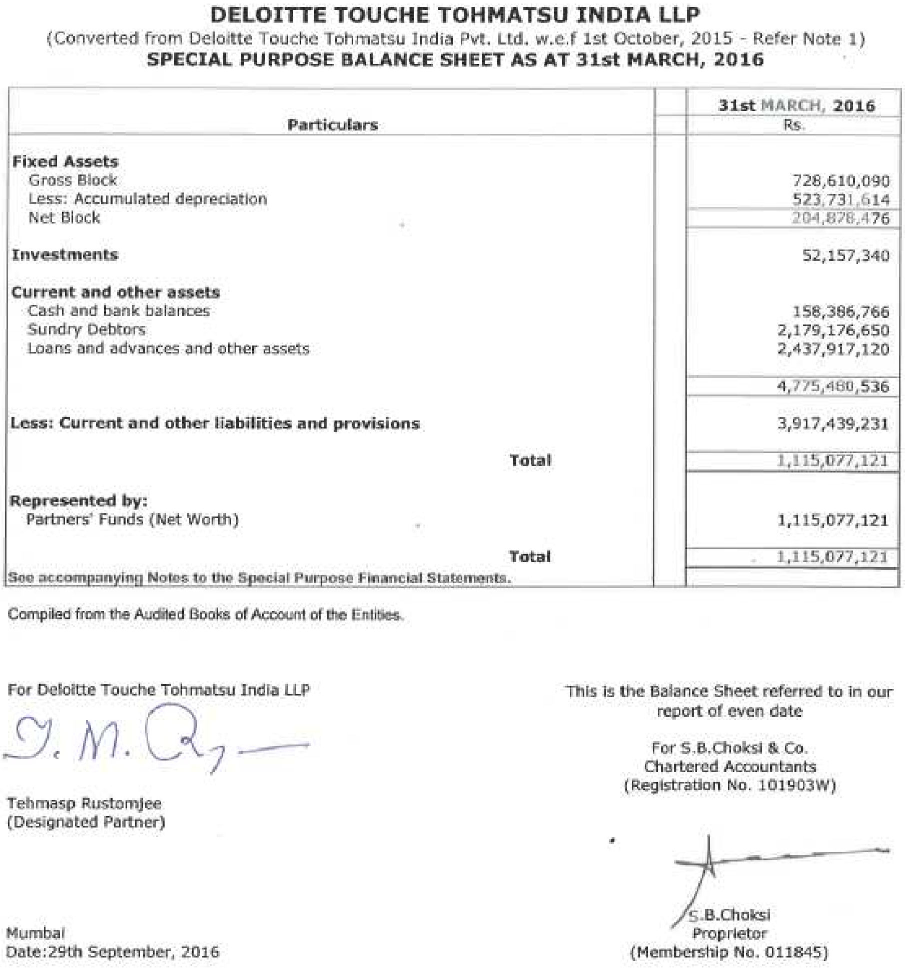
[1] Audited financial turnover of Lead Firm and the consortium is provided in Annexure A

Audited Financial Statement-Deloitte Touche Tohmatsu LLP (Lead Firm)

2015-16



DELOITTE TOUCHE TOHMATSU INDIA LLP

(Converted from Deloitte Touche Tohmatsu India Pvt. Ltd. w.e.f 1st October, 2015 - Refer Note 1)

SPECIAL PURPOSE BALANCE SHEET AS AT 31st MARCH, 2016

Particulars	31st MARCH, 2016 Rs.
Fixed Assets	
Gross Block	728,610,090
Less: Accumulated depreciation	523,731,614
Net Block	204,878,476
Investments	52,157,340
Current and other assets	
Cash and bank balances	158,386,766
Sundry Debtors	2,179,176,650
Loans and advances and other assets	2,437,917,120
	4,775,480,536
Less: Current and other liabilities and provisions	3,917,439,231
Total	1,115,077,121
Represented by:	
Partners' Funds (Net Worth)	1,115,077,121
Total	1,115,077,121

See accompanying Notes to the Special Purpose Financial Statements.

Compiled from the Audited Books of Account of the Entities.

For Deloitte Touche Tohmatsu India LLP

Tehmasp Rustomjee
(Designated Partner)

Mumbai
Date:29th September, 2016

This is the Balance Sheet referred to in our
report of even date

For S.B.Choksi & Co.
Chartered Accountants
(Registration No. 101903W)

S.B.Choksi
Proprietor
(Membership No. 011845)

DELOITTE TOUCHE TOHMATSU INDIA LLP

(Converted from Deloitte Touche Tohmatsu India Pvt. Ltd. w.e.f 1st October, 2015 - Refer Note 1)

SPECIAL PURPOSE PROFIT AND LOSS ACCOUNT
FOR THE PERIOD 1st APRIL 2015 to 31st MARCH, 2016 (FY 2015-16)

Particulars	For the Period 1st April 2015 to 31st March, 2016 (FY 2015-16) (Refer Note 2) Rs.
Income	
Professional fees	8,130,790,451
Other income	686,248,764
	8,817,039,215
Expenditure	
Personnel costs	4,685,946,055
Establishment costs	3,176,159,572
Interest and finance charges	142,678,262
Depreciation	93,423,368
	8,098,207,257
Profit before tax	718,831,958
Tax Expense	
(a) Current tax	285,700,000
(b) Deferred tax	(36,880,908)
	248,819,092
Profit after Tax	**470,012,866**

See accompanying Notes to the Special Purpose Financial Statements.

This is the Statement of Profit and Loss referred to in our report of even date

For Deloitte Touche Tohmatsu India LLP

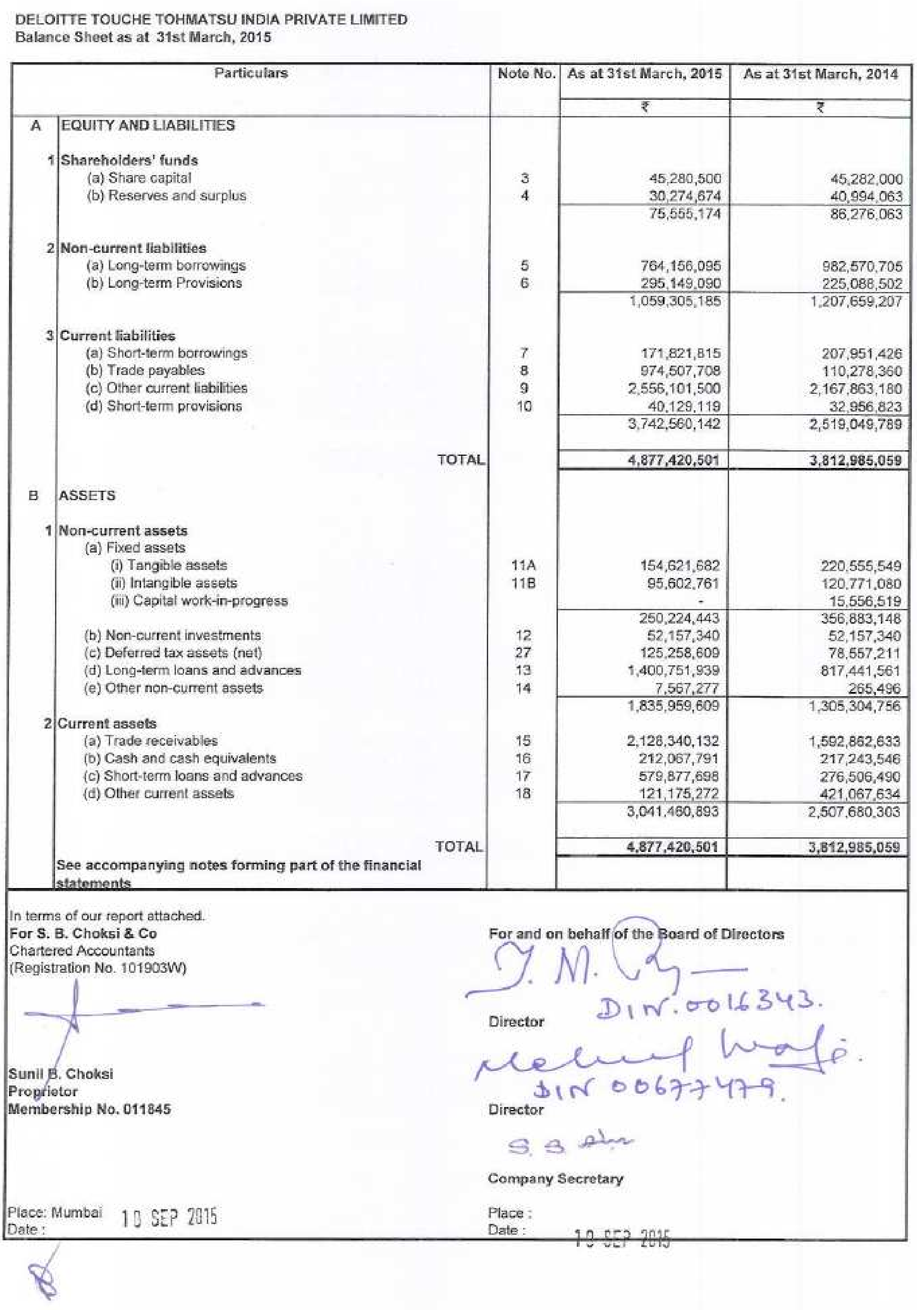
Tehmasp Rustomjee
(Designated Partner)

Mumbai
Date:29th September, 2016

For S.B.Choksi & Co.
Chartered Accountants
(Registration No. 101903W)

S.B.Choksi
Proprietor
(Membership No. 011845)

2014-15



DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED
Balance Sheet as at 31st March, 2015

	Particulars	Note No.	As at 31st March, 2015	As at 31st March, 2014
			₹	₹
A	**EQUITY AND LIABILITIES**			
1	**Shareholders' funds**			
	(a) Share capital	3	45,280,500	45,282,000
	(b) Reserves and surplus	4	30,274,674	40,994,063
			75,555,174	86,276,063
2	**Non-current liabilities**			
	(a) Long-term borrowings	5	764,156,095	982,570,705
	(b) Long-term Provisions	6	295,149,090	225,088,502
			1,059,305,185	1,207,659,207
3	**Current liabilities**			
	(a) Short-term borrowings	7	171,821,815	207,951,426
	(b) Trade payables	8	974,507,708	110,278,360
	(c) Other current liabilities	9	2,556,101,500	2,167,863,180
	(d) Short-term provisions	10	40,129,119	32,956,823
			3,742,560,142	2,519,049,789
	TOTAL		**4,877,420,501**	**3,812,985,059**
B	**ASSETS**			
1	**Non-current assets**			
	(a) Fixed assets			
	(i) Tangible assets	11A	154,621,682	220,555,549
	(ii) Intangible assets	11B	95,602,761	120,771,080
	(iii) Capital work-in-progress		-	15,556,519
			250,224,443	356,883,148
	(b) Non-current investments	12	52,157,340	52,157,340
	(c) Deferred tax assets (net)	27	125,258,609	78,557,211
	(d) Long-term loans and advances	13	1,400,751,939	817,441,561
	(e) Other non-current assets	14	7,567,277	265,496
			1,835,959,609	1,305,304,756
2	**Current assets**			
	(a) Trade receivables	15	2,128,340,132	1,592,862,633
	(b) Cash and cash equivalents	16	212,067,791	217,243,546
	(c) Short-term loans and advances	17	579,877,698	276,506,490
	(d) Other current assets	18	121,175,272	421,067,634
			3,041,460,893	2,507,680,303
	TOTAL		**4,877,420,501**	**3,812,985,059**
	See accompanying notes forming part of the financial statements			

In terms of our report attached.
For S. B. Choksi & Co
Chartered Accountants
(Registration No. 101903W)

Sunil B. Choksi
Proprietor
Membership No. 011845

Place: Mumbai
Date : 10 SEP 2015

For and on behalf of the Board of Directors

DIN. 0016343.

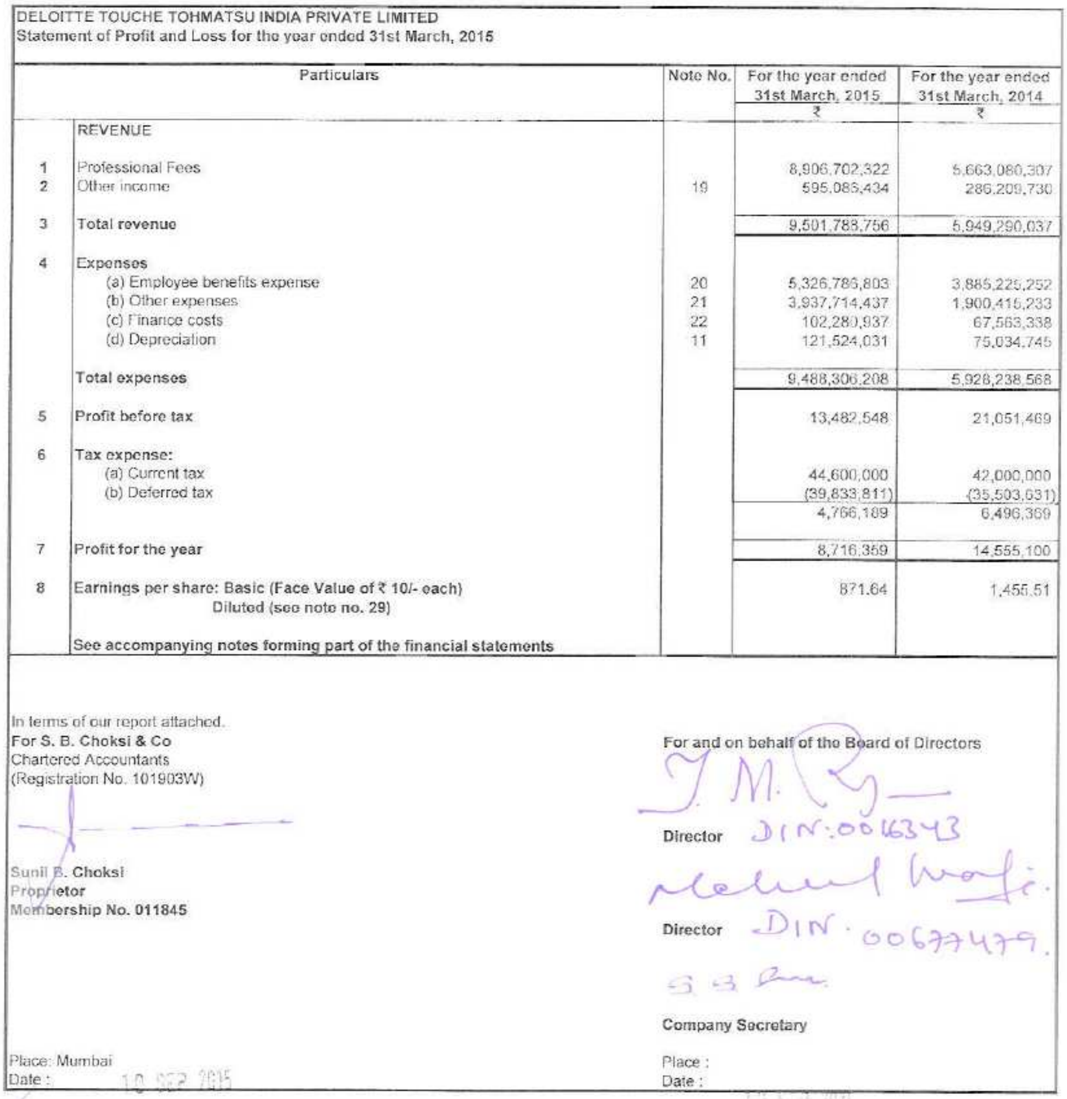
Director

DIN 00677479.

Director

Company Secretary

Place :
Date : 10 SEP 2015



DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED
Statement of Profit and Loss for the year ended 31st March, 2015

	Particulars	Note No.	For the year ended 31st March, 2015 ₹	For the year ended 31st March, 2014 ₹
	REVENUE			
1	Professional Fees		8,906,702,322	5,663,080,307
2	Other income	19	595,086,434	286,209,730
3	**Total revenue**		9,501,788,756	5,949,290,037
4	**Expenses**			
	(a) Employee benefits expense	20	5,326,786,803	3,885,225,252
	(b) Other expenses	21	3,937,714,437	1,900,415,233
	(c) Finance costs	22	102,280,937	67,563,338
	(d) Depreciation	11	121,524,031	75,034,745
	Total expenses		9,488,306,208	5,928,238,568
5	**Profit before tax**		13,482,548	21,051,469
6	**Tax expense:**			
	(a) Current tax		44,600,000	42,000,000
	(b) Deferred tax		(39,833,811)	(35,503,631)
			4,766,189	6,496,369
7	**Profit for the year**		8,716,359	14,555,100
8	**Earnings per share: Basic (Face Value of ₹ 10/- each)** **Diluted (see note no. 29)**		871.64	1,455.51
	See accompanying notes forming part of the financial statements			

In terms of our report attached.
For S. B. Choksi & Co
Chartered Accountants
(Registration No. 101903W)

Sunil B. **Choksi**
Proprietor
Membership No. 011845

Place: Mumbai
Date : 10 SEP 2015

For and on behalf of the Board of Directors

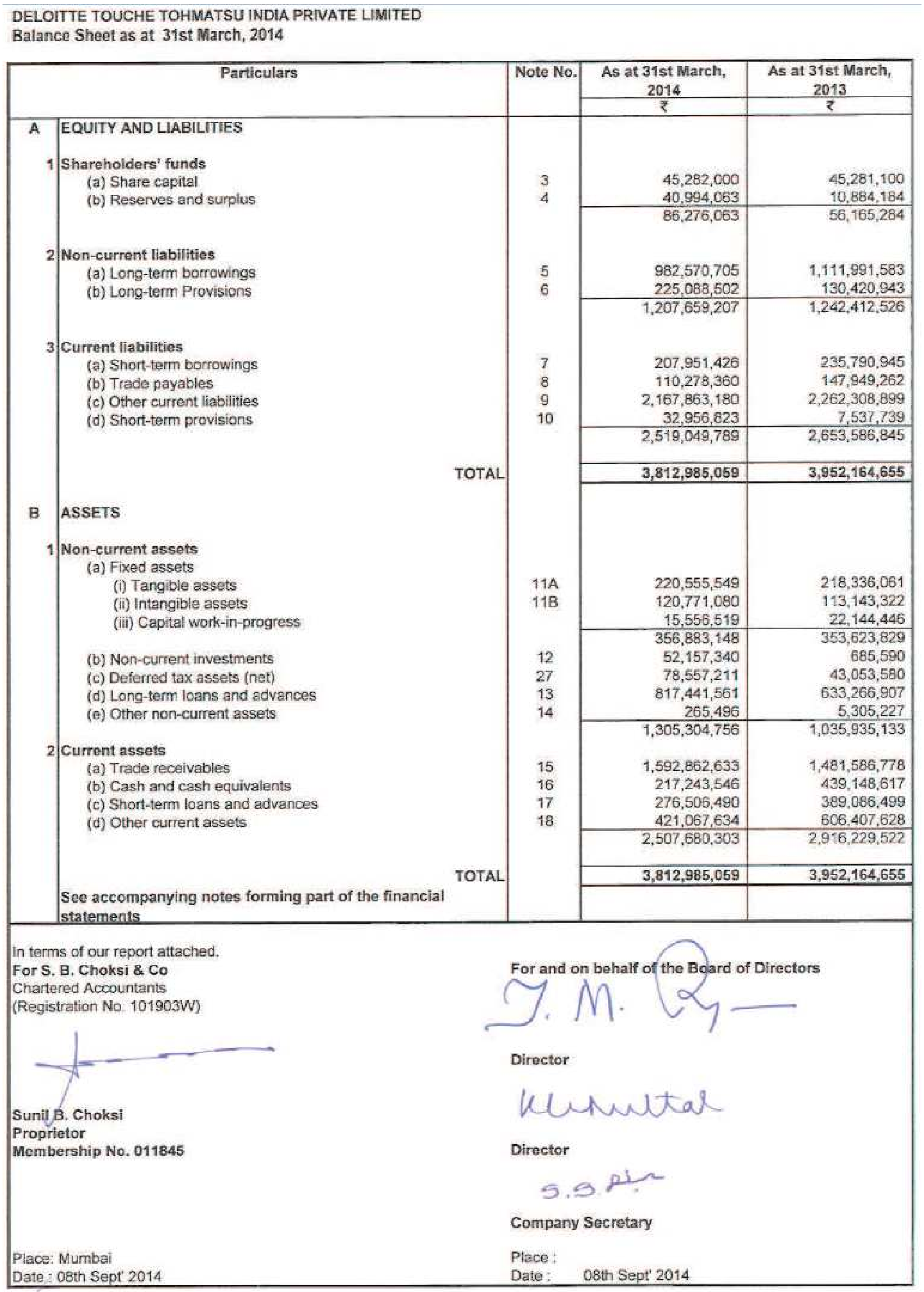
Director DIN:0016343

Director DIN. 00677479.

Company Secretary

Place :
Date :
10 SEP 2015

2013-14



DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED
Balance Sheet as at 31st March, 2014

	Particulars	Note No.	As at 31st March, 2014 ₹	As at 31st March, 2013 ₹
A	**EQUITY AND LIABILITIES**			
1	**Shareholders' funds**			
	(a) Share capital	3	45,282,000	45,281,100
	(b) Reserves and surplus	4	40,994,063	10,884,184
			86,276,063	56,165,284
2	**Non-current liabilities**			
	(a) Long-term borrowings	5	982,570,705	1,111,991,583
	(b) Long-term Provisions	6	225,088,502	130,420,943
			1,207,659,207	1,242,412,526
3	**Current liabilities**			
	(a) Short-term borrowings	7	207,951,426	235,790,945
	(b) Trade payables	8	110,278,360	147,949,262
	(c) Other current liabilities	9	2,167,863,180	2,262,308,899
	(d) Short-term provisions	10	32,956,823	7,537,739
			2,519,049,789	2,653,586,845
	TOTAL		**3,812,985,059**	**3,952,164,655**
B	**ASSETS**			
1	**Non-current assets**			
	(a) Fixed assets			
	(i) Tangible assets	11A	220,555,549	218,336,061
	(ii) Intangible assets	11B	120,771,080	113,143,322
	(iii) Capital work-in-progress		15,556,519	22,144,446
			356,883,148	353,623,829
	(b) Non-current investments	12	52,157,340	685,590
	(c) Deferred tax assets (net)	27	78,557,211	43,053,580
	(d) Long-term loans and advances	13	817,441,561	633,266,907
	(e) Other non-current assets	14	265,496	5,305,227
			1,305,304,756	1,035,935,133
2	**Current assets**			
	(a) Trade receivables	15	1,592,862,633	1,481,586,778
	(b) Cash and cash equivalents	16	217,243,546	439,148,617
	(c) Short-term loans and advances	17	276,506,490	389,086,499
	(d) Other current assets	18	421,067,634	606,407,628
			2,507,680,303	2,916,229,522
	TOTAL		**3,812,985,059**	**3,952,164,655**
	See accompanying notes forming part of the financial statements			

In terms of our report attached.
For S. B. Choksi & Co
Chartered Accountants
(Registration No. 101903W)

Sunil B. Choksi
Proprietor
Membership No. 011845

Place: Mumbai
Date : 08th Sept' 2014

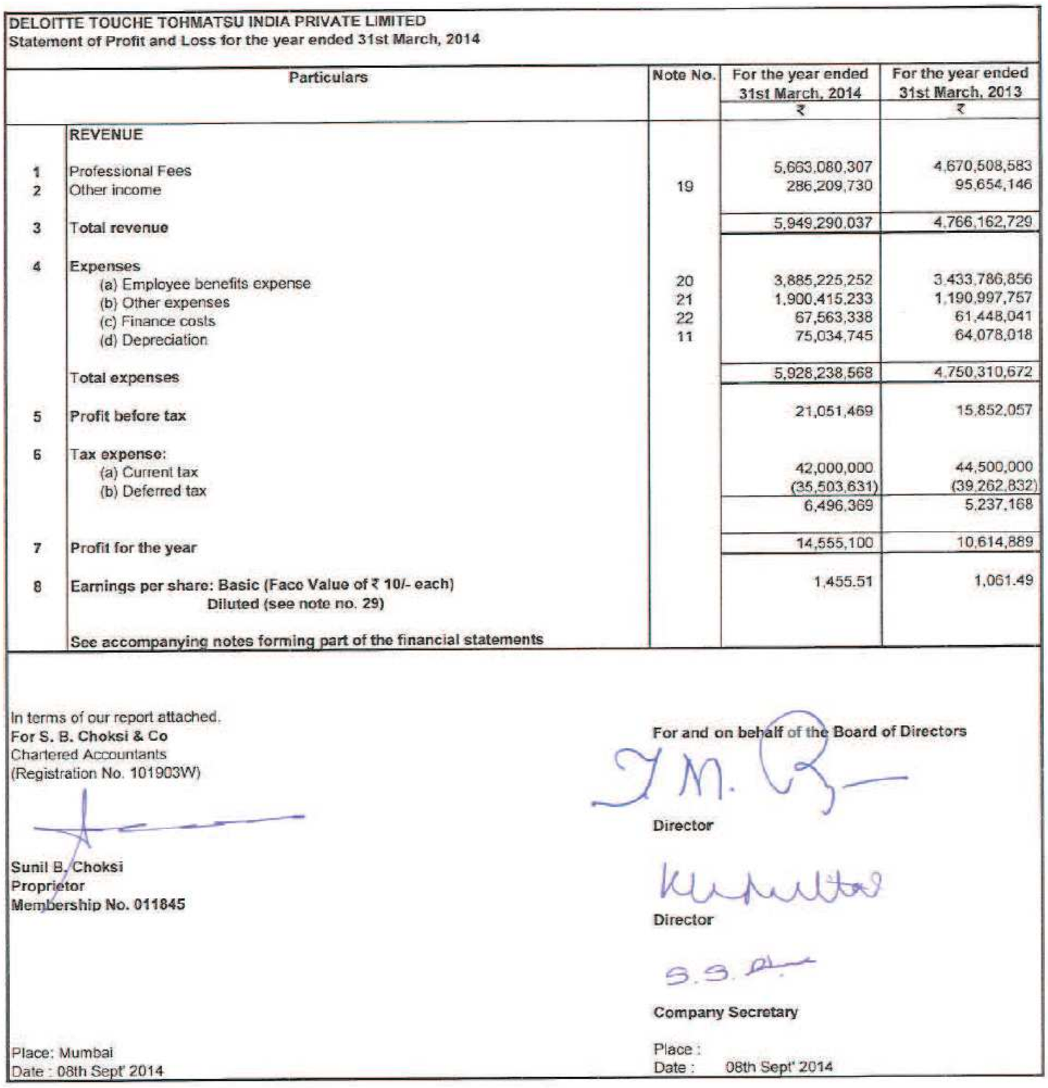
For and on behalf of the Board of Directors

Director

Director

Company Secretary

Place :
Date : 08th Sept' 2014



DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED
Statement of Profit and Loss for the year ended 31st March, 2014

	Particulars	Note No.	For the year ended 31st March, 2014 ₹	For the year ended 31st March, 2013 ₹
	REVENUE			
1	Professional Fees		5,663,080,307	4,670,508,583
2	Other income	19	286,209,730	95,654,146
3	**Total revenue**		5,949,290,037	4,766,162,729
4	**Expenses**			
	(a) Employee benefits expense	20	3,885,225,252	3,433,786,856
	(b) Other expenses	21	1,900,415,233	1,190,997,757
	(c) Finance costs	22	67,563,338	61,448,041
	(d) Depreciation	11	75,034,745	64,078,018
	Total expenses		5,928,238,568	4,750,310,672
5	**Profit before tax**		21,051,469	15,852,057
6	**Tax expense:**			
	(a) Current tax		42,000,000	44,500,000
	(b) Deferred tax		(35,503,631)	(39,262,832)
			6,496,369	5,237,168
7	**Profit for the year**		14,555,100	10,614,889
8	**Earnings per share: Basic (Face Value of ₹ 10/- each)**		1,455.51	1,061.49
	Diluted (see note no. 29)			
	See accompanying notes forming part of the financial statements			

In terms of our report attached.
For S. B. Choksi & Co
Chartered Accountants
(Registration No. 101903W)

Sunil B. Choksi
Proprietor
Membership No. 011845

Place: Mumbai
Date : 08th Sept' 2014

For and on behalf of the Board of Directors

Director

Director

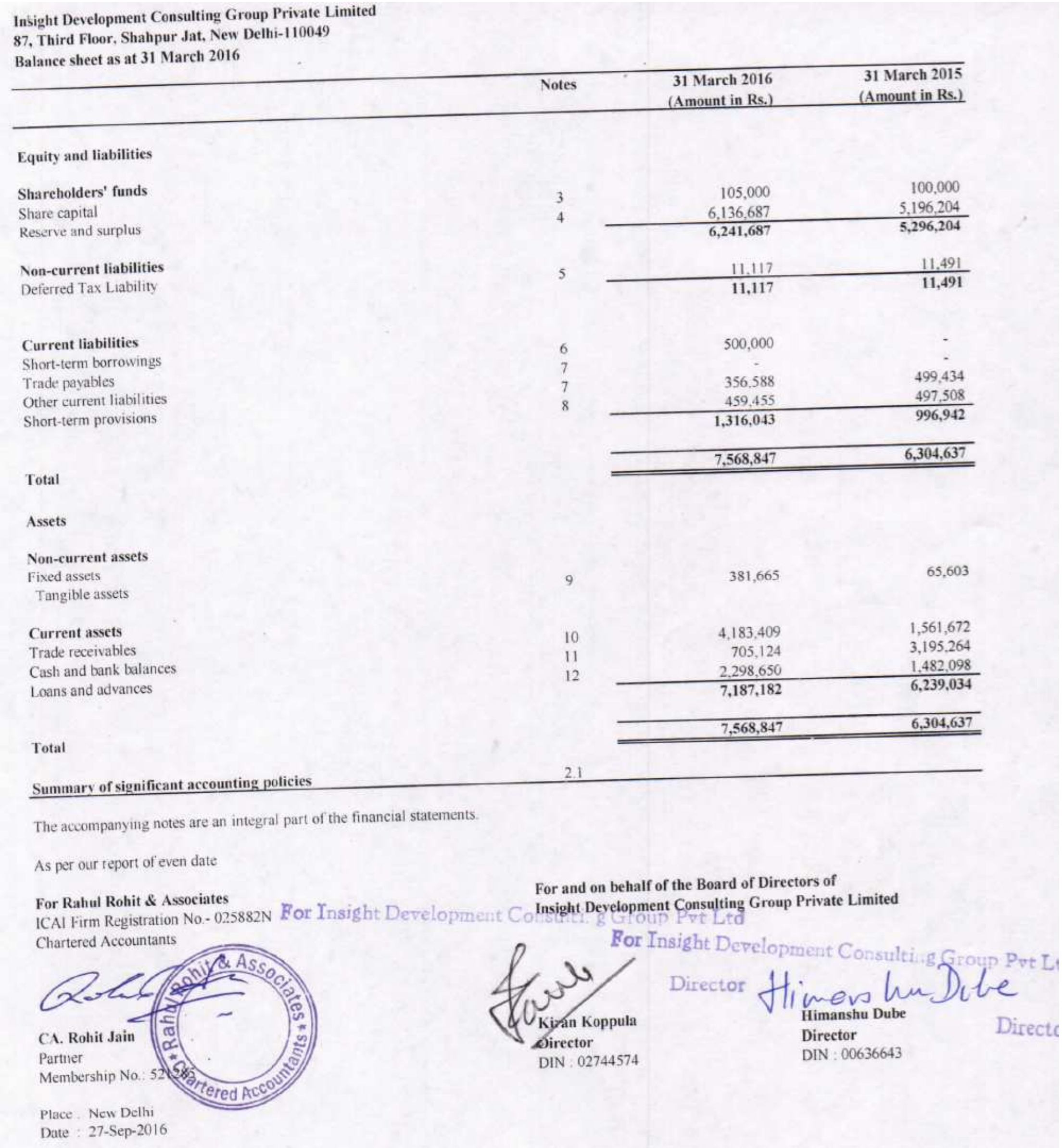
S. S.

Company Secretary

Place :
Date : 08th Sept' 2014

Audited Financial Statement-Insight Development Consulting Group Private Limited (Consortium Partner 1)

2015-16



Insight Development Consulting Group Private Limited
87, Third Floor, Shahpur Jat, New Delhi-110049
Balance sheet as at 31 March 2016

	Notes	31 March 2016 (Amount in Rs.)	31 March 2015 (Amount in Rs.)
Equity and liabilities			
Shareholders' funds			
Share capital	3	105,000	100,000
Reserve and surplus	4	6,136,687	5,196,204
		6,241,687	**5,296,204**
Non-current liabilities			
Deferred Tax Liability	5	11,117	11,491
		11,117	**11,491**
Current liabilities			
Short-term borrowings	6	500,000	-
Trade payables	7	-	-
Other current liabilities	7	356,588	499,434
Short-term provisions	8	459,455	497,508
		1,316,043	**996,942**
Total		**7,568,847**	**6,304,637**
Assets			
Non-current assets			
Fixed assets			
Tangible assets	9	381,665	65,603
Current assets			
Trade receivables	10	4,183,409	1,561,672
Cash and bank balances	11	705,124	3,195,264
Loans and advances	12	2,298,650	1,482,098
		7,187,182	**6,239,034**
Total		**7,568,847**	**6,304,637**
Summary of significant accounting policies	2.1		

The accompanying notes are an integral part of the financial statements.

As per our report of even date

For Rahul Rohit & Associates
ICAI Firm Registration No.- 025882N
Chartered Accountants

Rohit

CA. Rohit Jain
Partner
Membership No.: 52[illegible]

Place : New Delhi
Date : 27-Sep-2016

For and on behalf of the Board of Directors of
Insight Development Consulting Group Private Limited

For Insight Development Consulting Group Pvt Ltd

For Insight Development Consulting Group Pvt L

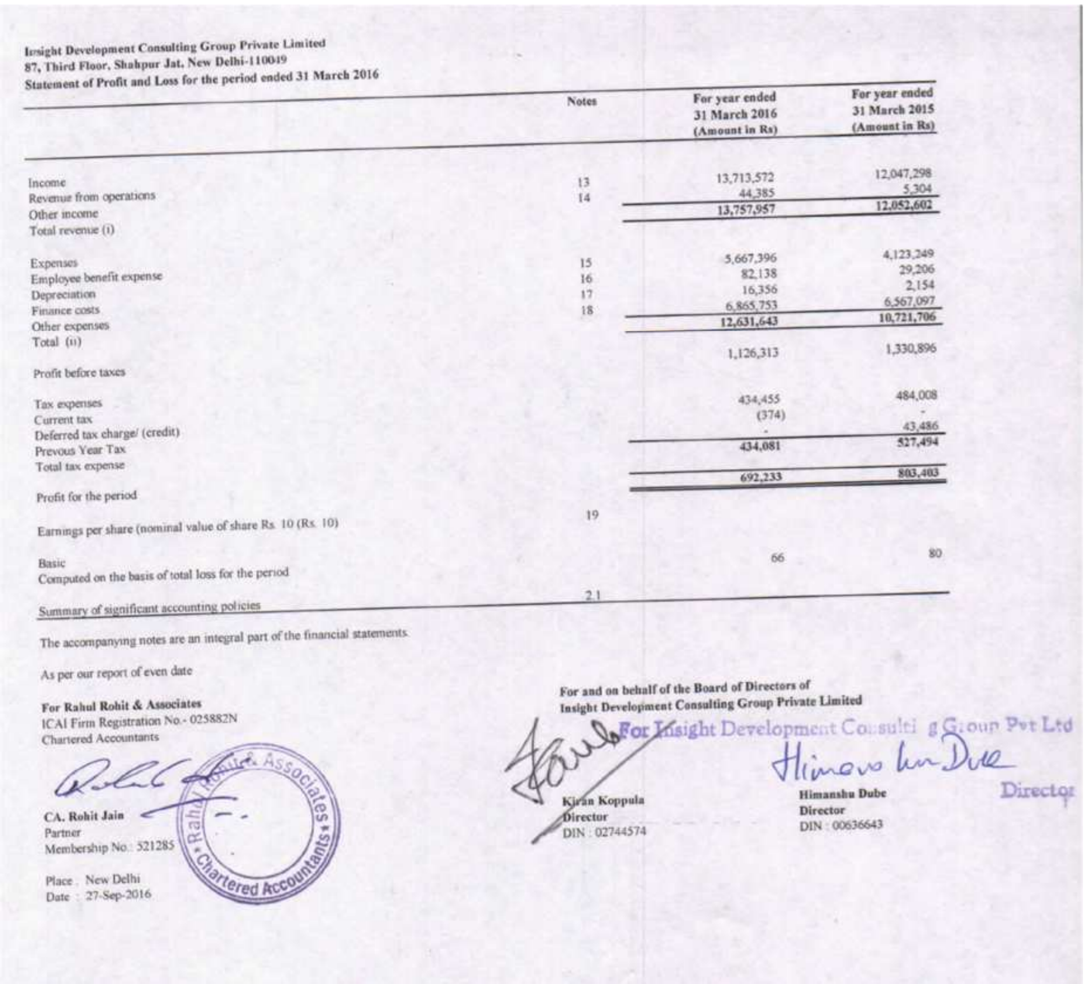
Director

Himanshu Dube

Kiran Koppula
Director
DIN : 02744574

Himanshu Dube
Director
DIN : 00636643

Directo



Insight Development Consulting Group Private Limited
87, Third Floor, Shahpur Jat, New Delhi-110049
Statement of Profit and Loss for the period ended 31 March 2016

	Notes	For year ended 31 March 2016 (Amount in Rs)	For year ended 31 March 2015 (Amount in Rs)
Income			
Revenue from operations	13	13,713,572	12,047,298
Other income	14	44,385	5,304
Total revenue (i)		13,757,957	12,052,602
Expenses			
Employee benefit expense	15	5,667,396	4,123,249
Depreciation	16	82,138	29,206
Finance costs	17	16,356	2,154
Other expenses	18	6,865,753	6,567,097
Total (ii)		12,631,643	10,721,706
Profit before taxes		1,126,313	1,330,896
Tax expenses			
Current tax		434,455	484,008
Deferred tax charge/ (credit)		(374)	-
Prevous Year Tax		-	43,486
Total tax expense		434,081	527,494
Profit for the period		692,233	803,403
Earnings per share (nominal value of share Rs. 10 (Rs. 10)	19		
Basic		66	80
Computed on the basis of total loss for the period			
Summary of significant accounting policies	2.1		

The accompanying notes are an integral part of the financial statements.

As per our report of even date

For Rahul Rohit & Associates
ICAI Firm Registration No.- 025882N
Chartered Accountants

CA. Rohit Jain
Partner
Membership No.: 521285

Place : New Delhi
Date : 27-Sep-2016

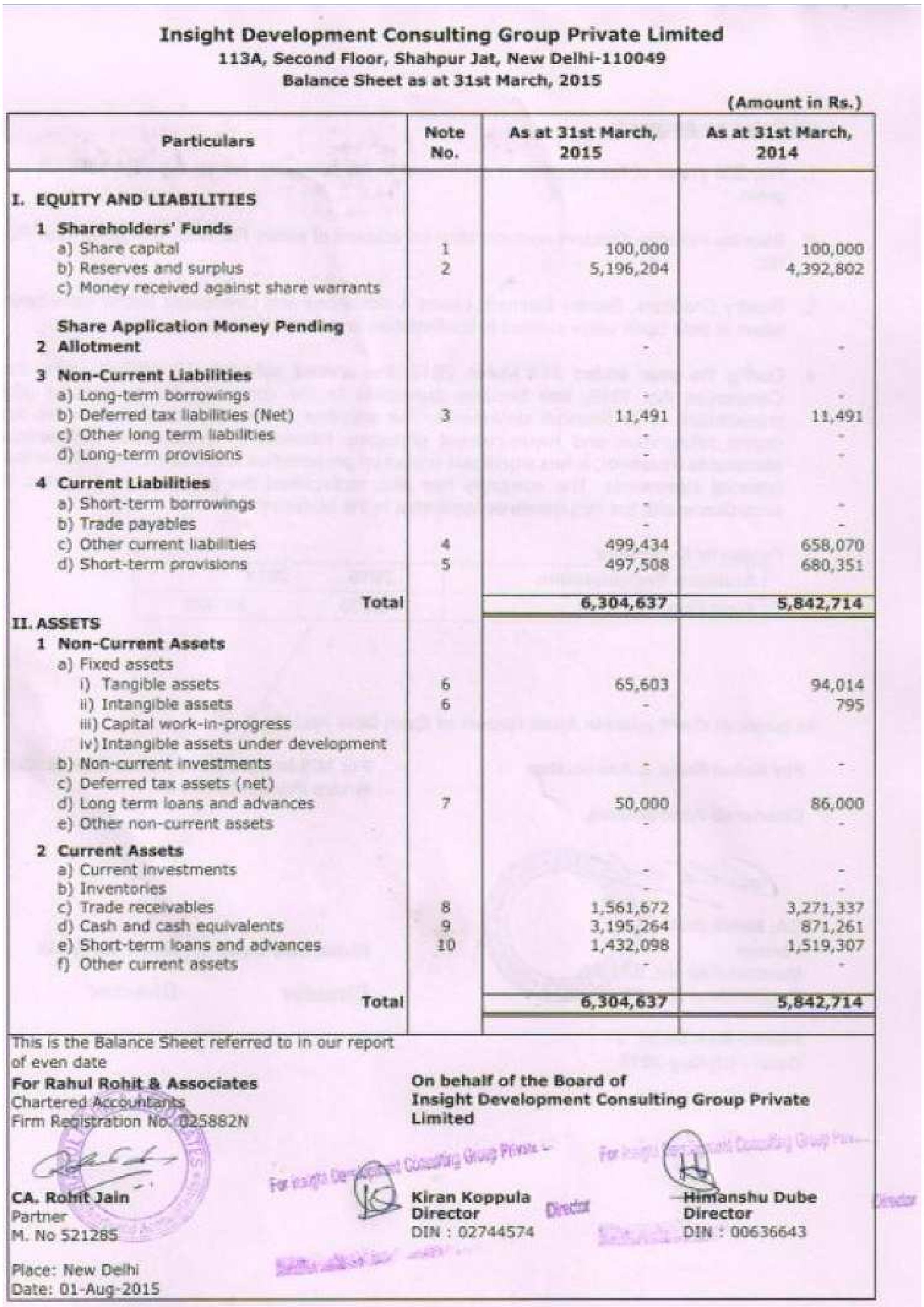
For and on behalf of the Board of Directors of
Insight Development Consulting Group Private Limited

For Insight Development Consulting Group Pvt Ltd
Director

Kiran Koppula
Director
DIN : 02744574

Himanshu Dube
Director
DIN : 00636643

2014-15 & 2013-14



Insight Development Consulting Group Private Limited
113A, Second Floor, Shahpur Jat, New Delhi-110049
Balance Sheet as at 31st March, 2015

(Amount in Rs.)

Particulars	Note No.	As at 31st March, 2015	As at 31st March, 2014
I. EQUITY AND LIABILITIES			
1 Shareholders' Funds			
a) Share capital	1	100,000	100,000
b) Reserves and surplus	2	5,196,204	4,392,802
c) Money received against share warrants			
2 Share Application Money Pending Allotment		-	-
3 Non-Current Liabilities			
a) Long-term borrowings		-	-
b) Deferred tax liabilities (Net)	3	11,491	11,491
c) Other long term liabilities		-	-
d) Long-term provisions		-	-
4 Current Liabilities			
a) Short-term borrowings		-	-
b) Trade payables		-	-
c) Other current liabilities	4	499,434	658,070
d) Short-term provisions	5	497,508	680,351
Total		**6,304,637**	**5,842,714**
II. ASSETS			
1 Non-Current Assets			
a) Fixed assets			
i) Tangible assets	6	65,603	94,014
ii) Intangible assets	6	-	795
iii) Capital work-in-progress			
iv) Intangible assets under development			
b) Non-current investments		-	-
c) Deferred tax assets (net)			
d) Long term loans and advances	7	50,000	86,000
e) Other non-current assets		-	-
2 Current Assets			
a) Current investments		-	-
b) Inventories		-	-
c) Trade receivables	8	1,561,672	3,271,337
d) Cash and cash equivalents	9	3,195,264	871,261
e) Short-term loans and advances	10	1,432,098	1,519,307
f) Other current assets		-	-
Total		**6,304,637**	**5,842,714**

This is the Balance Sheet referred to in our report of even date

For Rahul Rohit & Associates
Chartered Accountants
Firm Registration No. 025882N

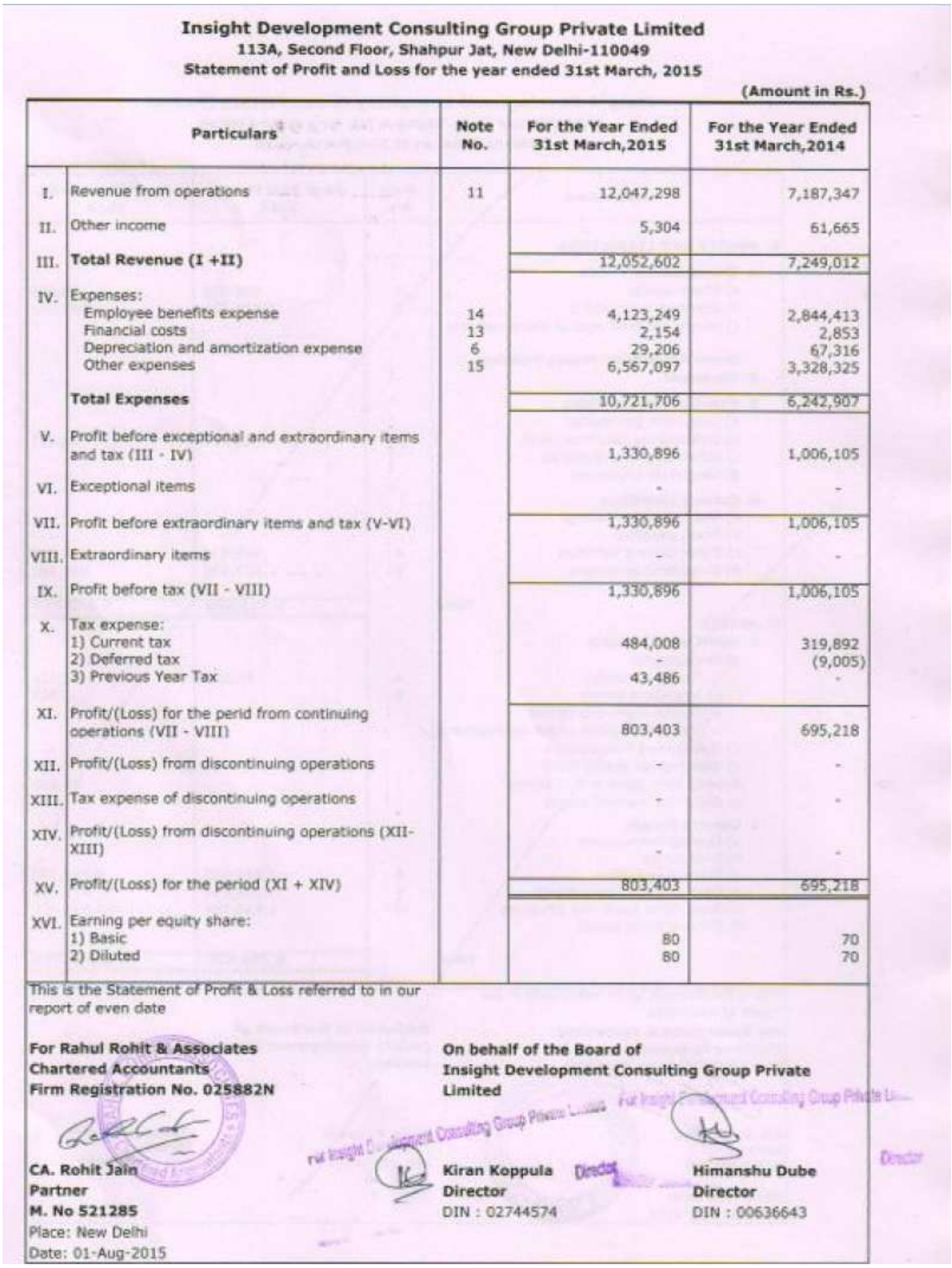
CA. Rohit Jain
Partner
M. No 521285

Place: New Delhi
Date: 01-Aug-2015

On behalf of the Board of Insight Development Consulting Group Private Limited

Kiran Koppula
Director
DIN : 02744574

Himanshu Dube
Director
DIN : 00636643



Insight Development Consulting Group Private Limited
113A, Second Floor, Shahpur Jat, New Delhi-110049
Statement of Profit and Loss for the year ended 31st March, 2015

(Amount in Rs.)

	Particulars	Note No.	For the Year Ended 31st March,2015	For the Year Ended 31st March,2014
I.	Revenue from operations	11	12,047,298	7,187,347
II.	Other income		5,304	61,665
III.	**Total Revenue (I +II)**		12,052,602	7,249,012
IV.	Expenses:			
	Employee benefits expense	14	4,123,249	2,844,413
	Financial costs	13	2,154	2,853
	Depreciation and amortization expense	6	29,206	67,316
	Other expenses	15	6,567,097	3,328,325
	Total Expenses		10,721,706	6,242,907
V.	Profit before exceptional and extraordinary items and tax (III - IV)		1,330,896	1,006,105
VI.	Exceptional items		-	-
VII.	Profit before extraordinary items and tax (V-VI)		1,330,896	1,006,105
VIII.	Extraordinary items		-	-
IX.	Profit before tax (VII - VIII)		1,330,896	1,006,105
X.	Tax expense:			
	1) Current tax		484,008	319,892
	2) Deferred tax		-	(9,005)
	3) Previous Year Tax		43,486	-
XI.	Profit/(Loss) for the perid from continuing operations (VII - VIII)		803,403	695,218
XII.	Profit/(Loss) from discontinuing operations		-	-
XIII.	Tax expense of discontinuing operations		-	-
XIV.	Profit/(Loss) from discontinuing operations (XII-XIII)		-	-
XV.	Profit/(Loss) for the period (XI + XIV)		803,403	695,218
XVI.	Earning per equity share:			
	1) Basic		80	70
	2) Diluted		80	70

This is the Statement of Profit & Loss referred to in our report of even date

For Rahul Rohit & Associates
Chartered Accountants
Firm Registration No. 025882N

CA. Rohit Jain
Partner
M. No 521285
Place: New Delhi
Date: 01-Aug-2015

On behalf of the Board of
Insight Development Consulting Group Private Limited

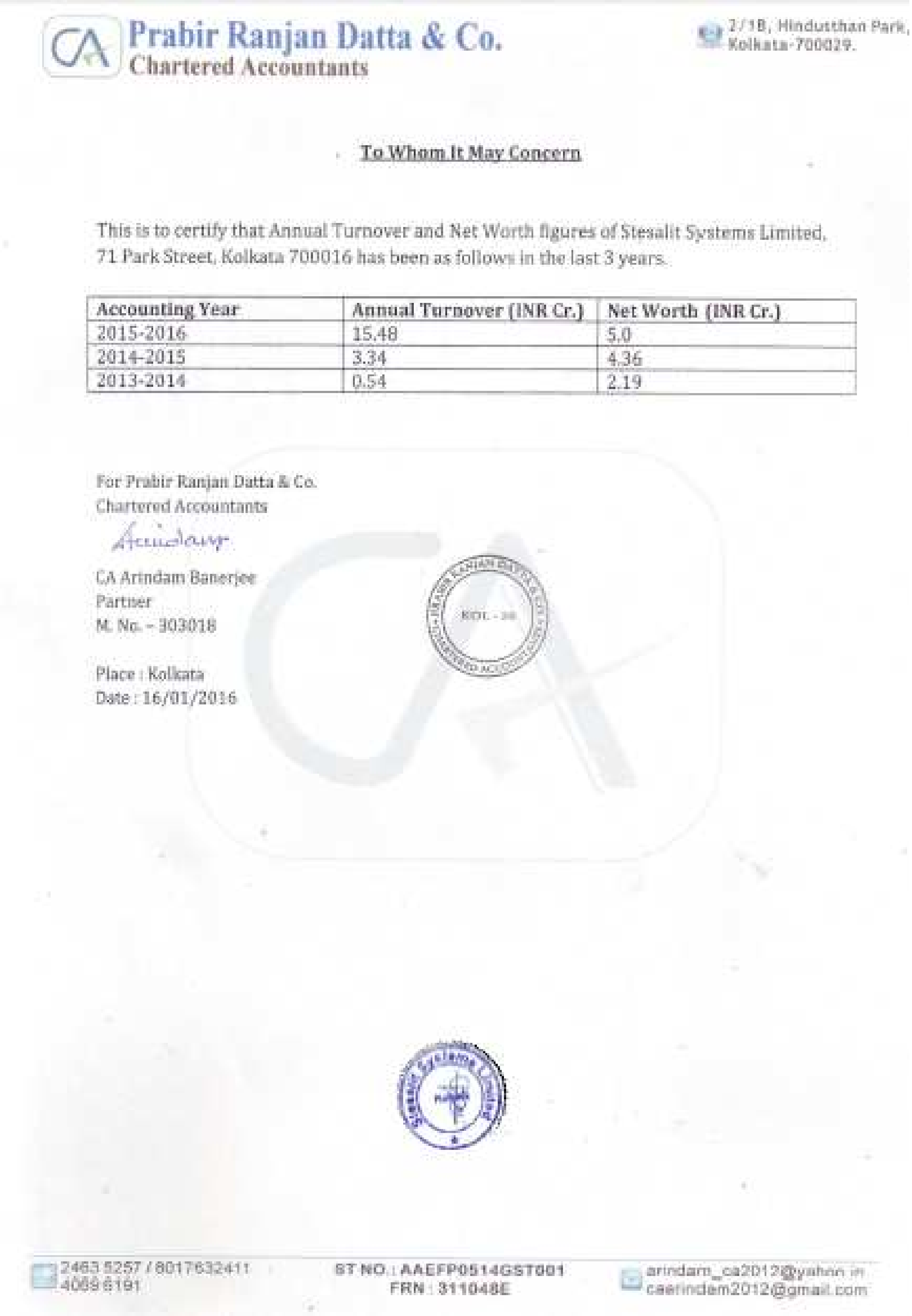
For Insight Development Consulting Group Private Limited
Director

Kiran Koppula
Director
DIN : 02744574

Himanshu Dube
Director
DIN : 00636643

Audited Financial Statement-Stesalit Systems Limited (Consortium Partner 2)

2015-16; 2014-15 & 2013-14



Prabir Ranjan Datta & Co.
Chartered Accountants

2/1B, Hindusthan Park,
Kolkata-700029.

To Whom It May Concern

This is to certify that Annual Turnover and Net Worth figures of Stesalit Systems Limited, 71 Park Street, Kolkata 700016 has been as follows in the last 3 years.

Accounting Year	Annual Turnover (INR Cr.)	Net Worth (INR Cr.)
2015-2016	15.48	5.0
2014-2015	3.34	4.36
2013-2014	0.54	2.19

For Prabir Ranjan Datta & Co.
Chartered Accountants

CA Arindam Banerjee
Partner
M. No. - 303018

Place : Kolkata
Date : 16/01/2016

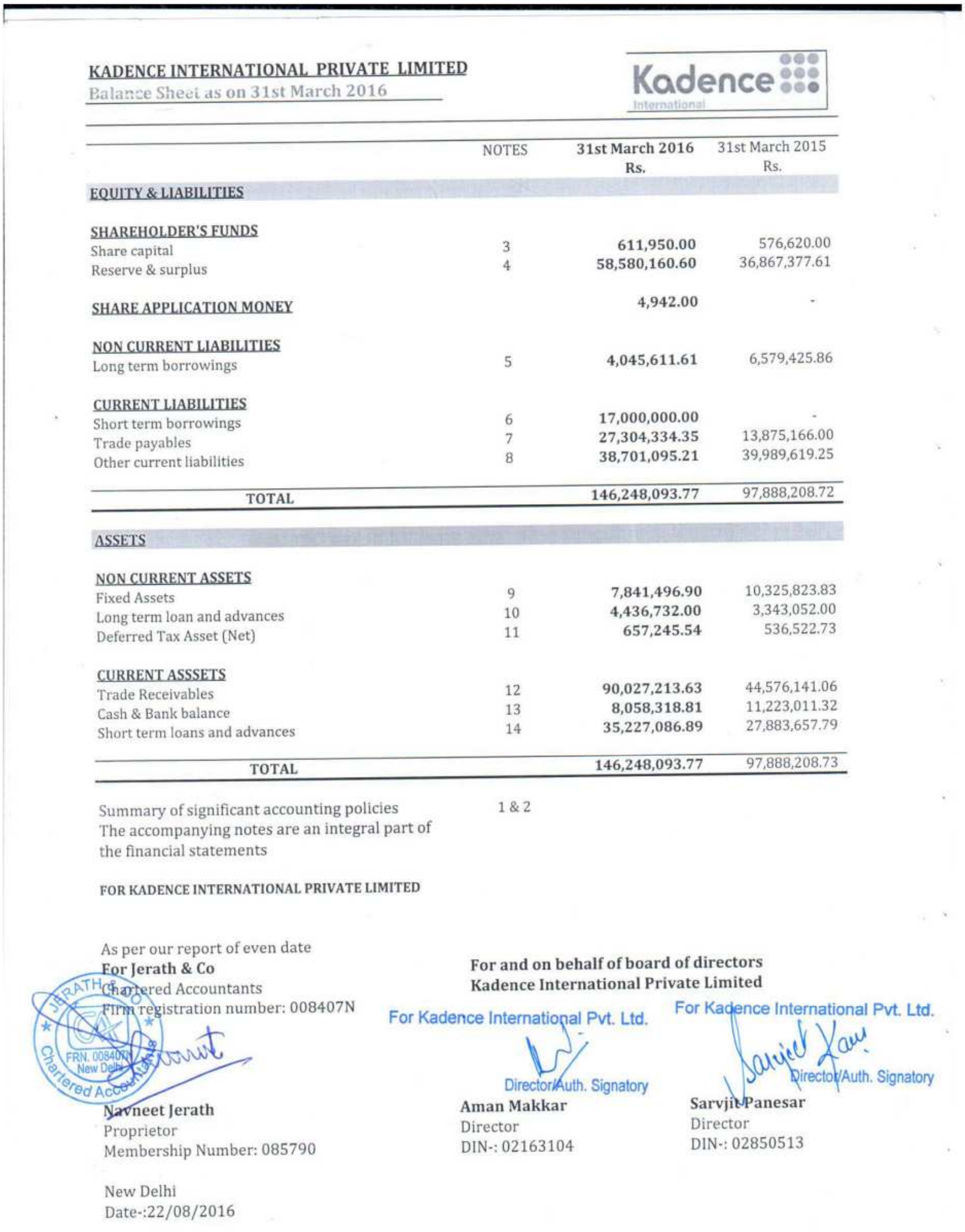
2463 5257 / 8017632411
4069 6191

ST NO.: AAEFP0514GST001
FRN : 311048E

arindam_ca2012@yahoo.in
caarindam2012@gmail.com

Audited Financial Statement-Kadence International Private Limited (Consortium Partner-3)

2015-16



KADENCE INTERNATIONAL PRIVATE LIMITED
Balance Sheet as on 31st March 2016

	NOTES	31st March 2016 Rs.	31st March 2015 Rs.
EQUITY & LIABILITIES			
SHAREHOLDER'S FUNDS			
Share capital	3	**611,950.00**	576,620.00
Reserve & surplus	4	**58,580,160.60**	36,867,377.61
SHARE APPLICATION MONEY		**4,942.00**	-
NON CURRENT LIABILITIES			
Long term borrowings	5	**4,045,611.61**	6,579,425.86
CURRENT LIABILITIES			
Short term borrowings	6	**17,000,000.00**	-
Trade payables	7	**27,304,334.35**	13,875,166.00
Other current liabilities	8	**38,701,095.21**	39,989,619.25
TOTAL		**146,248,093.77**	97,888,208.72
ASSETS			
NON CURRENT ASSETS			
Fixed Assets	9	**7,841,496.90**	10,325,823.83
Long term loan and advances	10	**4,436,732.00**	3,343,052.00
Deferred Tax Asset (Net)	11	**657,245.54**	536,522.73
CURRENT ASSSETS			
Trade Receivables	12	**90,027,213.63**	44,576,141.06
Cash & Bank balance	13	**8,058,318.81**	11,223,011.32
Short term loans and advances	14	**35,227,086.89**	27,883,657.79
TOTAL		**146,248,093.77**	97,888,208.73

Summary of significant accounting policies 1 & 2
The accompanying notes are an integral part of the financial statements

FOR KADENCE INTERNATIONAL PRIVATE LIMITED

As per our report of even date
For Jerath & Co
Chartered Accountants
Firm registration number: 008407N

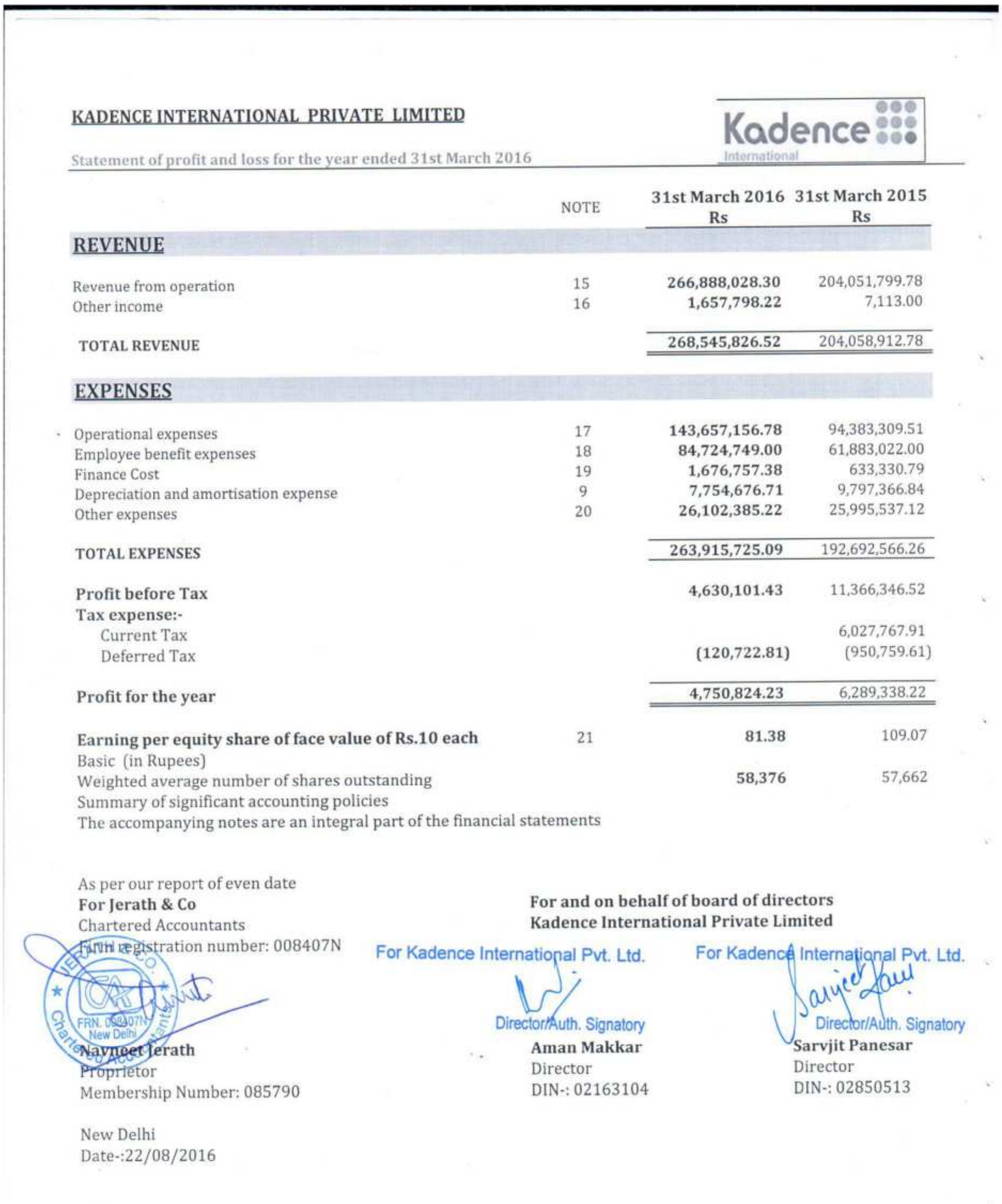
Navneet Jerath
Proprietor
Membership Number: 085790

New Delhi
Date-:22/08/2016

For and on behalf of board of directors
Kadence International Private Limited

For Kadence International Pvt. Ltd.
Director/Auth. Signatory
Aman Makkar
Director
DIN-: 02163104

For Kadence International Pvt. Ltd.
Sarvjit Kaur
Director/Auth. Signatory
Sarvjit Panesar
Director
DIN-: 02850513



KADENCE INTERNATIONAL PRIVATE LIMITED

Statement of profit and loss for the year ended 31st March 2016

	NOTE	31st March 2016 Rs	31st March 2015 Rs
REVENUE			
Revenue from operation	15	**266,888,028.30**	204,051,799.78
Other income	16	**1,657,798.22**	7,113.00
TOTAL REVENUE		**268,545,826.52**	204,058,912.78
EXPENSES			
Operational expenses	17	**143,657,156.78**	94,383,309.51
Employee benefit expenses	18	**84,724,749.00**	61,883,022.00
Finance Cost	19	**1,676,757.38**	633,330.79
Depreciation and amortisation expense	9	**7,754,676.71**	9,797,366.84
Other expenses	20	**26,102,385.22**	25,995,537.12
TOTAL EXPENSES		**263,915,725.09**	192,692,566.26
Profit before Tax		**4,630,101.43**	11,366,346.52
Tax expense:-			
Current Tax			6,027,767.91
Deferred Tax		**(120,722.81)**	(950,759.61)
Profit for the year		**4,750,824.23**	6,289,338.22
Earning per equity share of face value of Rs.10 each	21	**81.38**	109.07
Basic (in Rupees)			
Weighted average number of shares outstanding		**58,376**	57,662

Summary of significant accounting policies
The accompanying notes are an integral part of the financial statements

As per our report of even date
For Jerath & Co
Chartered Accountants
Firm registration number: 008407N

Navneet Jerath
Proprietor
Membership Number: 085790

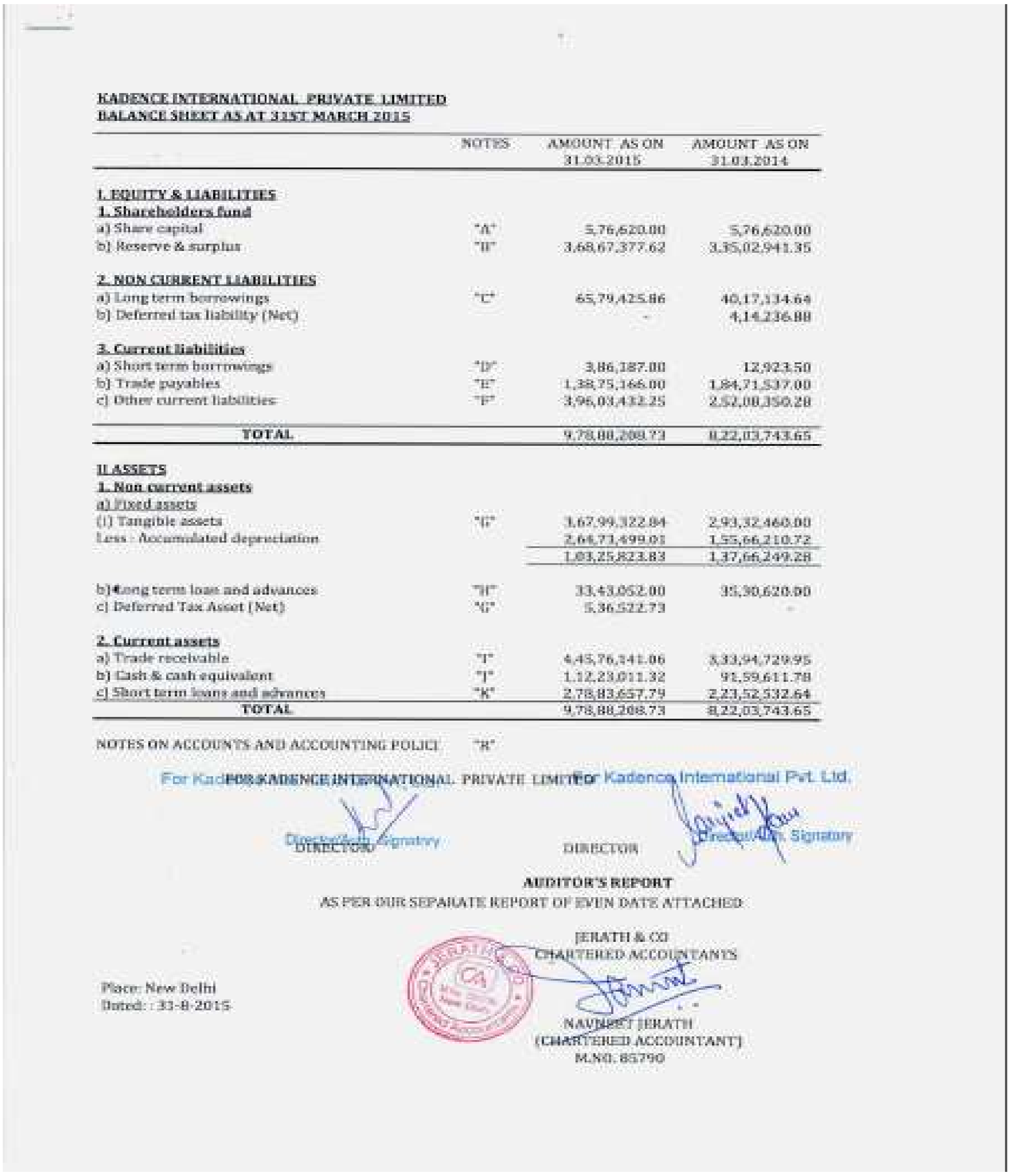
New Delhi
Date-:22/08/2016

For and on behalf of board of directors
Kadence International Private Limited

For Kadence International Pvt. Ltd.
Director/Auth. Signatory
Aman Makkar
Director
DIN-: 02163104

For Kadence International Pvt. Ltd.
Director/Auth. Signatory
Sarvjit Panesar
Director
DIN-: 02850513

2014-15



KADENCE INTERNATIONAL PRIVATE LIMITED
BALANCE SHEET AS AT 31ST MARCH 2015

	NOTES	AMOUNT AS ON 31.03.2015	AMOUNT AS ON 31.03.2014
I. EQUITY & LIABILITIES			
1. Shareholders fund			
a) Share capital	"A"	5,76,620.00	5,76,620.00
b) Reserve & surplus	"B"	3,68,67,377.62	3,35,02,941.35
2. NON CURRENT LIABILITIES			
a) Long term borrowings	"C"	65,79,425.86	40,17,134.64
b) Deferred tax liability (Net)		-	4,14,236.88
3. Current liabilities			
a) Short term borrowings	"D"	3,86,187.00	12,923.50
b) Trade payables	"E"	1,38,75,166.00	1,84,71,537.00
c) Other current liabilities	"F"	3,96,03,432.25	2,52,08,350.28
TOTAL		9,78,88,208.73	8,22,03,743.65
II ASSETS			
1. Non current assets			
a) Fixed assets			
(i) Tangible assets	"G"	3,67,99,322.84	2,93,32,460.00
Less : Accumulated depreciation		2,64,73,499.01	1,55,66,210.72
		1,03,25,823.83	1,37,66,249.28
b) Long term loan and advances	"H"	33,43,052.00	35,30,620.00
c) Deferred Tax Asset (Net)	"G"	5,36,522.73	-
2. Current assets			
a) Trade receivable	"I"	4,45,76,141.06	3,33,94,729.95
b) Cash & cash equivalent	"J"	1,12,23,011.32	91,59,611.78
c) Short term loans and advances	"K"	2,78,83,657.79	2,23,52,532.64
TOTAL		9,78,88,208.73	8,22,03,743.65

NOTES ON ACCOUNTS AND ACCOUNTING POLICI "R"

FOR KADENCE INTERNATIONAL PRIVATE LIMITED

For Kadence International Pvt. Ltd. For Kadence International Pvt. Ltd.

Director/Auth. Signatory Director/Auth. Signatory

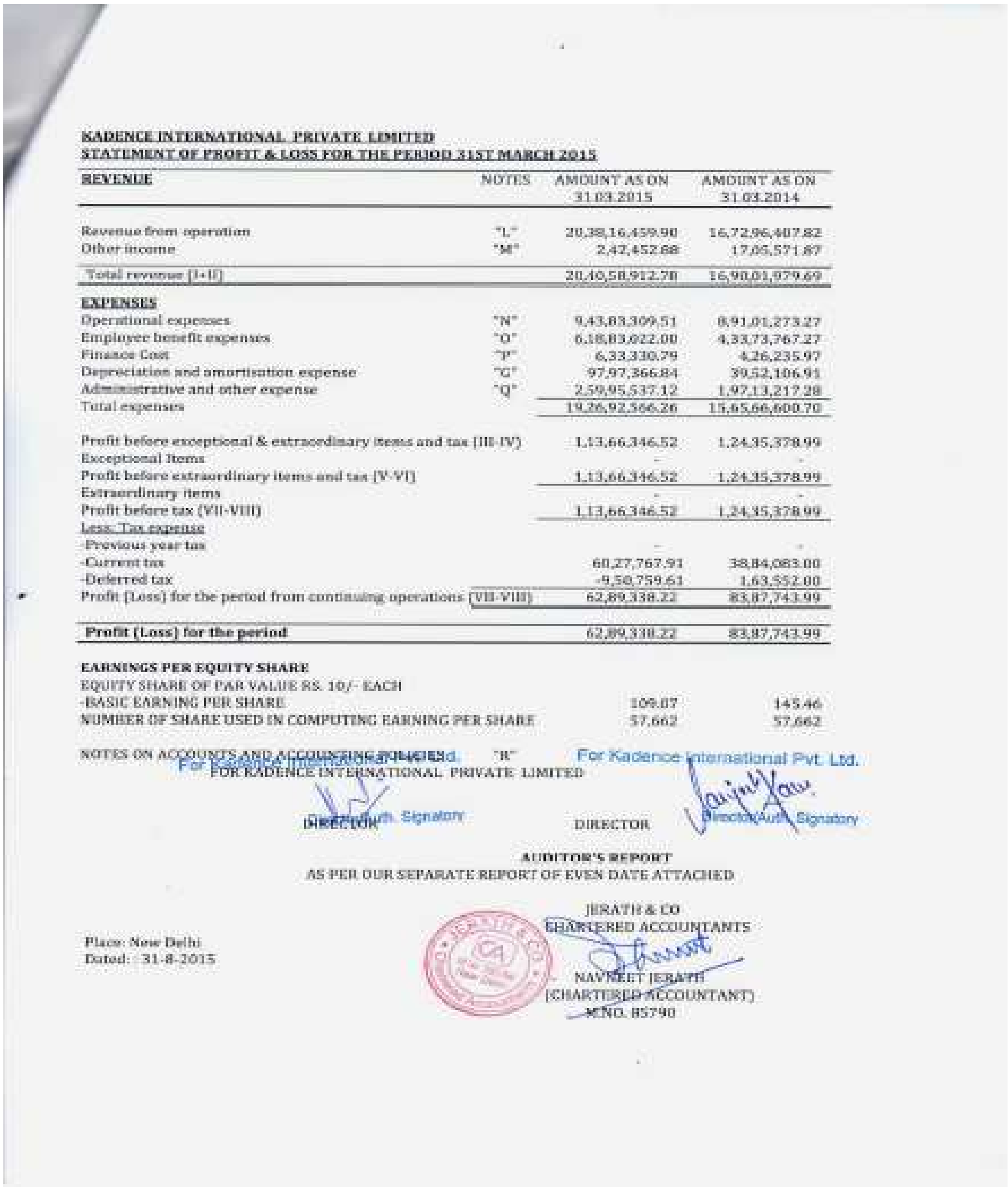
DIRECTOR DIRECTOR

AUDITOR'S REPORT
AS PER OUR SEPARATE REPORT OF EVEN DATE ATTACHED

JERATH & CO
CHARTERED ACCOUNTANTS

Place: New Delhi
Dated: : 31-8-2015

NAVNEET JERATH
(CHARTERED ACCOUNTANT)
M.NO. 85790



KADENCE INTERNATIONAL PRIVATE LIMITED
STATEMENT OF PROFIT & LOSS FOR THE PERIOD 31ST MARCH 2015

REVENUE	NOTES	AMOUNT AS ON 31.03.2015	AMOUNT AS ON 31.03.2014
Revenue from operation	"L"	20,38,16,459.90	16,72,96,407.82
Other income	"M"	2,42,452.88	17,05,571.87
Total revenue (I+II)		20,40,58,912.78	16,90,01,979.69
EXPENSES			
Operational expenses	"N"	9,43,83,309.51	8,91,01,273.27
Employee benefit expenses	"O"	6,18,83,022.00	4,33,73,767.27
Finance Cost	"P"	6,33,330.79	4,26,235.97
Depreciation and amortisation expense	"G"	97,97,366.84	39,52,106.91
Administrative and other expense	"Q"	2,59,95,537.12	1,97,13,217.28
Total expenses		19,26,92,566.26	15,65,66,600.70
Profit before exceptional & extraordinary items and tax (III-IV)		1,13,66,346.52	1,24,35,378.99
Exceptional Items		-	-
Profit before extraordinary items and tax (V-VI)		1,13,66,346.52	1,24,35,378.99
Extraordinary items		-	-
Profit before tax (VII-VIII)		1,13,66,346.52	1,24,35,378.99
Less: Tax expense			
-Previous year tax		-	-
-Current tax		60,27,767.91	38,84,083.00
-Deferred tax		-9,50,759.61	1,63,552.00
Profit (Loss) for the period from continuing operations (VII-VIII)		62,89,338.22	83,87,743.99
Profit (Loss) for the period		62,89,338.22	83,87,743.99

EARNINGS PER EQUITY SHARE

EQUITY SHARE OF PAR VALUE RS. 10/- EACH		
-BASIC EARNING PER SHARE	109.07	145.46
NUMBER OF SHARE USED IN COMPUTING EARNING PER SHARE	57,662	57,662

NOTES ON ACCOUNTS AND ACCOUNTING POLICIES "R"

FOR KADENCE INTERNATIONAL PRIVATE LIMITED

For Kadence International Pvt. Ltd.
Director/Auth. Signatory
DIRECTOR

For Kadence International Pvt. Ltd.
Director/Auth. Signatory
DIRECTOR

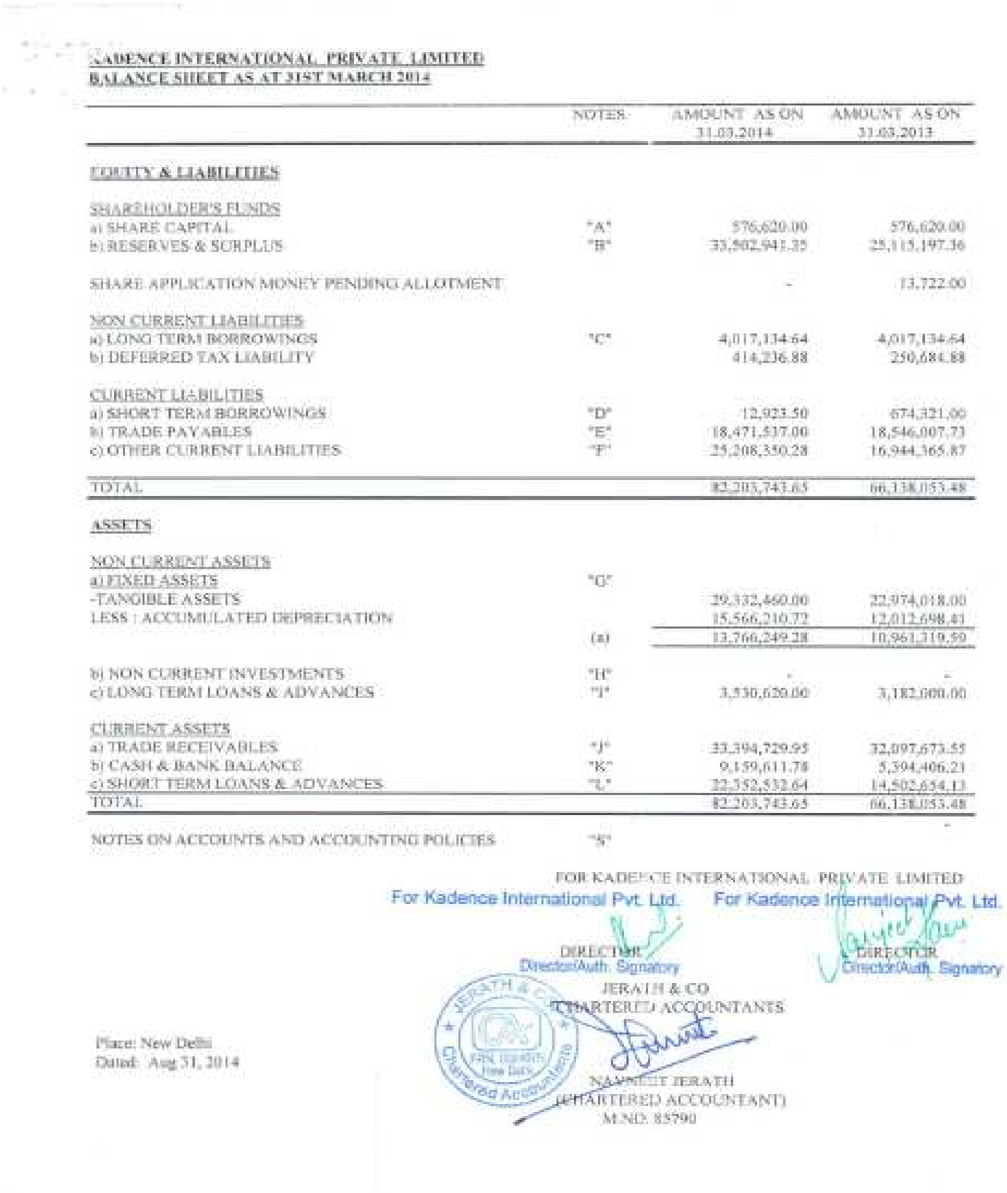
AUDITOR'S REPORT
AS PER OUR SEPARATE REPORT OF EVEN DATE ATTACHED

JERATH & CO
CHARTERED ACCOUNTANTS

NAVNEET JERATH
(CHARTERED ACCOUNTANT)
M.NO. 85790

Place: New Delhi
Dated: : 31-8-2015

2013-14



KADENCE INTERNATIONAL PRIVATE LIMITED
BALANCE SHEET AS AT 31ST MARCH 2014

	NOTES	AMOUNT AS ON 31.03.2014	AMOUNT AS ON 31.03.2013
EQUITY & LIABILITIES			
SHAREHOLDER'S FUNDS			
a) SHARE CAPITAL	"A"	576,620.00	576,620.00
b) RESERVES & SURPLUS	"B"	33,502,941.35	25,115,197.36
SHARE APPLICATION MONEY PENDING ALLOTMENT		-	13,722.00
NON CURRENT LIABILITIES			
a) LONG TERM BORROWINGS	"C"	4,017,134.64	4,017,134.64
b) DEFERRED TAX LIABILITY		414,236.88	250,684.88
CURRENT LIABILITIES			
a) SHORT TERM BORROWINGS	"D"	12,923.50	674,321.00
b) TRADE PAYABLES	"E"	18,471,537.00	18,546,007.73
c) OTHER CURRENT LIABILITIES	"F"	25,208,350.28	16,944,365.87
TOTAL		82,203,743.65	66,138,053.48
ASSETS			
NON CURRENT ASSETS			
a) FIXED ASSETS	"G"		
-TANGIBLE ASSETS		29,332,460.00	22,974,018.00
LESS : ACCUMULATED DEPRECIATION		15,566,210.72	12,012,698.41
	(a)	13,766,249.28	10,961,319.59
b) NON CURRENT INVESTMENTS	"H"	-	-
c) LONG TERM LOANS & ADVANCES	"I"	3,530,620.00	3,182,000.00
CURRENT ASSETS			
a) TRADE RECEIVABLES	"J"	33,394,729.95	32,097,673.55
b) CASH & BANK BALANCE	"K"	9,159,611.78	5,394,406.21
c) SHORT TERM LOANS & ADVANCES	"L"	22,352,532.64	14,502,654.13
TOTAL		82,203,743.65	66,138,053.48
NOTES ON ACCOUNTS AND ACCOUNTING POLICIES	"S"		

FOR KADENCE INTERNATIONAL PRIVATE LIMITED

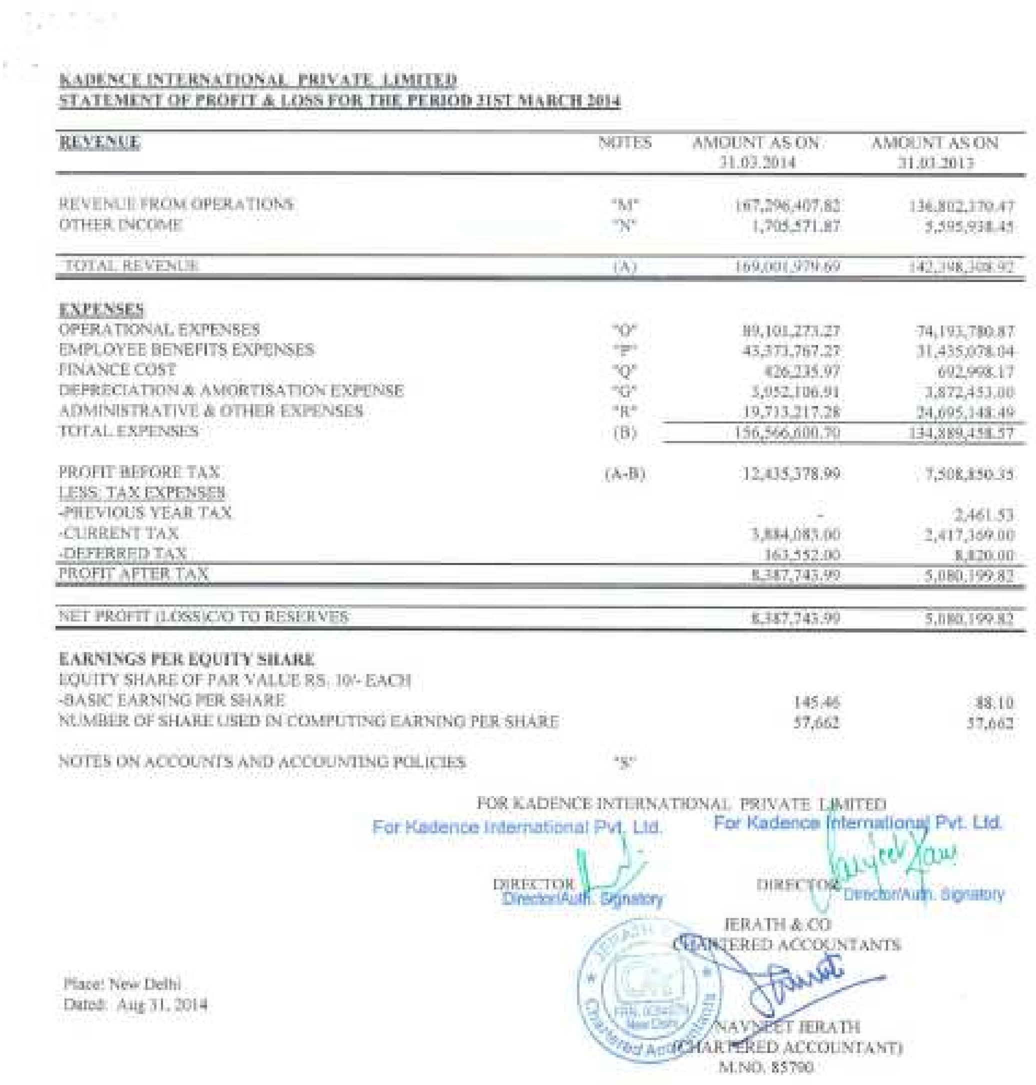
For Kadence International Pvt. Ltd.
DIRECTOR
Director/Auth. Signatory

For Kadence International Pvt. Ltd.
DIRECTOR
Director/Auth. Signatory

JERATH & CO
CHARTERED ACCOUNTANTS

NAVNEET JERATH
(CHARTERED ACCOUNTANT)
M.NO. 85790

Place: New Delhi
Dated: Aug 31, 2014



KADENCE INTERNATIONAL PRIVATE LIMITED
STATEMENT OF PROFIT & LOSS FOR THE PERIOD 31ST MARCH 2014

REVENUE	NOTES	AMOUNT AS ON 31.03.2014	AMOUNT AS ON 31.03.2013
REVENUE FROM OPERATIONS	"M"	167,296,407.82	136,802,370.47
OTHER INCOME	"N"	1,705,571.87	5,595,938.45
TOTAL REVENUE	(A)	169,001,979.69	142,398,308.92
EXPENSES			
OPERATIONAL EXPENSES	"O"	89,101,273.27	74,193,780.87
EMPLOYEE BENEFITS EXPENSES	"P"	43,373,767.27	31,435,078.04
FINANCE COST	"Q"	426,235.97	692,998.17
DEPRECIATION & AMORTISATION EXPENSE	"G"	3,952,106.91	3,872,453.00
ADMINISTRATIVE & OTHER EXPENSES	"R"	19,713,217.28	24,695,148.49
TOTAL EXPENSES	(B)	156,566,600.70	134,889,458.57
PROFIT BEFORE TAX	(A-B)	12,435,378.99	7,508,850.35
LESS: TAX EXPENSES			
-PREVIOUS YEAR TAX		-	2,461.53
-CURRENT TAX		3,884,083.00	2,417,369.00
-DEFERRED TAX		163,552.00	8,820.00
PROFIT AFTER TAX		8,387,743.99	5,080,199.82
NET PROFIT (LOSS)C/O TO RESERVES		8,387,743.99	5,080,199.82
EARNINGS PER EQUITY SHARE			
EQUITY SHARE OF PAR VALUE RS. 10/- EACH			
-BASIC EARNING PER SHARE		145.46	88.10
NUMBER OF SHARE USED IN COMPUTING EARNING PER SHARE		57,662	57,662
NOTES ON ACCOUNTS AND ACCOUNTING POLICIES	"S"		

FOR KADENCE INTERNATIONAL PRIVATE LIMITED

For Kadence International Pvt. Ltd.
DIRECTOR
Director/Auth. Signatory

For Kadence International Pvt. Ltd.
DIRECTOR
Director/Auth. Signatory

JERATH & CO
CHARTERED ACCOUNTANTS

Place: New Delhi
Dated: Aug 31, 2014

NAVNEET JERATH
(CHARTERED ACCOUNTANT)
M.NO. 85790

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys in urban areas

Cat #	Criteria	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys in the urban areas **Deloitte Touche Tohmatsu India LLP – Lead Firm**	Number of Cities: 35 cities Names of Cities: Hyderabad, Dispur, Itanagar, Patna, Raipur, Panaji, Gandhinagar, Chandigarh, Shimla, Srinagar, Jammu, Ranchi, Bangalore, Thiruvanthapuram,Bhopal, Mumbai, Imphal, Shillong, Aizwal, Kohima, Bhubaneshwar, Jaipur, Gangtok, Chennai, Agartala, Dehradun, Lucknow, Kolkata, Port Blair, Delhi, Sivassa, Daman, Diu, Kavaratti, Puducherry
2	Experience of the Firm in implementing assignments related to market research and field surveys in the urban areas **Insight Development Consulting Group Private Limited –Consortium Partner 1**	Number of Cities : 94 Names of Cities: Alwar, Baran-Chhabra, Barmer, Bharatpur, Bundi, Chittorgarh, Jasialmer, Jhalawar, Karauli, Nagaur, Rajasamand, Sawai-Madhopur, Sikar, Churu, Dholpur, Lucknow, Allahabad, Mathura, Muzaffarpur, Patna, Ranchi, Dhanbad Ganjam, Jaipur, Bhopal, Chitrakoot, Indore, Dewas, Durg, Satara, Deogarh, Chandigarh, Ludhiana, Panchkula, Panipat, Faridabad, Chennai, Thiruvannamalai, Thoothukudi, Puducherry, Ahmedabad, Gandhinagar, Hyderabad, Karimnagar, Kurnool, Kolkata, Mumbai, New Delhi, Alappuzha, Belgaum, Dehradun, Aligarh, Chandrapur, Cuttack, Dewas, Jabalpur, Meerut, Nagpur, Satna, Udaipur, Ujjain, Gaya, Begusarai, Bihar Sharif, Muzaffarpur, Ara, Darbhanga, Purnia, Katihaar, Munger, Bhagalpur, Gopalganj, Pashchim hamparan, Vaishali Siwan, Purba Champaran, Saharsa, Rohtas, Sitamari, Kishangunj, Aurangabad, Sarwan, Dausa, Hanumangarh, Noida, Ajmer, Udaipur, Jodhpur, Bikaner, Latur, Mahendragarh, Gwalior
3	Experience of the Firm in implementing assignments related to market research and field surveys in the urban areas **Stesalit Systems Limited - Consortium Partner 2**	Number of Cities : 13 Names of Cities: Sarni, Hoshangabad, Burhanpur, Jhabua, Khandwa, Pitampur, Dewas, Korba, Raipur, Namchi, Jorethang, Singtam, Rangpo.

4	Experience of the Firm in implementing assignments related to market research and field surveys in the urban areas **Kadence International Pvt Ltd - Consortium Partner 3**	Number of Cities : 182 Names of Cities: Kokrajhar, Dantewada, Latehar ,Ganjam, Tinsukia, Dibrugarh, Golaghat, Jorhat, Nagaon, Shivsaga, Sonitpur, Raipur, Mahasumund, Patna, Gaya, Ahemdabad, Surat, Jaipur, Adilabad, Ganjam, Anantapur, Puri, Chittoor, Ariyalur, East Godawari, Chennai, Guntur, Coimbatore, Hyderabad, Cuddalore,30 Karimnagar, Dharmapuri, Krishna, Dindigul, Medak, Erode, Nalgonda, Kancheepuram, Prakasam, Kanniyakumari, Srikakulam, Karur, Vizianagaram, Karur, Warangal, Karur, YSR (Kadapa), Madurai, Bongaigaon, Namakkal, Cachar, Palakkad, Darrang, Ramanathapuram, Dibrugarh, Salem, Kamrup, Sivaganga, Sivasagar, Thanjavur, Bhagalpur, Tiruchirappalli, Patna, Tirunelveli , Ahemedabad, Tiruppur, Hisar, Tiruvannamalai, Karnal, Vellore, Panipat, Viluppuram, Panipat, Virudhunagar, North Tripura, Panipat, West Tripura,Agra, Sonepat, Aligarh, Yamuna Nagar, Allahabad, Jammu, Azamgarh, Srinagar, Banda , Bagalkot, Barabanki, Bangalore, Bareilly, Chitradurga, Basti, Dakshin Kannada, Bijnore, Alappuzha, Chandauli, Ernakulam, Etawah, Kannur, Gazipur, Kottayam, Gorakhpur, Kozhikode, Hardoi, Thiruvananthapuram, Jhansi, Thrissur, Kanpur, Bhopal, Lucknow, Khargone, Hardoi, Bishnupur, Meerut, Mirzapur, Chandel, Moradabad, Churachandpur, Muzzaffarnagar, Rampur, Imphal, Sitapur, Varanasi, Bankura, Senapati, Burdwan, Tamenglong, Dakshin Dinajpur, Thoubal, Hooghly, Ukharul, Kolkata, Bargarh, Midnapur, Boudh, Murshidabad, Cuttack, Nadia, Delhi, Agra, Bareilly, Moradabad, Lucknow, Kumbakonam, Tanjavur, Mysore, Bangalore, Bidar, Nalbari, Agartala, Visakhapatnam, Kakinada, Uppalaguptam, Allavaram, Panvel, Alibag, Mundra, Gandhidham, Bhavnagar, Tirap, Churachandpur, Zunheboto, Darjeeling, Jalpaiguri, Madhubani, Ghazipur, Barabanki, Hissar, Pali, Guna, Chhindwara, Nagpur, Buldana, Nasik, Bangalore Urban, Belgaum, Karim Nagar, Kollam, Parambalur, Kanchipuram, Nellore, E.Singhbhum, Dantewada, Amreli, Jamnagar, Lohit, Dimapur, Hailakandi, Kamprup (METRO), Jamui, Patna, Lakhimpur Kheri, Kanpur nagar, Gorakhpur, Meerut, Kinnaur, Mandi, Panchkula, Dehradun, Tehri Garhwal, Bundi, Ajmer, Katni, Umaria, Balaghat, Simdega, Kathua, Muktsar, Fazilka, Pathankoth

Kadence International follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Appendix 5A: Assignment Details of the Applicant

Assignment #5.1

Assignment Name: Survey of Business Environment for Manufacturing – A Comparison of Indian States	**Approx. Value of the Contract:** INR 88 Lakh
Country: India **Location within the Country**: All States	**Duration of Assignment (months):** 7
Name of Client: NITI Aayog (erstwhile Planning Commission)	**Total number of staff-months:** 36
Address of Client: Planning Commission of India, Yojana Bhawan, Sansad Marg, New Delhi-110001	**Value of the contract per city (in current INR):**
Start Date: September 2013 **Completion Date:** March 2014	

Narrative description of Project: Planning Commission commissioned a study to evaluate business environment at state & local levels, assess their relation to industry related policies/ regulations at the national level. This study was carried out in all the states with following scope.

- Develop an assessment framework and conduct a comparative analysis of the business enabling environment and performance of manufacturing sector in all the Indian states.
- Identify the enabling and disabling factors /regulations /policies responsible for growth of manufacturing sectors / affecting manufacturing competitiveness in states and comparison of Industrial policies of the states.
- Suggest a robust strategy to improve the manufacturing competitiveness.
- Shortlist the innovative policies/Initiatives, good practices and their contribution in shaping business enabling environment in the states and high growth of manufacturing sector.
- Develop a policy tool /evaluation framework for manufacturing competitiveness to be used for periodical analysis in future.

Description of Actual Services Provided by your Staff :
The actual services performed by Deloitte are:

- Developed an analysis framework including questionnaires, for assessing business regulatory environment impacting ease of doing business in all the states, based on discussions with erstwhile Planning Commission and Industry Associations.
- Conducted survey of more than 400 industries and 50 industry associations across 28 states, to understand their experience with regards to business regulatory environment impacting ease of doing business in their respective states.
- Developed an understanding of processes associated with business regulations / licenses governing manufacturing sector across 28 states through interactions with industry and Government officials. For this purpose, we mapped the processes for finance & tax related regulations, labour related compliances, infrastructure & utilities related regulations, land and building related regulations, environment related compliances and other business regulatory approvals in line with the framework developed.
- Identified enabling and disabling factors/ regulations/ policies impacting the business regulatory environment impacting ease of doing business in the states. Further, a comparative analysis of business enabling environment of the states in terms of time and cost incurred in meeting compliance and difficulty experienced with respect to forms and processes was conducted.
- Developed a compendium of good practices and innovative policies/ initiatives observed to be adopted by the respective states and documenting their contribution in shaping the business enabling environment in the respective state.
- Developed a policy tool/ evaluation framework to assess the business regulatory competitiveness associated with manufacturing sector in the respective states, which would be used for periodical benchmark assessment in future.

• Recommended improvement action items with regards to policies, processes and institutional mechanism for improving the business regulatory environment of each state. The full report for the study was published by erstwhile Planning Commission and is available at: http://planningcommission.gov.in/reports/genrep/rep_enf0705.pdf
Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment #5.2

Assignment Name Situation Analysis and Baseline in Four Districts of Assam, Chhattisgarh, Jharkhand and Odisha (Orissa)	**Approx. Value of the Contract:** INR 34,28,100/-
Country: **India** Location within country: **Kokrajhar (Assam), Dantewada(Chhattisgarh), Latehar(Jharkhand) and Ganjam (Odisha)**	**Duration of Assignment (months):** 7
Name of Client: UNICEF	**Total number of staff-months:** 30
Address of Client:UNICEF, 73 Lodi Estate, New Delhi – 110 003	**Value of the contract per city (in current INR):**
Start Date: February 2015 **Completion Date:** September 2015	
Overall Objective: To understand the institutional mechanisms, their capacities and readiness for implementation of key policies, legislation and schemes in the area of child protection with a specific focus on JJ Act, ICPS, POSCO, IPC and CLPRA at the state, district and sub-district level. Outcome of the project: To generate and analyze data and information on key indicators in the area of child protection in the four selected districts to assess the impact of conflict on children. Research Design: Qualitative Sampling Size: 221 FGDs •	
Description of Actual Services Provided by your Staff : - Designing the tools and instruments, Field data collection, Data Analysis and Presentation of Findings	
Name of the Firm: Kadence International Pvt Ltd	

Kadence International follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Assignment #5.3

Assignment Name: Mid-term and End-line Assessment as Part of Implementation of Asian Development bank (ADB) Assisted Investment Program Performance & Monitoring System Consultants (IPPMS) of Rajasthan Urban Sector Development Investment Program (RUSDIP)	**Approx. Value of Services:** INR 60,00,000 /-
Country: Rajasthan, India **Name of City/ Cities:** Alwar, Baran-Chhabra, Barmer, Bharatpur, Bundi, Chittorgarh, Jasialmer, Jhalawar, Karauli, Nagaur, Rajasamand, Sawai-Madhopur, Sikar, and Dholpur	**Duration of assignment:** 10 months
Name of Client: ICF Consulting Services India Private Limited	**Total No of staff-months of the**

	assignment: N.A
Address: Ashoka Estate, 24 New Barakhamba Road, 302-307, Third Floor, Connaught Lane, New Delhi, Delhi 110001	**Value of the contract per city:** INR 4,00,000
Start Date (Month/Year): September 2016 **Completion Date (Month/Year):** Ongoing *(Draft Final Report submitted)*	

Narrative Description of Project:

Despite concerted efforts by the National and State Governments to ensure that the development of new infrastructure in the larger cities of historical importance would remain reasonably commensurate with population growth, the accelerated growth of urban areas has far outpaced the ability of the state and municipal governments to meet local needs. Thus, infrastructure services—particularly in the areas of potable water supplies, waste water management, drainage and solid waste, Road improvement, Slum improvement & heritage —have lagged far behind the requirements of large urban cities with their increasing populations and population densities. In an effort to ameliorate problems associated with insufficient infrastructure, and the negative health consequences which ensue from such inadequacies the State of Rajasthan, in collaboration with and with support from the Asian Development Bank, is currently implementing the comprehensive Rajasthan Urban sector Development & Investment Project (RUSDIP), which will help meet critical infrastructure construction and rehabilitation needs in fifteen major urban areas, including-Alwar, Bharatpur, Dholpur, Karauli, SawaiMadhopur, Bundi, Baran-chabra, Jhalawar-Jhalarapatan, Chittourgarh, Rajsamand, Nagaur, Churu, Sikar, Jaiselmer, Barmer.

Though conditions vary from area to area, the State of Rajasthan is, in general, arid and is striving to provide adequate supplies of water to a rapidly growing urban population. Supplies of ground water, which are replaced only sporadically by monsoons, are inconsistent and water shortages recur perennially. Further, augmentation of the water supplies which is planned under the RUSDIP will precipitate a dramatic growth in the quantity of wastewater for which treatment facilities are inadequate.

An important feature of RUSDIP is concurrent Project Performance Monitoring System (PPMS) of various packages as they are planned and implemented. IDCG was commissioned to undertake this task. PPMS will be used as the principal tool to ensure that the work at site of various packages in the Project are performed effectively & timely conceived with specific benefits accruing to the target groups, leading to realization of global objectives of the RUSDIP.

Description of Actual Services Provided By Your Staff:

- Development of research framework and study tools
- Training of field teams
- Data collection and analysis for over *8000 urban households*
- Data interpretation
- Preparing, 15 city reports and one consolidated report for the Mid-term assessment
- Preparing, 15 city reports and one consolidated report for the End-line assessment

Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited

Assignment #5.4

Assignment Name: National Consumers Survey under "ConsumerUp" Project of Department of Consumer Affairs implemented by CUTS	**Approx. Value of Services:** INR 14,99,999
Country: India **Name of City/ Cities:** Jaisalmer, Ahmedabad, Alappuzha, Allahabad, Alwar, Belgaum, Bhopal,	**Duration of assignment: 5**

Chandigarh, Chennai, Chitrakoot, Dehradun, Deogarh, Dhanbad, Durg, Faridabad, Gandhinagar, Ganjam, Hyderabad, Indore, Jaipur, Jaisalmer, Karimnagar, Kolkata, Kurnool, Lucknow, Ludhiana, Mathura, Mumbai, Muzaffarpur, New Delhi, Panchkula, Panipat, Patna, Puducherry, Ranchi, Satara, Thiruvannamalai, Dewas and Thoothukudi	
Name of Client: CUTS	**Total No of staff-months of the assignment:** N.A.
Address: 217, Bhaskar Marg, Sindhi Colony, Bani Park, Jaipur, Rajasthan 302016	**Value of the contract per city:** N.A.
Start Date (Month/Year): February 2012 **Completion Date (Month/Year):** June 2012	
Narrative Description of Project: The objective of the study was to assess the level of knowledge and awareness of consumers regarding their rights. Towards the end, an *11,600 consumer's* survey was conducted in 19 states, and 3 union territories of India.	
Description of actual services provided by your staff within the assignment: • Overall project management • Survey and sampling design, study instrument design, and scheduling • Discussion with members of consumer courts, departmental officials, etc to understand the state of the Indian consumers • Device policy recommendations based on quantitative and qualitative survey findings	
Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited	

Assignment #5.5

Assignment Name: Baseline Survey of Project Urban Local Bodies under "Support Program for Urban Reforms" (SPUR)	**Approx. Value of Services:** INR 29,62,500
Country: India **Name of City/ Cities:** Patna, Gaya, Begusarai, Bihar, Sharif, Muzaffarpur, Ara, Darbhanga, Purnia, Katihaar, Munger, Bhagalpur, Gopalganj, Pashchim Champaran, Vaishali, Siwan, Purba Champaran , Saharsa, Rohtas , Sitamari, Kishangunj, Aurangabad, and Sarwan	**Duration of assignment:** 12 Months
Name of Client: DFID	**Total No of staff-months of the Assignment:** N.A.
Address: DFID India, British High Commission, Shantipath, Chankayapuri, New Delhi 110021, India	**Value of the contract per city:** N.A.
Start Date (Month/Year): June 2010 **Completion Date (Month/Year):** June 2011	
Narrative Description of Project: This program, the Support Program for Urban Reforms in Bihar (SPUR), was implemented in 28 towns across the states. The baseline will focus on eliciting appropriate data on the following program aspects: • Urban Governance and Capacity Building • Municipal Finance and Accounting • Municipal Infrastructure and Service Benchmarks • Municipal/ Local Economic Development	

• Social Development and Livelihood
Description of actual services provided by your staff within the assignment: • Developing overall project monitoring framework • Developing performance indicators across each component and sub component • Study design, sample design, development of data collection instruments, dataentry formats • Development of data collection, data entry and data analysis plan; • Data collection management • Quality assurance • Preparation of base line reports including municipal service level bench marking based municipal report card for all *28 towns*
Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited

Assignment #5.6

Assignment Name: Household Consumer Survey for Understanding the Opportunities for End-user Electricity Tariff Reform	**Approx. Value of Services:** INR 5,36,786
Country: Rajasthan, India **Name of City/ Cities:** Dausa, Jaipur, Hanumangarh and Jaisalmer	**Duration of assignment:** 1 month
Name of Client: International Institute for Sustainable Development (IISD)	**Total No of staff-months of the Assignment:** N.A
Address: First Floor, 35, Feroz Shah Road, Connaught Place, Copernicus Marg, New Delhi, Delhi 110001	**Value of the contract per city:** INR N.A.
Start Date (Month/Year): October 2015 **Completion Date (Month/Year):** November 2015	
Narrative Description of Project: International Institute for Sustainable Development (IISD) conducted a study with end users to understand the level of knowledge their level of awareness regarding electricity Pricing and Subsidies. The project also focused to understating whether the end users are willing pay more price for better services.	
Description of actual services provided by your staff within the assignment: • Questionnaire development • Sample selection • Data Collection from a sample of *1000 respondents* • Data Analysis • Report Preparation	
Name of the Firm: Insight Development Consulting Group Private Limited	

Assignment #5.7

Assignment Name: Market assessment for a planned healthcare complexes in three States	**Approx. Value of Services:** INR 4,80,000
Country: India **Name of City/ Cities:** Latur, Mahendragarh and Gwalior	**Duration of assignment:** 5 Months
Name of Client: A leading company in the education sector/ Large Management Consulting Firm	**Total No of staff-months of the Assignment:** N.A.

Address: U-80/ 80, Building 5, Tower C, Gali Number 3, U Block, DLF Phase 3, Sector 24, Gurugram, Haryana 122002	**Value of the contract per city:** N.A.
Start Date (Month/Year): September 2010 **Completion Date (Month/Year):** December 2010	
Narrative Description of Project: Market assessment for developing a financial model for a planned healthcare complex including Medical Nursing and Paramedical College, Teaching Hospital and Super specialty Hospital in Latur (Maharashtra), Mahendragarh (Haryana), and Gwalior (Madhya Pradesh)	
Description of actual services provided by your staff within the assignment: IDCG's responsibilities included: • Defining the catchment area for the proposed healthcare complex (primary, secondary, and tertiary catchment areas) • Assessing the patient needs, attitude, preferences and, future intentions towards tertiary care in the catchment area • Assessment of availability of healthcare manpower – Physicians (both general and specialist), Nurses, Paramedics, Healthcare administrators, and unskilled manpower • Assessment of rate and disease profile of hospitalization, and rate and profile of morbidity in the catchment area • Assessment of private, and public healthcare providers in the area in terms of number of hospitals, beds and specialties offered • Assessment of demand for nurses, paramedical staff in the region • Data collection from a sample of 60 – doctors; 16 – Hospitals; 6 - Medical/ nursing/ paramedical colleges; 100 – patients at each location. Three locations were covered under the study – Gwalior, Latur and Mahendragarh.	
Name of the Firm: Insight Development Consulting Group Private Limited	

Assignment #5.8

Assignment Name: Market assessment for establishing schools in the state of Rajasthan under ADB TA 4993-IND: Mainstreaming PPP at Central Line Ministries	**Approx. Value of Services:**
Country: India **Name of City/ Cities:** Ajmer and Udaipur	**Duration of assignment:** 1Month
Name of Client: Asian Development Bank/ Another Management Consulting Firm	**Total No of staff-months of the Assignment:** N.A.
Address: U-80/ 80, Building 5, Tower C, Gali Number 3, U Block, DLF Phase 3, Sector 24, Gurugram, Haryana 122002	**Value of the contract per city:** N.A.
Start Date (Month/Year): May2009 **Completion Date (Month/Year):** June 2009	
Narrative Description of Project: ADB and GoR envisaged to develop a PPP project in the Education sector with the overarching objectives of:- • Expansion of infrastructure for secondary school education within the rural areas • Improving quality of education delivery through participation of private sector • Induction of private sector efficiencies in operating and managing schools This demonstrated how the private sector worked in collaboration with the public sector to enhance overall provision of education which remains under the overall purview of the governments. The PPP project aimed at new-build of up to one hundred sixty five (165) senior secondary schools (from Class VI to Class XII) across 33 districts. Each school was expected to have a capacity of about 500 students, translating to about 35 students per	

Class; two sections each class. Fifty percent of the school capacity was expected to be allocated to government sponsored students who would be provided education vouchers towards the payment of school fees. The government also provided land at concessional rates and a capital subsidy on the capital cost of the project.
The initial market assessment was proposed to be conducted for 10 schools, one in each district of Ajmer and Udaipur divisions. Each of these schools were established where no government senior secondary school existed and was expected to cater to the needs of 5 villages/habitations.

Description of actual services provided by your staff within the assignment: The objective of this exercise was to conduct a rapid market assessment exercise across Udaipur and Ajmer to understand demographic profile of the region, fee paying capacity, interest to switch-over to a new school in the VI - XII standard, elasticity of demand for the fees being paid, and other factors that could impact revenue estimates in schools in the region.
The market assessment focused on obtain data covering the following aspects:

- Demographic Profile
- Profile of existing middle & secondary/higher secondary schools: facilities and fees
- Willingness/capacity to pay higher/premium fees by APL families
- Possible alternative sources of revenue for operator including appropriate disciplines for vocational training

Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited

Assignment #5.9

Assignment Name: Final Evaluation of Savings-Led, Community Managed Microfinance Project, “Banking on Change” in Delhi	**Approx. Value of Services:** INR 15,28,169
Country: India **Name of City/ Cities:** New Delhi and Chennai	**Duration of assignment:** 4 months
Name of Client: Plan India and Care	**Total No of staff-months of the Assignment:** N.A.
Address: E-12, Kailash Colony, New Delhi, Delhi 110048/ N-19, Green Park Extension, Green Park Extension, New Delhi, Delhi 110016	**Value of the contract per city:** N.A.
Start Date (Month/Year): September 2015 **Completion Date (Month/Year):** January 2016	

Narrative Description of Project:
Banking on Change, a partnership between Barclays, CARE UK, and Plan UK was established in 2009. Originally it set out to deliver a savings-led microfinance program with the aim of improving the financial inclusion of people in 11 countries across Africa, Asia, and South America. Using a savings led microfinance methodology, Banking on Change mobilized individuals into savings groups so they could save regularly and in turn borrow small amounts at a fair rate of interest agreed by group members.
In phase 1, Banking on Change established over 21,000 new groups who have accrued over $6.5m in savings and loaned out over $5m. Nearly 500 groups have been formally linked to group accounts in branches of Barclays in Uganda, Ghana, Tanzania, and Kenya.
Barclays renewed its commitment to the partnership through an additional three year investment in a second phase of Banking on Change (2013-2015). In phase 2, the partnership has used the same savings-led microfinance methodology established in phase 1 as a springboard for implementing a more focused, in-depth, program targeted at young people in seven countries (Egypt, Ghana, India, Kenya, Tanzania, Uganda, and Zambia).

Description of actual services provided by your staff within the assignment:

IDCG's responsibilities included Questionnaire Review, Data Collection (A sample of 890 households and 20 Focus Group Discussions); Data Analysis & Report preparation
Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited

Assignment #5.10

Assignment name: **Preparation of Housing For All Plan of Action (HFAPoA) & DPR with Construction Supervision & Quality Control in multiple ULBs under PMAY**	Value of the contract (in current INR): 49,50,000 (Burhanpur); 22,00,000 (Khandwa); 22,00,000 (Pithampur); 27,90,000 (Dewas); Jhabua (22,00,000)
Country: India Name of City/ Cities: Burhanpur, Khandwa, Pithampur, Dewas & Jhabua	Duration of assignment (months): 6 months per city in Burhanpur, Khandwa, Pithampur and Dewas; 10 months (Jhabua)
Names of Multiple Clients: 1. Municipal Corporation Burhanpur 2. Municipal Council Khandwa 3. Municipal Council Pithampur 4. Municipal Corporation Dewas 5. Municipal Council, Jhabua	Total No of staff-months of the assignment:30 per city in Burhanpur, Khandwa, Pithampur and Dewas; 44 (Jhabua)
Address: 1. O/o Municipal Corporation, Burhanpur 2. O/o Municipal Council, Khandwa 3. O/o Municipal Council, Pithampur 4. O/o Municipal Corporation, Dewas 5. O/o Municipal Corporation, Dewas	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	March, 2015 March 2016
Narrative description of Project: To support ULBs of Burhanpur, Khandwa, Pithampur, Jhabua and Dewas in the implementation of Pradhan Mantri Awas Yojana (PMAY) as per the guidelines issued Ministry of Housing Urban Poverty Alleviation, Government of India and to achieve the ultimate objective of providing Housing For All by 2022. The overall scope of work of the Consultant covered conducting demand survey as per format provided in the Guidelines of PMAY, preparation of Housing For All Plan of Action (HFAPoA) covering all the 4 (four) verticals of PMAY, Preparation of DPRs for FY 2015-16 as stipulation in HFAPoA, Construction Supervision & Quality Control.	
Description of actual services provided by your staff within the assignment: • Demand survey for assessing the actual demand of housing. • Assessment of quality indicators on an ongoing basis during the course of the entire survey. • Document critical issues in a systematic manner in terms of both qualitative reports and quantitative indicators (namely, response rates, missing data proportions, test reliability through random checks etc.). • Data entry, data compilation, collation and analysis simultaneously at the ward / zone level for all the information generated in the demand surveys. • Validating list of slums and information there in required for preparation of Housing for All Plan of Action. • Review of Tenability Analysis under SFCPoA and revise the list of Tenable and Un-tenable Slums (Location, no of eligible slum dwellers, area of slum land, Market Potential of Land (Land Value), FAR available, Density against norms). • Determine financial and technical viability of "in-situ" Slum redevelopment on PPP basis using land as a resource for all the Tenable Slums.	

- Assist MC in preparing First Year Annual Implementation Plan (AIP) based on the Priority of Implementation and availability of Financial Resources.
- Compile all the analysis, recommendations, strategies, proposals, costing, prioritization and phasing and submit Draft Housing for All Plan of Action (HFAPoA) Report
- Preparation of DPR.
- BID process management
- Supervision during construction and development.
- Quality Assurance of General Civil and Structural Works.

Name of the Firm: Stesalit Systems Limited

Assignment #5.11

Assignment name: **Preparation of Housing For All Plan of Action (HFAPoA) & DPR with Construction Supervision & Quality Control in multiple ULBs under PMAY**	Value of the contract (in current INR): 49,50,000 (Burhanpur); 22,00,000 (Khandwa); 22,00,000 (Pithampur); 27,90,000 (Dewas); Jhabua (22,00,000)
Country: India Name of City/ Cities: Burhanpur, Khandwa, Pithampur, Dewas & Jhabua	Duration of assignment (months): 6 months per city in Burhanpur, Khandwa, Pithampur and Dewas; 10 months (Jhabua)
Names of Multiple Clients: 6. Municipal Corporation Burhanpur 7. Municipal Council Khandwa 8. Municipal Council Pithampur 9. Municipal Corporation Dewas 10. Municipal Council, Jhabua	Total No of staff-months of the assignment:30 per city in Burhanpur, Khandwa, Pithampur and Dewas; 44 (Jhabua)
Address: 6. O/o Municipal Corporation, Burhanpur 7. O/o Municipal Council, Khandwa 8. O/o Municipal Council, Pithampur 9. O/o Municipal Corporation, Dewas 10. O/o Municipal Corporation, Dewas	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	March, 2015 March 2016
Narrative description of Project: To support ULBs of Burhanpur, Khandwa, Pithampur, Jhabua and Dewas in the implementation of Pradhan Mantri Awas Yojana (PMAY) as per the guidelines issued Ministry of Housing Urban Poverty Alleviation, Government of India and to achieve the ultimate objective of providing Housing For All by 2022. The overall scope of work of the Consultant covered conducting demand survey as per format provided in the Guidelines of PMAY, preparation of Housing For All Plan of Action (HFAPoA) covering all the 4 (four) verticals of PMAY, Preparation of DPRs for FY 2015-16 as stipulation in HFAPoA, Construction Supervision & Quality Control.	
Description of actual services provided by your staff within the assignment: • Demand survey for assessing the actual demand of housing. • Assessment of quality indicators on an ongoing basis during the course of the entire survey. • Document critical issues in a systematic manner in terms of both qualitative reports and quantitative indicators (namely, response rates, missing data proportions, test reliability through random checks etc.). • Data entry, data compilation, collation and analysis simultaneously at the ward / zone level for all the information generated in the demand surveys. • Validating list of slums and information there in required for preparation of Housing for All Plan of Action. • Review of Tenability Analysis under SFCPoA and revise the list of Tenable and Un-tenable Slums (Location, no of eligible slum dwellers, area of slum land, Market Potential of Land (Land Value), FAR available, Density against norms). • Determine financial and technical viability of "in-situ" Slum redevelopment on PPP basis using land as a resource for all the Tenable Slums. • Assist MC in preparing First Year Annual Implementation Plan (AIP) based on the Priority of Implementation and availability of Financial Resources. • Compile all the analysis, recommendations, strategies, proposals, costing, prioritization and phasing and submit Draft Housing for All Plan of Action (HFAPoA) Report • Preparation of DPR.	

• BID process management • Supervision during construction and development. • Quality Assurance of General Civil and Structural Works.
Name of the Firm: Stesalit Systems Limited

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Cat No.	Criteria	Number and Name of Cities
	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)** **(Lead Firm)** **Deloitte Touche Tohmatsu India LLP** The experiences include skillgap assessment studies with Deloitte utilizing the services of certified market research / survey agencies	Number of Cities: 09 Names of Cities: Ranchi, Raipur, Gwalior, Vidisha, Dewar, Tirupati, Karimnagar, Vizag, New Delhi,
	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	Number of Cities: 57 Names of Cities: Alwar, Baran-Chhabra, Barmer, Bharatpur, Bundi, Chittorgarh, Jasialmer, Jhalawar, Karauli, Nagaur, Rajasamand, Sawai-Madhopur, Sikar, Churu, Dholpur, Aligarh, Chandrapur, Cuttack, Dewas, Indore, Jabalpur, Lucknow, Merut, Nagpur, Satara, Satna, Udaipur, Ujjain, Patna, Gaya, Begusarai,

	Insight Development Consulting Private Limited	Bihar Sharif, Muzaffarpur, Ara, Darbhanga, Purnia, Katihaar, Munger, Bhagalpur, Gopalganj, Pashchim Champaran, Vaishali, Siwan, Purba Champaran, Saharsa, Rohtas, Sitamari, Kishangunj, Aurangabad, Sarwan, Dausa, Jaipur, Hanumangarh, Ajmer, Udaipur, New Delhi, Chennai
	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **Stesalit Systems Limited**	Number of Cities: 00 Names of Cities:
	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **Kadence International Pvt Ltd**	Number of Cities: 182 Names of Cities: Kokrajhar, Dantewada, Latehar ,Ganjam, Tinsukia, Dibrugarh, Golaghat, Jorhat, Nagaon, Shivsaga, Sonitpur, Raipur, Mahasumund, Patna, Gaya, Ahemdabad, Surat, Jaipur, Adilabad, Ganjam, Anantapur, Puri, Chittoor, Ariyalur, East Godawari, Chennai, Guntur, Coimbatore, Hyderabad, Cuddalore,30 Karimnagar, Dharmapuri, Krishna, Dindigul, Medak, Erode, Nalgonda, Kancheepuram, Prakasam, Kanniyakumari, Srikakulam, Karur, Vizianagaram, Karur, Warangal, Karur, YSR (Kadapa), Madurai, Bongaigaon, Namakkal, Cachar, Palakkad, Darrang, Ramanathapuram, Dibrugarh, Salem, Kamrup, Sivaganga, Sivasagar, Thanjavur, Bhagalpur, Tiruchirappalli, Patna, Tirunelveli , Ahemedabad, Tiruppur, Hisar, Tiruvannamalai, Karnal, Vellore, Panipat, Viluppuram, Panipat, Virudhunagar, North Tripura, Panipat, West Tripura,Agra, Sonepat, Aligarh, Yamuna Nagar, Allahabad, Jammu, Azamgarh, Srinagar, Banda , Bagalkot, Barabanki, Bangalore, Bareilly, Chitradurga, Basti, Dakshin Kannada, Bijnore, Alappuzha, Chandauli, Ernakulam, Etawah, Kannur, Gazipur, Kottayam, Gorakhpur, Kozhikode, Hardoi, Thiruvananthapuram, Jhansi, Thrissur, Kanpur, Bhopal, Lucknow, Khargone, Hardoi, Bishnupur, Meerut, Mirzapur, Chandel, Moradabad, Churachandpur, Muzzaffarnagar, Rampur, Imphal, Sitapur, Varanasi, Bankura, Senapati, Burdwan, Tamenglong, Dakshin Dinajpur, Thoubal, Hooghly, Ukharul, Kolkata, Bargarh, Midnapur, Boudh, Murshidabad, Cuttack, Nadia, Delhi, Agra, Bareilly, Moradabad, Lucknow, Kumbakonam, Tanjavur, Mysore, Bangalore, Bidar, Nalbari, Agartala, Visakhapatnam, Kakinada, Uppalaguptam, Allavaram, Panvel, Alibag, Mundra, Gandhidham, Bhavnagar, Tirap,

		Churachandpur, Zunheboto, Darjeeling, Jalpaiguri, Madhubani, Ghazipur, Barabanki, Hissar, Pali, Guna, Chhindwara, Nagpur, Buldana, Nasik, Bangalore Urban, Belgaum, Karim Nagar, Kollam, Parambalur, Kanchipuram, Nellore, E.Singhbhum, Dantewada, Amreli, Jamnagar, Lohit, Dimapur, Hailakandi, Kamprup (METRO), Jamui, Patna, Lakhimpur Kheri, Kanpur nagar, Gorakhpur, Meerut, Kinnaur, Mandi, Panchkula, Dehradun, Tehri Garhwal, Bundi, Ajmer, Katni, Umaria, Balaghat, Simdega, Kathua, Muktsar, Fazilka, Pathankoth

Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Appendix 6A: Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau VERITAS (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment#6.1

Assignment name: Status of implementation of right To free and compulsory education Act and rules in Delhi	**Country:** India **Location within country:** Delhi
Name of Client: Save the Children	**Address:** 3rd Floor, Vardhaman Trade Centre, 9-10-11 Nehru Place, New Delhi - 110019
Duration of assignment (months): 1Year **Start date (month/year):** June 2014 **Completion date (month/year):** Nov 2015	**Total No of staff-months of the assignment:** Research Staff – 3 Field Staff – 10
Approx. value of the contract: INR 12,35,800/-	**Approx. value of the services provided by your firm under the contract:** INR 12,35,800/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Research Manager - Parul Sharma

Narrative description of Project:

Overall Objective: To examine the status of compliance of Right to Free and Compulsory Education Act, 2009 and Delhi Right of Children to Free and Compulsory Education Rules, 2011 in Delhi;

Outcome of the project: The study on assessment of RTE compliance undertaken in 416 schools in Delhi highlights the current status of RTE Norms across various schools managed by Delhi Cantonment Board (DCB), Municipal Corporation of Delhi (MCD), Department of Education (DoE) and New Delhi Municipal Council (NDMC). Overall steps have been taken to meet the broader Norms related to physical infrastructure and provision of free entitlements like school text books. The study has identified significant gaps in implementation of Right to Education Norms related to governance, inclusive education and state level measures.

Research Design: Desk Research, Quantitative and Qualitative

Sampling Size: 416 Structured Interviews and 24 FGD's

Description of actual services provided by your staff within the assignment:
Designing the tools and instruments, Field Training, Field data collection, Data Analysis and Presentation of Findings in word and PPT format

Deloitte Touche Tohmatsu India LLP

Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*

Assignment#6.2

Assignment Name: National Research Institute for SIDBI under an Asian Development Bank project “Supporting Micro Entrepreneurship for Women’s in Selected States”	**Approx. Value of Services:** INR 44,81,269
Country: India **Name of City/ Cities:** Aligarh, Chandrapur, Cuttack, Dewas, Indore, Jabalpur, Lucknow, Merut, Nagpur,Satara, Satna, Udaipur, and Ujjain	**Duration of assignment:** 33 months
Name of Client: SIDBI	**Total No of staff-months of the Assignment:** N.A.
Address: 15, Ashok Marg, Civil Lines, Lucknow, Uttar Pradesh 226001	**Value of the contract per city:** N.A.
Start Date (Month/Year): March 2012 **Completion Date (Month/Year):** December 2014	
Narrative Description of Project: The Asian Development Bank (ADB) had approved a grant financed by the Japan Fund for Poverty Reduction (JFPR) to facilitate access by low-income women micro entrepreneurs to an appropriate range of services in selected Indian States (Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Uttar Pradesh). The project was implemented by the Small Industries Development Bank of India (SIDBI) through the SIDBI Foundation for Micro Credit (SFMC). The grant’s objective was to “facilitate access by poor female micro-entrepreneurs to an appropriate range of information and services that support microcredit.”	
Description of actual services provided by your staff within the assignment: As national research institute IDCG was responsible for conducting the following two studies: • Output to Outcome Review for the grant • Impact Evaluation of credit and training to women micro-entrepreneur borrowers Output to Outcome Review focused on the entire set the of project, business, and social outcomes for the borrowers while the Impact Evaluation focused on impacts of credit and training which ultimately resulted in project, business, and social outcomes. The National Research Institute was expected to provide an evidence based learning for advising on development of policy and access to financial products for women micro-entrepreneurs. The National Research Institute was expected to structure and implement a framework for collection of evidence on social and business outcomes for a customized product at baseline and end-line stages of the ADB-JFPR grant project.	
Name of the Firm: Insight Development Consulting Group (IDCG) Private Limited	

Assignment#6.3

Assignment name: End Line Survey of MTH Pehchan Programe	**Country:** India **Location within country:** Andhra Pradesh & Telangana, Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal

Name of Client: India HIV/AIDS Alliance	**Address:** 6, Community Centre, Zamrudpur, Kailash Colony Extension, New Delhi-110048
Duration of assignment (months): 3 Month **Start date (month/year):** May 2015 **Completion date (month/year):** Ongoing	**Total No of staff-months of the assignment:** Research Staff – 6 Field Staff – 70
Approx. value of the contract: INR 17,72,700/-	**Approx. value of the services provided by your firm under the contract:** INR 17,72,700/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Research Manager – Swapnil Dube
Narrative description of Project: **Overall Objective:** To assess the effectiveness of the delivery model of Pehchan program in building an enabling environment that encourages healthy behaviour among MTH community. Track key outcome indicators in Pehchan program, specifically— • * Condom usage during last anal intercourse with a male partner and female partner • * Consistency of condom usage during last one month and last six months • * Instances of violence, stigma and discrimination by law enforcement authorities/police **Outcome of the project:** The study findings would help understand the outcome against the key priority areas within Pehchan, where the program has been working for last four and half years. Further, the study findings are also intended to help identify successes, challenges and gaps within the program and provide further recommendations for program and policy changes. **Research Design:** Quantitative **Sampling Size:** Total 1682 Structured Interviews (MSM - 1414, Transgender & Hijras - 268)	
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, training of field teams, field data collection, data analysis and presentation of findings	
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*	

Assignment#6.4

Assignment name: Quantitative research for Bank Mitr (BMs) assessment under PMJDY	**Country:** India **Location within country:** Rajasthan, Chhattisgarh, Bihar, Gujarat
Name of Client: Micro Save & MoF	**Address:** S-10, 2nd floor, Green Park Extension, New Delhi-110016, India

Duration of assignment (months): 3 Month **Start date (month/year):** May 2015 **Completion date (month/year):** July 2015	**Total No of staff-months of the assignment:** Research Staff – 3 Field Staff – 20
Approx. value of the contract: USD 38,586.08/-	**Approx. value of the services provided by your firm under the contract:** USD 38,586.08/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Research Manager - Rajan Tyagi
Narrative description of Project: **Overall Objective:** Objective of PMJDY is ensuring access to various financial services like availability of basic savings bank account, access to need based credit, remittances facility, insurance and pension to the excluded sections i.e. weaker sections & low income groups. **Outcome of the project:** Effectiveness of BM as a cadre for enhancing the outreach of financial inclusion services in the rural/ unserved/shadow area and also the effectiveness of Bank Mitr as an alternate banking channel in four states. **Research Design:** Qualitative **Sampling Size:** Total 3080 Structured Interview's (Bank Mitr – 770 and Beneficiary – 2310)	
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, training of field teams, field data collection, data analysis and presentation of findings.	
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*	

Assignment#6.5

Assignment name: End Line Evaluation of "Main Kuch Bhi Kar Sakti Hoon" Proram	**Country:** India **Location within country:** Bihar & MP
Name of Client: Population Foundation of India	**Address:** B-28, Qutub Institutional Area, New Delhi-110016
Duration of assignment (months): 9 Month **Start date (month/year):** January 2015 **Completion date (month/year):** December 2015	**Total No of staff-months of the assignment:** Research Staff – 5 Field Staff – 85
Approx. value of the contract: INR 25,00,000/-	**Approx. value of the services provided by your firm under the contract:** INR 25,00,000/-

Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Research Manager - Parul Sharma
Narrative description of Project: **Overall Objective:** To assess whether the program is able to bring out the desired change in knowledge, attitude and perceptions as well as markers of movement towards behavior change. **Outcome of the project:** Impact of the program in terms of changing the KAP of the target audience **Research Design :** Quantitative and Qualitative **Sampling Size :** 8160 Household Structured Interviews and 20 FGD's	
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, Field Training, Field data collection, Data Analysis, Presentation of Findings and Report in Word format	
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*	

Assignment#6.6

Assignment name: Base Line Evaluation of Entertainment Education Intervention (EEI)	**Country:** India **Location within country:** Bihar & Madhya Pradesh
Name of Client: Population Foundation of India	**Address:** B-28, Qutub Institutional Area, New Delhi-110016
Duration of assignment (months): 6 Month **Start date (month/year):** January 2014 **Completion date (month/year):** June 2014	**Total No of staff-months of the assignment:** Research Staff – 5 Field Staff – 75
Approx. value of the contract: INR 25,00,000/-	**Approx. value of the services provided by your firm under the contract:** INR 25,00,000/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Research Manager - Parul Sharma

Deloitte Touche Tohmatsu India LLP

Narrative description of Project:

Overall Objective: Intervention was designed as a long term TV & Radio serial format with detailed messaging on specific health issues aiming to improve people's behavior towards certain health practices. The objective of the study was to assess whether the program is able to bring out the desired change in kNowledge, attitude and perceptions as well as markers of movement towards behavior change.

Outcome of the project: A baseline survey was conducted for establishing the framework and identifying the measurable indicators which would reflect the changes in the kNowledge, attitude and Practice of the community post exposure to the drama series.

Research Design : Quantitative

Sampling Size : 3600 Structured Interviews

Description of actual services provided by your staff within the assignment:
Designing the tools and instruments, Field Training, Field data collection, Data Analysis and Presentation of Findings

Name of the Firm: Kadence International Private Limited
Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Assignment#6.7

Assignment name: DMPA Midline Survey among Married woman of reproductive age (MWRA)	**Country:** India **Location within country:** Uttar Pradesh, Bihar
Name of Client: Abt Associates	**Address:** 201, 2nd Floor, Aurobindo market, HauzKhas, New Delhi-110016
Duration of assignment (months): 3 Month **Start date (month/year):** April 2016 **Completion date (month/year):** July 2016	**Total No of staff-months of the assignment:** Research Staff – 3 Field Staff – 60
Approx. value of the contract: INR 30,13,520/-	**Approx. value of the services provided by your firm under the contract:** INR 30,13,520/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Project Lead – Rajan Tyagi Researcher – Abhishek Karjee

Narrative description of Project:

Overall Objective: Assessing Current use of Injectable Contraceptives/DMPA by married woman of reproductive age, Reporting current use of modern family planning methods by married woman of reproductive age, Spontaneous awareness of Injectable Contraceptives/DMPA married woman of reproductive age.

Research Design : Quantitative

Deloitte Touche Tohmatsu India LLP

Sampling Size : 57600 Listing of Households and 3600 Semi-Structured household Interviews on CAPI
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, Field Training, Field data collection, Data Analysis, Presentation of Findings and Report in Word format
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*

Assignment#6.8

Assignment name: Urban Sanitation Study	**Country:** India **Location within country:** 10 Cities in all Over India
Name of Client: FICCI on behalf of India Sanitation Coalition	**Address:** 1, Federation House, Tansen Marg, New Delhi
Duration of assignment (months): 4 Month **Start date (month/year):** March 2016 **Completion date (month/year):** June 2016	**Total No of staff-months of the assignment:** Research Staff – 4 Field Staff – 60
Approx. value of the contract: INR 30,98,040/-	**Approx. value of the services provided by your firm under the contract:** INR 30,98,040/-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Project Lead – Priyanka Roy Sr. Researcher – Rajan Tyagi Researcher -- Ankit Makkar
Narrative description of Project: **Overall Objective :** To map the sanitary facilities at major public places in key urban centers and to understand the barriers and challenges faced in maintaining the facilities by those responsible for maintaining them **Outcome of the project:** Are their sanitary facilities at the major public place and are they adequate for the footfall in that area. Also what are the major challenges faced by the maintenance staff in maintaining them. **Research Design :** Quantitative and Qualitative	

Sampling Size : 4200 Audits, 700 Semi-Structured Interviews and 38 IDIs
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, Field Training, Field data collection, Data Analysis, Presentation of Findings and Report in Word format
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*

Assignment#6.9

Assignment name: Baseline Evaluation of the Basic Amenities Available in Transport Nagar of Jaipur & Jodhpur	**Country:** India **Location within country:** Rajasthan
Name of Client: Practical Action &Apollo Tyres Foundation	**Address:** 7 Institutional area, Sector 32, Gurgaon, Haryana–122001
Duration of assignment (months): 3 Month **Start date (month/year):** April 2015 **Completion date (month/year):** June 2015	**Total No of staff-months of the assignment:** Research Staff – 3 Field Staff – 20
Approx. value of the contract: INR 6,75,000	**Approx. value of the services provided by your firm under the contract:** INR 6,75,000
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Researcher -- Sourabh Nailwal
Narrative description of Project: **Overall Objective:** the proposed research was to obtain baseline measures regarding basic amenities available in Transport Nagar Jaipur & Jodhpur. **Outcome of the project:** The need for sanitation is emerging quite strongly amongst all the respondents repeatedly. Therefore, it is apt to consider this as the first priority. This should be planned in the following. **Research Design:** Quantitative + Qualitative **Sampling Size:** 380 Structured Interviews, 14 FGD's and 12 IDI's	
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, Field data collection, Data Analysis and Presentation of Findings, Preparation of Map for Transport Nagars and Jaipur Industrial Area, Report Writing	

Name of the Firm: Kadence International Private Limited
Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Assignment#6.10

Assignment name: Baseline Survey in the Districts of Malda and Murshidabad in West Bengal	**Country:** India **Location within country:** West Bengal
Name of Client: UNICEF/Knowledge Links	**Address:** KA-54, First Floor, Kaushambi, Gaziabad-201010
Duration of assignment (months): 6 Month **Start date (month/year):** March 2015 **Completion date (month/year):** August 2015	**Total No of staff-months of the assignment:** Research Staff – 3 Field Staff – 26
Approx. value of the contract: INR 7,43,824//-	**Approx. value of the services provided by your firm under the contract:** INR 7,43,824//-
Name of associated Consultants, if any: NA	**No of professional staff-months provided by associated Consultants:** NA
	Name of senior professional staff of your firm involved and functions performed: Project Guide– Soumya Sinha Team Lead – Priyanka Roy Research Manager -Rajan Tyagi
Narrative description of Project: **Overall Objective:** KNOWLEDGE LINKS, INDIA has been engaged by UNICEF to support the district administration of Malda, West Bengal to implement the Swachh Bharat Mission- Gramin, using alternative approaches such as the Community Led Total Sanitation (CLTS). Therefore in order to measure the changes in the sanitation and hygiene status of people, a base line survey was conducted, keeping Malda as an intervention district and Murshidabad as a control district. **Outcome of the project:** The kNowledge, attitude and practices towards sanitation, hygiene and health issues pertaining in the villages in the intervention and control districts **Research Design:** Quantitative and Qualitative **Sampling Size:** 1200 Structured interviews and 30 IDI's	
Description of actual services provided by your staff within the assignment: Designing the tools and instruments, Field data collection, Data Analysis, Presentation of Findings and Topline Findings Report in Word format	
Name of the Firm: Kadence International Private Limited *Kadence International Private Limited is a certified company with ISO 9001 and ISO 20252 and follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.*	

Appendix 7: Experience of the Applicant in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation

Category No.	Criteria	Number and Name of Cities
	Experience of the Applicant in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. (Substantially Completed only) (**Deloitte Touche Tohmatsu India LLP**)	Number of Cities: 55 Names of Cities: Indore, Jabalpur, Bhopal, Ujjain, Raipur, Bilaspur, Rajkot, Ahmedabad, Surat, Vadodara, Dadra& Nagar Haveli, Daman, Diu, Silvassa, Jaipur, Ajmer, Mumbai, Pune, Bhubaneshwar, Rourkela, Sambalpur, Behrampur, Cuttack, Puri, Balasore, Baripada, Chandigarh, Dehradun, Bhadrak, Mehsana, Kadi, Budhni, Gurgaon, Faridabad, Sonipat, Ghaziabad, Meerut, Mathura, Noida, Greater Noida, Vijayawada, Jaipur, Nagpur, Ludhiana, Surat, Baruipur, Budge-Budge, Dum-Dum, Delhi, Vidisha, Shajapur, Porbander, Himmatnagar, Unjha,
	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Insight Development Consulting Private Limited)**	Number of Cities: Names of Cities:
	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Stesalit Systems Limited)**	Number of Cities: 11 Names of Cities: Sarni, Hoshangabad, Korba, Raipur, Namchi, Jorathang, Singtham, Rangpo,Chennai, Kolkata, Banagalore
	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation.	Number of Cities: 10 Names of Cities: Delhi, Jaipur, Ranchi, Raipur, Ludhiyana, Kolkata, Ahemdabad, Guwahati, Bangalore, Mumbai

	(Substantially Completed only) (**Kadence International Pvt Ltd)**	

Kadence International follows a standardized protocol to deliver best quality data to clients especially during recruitment of data collectors, interviewers and supervisors, use of tools for quality checks during data collection, monitoring, analysis and uploading.

Appendix 7A: Assignment Details of the Applicant

Assignment#7.1:

Assignment Name: Appraisal of Urban Reforms prescribed under Jawaharlal Nehru National Urban Renewal Mission	**Value of the contract (Rs.):** Approx. RS. 3.75 Crore

Country: India **Name of City/ Cities:** Madhya Pradesh, Chhattisgarh, Gujarat, Dadra, Nagar Haveli, Daman & Diu	**Duration of assignment (months):** 45 months
Name of Client: Ministry of Urban Development, Government of India	**Total No. of staff-months of the assignment**: 160
Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110 011	**Approx. value of the services provided by your firm under the contract (in Rs.):** Approx. Rs. 3.25 Crore
Start date (month/year): June 2010 **Completion date (month/year):**March 2014	**No. of professional staff-months provided by associated Consultants:** 20

Narrative description of Project:

The Government of India expects all participating States to implement a set of 23 reforms at the level of the State and the urban local bodies, upon fulfilment of which parts of Central assistance are to be made available for infrastructure projects.

The Government of India seeks to ascertain if the reforms have been implemented in letter and spirit in the States and urban local bodies and if not, reasons thereof. Deloitte has been mandated as the reforms appraisal agency to **monitor and evaluate the reform implementation** for a set of three States and two Union Territories comprising the States of Madhya Pradesh, Chhattisgarh, Gujarat and the Union Territories of Dadra, Nagar Haveli, Daman & Diu.

Description of actual services provided by your staff within the assignment:

- Creation of roadmaps for each of the urban reforms, ranging from realization of what the reform is meant to do to quantifying its impacts, both beneficial and otherwise.
- **Monitor and evaluate** the level of reforms including capacities of ULBs to implement/ sustain the reform process, impediments in reform implementation/ completion and penetration of reform impact/ results in the state and ULBs. The **reform assessment** included assessing the quality of municipal financial management, **institutional reforms**, human resource management, various aspects of **urban service delivery,** environment conservation & urban planning done by ULBs with specific focus on **providing basic services to urban poor.**
- **Assessment of impact of interventions** aimed at improving service delivery improvement in terms of e-governance initiatives related to automated building plan approval system, GIS-based property tax system, property tax / user charge payment, grievance redress, birth & death certificate registration etc. and water supply against SLB indicators (NRW, level of metering, tariff levels etc.).
- **Identify and evaluate** Institutional, procedural and capacity-based bottlenecks that cause exceptions.

Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment#7.2:

Assignment name: Providing management support and technical assistance to Change Management Unit (CMU) KUSP to facilitate,	Approx. value of the contract : $ 1.4 Million, INR 17 Crores

coordinate, administer and execute Rajiv Awas Yojana (RAY) in West Bengal	
Country: India Location within country: Kolkata, West Bengal	Duration of assignment (months):
Name of Client: DFID/ Government of West Bengal	Total No. of staff-months of the assignment:
Address:	Value of Contract per city (in current INR):
Start date (month/year): September, 2012 Completion date (month/year): June, 2015	

Description of Project: Government of India through the 12th Five Year Plan (2012-17) has set a goal of phased reduction of the headcount ratio through directly targeted urban poverty alleviation programmes. The mission-mode Rajiv Awas Yojana (RAY) being one of such programmes aimed at urban poverty alleviation was launched by Government of India, encouraging states to focus on the development and upgradation of slums with basic amenities and affordable housing with a whole-city whole slum approach.

Given this background, DFID, which is working to reach the Millennium Development Goals (MDGs) agreed by the United Nations (UN) to halve world poverty by 2015, proposes to set up a Project Management Unit (PMU) within the Change Management Unit of Kolkata Urban Service for Poor (KUSP), to assist the Government of West Bengal in implementing RAY towards achievement of slum free state and city.

Given this background, Deloitte in association with ASCI, JLL and SAFHI has been mandated to set up the PMU for providing the technical and management support to the CMU KUSP, for implementing RAY objectives in West Bengal.

Description of actual services provided by your staff within the assignment:

The key activities being undertaken include the following:

- Understanding project objectives and key stakeholders issues and expectation
- Analysing and documenting the progress made under urban poverty related ongoing /completed programmes including JNNURM pro-poor reforms like BSUP; IHSDP etc.
- Preparation of detailed guideline on GIS and MIS data ratification and rough mapping and subsequently, providing orientation training to ULBs on guideline for validation of GIS-MIS
- Preparation of Slum Free City Plan of Action for Baruipur city. This task involved accomplishing following key activities:
    - Organising stakeholders’ workshop at Baruipur for sensitization
    - Undertaking i) Soicio-economic data validation and ii) Slum Boundary demarcation and GIS data validation for all the 64 slums of Baruipur, in association with third party expert agencies
    - Integration of spatial data (GIS Map Layer) and socio-economic information for slum households to develop a GIS enabled slum MIS
    - Categorization of slums based on tenability analysis
    - Prioritization of slums based on infrastructure deficiency & vulnerability
    - Detailed analysis of prioritized slums
    - Formulation of development options for all slums etc.
    - Formulation of credit plan and requisite institutional framework for implementation
- Preparation of draft bill on property rights to slum dwellers and assisting GoWB in framing their scheme on providing long term leasehold rights to urban poor of the state
- Providing hand-holding MIS support to 48 ULBs through appointment of an agency
- Conducting state level and ULB level orientation training programme on RAY and SFCPoA preparatory activity requirements to 48 ULBs
- Developing project outputs, milestones, timelines, appropriate systems, procedures and implementation matrix and the logical framework
- Prepared a procurement manual for selection of services under Technical Assistance component

- Facilitating tendering process for selection of agencies for preparation of SFCPoA and setting up city level technical cell.
- Preparation of community mobilization strategy/framework for mobilizing slum based CBOs/NGOs and community volunteers to undertake slum surveys and participate in policy formulation and implementation of the same
- Formulating strategy for prevention of formation of new slums and formulation of future housing supply plan
- Preparation of PPP guidelines in affordable housing/slum redevelopment
- Preparation of FAQs on RAY in English and vernacular

Developing knowledge management web portal (E-room) which is repository of all the reports and material having access to both the client and project management team.

Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment#7.3:

Assignment Name: Scoping Study to Assess Opportunities to Improve Performance of Water Supply and Sanitation in the Seven Metro Centers in the National Capital Region (NCR)

Value of the contract (Rs.): Rs. 44 Lakhs

Country: India **Name of City/ Cities:** National Capital Region	**Duration of assignment (months):** 6
Name of Client: The World Bank/ National Capital Region Planning Board	**Total No. of staff-months of the assignment**: 10
Address: 70, Lodhi Estate, New Delhi - 110003	**Approx. value of the services provided by your firm under the contract (in Rs.):** Rs. 43 Lakhs
Start date (month/year): October 2012 **Completion date (month/year):** February 2013	**No. of professional staff-months provided by associated Consultants:** 1

Narrative description of Project:

One of the key focus areas of the World Bank Group in India has been to support the Central and State governments in resolving the identified issues in water supply and sanitation. World bank has mandated a scoping study to assess the opportunities available in improving the service delivery performance of water supply and sanitation of select metro centres in the National capital Region (NCR) of India. Deloitte has been mandated to i) assess the current scenario, ii) identify existing & expected performance shortfalls, iii) identify potential options to improve quality and sustainability of service delivery, iv) identify the possible roles and responsibilities of NCRPB, the states and cities and v) prepare outline program for WSS investment and reforms over the next 10 year period.

Description of actual services provided by your staff within the assignment:

The key activities undertaken includes the following:

- Review and assess the current water supply and sanitation performance levels in the NCR to identify the existing shortfalls in performance and sustainability with reference to service level benchmarking developed by MoUD, GoI
- Identify the issues/ constraints in service level deficiencies in terms of the existing policy/ regulatory framework, the institutional mechanism, the existing technology and available means of financing
- Assess the various options available in terms of (i) the required policy and institutional framework including the linkages between various stakeholders including the state government, the urban local bodies, parastatals, private sector and the users (ii) cost recovery of capex and operations & maintenance through tariff and (iii) optimum technology and identify select interventions required in order to ensure improved service delivery performance and sustainability across the region
- Identify solutions in terms of enhancing facilities / new facilities at local and regional level over a 10 year perspective including suggestions on enabling policies for implementation
- Develop an action plan along with assessment of the investments required along with associated timelines for the roll-out of the identified initiatives, over the next 10 years
- Examine various options for financing including involvement of private sector partners through innovative PPPs

Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment#7.4:

Assignment Name: Providing Technical Assistance Support to Implementation of Odisha Urban Infrastructure Programme (OSUIP)	**Value of the contract (in current INR):** Above INR 43 Crores
Country: India **Location:** Nine cities of Odisha	**Duration of assignment (months):** 48 (ongoing)
Name of Client: Housing & Urban Development Department, Government of Odisha (GoO) & DFID, UK	**Total No. of staff-months of the assignment**: 400
Address: Department for International Development, British High Commission, Shantipath,, Chanakyapuri, New Delhi 110021, India; Government of Odisha	**Approx. value of the services provided by your firm under the contract (in INR):** Above INR 20 Crores
Start date (month/year): Jan 2015 **Completion date (month/year):** Ongoing	Value of Contract per city (in current INR):
Narrative description of Project: Typical vicious circle of low service levels were being witnessed in the Odisha urban sector resulting in low willingness to pay, low tariffs and cost recovery which in turn result in low levels of investment leading to poor service levels. Housing & Urban Development Department (HUDD), requested DFID for providing Technical Assistance (TA) support in **developing, implementing and monitoring** capacity building strategy to encourage private sector engagement and enhance the creditworthiness of ULBs and parastatal agencies. It aims to develop implementing strategy for improving urban administration, and building **institutional & regulatory** capacity.	
Description of actual services provided by your staff within the assignment: As part of this Project, technical assistance has been provided in identification and implementation of necessary policy, legal and regulatory changes at the State/City level to promote municipal resource mobilisation and implementation of key urban sector reforms (including AMRUT). Some of the key legislations, policies/regulations supported under TA include:	

- **Baseline survey of the water supply & santiation service levels in nine AMRUT cities** viz., Bhubaneswar, Rourkela, Brahmapur, Cuttack, Baripada, Bhadrak, Puri & Balasore.
- **Establishment of Municipal Cadre**: Facilitate establishment of dedicated cadres for municipal administration through the enactment of Odisha Municipal Services Act, 2015, drafting of relevant rules for eight different services.
- **Streamlining Property Tax Administration**: Amendments to Odisha Municipal Corporations Act and Odisha Municipal Act, 1950 for introducing Unit Area Method of Property Taxation, drafting of Property Tax Rules 2016**. Review and assessment of Municipal Revenues in all the nine AMRUT cities of Odisha.**
- **Regulations for Revenue Mobilisation**: Advertisement Regulations, Parking Regulations and Trade License Regulations with a purpose of ensuring the comprehensive coverage, self-regulation and fee escalation to increase revenue collection.
- **Internship Guidelines, 2016**: Scheme for engagement of interns from graduate and post graduate courses in ULBs and parastatals from April 1, 2016.
- **Septage Management Rules**: Includes procedure to build, operate, manage, desludge, transport, treat and dispose waste originating from the septic tanks as per the National Building Code, Bureau of Indian Standards and Code of practices for installation of septic tanks. Rules provide for registration system of septage transport vehicles and formation of City Septage Management Committee to ensure proper enforcement.
- **Planning and Building Standards Rules:** Drafting of common building rules for Planning Authorities viz., Regional Improvement Trusts and Special Planning Authorities in Odisha under Odisha Town Planning & Improvement Trust (OTP&IT) Act, to facilitate planned development
- **Water works rules**: Amendments to the existing rules to facilitate revision of water tariff
- **Support implementation of state urban water supply policy**, aimed at enhancing coverage, treated water quality, reducing NRW, etc.
- Technical support for prioritisation of urban basic services and infrastructure projects relating to water supply, sewerage, urban transport, etc.
- Mission support for Revenue Enhancement & Mobilisation Plan (REMP) indicating areas of tax and non-tax revenues.

Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment#7.5:

Assignment Name: Identification and Evaluation of Options for Implementation of the National Urban Sanitation Policy (NUSP) at the State Level

Value of the contract (Rs.): Rs. 66 Lakhs

Country: India **Name of City/ Cities:** New Delhi	**Duration of assignment (months):** 6
Name of Client: The World Bank	**Total No. of staff-months of the assignment**: 30
Address: The World Bank 75, Lodhi Estate, New Delhi	**Approx. value of the services provided by your firm under the contract (in Rs.): Rs.** 61 Lakhs
Start date (month/year): Aug 2012 **Completion date (month/year):** Feb 2013	**No. of professional staff-months provided by associated Consultants: N.A**

Narrative description of Project:

The overall objective of this assignment is to assist States in identifying and evaluating options for implementation of the National Urban Sanitation Policy (NUSP) at the State level and inform the

Ministry of Urban Development (MoUD) of the role it might play in supporting the States to achieve NUSP objectives.

To this effect the specific objectives are three fold:

- to review progress and implementation challenges of NUSP in two States and assess what they would need in terms of support to make things happen as per NUSP; This includes in-depth analysis of 3 sets of cities in each state
- identify options for these states to move forward to deliver on NUSP
- list lessons can be drawn by MoUD to help states and cities to implement NUSP

The World Bank mandated Deloitte to assist the two states - Madhya Pradesh and Andhra Pradesh - in identifying and evaluating options for implementation of the National Urban Sanitation Policy (NUSP) at the State level.

Description of actual services provided by your staff within the assignment:

As part of the engagement Deloitte provided following services to The World Bank:

Phase I – Diagnostic review of delivery of urban sanitation

- Policy assessment – Assessment of Policy and program at national and state levels related to sanitation sector that are meant support the achievement of NUSP goals (e.g. JNNURM, UIDSSMT, ILCS, SWM policy, etc.).
- City-specific analysis – Carrying out consultations in each of the representative ULBs to get feed-back on the NUSP implementation options. In-depth assessment of the issues, challenges and gaps in the sector to meet the status of total sanitation as envisaged in NUSP covering the entire urban sanitation chain along with drainage, wastewater and solid waste management services. The city specific case studies will cover the technical, institutional and financial analyses and highlight the gaps and areas of improvements needed.
- Organise state level workshop: Workshop at state level to share findings of the diagnostic study

Phase II – Identification and evaluation of NUSP implementation approaches at states and cities

- Assessment of range of technical, institutional, financial, capacity and knowledge support options based on several scenarios based on interactions / stakeholder consultations / workshop in the two states.

Name of the Firm: Deloitte Touche Tohmatsu India LLP

Assignment#7.6:

Assignment Name: Technical Assistance for Implementation of Monitoring and Evaluation Framework in Urban Local Bodies by Andhra Pradesh Urban Services for the Poor (APUSP)	**Value of the contract (in current INR):** Above INR 0.64 Crore
Country: India **Location: Andhra Pradesh**	**Duration of assignment (months):** 24
Name of Client: Andhra Pradesh Urban Services for the poor	**Total No. of staff-months of the assignment**: 40
Address: 3rd Floor, E-in-C (PH) Bldgs, AC Guards, Hyderabad. Andhra Pradesh	**Approx. value of the services provided by your firm under the contract (in INR):** Above INR 0.64 Crore
In case of consortium, whether Lead or associate: Lead Member	**Name of associated Consultant, if any:** None

Start date (month/year): April 2007 **Completion date (month/year):** April 2009	**No. of professional staff-months provided by your firm:** 40
Narrative description of Project: Implementation of M&E framework for APUSP to ensure maximum possible alignment with the anticipated monitoring and evaluation frameworks for Andhra Pradesh Urban reforms and Municipal Services Project. This helped in **preventing redundancy and proliferation of M&E systems and procedures** at ULB and State level.	
Description of actual services provided by your staff within the assignment: Key activities performed by Deloitte included: Part One : Design of M& E system, **Finalization of indicators**, data sources and development of software • Examination of identified indicators and specification of selected indicators • Analysis of existing sources of unitary data and the availability, veracity and integrity of such data as part of the **M&E system** • Mapping of data to indicators and design of aggregation procedures and conversion formulae • Design and development of software for data aggregation/analysis and generation of comparative performance assessment reports • **State level Workshop** to finalise the performance monitoring indicators and sources of data Part Two : Generation of MIS • Design and piloting customer perception/report card survey instruments for collection of qualitative information and geographic/social disaggregation. • Support for construction of baseline information on project towns of APUSP. • Identification of existing baseline information. • Review of available baseline data and gap identification • Identification of potential sources for baseline data and preparation of action plan. Part Three : Training and Capacity Building • Preparation of training materials (including training on M&E software) • Rollout training programs at State, Regional & ULB level covering about 400 users at various levels. Part Four : Data analysis and generation of reports • Generation and review of reports generated by M&E software. • Development of ***benchmarking model for ULB performance*** • Assistance to CDMA in ***comparative benchmarking of ULB performance***. Part Five: Capacity building of APUSP team involved in ***monitoring project progress*** A training program each on the ***M&E system*** and software to the APUSP team at the APUSP office.	
Name of the Firm: Deloitte Touche Tohmatsu India LLP	

Assignment#7.7:

Assignment Name: Mid-term and End-line Assessment as Part of Implementation of Asian Development bank (ADB) Assisted Investment Program Performance & Monitoring System Consultants (IPPMS) of Rajasthan Urban Sector Development Investment Program (RUSDIP)	**Approx. Value of Services:** INR 60,00,000 /-
Country: Rajasthan, India **Name of City/ Cities:** Alwar, Baran-Chhabra, Barmer, Bharatpur, Bundi, Chittorgarh, Jasialmer, Jhalawar, Karauli, Nagaur, Rajasamand, Sawai-Madhopur, Sikar, and Dholpur	**Duration of assignment:** 10 months

Name of Client: ICF Consulting Services India Private Limited	**Total No of staff-months of the assignment:** N.A
Address: Ashoka Estate, 24 New Barakhamba Road, 302-307, Third Floor, Connaught Lane, New Delhi, Delhi 110001	**Value of the contract per city:** INR 4,00,000
Start Date (Month/Year): September 2016 **Completion Date (Month/Year):** Ongoing *(Draft Final Report submitted)*	

Narrative Description of Project:
Despite concerted efforts by the National and State Governments to ensure that the development of new infrastructure in the larger cities of historical importance would remain reasonably commensurate with population growth, the accelerated growth of urban areas has far outpaced the ability of the state and municipal governments to meet local needs. Thus, infrastructure services—particularly in the areas of potable water supplies, waste water management, drainage and solid waste, Road improvement, Slum improvement & heritage —have lagged far behind the requirements of large urban cities with their increasing populations and population densities. In an effort to ameliorate problems associated with insufficient infrastructure, and the negative health consequences which ensue from such inadequacies the State of Rajasthan, in collaboration with and with support from the Asian Development Bank, is currently implementing the comprehensive Rajasthan Urban sector Development & Investment Project (RUSDIP), which will help meet critical infrastructure construction and rehabilitation needs in fifteen major urban areas, including- Alwar, Bharatpur, Dholpur, Karauli, SawaiMadhopur, Bundi, Baran-chabra, Jhalawar-Jhalarapatan, Chittourgarh, Rajsamand, Nagaur, Churu, Sikar, Jaiselmer, Barmer.

Though conditions vary from area to area, the State of Rajasthan is, in general, arid and is striving to provide adequate supplies of water to a rapidly growing urban population. Supplies of ground water, which are replaced only sporadically by monsoons, are inconsistent and water shortages recur perennially. Further, augmentation of the water supplies which is planned under the RUSDIP will precipitate a dramatic growth in the quantity of wastewater for which treatment facilities are inadequate.

An important feature of RUSDIP is concurrent Project Performance Monitoring System (PPMS) of various packages as they are planned and implemented. IDCG was commissioned to undertake this task. PPMS will be used as the principal tool to ensure that the work at site of various packages in the Project are performed effectively & timely conceived with specific benefits accruing to the target groups, leading to realization of global objectives of the RUSDIP.

Description of Actual Services Provided By Your Staff:

- Development of research framework and study tools
- Training of field teams
- Data collection and analysis for over *8000 urban households*
- Data interpretation
- Preparing, 15 city reports and one consolidated report for the Mid-term assessment
- Preparing, 15 city reports and one consolidated report for the End-line assessment

Name of the Firm: Insight Development Consulting Group Private Limited

Assignment#7.8:

Assignment Name: Baseline Survey of Project Urban Local Bodies under "Support Program for Urban Reforms" (SPUR)	**Approx. Value of Services:** INR 29,62,500
Country: India	**Duration of assignment:** 12 Months

Name of City/ Cities: Patna, Gaya, Begusarai, Bihar, Sharif, Muzaffarpur, Ara, Darbhanga, Purnia, Katihaar, Munger, Bhagalpur, Gopalganj, Pashchim Champaran, Vaishali, Siwan, Purba Champaran , Saharsa, Rohtas , Sitamari, Kishangunj, Aurangabad, and Sarwan	
Name of Client: DFID	**Total No of staff-months of the Assignment:** N.A.
Address: DFID India, British High Commission, Shantipath, Chankayapuri, New Delhi 110021, India	**Value of the contract per city:** N.A.
Start Date (Month/Year): June 2010 **Completion Date (Month/Year):** June 2011	
Narrative Description of Project: This program, the Support Program for Urban Reforms in Bihar (SPUR), was implemented in 28 towns across the states. The baseline will focus on eliciting appropriate data on the following program aspects: • Urban Governance and Capacity Building • Municipal Finance and Accounting • Municipal Infrastructure and Service Benchmarks • Municipal/ Local Economic Development • Social Development and Livelihood	
Description of actual services provided by your staff within the assignment: Developing overall project monitoring framework • Developing performance indicators across each component and sub component • Study design, sample design, development of data collection instruments and data entry formats • Development of data collection, data entry and data analysis plan; • Data collection management • Quality assurance • Preparation of base line reports including municipal service level bench marking based municipal report card for all *28 towns*	
Name of the Firm: Insight Development Consulting Group Private Limited	

Assignment#7.9:

Assignment name: **Consultancy services for preparation of City sanitation plans for five cities of Chhattisgarh state.**	Value of the contract (in current INR): 23,00,000
Country: India Name of City/ Cities:	Duration of assignment (months): 5 months
Name of Client:**State Urban Development Agency, Raipur, Chhattisgarh**	Total No of staff-months of the assignment:
Address: RDA Building, Bajrang Complex, GE Road, Raipur 492001	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	April 2012 October 2013
Narrative description of Project: The objective of the ***City Sanitation Plan*** would be to determine time-frames and deadlines to achieve the goals mentioned in the National Urban Sanitation Policy and to spell out a detailed roadmap, including the incremental targets for achievement of goals. For example, to achieve the goal of open defecation free (ODF), a detailed plan for extending access will need to be formulated and implemented in a time-bound manner. All such steps will need to be spelt out in and operationalized under the CSPs. While some of the activities in the sanitation plan may be possible to complete with little financial resources e.g. better utilization of existing facilities, improved	

management systems for sewage cleaning, awareness generation; etc. whereas others e.g. reconditioning or laying new sewers, may be more resource-intensive. The CSP will need to be prepared keeping in view what the city can afford and finance. It will be better as far as possible to improve the effectiveness of existing facilities before embarking on expensive new investments. Further, thinking about the whole city, and not just some portions or just some facilities, will be necessary to achieve the goals in a comprehensive and systematic manner.
Description of actual services provided by your staff within the assignment: • Determine time-frames and deadlines to achieve the goals mentioned in the National Urban Sanitation Policy. • Spell out a detailed roadmap, including the incremental targets for achievement of goals. For example, to achieve the goal of open defecation free (ODF) • Prepare plan for better utilization of existing facilities • Prepare improved management systems for sewage cleaning awareness generation on (1) Sanitary Choices and Technical Options and (2) Operation & Maintenance and Service Delivery Systems • Prepare roadmap for reconditioning or laying new sewer lines.
Name of the Firm: Stesalit Systems Limited

Assignment#7.10:

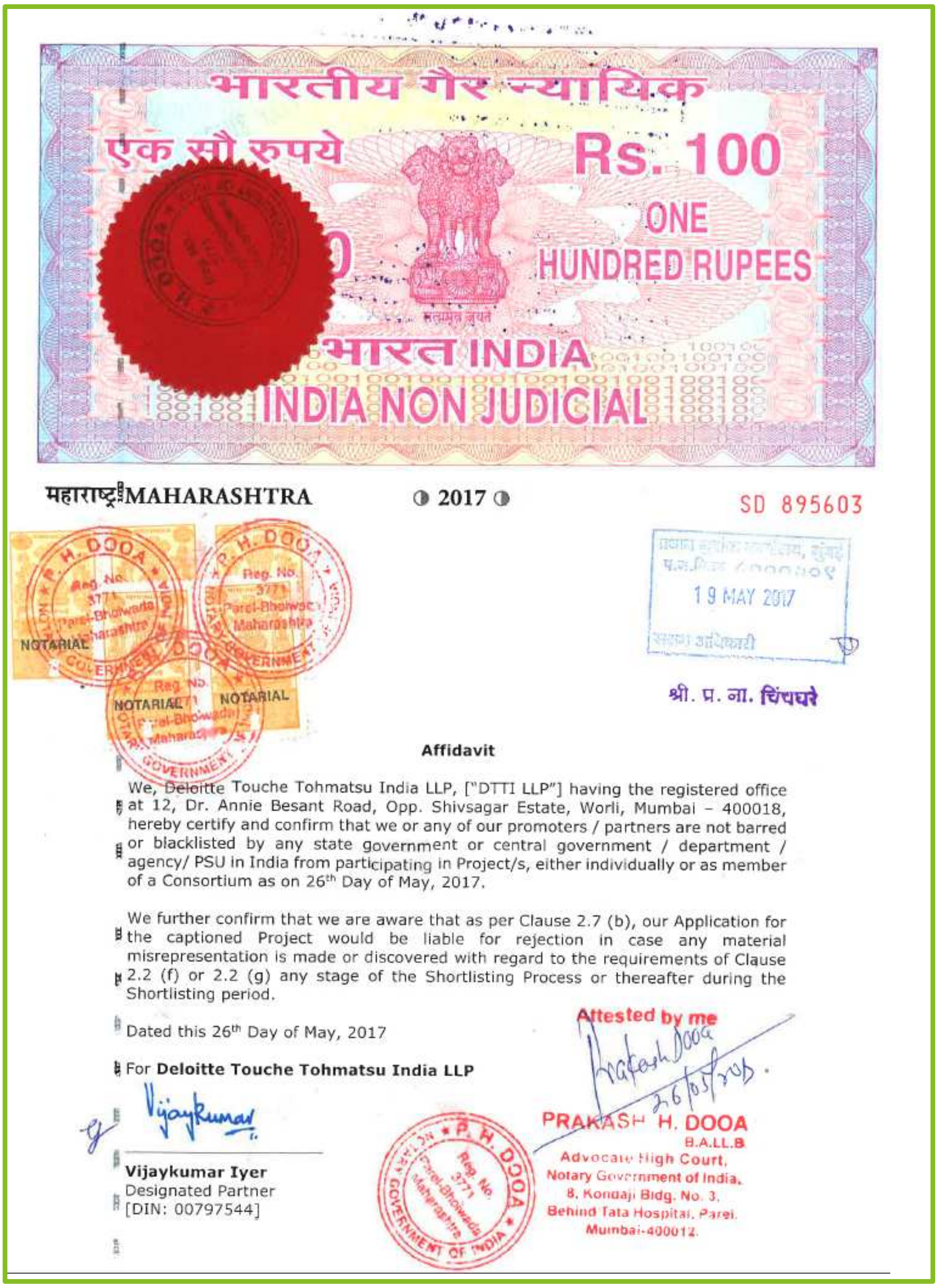
Assignment name: **Preparation of Slum Free City Plan of Action for upgradation /rehabilitation of Slums under Rajiv Awas Yojana Scheme.**	Value of the contract (in current INR): 52,39376 (Korba); 64,83,912 (Raipur); 20,00,000 (Namchi)
Country: India Name of City/ Cities: Korba, Raipur, Namchi, Jorethang, Singtam, Rangpo	Duration of assignment (months): 12 months for each city (Korba, Raipur, Namchi)
Name of Client: 1. Korba Municipal Corporation 2. Raipur Municipal Corporation 3. Urban development & Housing Development Department, Sikkim	Total No of staff-months of the assignment: 25 staff months per each city (Korba, Raipur) 30 staff months (Namchi)
Address: 1. Commissioner Korba Municipal Corporation 2. Nagar Palika Nigam (Raipur) 3. Urban & Housing Dev. Dept., Sikkim	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	June 2011 (Korba); Sep 2012 (Raipur); December 2012 (Korba); Sep 2013 (Raipur)
Narrative description of Project: This involves conducting detailed survey, creation and digitization of base maps, ***creation of central database and integration of socio-economic and geo-spatial data,*** creation of a comprehensive MIS structure to enable report analysis of various demographic, socio-economic and other data, etc. Zonal separation will be done according to the different zones with the help of Web GIS enabled MIS for Slum and this will in turn help us to derive to a Slum Redevelopment Model. Several Models will be derived in this manner and the amalgamation of all of them will help us to achieve a complete Slum-Free City Development Plan.	
Description of actual services provided by your staff within the assignment: Preparation of Slum Free City Plan for upgradation / rehabilitation of Slums under Rajiv Awas Yojana Scheme for Korba Municipal Corporation & Raipur Municipal Corporation. ***The project involved detailed Household and Socio-economic Survey***, creation and digitization of base maps, Creation of central database and integration of socio-economic and geo-spatial data,	

creation of a comprehensive MIS structure to enable report analysis of various demographic, socio-economic and other data.
Name of the Firm: Stesalit Systems Limited

Deloitte Touche Tohmatsu India LLP

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

A. Deloitte Touche Tohmatsu India LLP



भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2017 ◑ SD 895603

19 MAY 2017

श्री. प्र. ना. चिंचघरे

P. H. DOOA Reg. No. 3771

Affidavit

We, Deloitte Touche Tohmatsu India LLP, ["DTTI LLP"] having the registered office at 12, Dr. Annie Besant Road, Opp. Shivsagar Estate, Worli, Mumbai – 400018, hereby certify and confirm that we or any of our promoters / partners are not barred or blacklisted by any state government or central government / department / agency/ PSU in India from participating in Project/s, either individually or as member of a Consortium as on 26th Day of May, 2017.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 26th Day of May, 2017

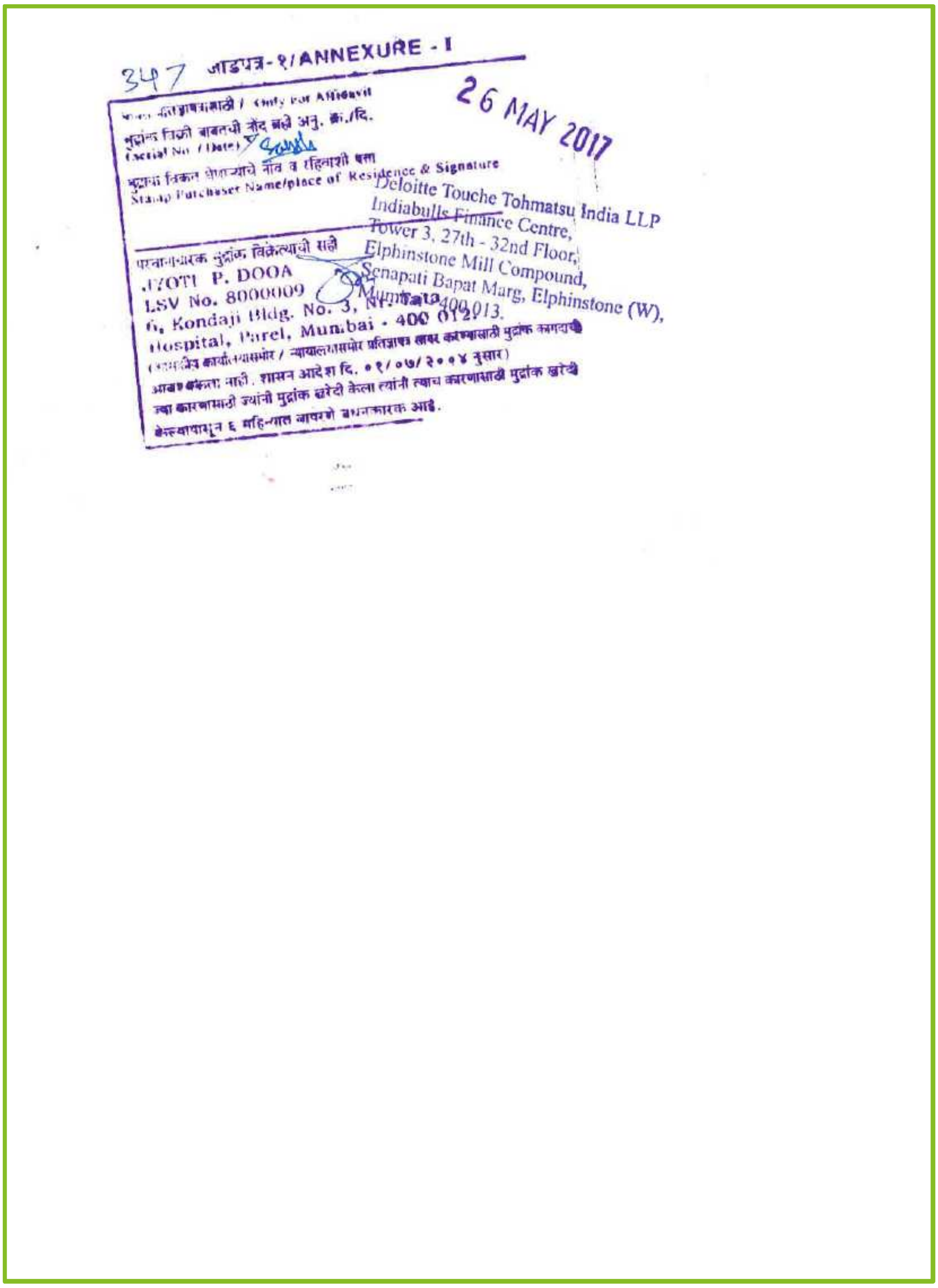
For **Deloitte Touche Tohmatsu India LLP**

Vijaykumar

Vijaykumar Iyer
Designated Partner
[DIN: 00797544]

Attested by me
Prakash Dooa
26/05/2017

PRAKASH H. DOOA
B.A.LL.B
Advocate High Court,
Notary Government of India,
8, Kondaji Bldg. No. 3,
Behind Tata Hospital, Parel,
Mumbai-400012.



347 जोडपत्र-१/ANNEXURE - I

26 MAY 2017

फक्त प्रतिज्ञापत्रासाठी / Only For Affidavit
मुद्रांक विक्री बाबतची नोंद वही अनु. क्र./दि.
(Serial No / Date) 7

मुद्रांक विकत घेणाऱ्याचे नाव व रहिवाशी पत्ता
Stamp Purchaser Name/place of Residence & Signature

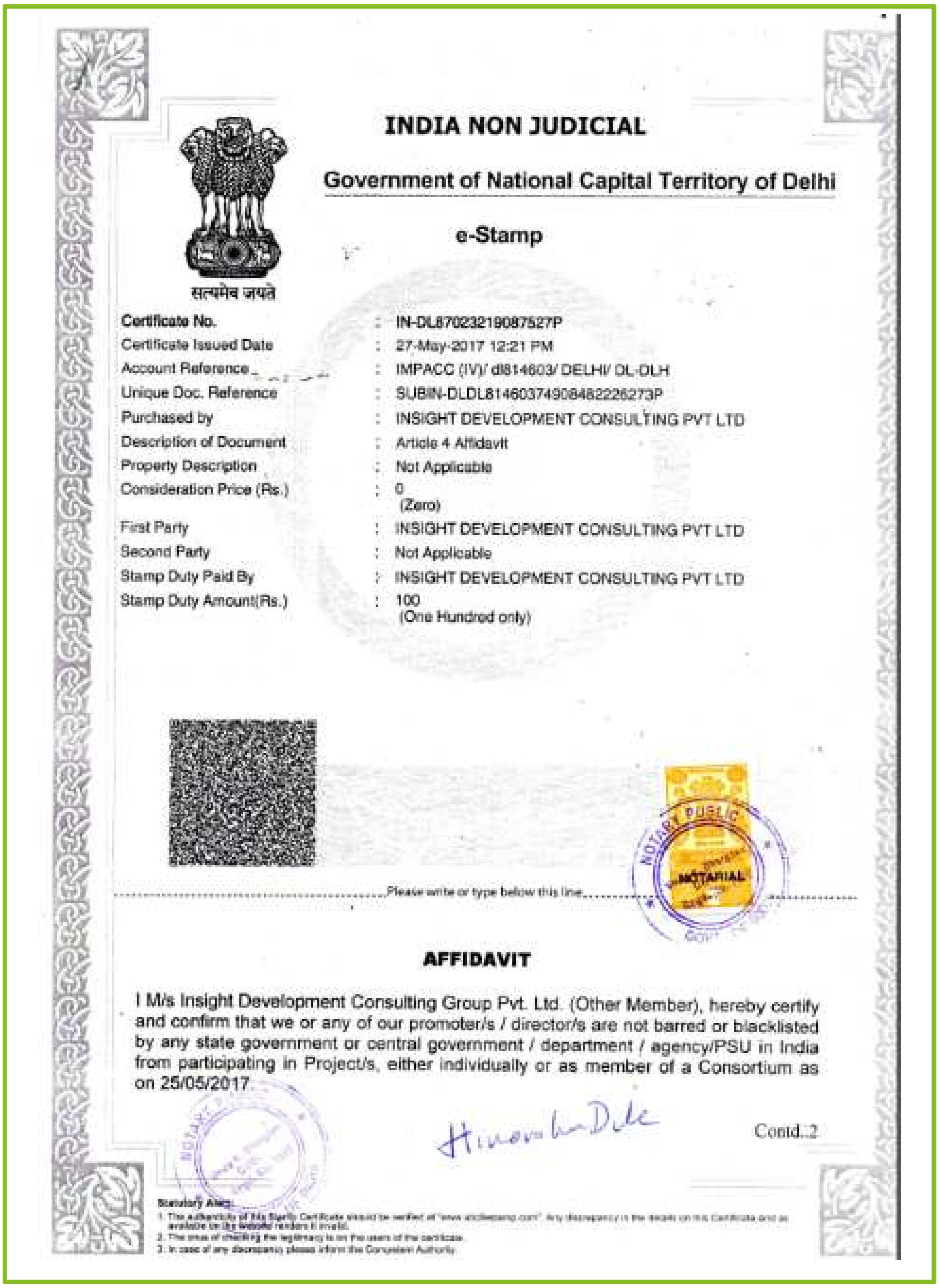
Deloitte Touche Tohmatsu India LLP
Indiabulls Finance Centre,
Tower 3, 27th - 32nd Floor,
Elphinstone Mill Compound,
Senapati Bapat Marg, Elphinstone (W),
Mumbai - 400 013.

परवानाधारक मुद्रांक विक्रेत्याची सही
JYOTI P. DOOA
LSV No. 8000009
6, Kondaji Bldg. No. 3, Nr. Tata
Hospital, Parel, Mumbai - 400 012.

ज्या कारणासाठी ज्यांनी मुद्रांक खरेदी केला त्यांनी त्याच कारणासाठी मुद्रांक खरेदी केल्यापासून ६ महिन्यात वापरणे बंधनकारक आहे.

(शासकीय कार्यालयासमोर / न्यायालयासमोर प्रतिज्ञापत्र सादर करण्यासाठी मुद्रांक कागदाची आवश्यकता नाही. शासन आदेश दि. ०१/०७/२००४ नुसार)

B. Insight Development Consulting Group (IDCG)



INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

सत्यमेव जयते

Certificate No.	: IN-DL87023219087527P
Certificate Issued Date	: 27-May-2017 12:21 PM
Account Reference	: IMPACC (IV)/ dl814603/ DELHI/ DL-DLH
Unique Doc. Reference	: SUBIN-DLDL81460374908482226273P
Purchased by	: INSIGHT DEVELOPMENT CONSULTING PVT LTD
Description of Document	: Article 4 Affidavit
Property Description	: Not Applicable
Consideration Price (Rs.)	: 0 (Zero)
First Party	: INSIGHT DEVELOPMENT CONSULTING PVT LTD
Second Party	: Not Applicable
Stamp Duty Paid By	: INSIGHT DEVELOPMENT CONSULTING PVT LTD
Stamp Duty Amount(Rs.)	: 100 (One Hundred only)

.....................Please write or type below this line.....................

NOTARY PUBLIC

NOTARIAL

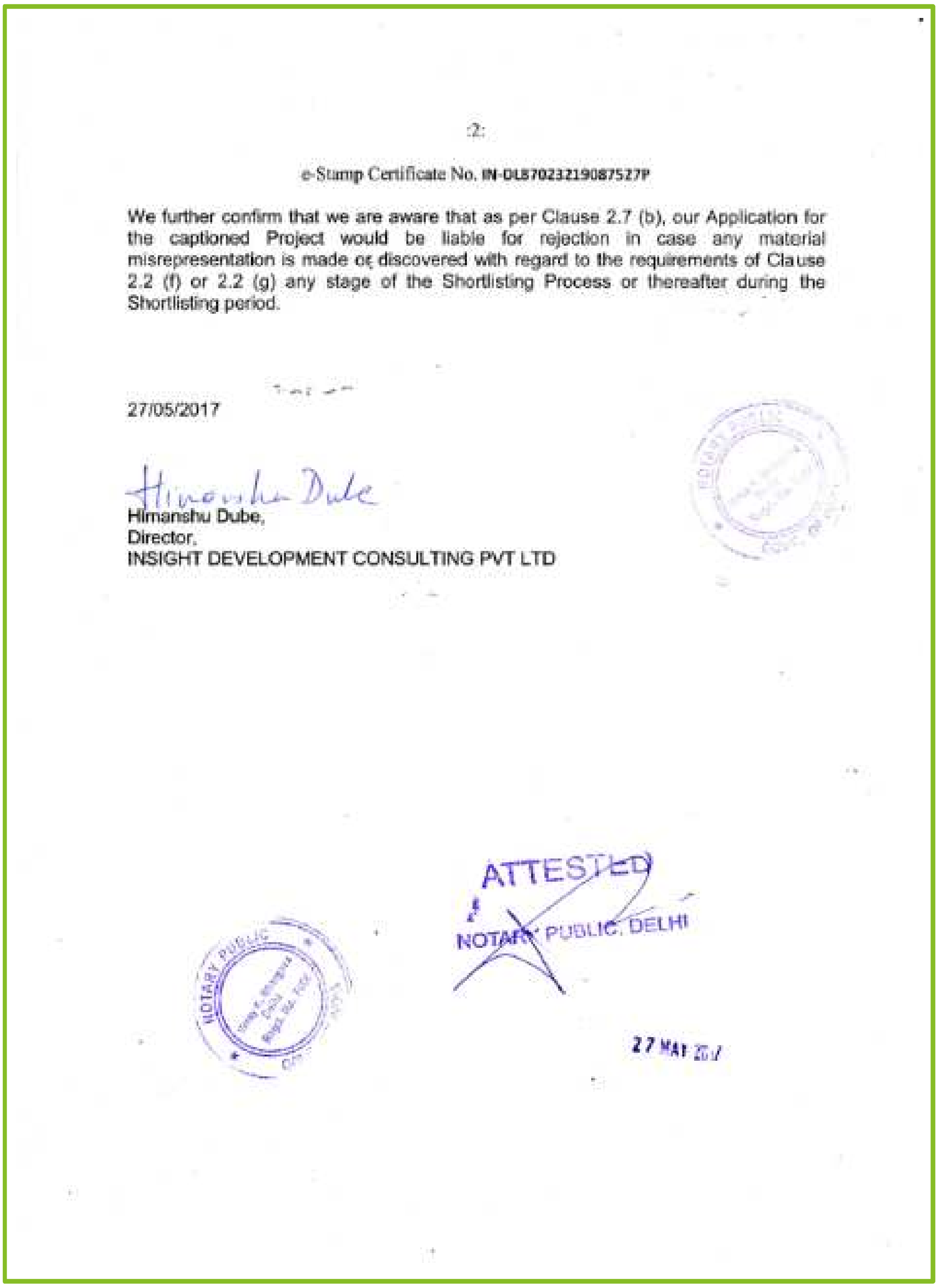
AFFIDAVIT

I M/s Insight Development Consulting Group Pvt. Ltd. (Other Member), hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 25/05/2017.

Contd..2

Statutory Alert:

1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.



:2:

e-Stamp Certificate No. IN-DL87023219087527P

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

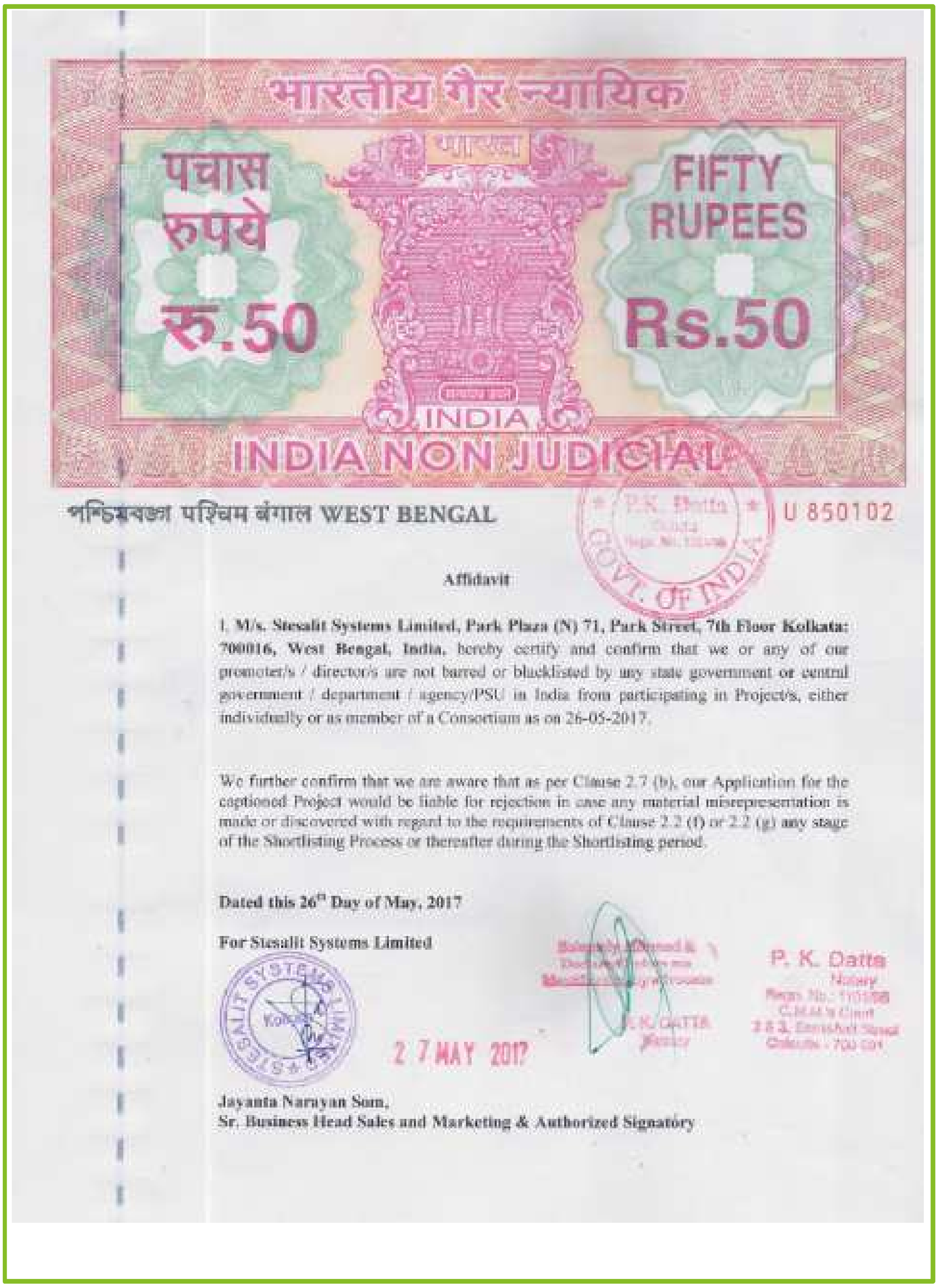
27/05/2017

Himanshu Dube
Himanshu Dube,
Director,
INSIGHT DEVELOPMENT CONSULTING PVT LTD

ATTESTED
NOTARY PUBLIC, DELHI

27 MAY 2017

C. Stesalit Systems Limited



भारतीय गैर न्यायिक

पचास रुपये रु.50

FIFTY RUPEES Rs.50

INDIA

INDIA NON JUDICIAL

পশ্চিমবঙ্গ पश्चिम बंगाल WEST BENGAL

U 850102

Affidavit

I, **M/s. Stesalit Systems Limited, Park Plaza (N) 71, Park Street, 7th Floor Kolkata: 700016, West Bengal, India,** hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 26-05-2017.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 26th Day of May, 2017

For Stesalit Systems Limited

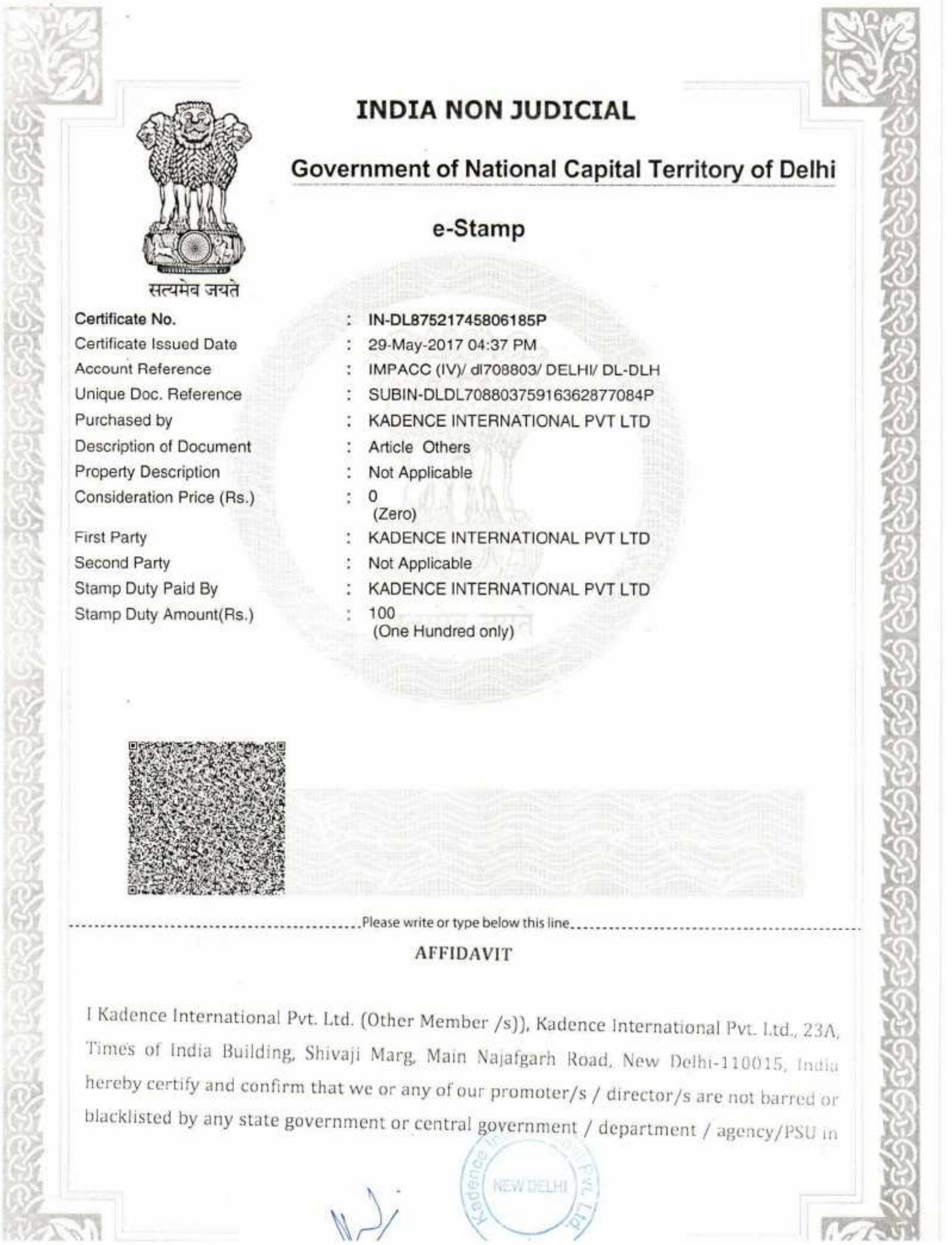
27 MAY 2017

P. K. DATTA
Notary

P. K. Datta
Notary

Jayanta Narayan Som,
Sr. Business Head Sales and Marketing & Authorized Signatory

D. Kadence International Pvt Ltd.



INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

सत्यमेव जयते

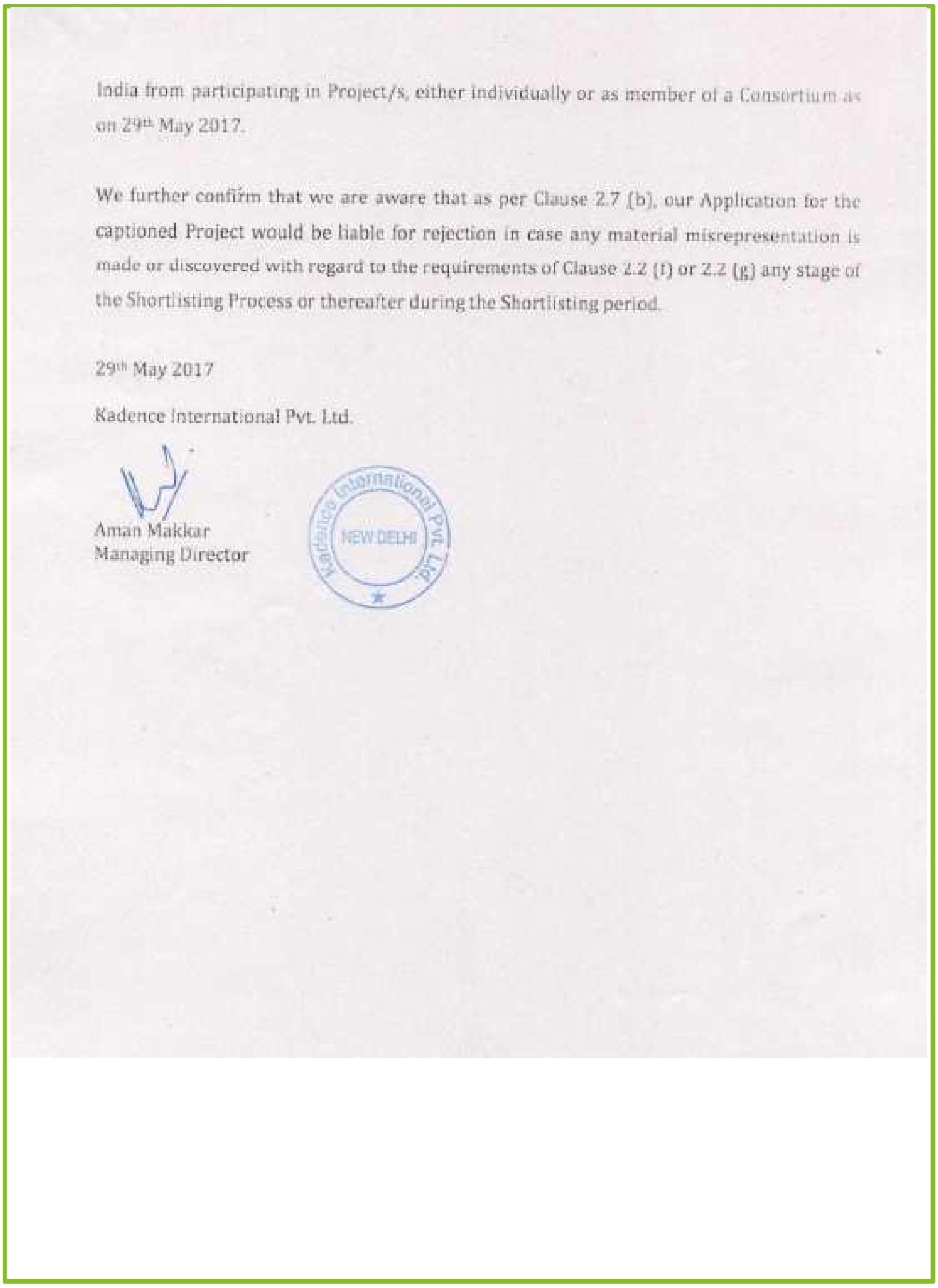
Certificate No.	: IN-DL87521745806185P
Certificate Issued Date	: 29-May-2017 04:37 PM
Account Reference	: IMPACC (IV)/ dl708803/ DELHI/ DL-DLH
Unique Doc. Reference	: SUBIN-DLDL70880375916362877084P
Purchased by	: KADENCE INTERNATIONAL PVT LTD
Description of Document	: Article Others
Property Description	: Not Applicable
Consideration Price (Rs.)	: 0 (Zero)
First Party	: KADENCE INTERNATIONAL PVT LTD
Second Party	: Not Applicable
Stamp Duty Paid By	: KADENCE INTERNATIONAL PVT LTD
Stamp Duty Amount(Rs.)	: 100 (One Hundred only)

Please write or type below this line

AFFIDAVIT

I Kadence International Pvt. Ltd. (Other Member /s)), Kadence International Pvt. Ltd., 23A, Times of India Building, Shivaji Marg, Main Najafgarh Road, New Delhi-110015, India hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in

Kadence International Pvt. Ltd.
NEW DELHI



India from participating in Project/s, either individually or as member of a Consortium as on 29th May 2017.

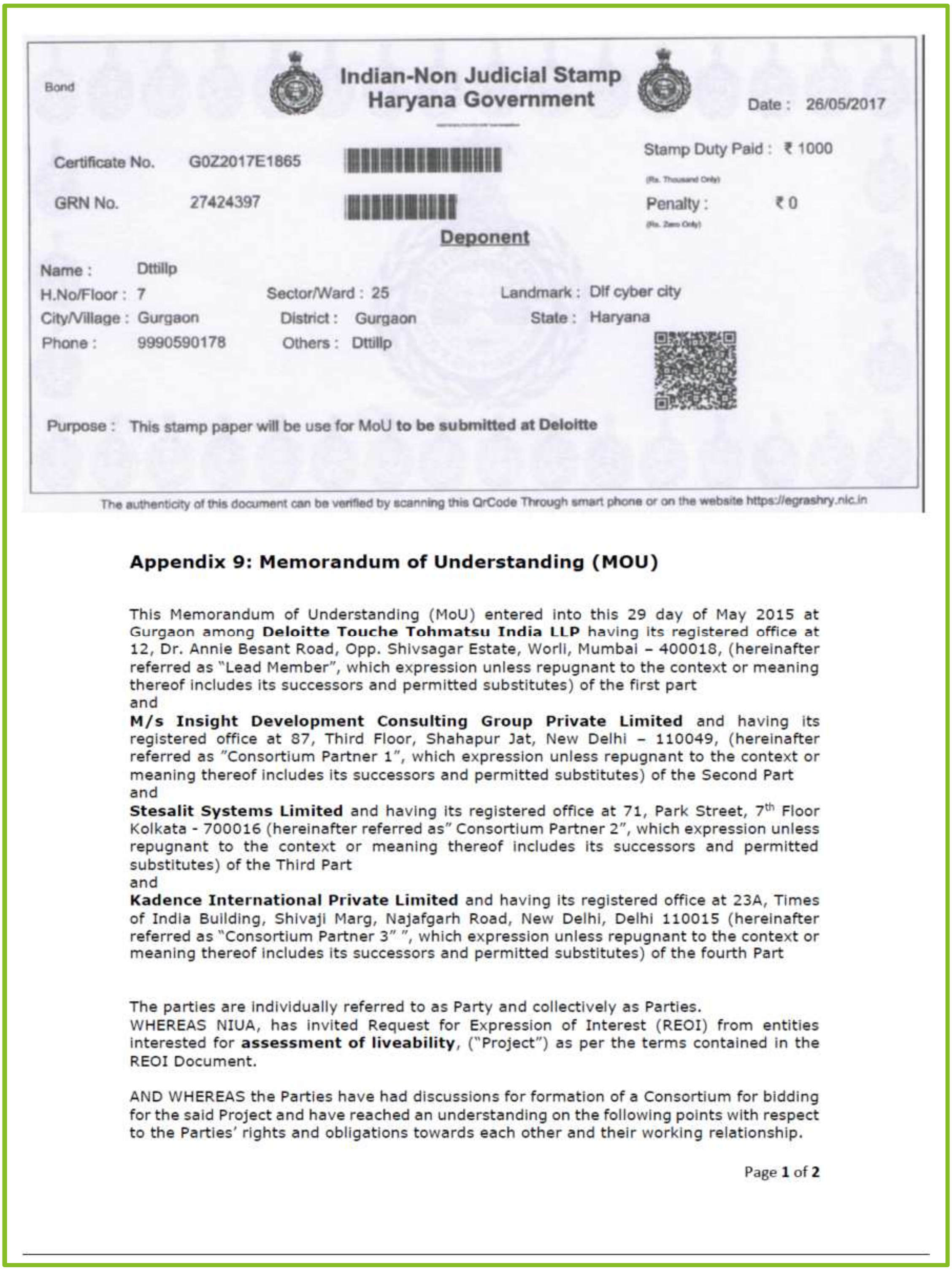
We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

29th May 2017

Kadence International Pvt. Ltd.

Aman Makkar
Managing Director

Appendix 9: Format for Memorandum of Understanding (MOU)



Bond

Indian-Non Judicial Stamp
Haryana Government

Date : 26/05/2017

Certificate No. G0Z2017E1865

GRN No. 27424397

Stamp Duty Paid : ₹ 1000
(Rs. Thousand Only)

Penalty : ₹ 0
(Rs. Zero Only)

Deponent

Name : Dttillp
H.No/Floor : 7
Sector/Ward : 25
Landmark : Dlf cyber city
City/Village : Gurgaon
District : Gurgaon
State : Haryana
Phone : 9990590178
Others : Dttillp

Purpose : This stamp paper will be use for MoU **to be submitted at Deloitte**

The authenticity of this document can be verified by scanning this QrCode Through smart phone or on the website https://egrashry.nic.in

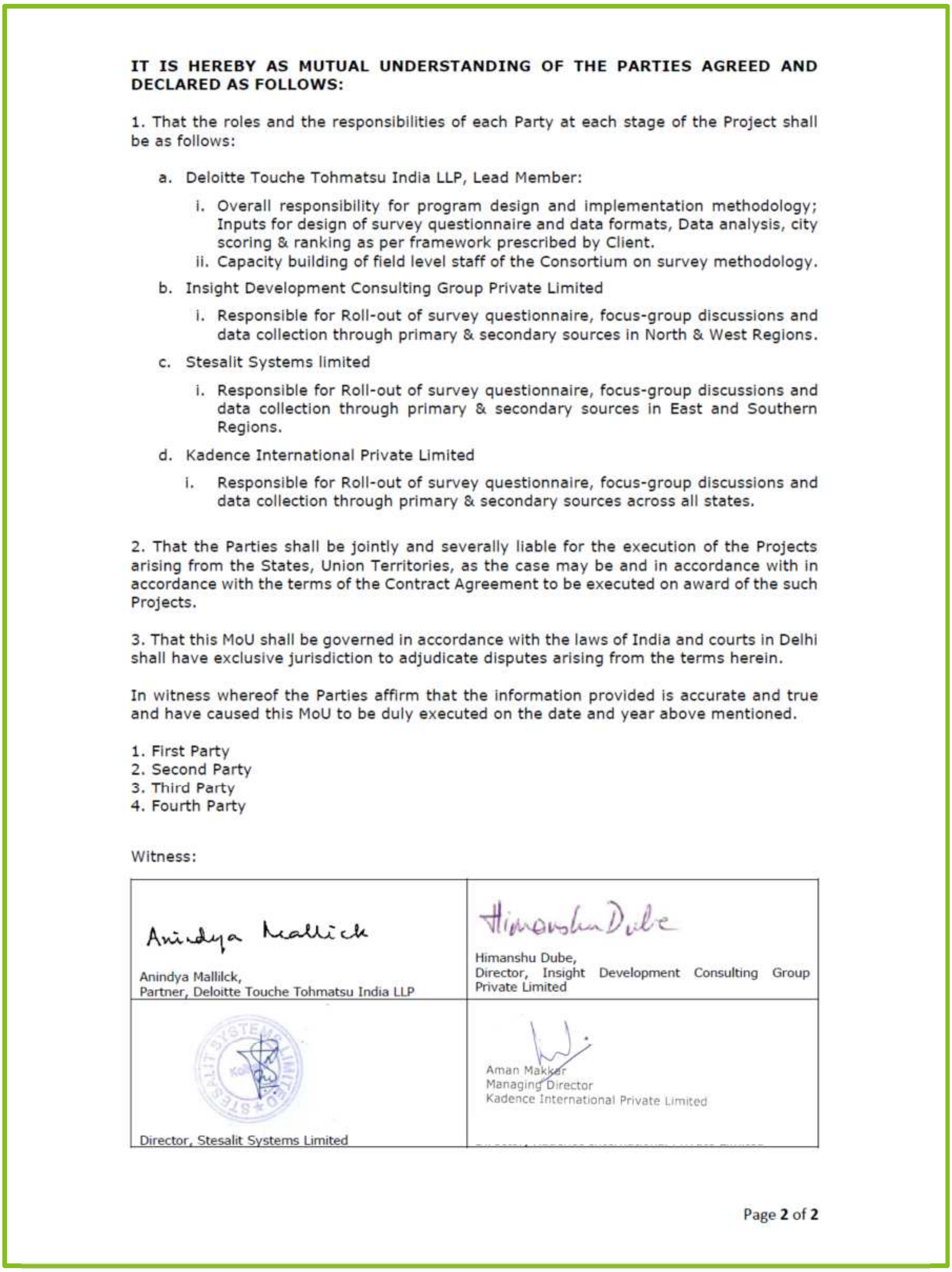
Appendix 9: Memorandum of Understanding (MOU)

This Memorandum of Understanding (MoU) entered into this 29 day of May 2015 at Gurgaon among **Deloitte Touche Tohmatsu India LLP** having its registered office at 12, Dr. Annie Besant Road, Opp. Shivsagar Estate, Worli, Mumbai – 400018, (hereinafter referred as "Lead Member", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the first part
and
M/s Insight Development Consulting Group Private Limited and having its registered office at 87, Third Floor, Shahapur Jat, New Delhi – 110049, (hereinafter referred as "Consortium Partner 1", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and
Stesalit Systems Limited and having its registered office at 71, Park Street, 7th Floor Kolkata - 700016 (hereinafter referred as" Consortium Partner 2", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Third Part
and
Kadence International Private Limited and having its registered office at 23A, Times of India Building, Shivaji Marg, Najafgarh Road, New Delhi, Delhi 110015 (hereinafter referred as "Consortium Partner 3" ", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the fourth Part

The parties are individually referred to as Party and collectively as Parties.
WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

Page **1** of **2**



IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

   a. Deloitte Touche Tohmatsu India LLP, Lead Member:
      i. Overall responsibility for program design and implementation methodology; Inputs for design of survey questionnaire and data formats, Data analysis, city scoring & ranking as per framework prescribed by Client.
      ii. Capacity building of field level staff of the Consortium on survey methodology.

   b. Insight Development Consulting Group Private Limited
      i. Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources in North & West Regions.

   c. Stesalit Systems limited
      i. Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources in East and Southern Regions.

   d. Kadence International Private Limited
      i. Responsible for Roll-out of survey questionnaire, focus-group discussions and data collection through primary & secondary sources across all states.

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party
4. Fourth Party

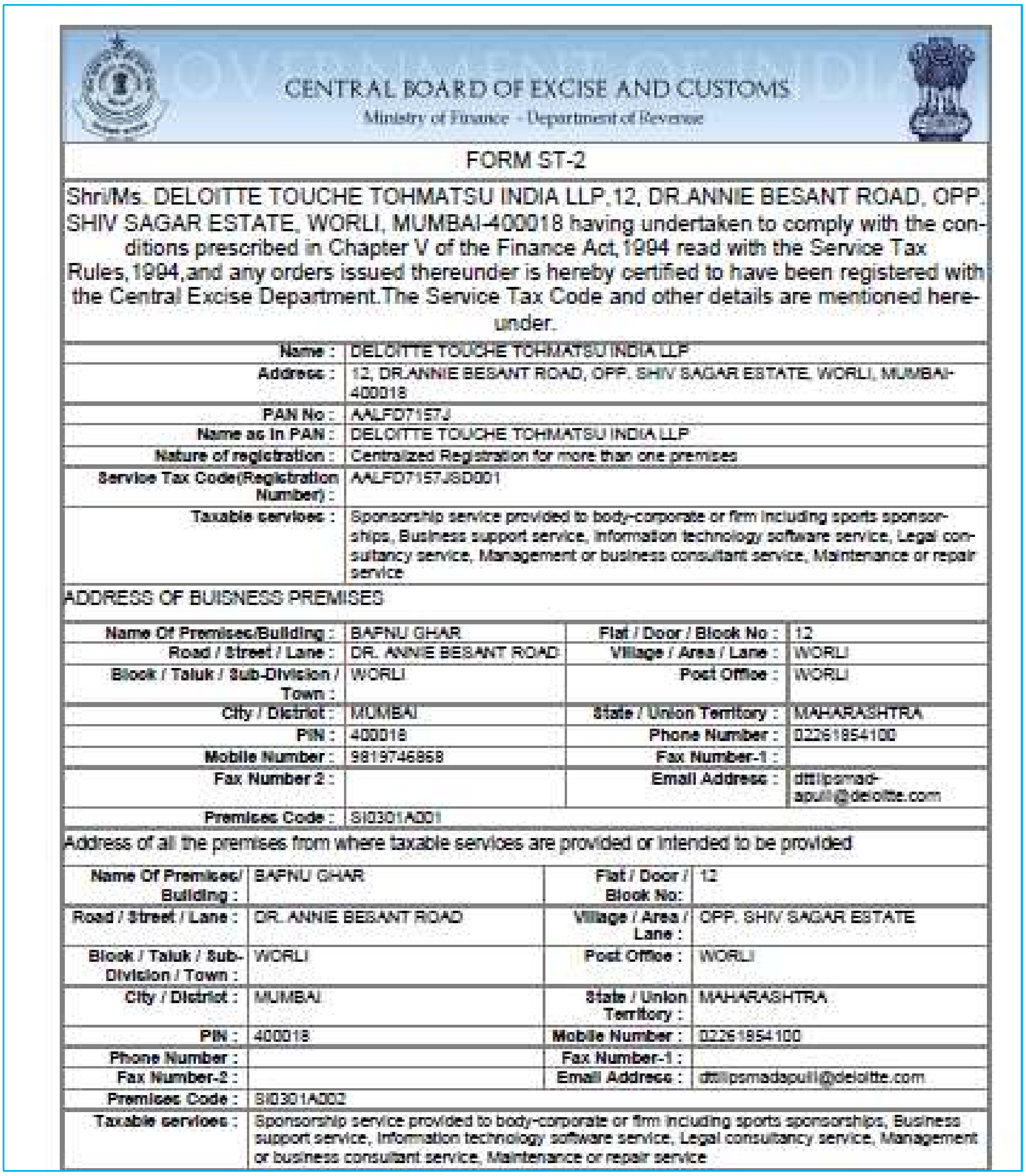
Witness:

Anindya Mallick Anindya Mallilck, Partner, Deloitte Touche Tohmatsu India LLP	Himanshu Dube Himanshu Dube, Director, Insight Development Consulting Group Private Limited
Director, Stesalit Systems Limited	Aman Makkar Managing Director Kadence International Private Limited

Page **2** of **2**

Annexure 1: Copy of Service Tax Registration Number

A. Deloitte Touche Tohmatsu India LLP



CENTRAL BOARD OF EXCISE AND CUSTOMS
Ministry of Finance - Department of Revenue

FORM ST-2

Shri/Ms. DELOITTE TOUCHE TOHMATSU INDIA LLP,12, DR.ANNIE BESANT ROAD, OPP. SHIV SAGAR ESTATE, WORLI, MUMBAI-400018 having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act,1994 read with the Service Tax Rules,1994,and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department.The Service Tax Code and other details are mentioned hereunder.

Name :	DELOITTE TOUCHE TOHMATSU INDIA LLP
Address :	12, DR.ANNIE BESANT ROAD, OPP. SHIV SAGAR ESTATE, WORLI, MUMBAI-400018
PAN No :	AALFD7157J
Name as in PAN :	DELOITTE TOUCHE TOHMATSU INDIA LLP
Nature of registration :	Centralized Registration for more than one premises
Service Tax Code(Registration Number) :	AALFD7157JSD001
Taxable services :	Sponsorship service provided to body-corporate or firm including sports sponsorships, Business support service, Information technology software service, Legal consultancy service, Management or business consultant service, Maintenance or repair service

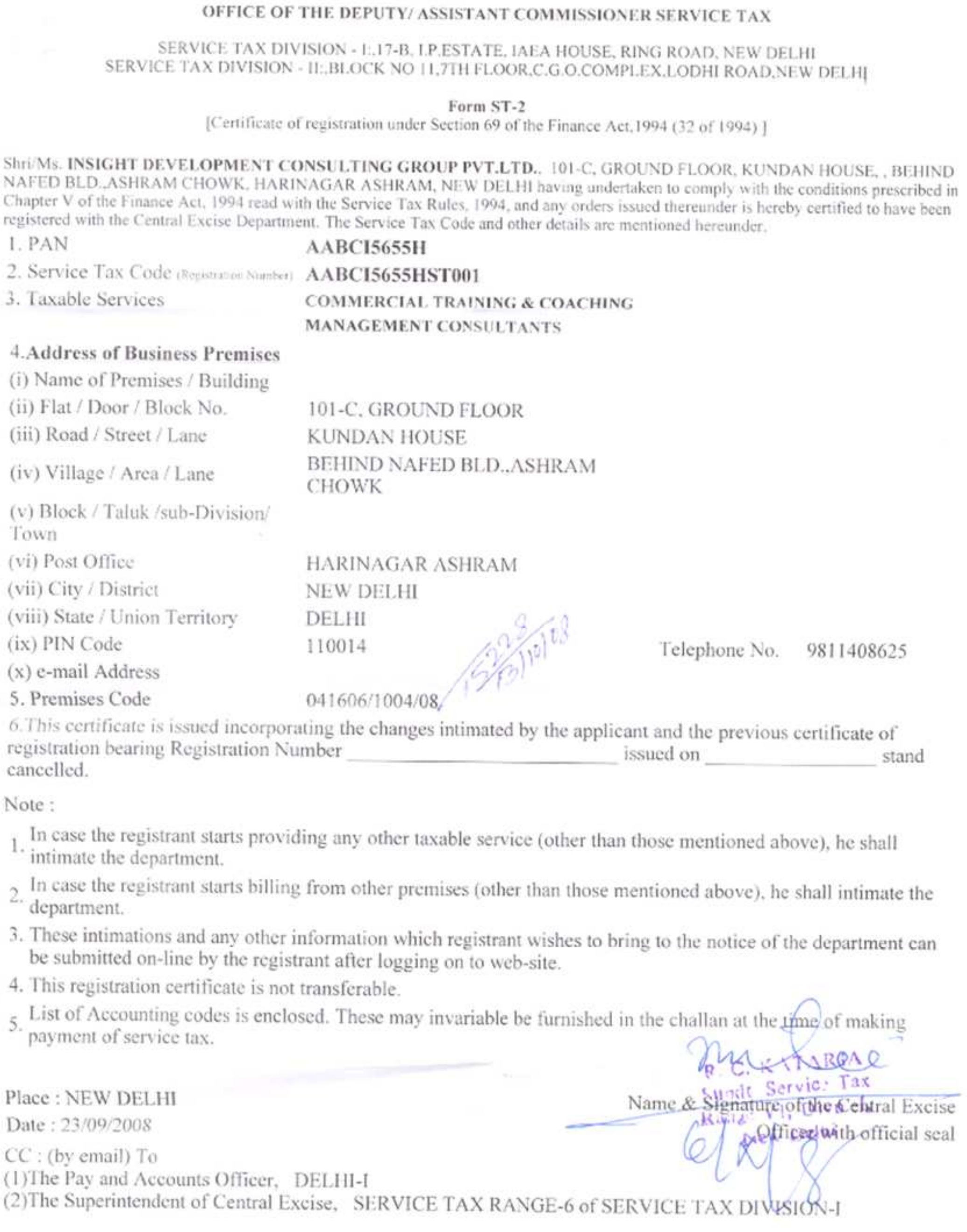
ADDRESS OF BUISNESS PREMISES

Name Of Premises/Building :	BAFNU GHAR	**Flat / Door / Block No :**	12
Road / Street / Lane :	DR. ANNIE BESANT ROAD	**Village / Area / Lane :**	WORLI
Block / Taluk / Sub-Division / Town :	WORLI	**Post Office :**	WORLI
City / District :	MUMBAI	**State / Union Territory :**	MAHARASHTRA
PIN :	400018	**Phone Number :**	02261854100
Mobile Number :	9819746868	**Fax Number-1 :**	
Fax Number 2 :		**Email Address :**	dttilpsmad-apull@deloitte.com
Premises Code :	SI0301A001		

Address of all the premises from where taxable services are provided or intended to be provided

Name Of Premises/ Building :	BAFNU GHAR	**Flat / Door / Block No:**	12
Road / Street / Lane :	DR. ANNIE BESANT ROAD	**Village / Area / Lane :**	OPP. SHIV SAGAR ESTATE
Block / Taluk / Sub-Division / Town :	WORLI	**Post Office :**	WORLI
City / District :	MUMBAI	**State / Union Territory :**	MAHARASHTRA
PIN :	400018	**Mobile Number :**	02261854100
Phone Number :		**Fax Number-1 :**	
Fax Number-2 :		**Email Address :**	dttilpsmadapull@deloitte.com
Premises Code :	SI0301A002		
Taxable services :	Sponsorship service provided to body-corporate or firm including sports sponsorships, Business support service, Information technology software service, Legal consultancy service, Management or business consultant service, Maintenance or repair service		

B. Insight Development Consulting Group Pvt. Ltd. (IDCG)



OFFICE OF THE DEPUTY/ ASSISTANT COMMISSIONER SERVICE TAX

SERVICE TAX DIVISION - I:,17-B, I.P.ESTATE, IAEA HOUSE, RING ROAD, NEW DELHI
SERVICE TAX DIVISION - II:,BLOCK NO 11,7TH FLOOR,C.G.O.COMPLEX,LODHI ROAD,NEW DELHI

Form ST-2
[Certificate of registration under Section 69 of the Finance Act,1994 (32 of 1994)]

Shri/Ms. **INSIGHT DEVELOPMENT CONSULTING GROUP PVT.LTD.**, 101-C, GROUND FLOOR, KUNDAN HOUSE, , BEHIND NAFED BLD.,ASHRAM CHOWK, HARINAGAR ASHRAM, NEW DELHI having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act, 1994 read with the Service Tax Rules, 1994, and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department. The Service Tax Code and other details are mentioned hereunder.

1. PAN	**AABCI5655H**		
2. Service Tax Code (Registration Number)	**AABCI5655HST001**		
3. Taxable Services	**COMMERCIAL TRAINING & COACHING** **MANAGEMENT CONSULTANTS**		
4.Address of Business Premises			
(i) Name of Premises / Building			
(ii) Flat / Door / Block No.	101-C, GROUND FLOOR		
(iii) Road / Street / Lane	KUNDAN HOUSE		
(iv) Village / Area / Lane	BEHIND NAFED BLD.,ASHRAM CHOWK		
(v) Block / Taluk /sub-Division/ Town			
(vi) Post Office	HARINAGAR ASHRAM		
(vii) City / District	NEW DELHI		
(viii) State / Union Territory	DELHI		
(ix) PIN Code	110014	Telephone No.	9811408625
(x) e-mail Address			
5. Premises Code	041606/1004/08		

15228 13/10/08

6.This certificate is issued incorporating the changes intimated by the applicant and the previous certificate of registration bearing Registration Number ______________ issued on ____________ stand cancelled.

Note :

1. In case the registrant starts providing any other taxable service (other than those mentioned above), he shall intimate the department.
2. In case the registrant starts billing from other premises (other than those mentioned above), he shall intimate the department.
3. These intimations and any other information which registrant wishes to bring to the notice of the department can be submitted on-line by the registrant after logging on to web-site.
4. This registration certificate is not transferable.
5. List of Accounting codes is enclosed. These may invariable be furnished in the challan at the time of making payment of service tax.

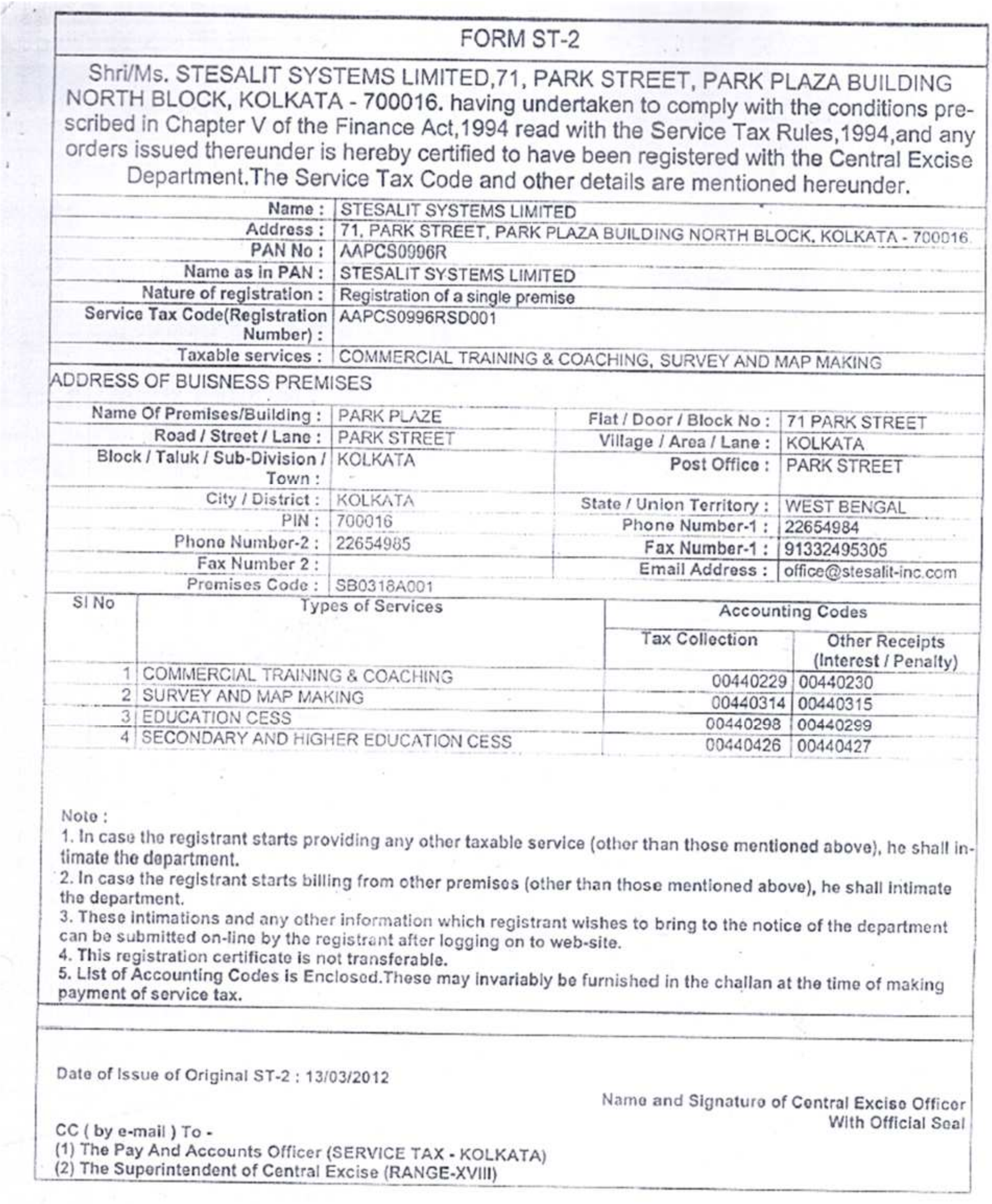
Place : NEW DELHI
Date : 23/09/2008

P. C. KHARGAL
Supdt. Service Tax
6/10/08

Name & Signature of the Central Excise
Officer with official seal

CC : (by email) To
(1)The Pay and Accounts Officer, DELHI-I
(2)The Superintendent of Central Excise, SERVICE TAX RANGE-6 of SERVICE TAX DIVISION-I

C. Stesalit Systems Limited



FORM ST-2

Shri/Ms. STESALIT SYSTEMS LIMITED,71, PARK STREET, PARK PLAZA BUILDING NORTH BLOCK, KOLKATA - 700016. having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act,1994 read with the Service Tax Rules,1994,and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department.The Service Tax Code and other details are mentioned hereunder.

Name :	STESALIT SYSTEMS LIMITED
Address :	71, PARK STREET, PARK PLAZA BUILDING NORTH BLOCK, KOLKATA - 700016
PAN No :	AAPCS0996R
Name as in PAN :	STESALIT SYSTEMS LIMITED
Nature of registration :	Registration of a single premise
Service Tax Code(Registration Number) :	AAPCS0996RSD001
Taxable services :	COMMERCIAL TRAINING & COACHING, SURVEY AND MAP MAKING

ADDRESS OF BUISNESS PREMISES

Name Of Premises/Building :	PARK PLAZE	Flat / Door / Block No :	71 PARK STREET
Road / Street / Lane :	PARK STREET	Village / Area / Lane :	KOLKATA
Block / Taluk / Sub-Division / Town :	KOLKATA	Post Office :	PARK STREET
City / District :	KOLKATA	State / Union Territory :	WEST BENGAL
PIN :	700016	Phone Number-1 :	22654984
Phone Number-2 :	22654985	Fax Number-1 :	91332495305
Fax Number 2 :		Email Address :	office@stesalit-inc.com
Premises Code :	SB0318A001		

Sl No	Types of Services	Accounting Codes	
		Tax Collection	Other Receipts (Interest / Penalty)
1	COMMERCIAL TRAINING & COACHING	00440229	00440230
2	SURVEY AND MAP MAKING	00440314	00440315
3	EDUCATION CESS	00440298	00440299
4	SECONDARY AND HIGHER EDUCATION CESS	00440426	00440427

Note :

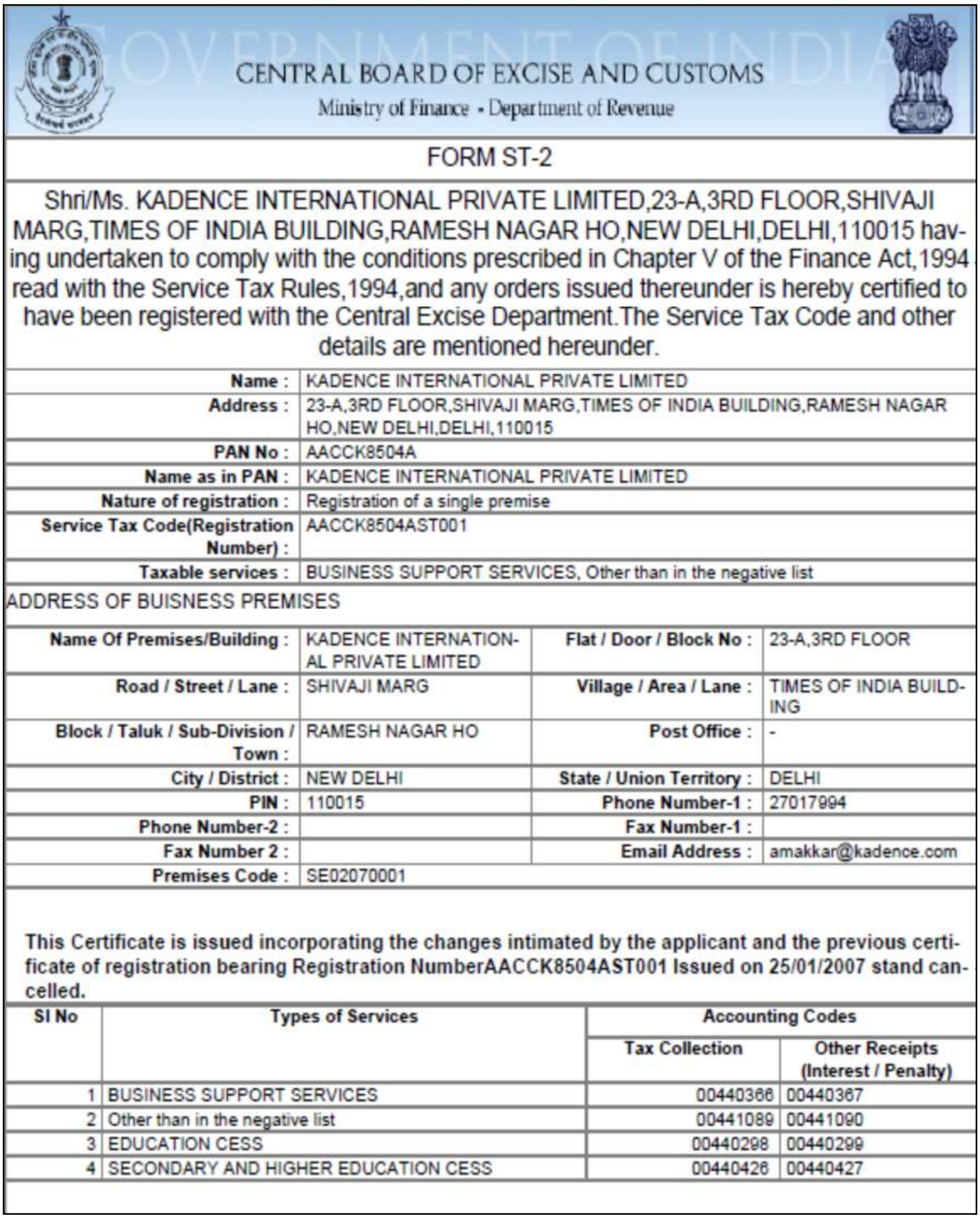
1. In case the registrant starts providing any other taxable service (other than those mentioned above), he shall intimate the department.
2. In case the registrant starts billing from other premises (other than those mentioned above), he shall intimate the department.
3. These intimations and any other information which registrant wishes to bring to the notice of the department can be submitted on-line by the registrant after logging on to web-site.
4. This registration certificate is not transferable.
5. List of Accounting Codes is Enclosed.These may invariably be furnished in the challan at the time of making payment of service tax.

Date of Issue of Original ST-2 : 13/03/2012

Name and Signature of Central Excise Officer
With Official Seal

CC (by e-mail) To -
(1) The Pay And Accounts Officer (SERVICE TAX - KOLKATA)
(2) The Superintendent of Central Excise (RANGE-XVIII)

D. Kadence International Pvt Ltd



CENTRAL BOARD OF EXCISE AND CUSTOMS
Ministry of Finance - Department of Revenue

FORM ST-2

Shri/Ms. KADENCE INTERNATIONAL PRIVATE LIMITED,23-A,3RD FLOOR,SHIVAJI MARG,TIMES OF INDIA BUILDING,RAMESH NAGAR HO,NEW DELHI,DELHI,110015 having undertaken to comply with the conditions prescribed in Chapter V of the Finance Act,1994 read with the Service Tax Rules,1994,and any orders issued thereunder is hereby certified to have been registered with the Central Excise Department.The Service Tax Code and other details are mentioned hereunder.

Name :	KADENCE INTERNATIONAL PRIVATE LIMITED
Address :	23-A,3RD FLOOR,SHIVAJI MARG,TIMES OF INDIA BUILDING,RAMESH NAGAR HO,NEW DELHI,DELHI,110015
PAN No :	AACCK8504A
Name as in PAN :	KADENCE INTERNATIONAL PRIVATE LIMITED
Nature of registration :	Registration of a single premise
Service Tax Code(Registration Number) :	AACCK8504AST001
Taxable services :	BUSINESS SUPPORT SERVICES, Other than in the negative list

ADDRESS OF BUISNESS PREMISES

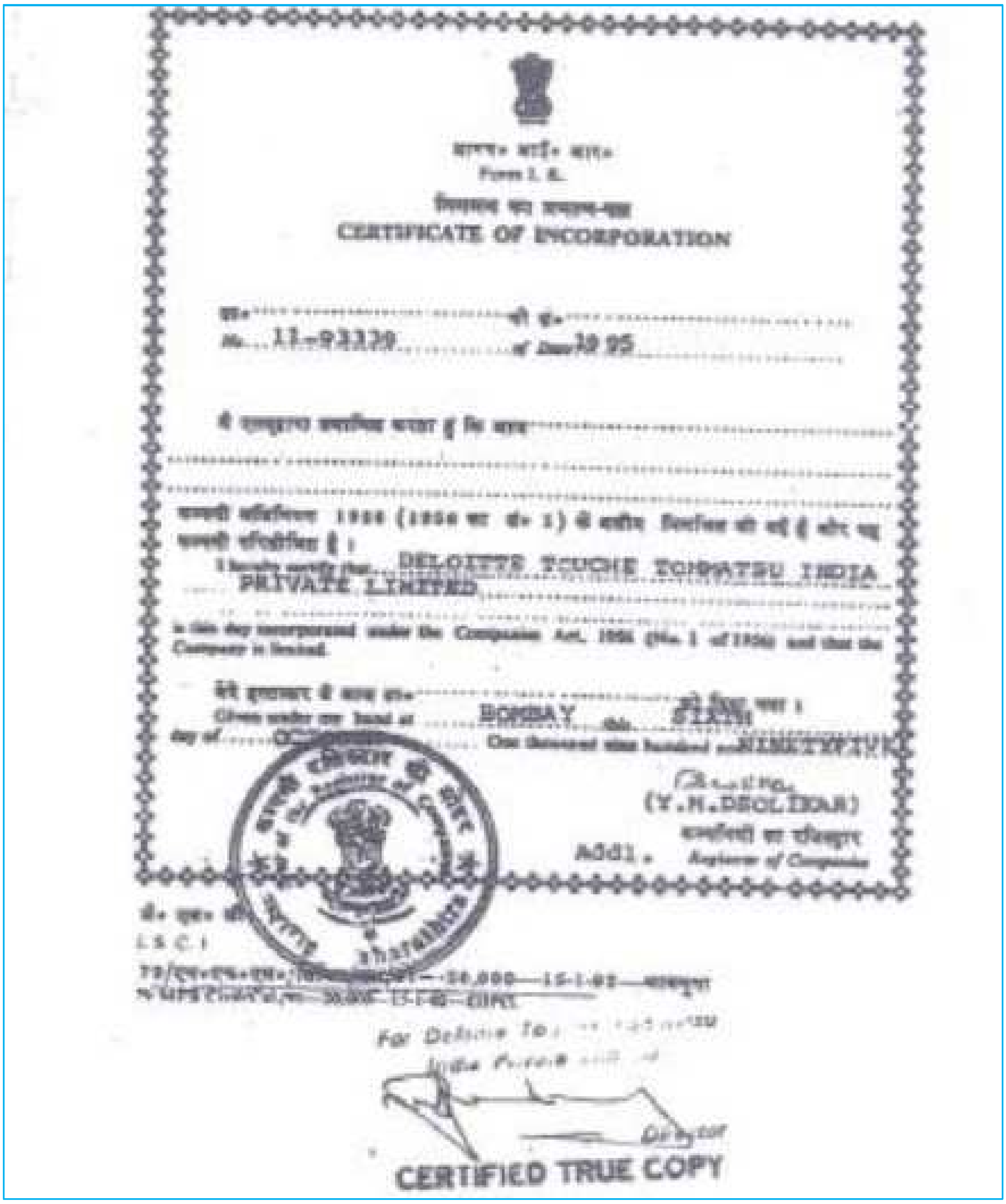
Name Of Premises/Building :	KADENCE INTERNATIONAL PRIVATE LIMITED	**Flat / Door / Block No :**	23-A,3RD FLOOR
Road / Street / Lane :	SHIVAJI MARG	**Village / Area / Lane :**	TIMES OF INDIA BUILDING
Block / Taluk / Sub-Division / Town :	RAMESH NAGAR HO	**Post Office :**	-
City / District :	NEW DELHI	**State / Union Territory :**	DELHI
PIN :	110015	**Phone Number-1 :**	27017994
Phone Number-2 :		**Fax Number-1 :**	
Fax Number 2 :		**Email Address :**	amakkar@kadence.com
Premises Code :	SE02070001		

This Certificate is issued incorporating the changes intimated by the applicant and the previous certificate of registration bearing Registration NumberAACCK8504AST001 Issued on 25/01/2007 stand cancelled.

Sl No	**Types of Services**	**Accounting Codes**	
		Tax Collection	**Other Receipts (Interest / Penalty)**
1	BUSINESS SUPPORT SERVICES	00440366	00440367
2	Other than in the negative list	00441089	00441090
3	EDUCATION CESS	00440298	00440299
4	SECONDARY AND HIGHER EDUCATION CESS	00440426	00440427

Annexure 2: Copy of Certificate of Incorporation

A. **Deloitte Touche Tohmatsu India LLP -** Certificate of Incorporation - Deloitte Touché Tohmatsu India Private Limited



Form I. R.

CERTIFICATE OF INCORPORATION

No. 11-93339 of 1995

I hereby certify that DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED

is this day incorporated under the Companies Act, 1956 (No. 1 of 1956) and that the Company is limited.

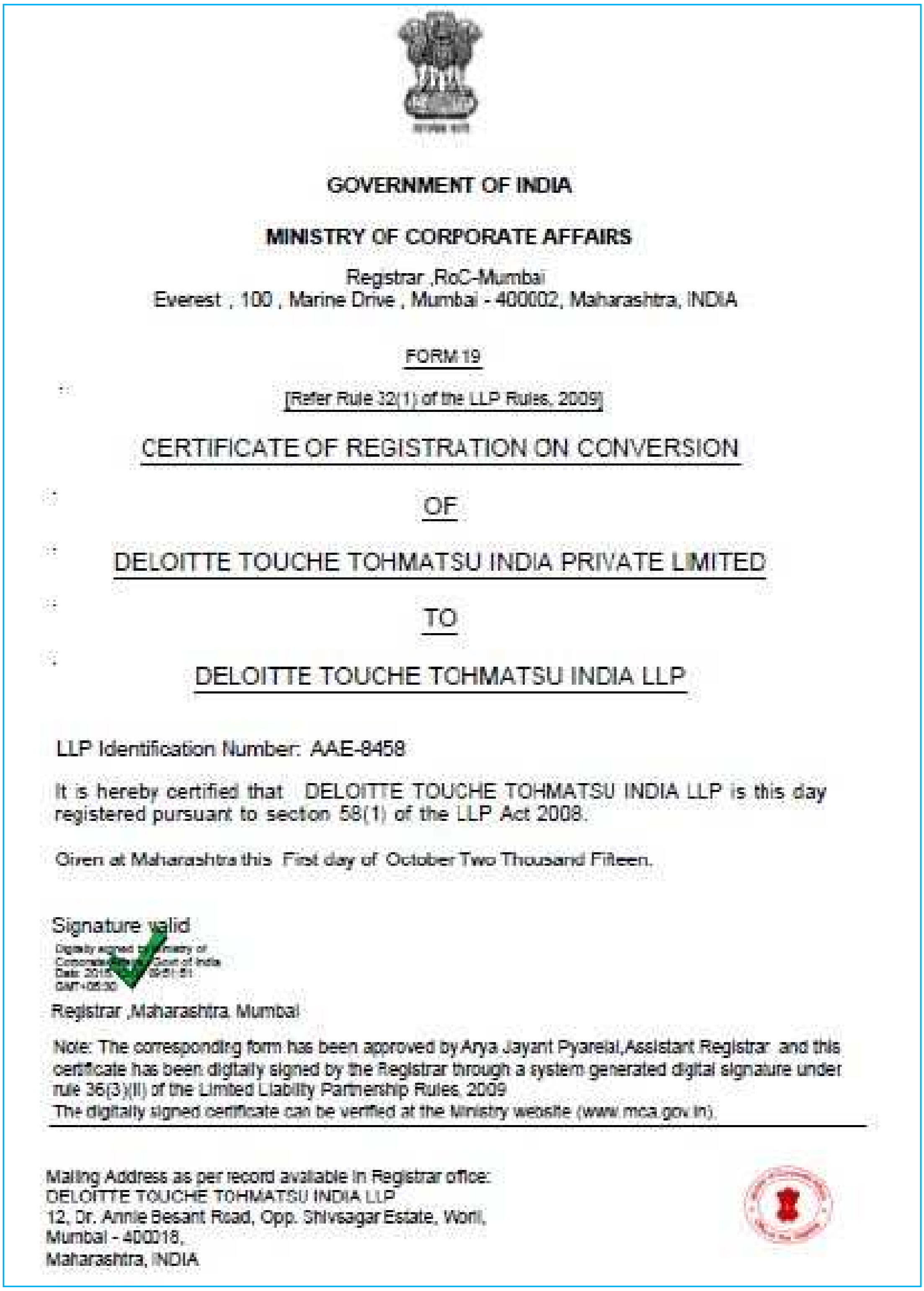
Given under my hand at BOMBAY this SIXTH day of OC One thousand nine hundred and NINETYFIVE

(Y.M.DEOLIKAR)
कम्पनियों का रजिस्ट्रार
Addl. Registrar of Companies

For Deloitte Touche Tohmatsu
India Private Limited
Director

CERTIFIED TRUE COPY

Certificate of Registration on Conversion of Deloitte Touché Tohmatsu India Private Limited to Deloitte Touché Tohmatsu India LLP



GOVERNMENT OF INDIA

MINISTRY OF CORPORATE AFFAIRS

Registrar ,RoC-Mumbai
Everest , 100 , Marine Drive , Mumbai - 400002, Maharashtra, INDIA

FORM 19

[Refer Rule 32(1) of the LLP Rules, 2009]

CERTIFICATE OF REGISTRATION ON CONVERSION

OF

DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED

TO

DELOITTE TOUCHE TOHMATSU INDIA LLP

LLP Identification Number: AAE-8458

It is hereby certified that DELOITTE TOUCHE TOHMATSU INDIA LLP is this day registered pursuant to section 58(1) of the LLP Act 2008.

Given at Maharashtra this First day of October Two Thousand Fifteen.

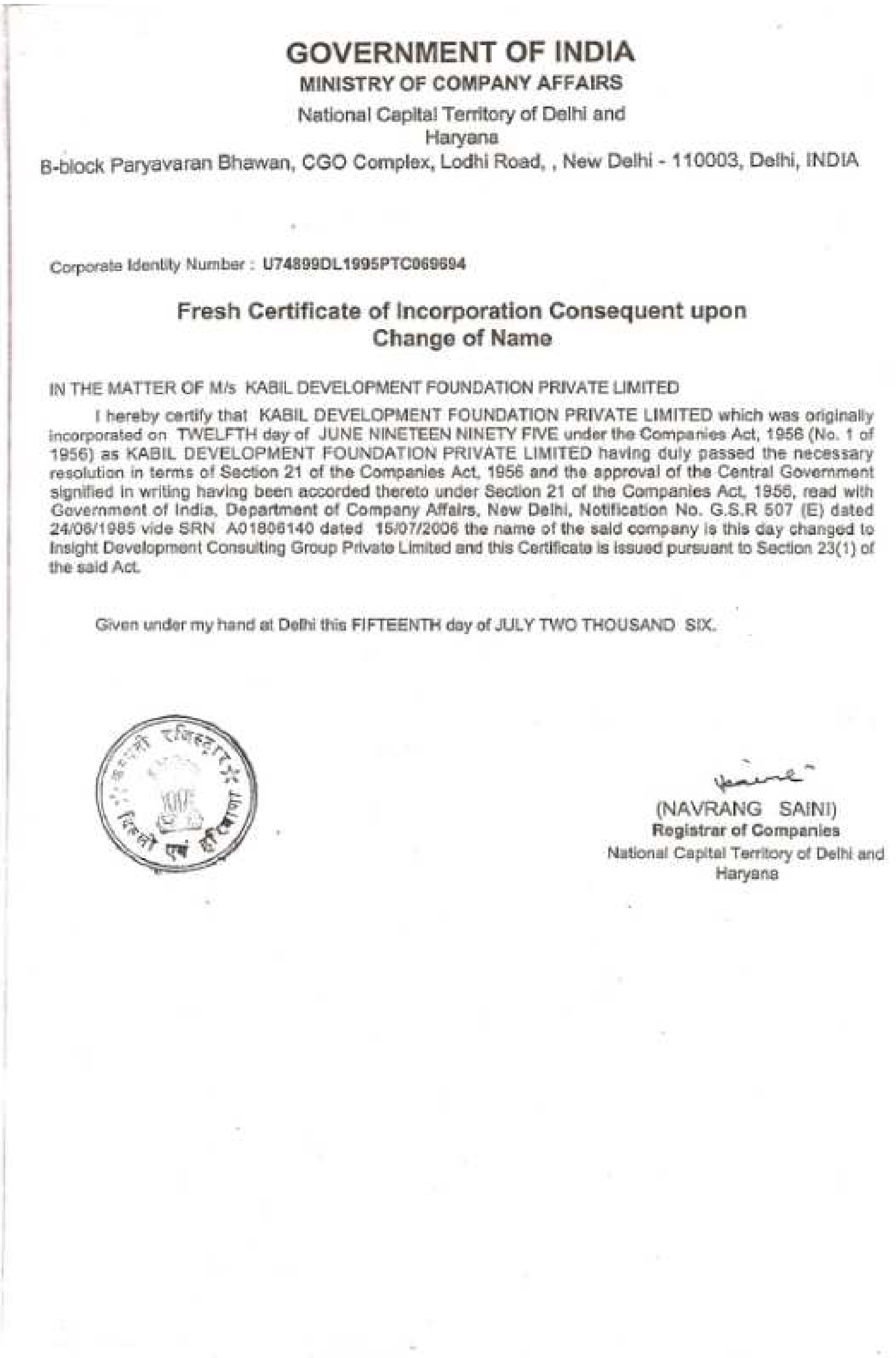
Signature valid
Digitally signed [illegible] Ministry of
Corporate [illegible] Govt of India
Date: 2015 [illegible] 09:51:51
GMT+05:30

Registrar ,Maharashtra, Mumbai

Note: The corresponding form has been approved by Arya Jayant Pyarelal,Assistant Registrar and this certificate has been digitally signed by the Registrar through a system generated digital signature under rule 36(3)(ii) of the Limited Liability Partnership Rules, 2009
The digitally signed certificate can be verified at the Ministry website (www.mca.gov.in).

Mailing Address as per record available in Registrar office:
DELOITTE TOUCHE TOHMATSU INDIA LLP
12, Dr. Annie Besant Road, Opp. Shivsagar Estate, Worli,
Mumbai - 400018,
Maharashtra, INDIA

B. Insight Development Consulting Group Pvt. Ltd. (IDCG)



GOVERNMENT OF INDIA
MINISTRY OF COMPANY AFFAIRS
National Capital Territory of Delhi and
Haryana
B-block Paryavaran Bhawan, CGO Complex, Lodhi Road, , New Delhi - 110003, Delhi, INDIA

Corporate Identity Number : U74899DL1995PTC069694

Fresh Certificate of Incorporation Consequent upon Change of Name

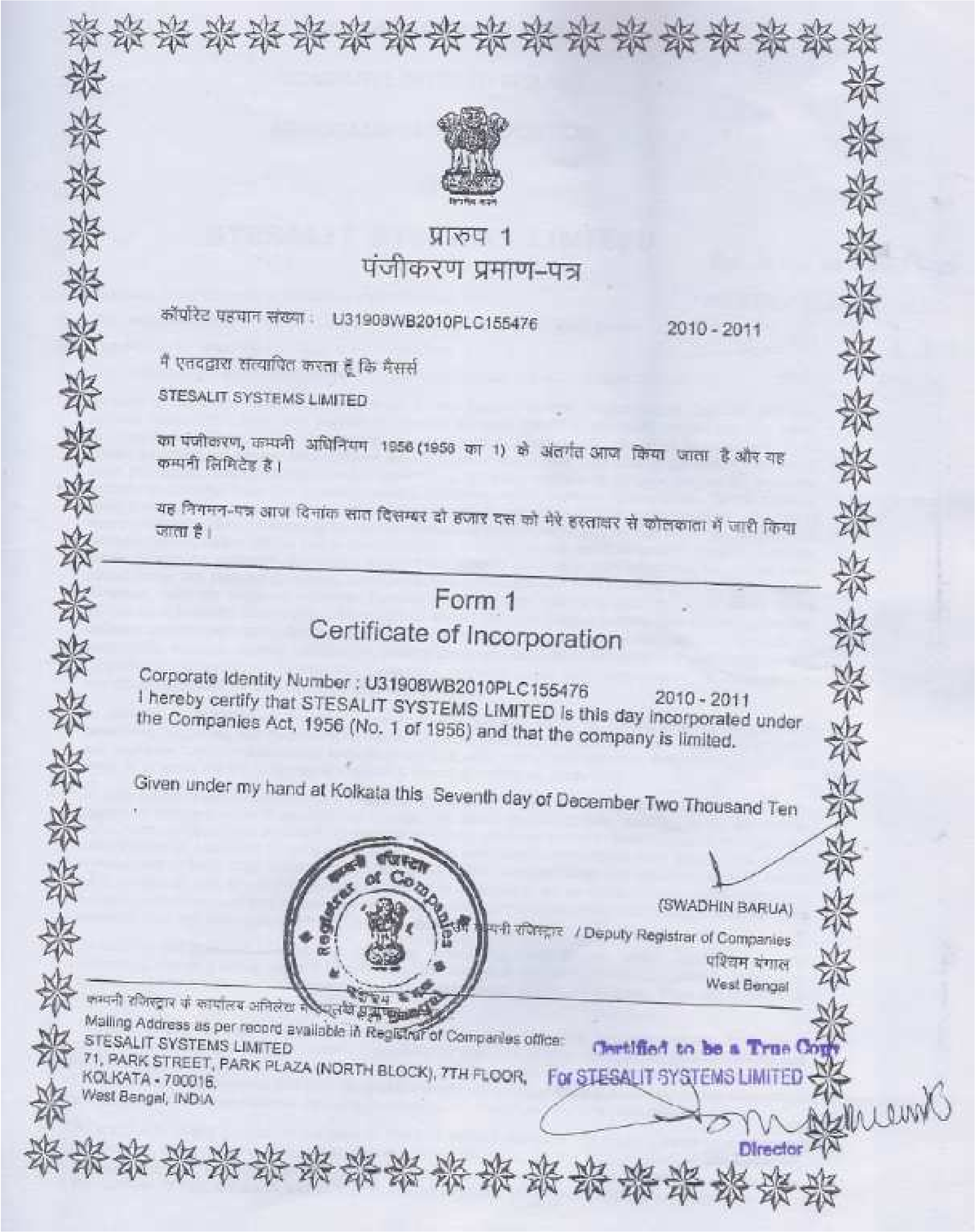
IN THE MATTER OF M/s KABIL DEVELOPMENT FOUNDATION PRIVATE LIMITED

I hereby certify that KABIL DEVELOPMENT FOUNDATION PRIVATE LIMITED which was originally incorporated on TWELFTH day of JUNE NINETEEN NINETY FIVE under the Companies Act, 1956 (No. 1 of 1956) as KABIL DEVELOPMENT FOUNDATION PRIVATE LIMITED having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956 and the approval of the Central Government signified in writing having been accorded thereto under Section 21 of the Companies Act, 1956, read with Government of India, Department of Company Affairs, New Delhi, Notification No. G.S.R 507 (E) dated 24/06/1985 vide SRN A01806140 dated 15/07/2006 the name of the said company is this day changed to Insight Development Consulting Group Private Limited and this Certificate is issued pursuant to Section 23(1) of the said Act.

Given under my hand at Delhi this FIFTEENTH day of JULY TWO THOUSAND SIX.

(NAVRANG SAINI)
Registrar of Companies
National Capital Territory of Delhi and
Haryana

C. Stesalit Systems Limited



प्रारुप 1
पंजीकरण प्रमाण-पत्र

कॉर्पोरेट पहचान संख्या : U31908WB2010PLC155476 2010 - 2011

मैं एतदद्वारा सत्यापित करता हूँ कि मैसर्स

STESALIT SYSTEMS LIMITED

का पंजीकरण, कम्पनी अधिनियम 1956 (1956 का 1) के अंतर्गत आज किया जाता है और यह कम्पनी लिमिटेड है।

यह निगमन-पत्र आज दिनांक सात दिसम्बर दो हजार दस को मेरे हस्ताक्षर से कोलकाता में जारी किया जाता है।

Form 1
Certificate of Incorporation

Corporate Identity Number : U31908WB2010PLC155476 2010 - 2011

I hereby certify that STESALIT SYSTEMS LIMITED is this day incorporated under the Companies Act, 1956 (No. 1 of 1956) and that the company is limited.

Given under my hand at Kolkata this Seventh day of December Two Thousand Ten

(SWADHIN BARUA)
उप कम्पनी रजिस्ट्रार / Deputy Registrar of Companies
पश्चिम बंगाल
West Bengal

कम्पनी रजिस्ट्रार के कार्यालय अभिलेख में उपलब्ध [illegible]
Mailing Address as per record available in Registrar of Companies office:
STESALIT SYSTEMS LIMITED
71, PARK STREET, PARK PLAZA (NORTH BLOCK), 7TH FLOOR,
KOLKATA - 700016,
West Bengal, INDIA

Certified to be a True Copy
For STESALIT SYSTEMS LIMITED
Director

Deloitte Touche Tohmatsu India LLP

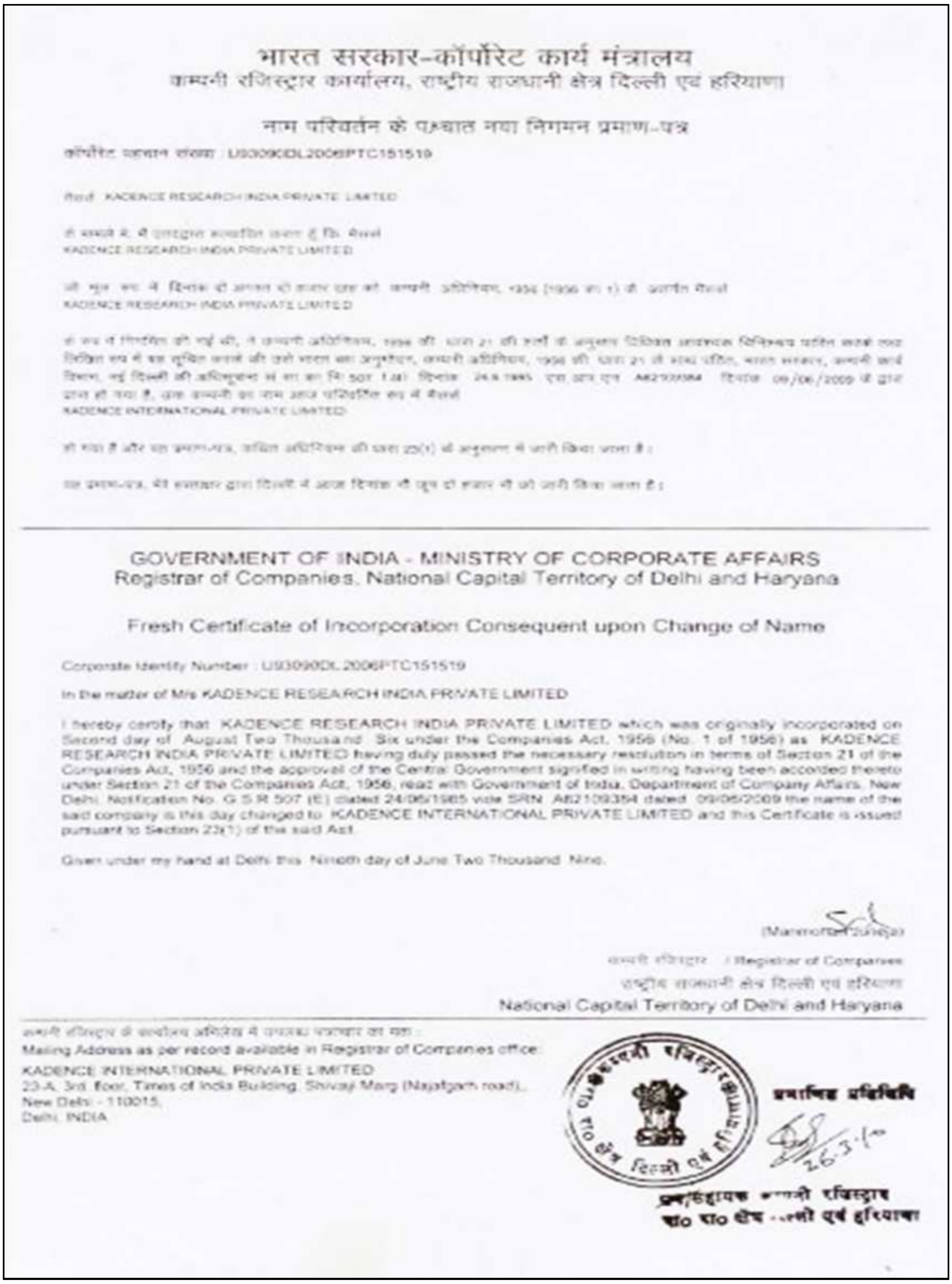
D. Kadence International Pvt Ltd

Form 1

Certificate of Incorporation

Deloitte Touche Tohmatsu India LLP

Certificate of Name Change



भारत सरकार-कॉर्पोरेट कार्य मंत्रालय
कम्पनी रजिस्ट्रार कार्यालय, राष्ट्रीय राजधानी क्षेत्र दिल्ली एवं हरियाणा

नाम परिवर्तन के पश्चात नया निगमन प्रमाण-पत्र

कॉर्पोरेट पहचान संख्या : U93090DL2006PTC151519

GOVERNMENT OF INDIA - MINISTRY OF CORPORATE AFFAIRS
Registrar of Companies, National Capital Territory of Delhi and Haryana

Fresh Certificate of Incorporation Consequent upon Change of Name

Corporate Identity Number : U93090DL2006PTC151519

In the matter of M/s KADENCE RESEARCH INDIA PRIVATE LIMITED

I hereby certify that KADENCE RESEARCH INDIA PRIVATE LIMITED which was originally incorporated on Second day of August Two Thousand Six under the Companies Act, 1956 (No. 1 of 1956) as KADENCE RESEARCH INDIA PRIVATE LIMITED having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956 and the approval of the Central Government signified in writing having been accorded thereto under Section 21 of the Companies Act, 1956, read with Government of India, Department of Company Affairs, New Delhi, Notification No. G.S.R 507 (E) dated 24/06/1985 vide SRN A62109384 dated 09/06/2009 the name of the said company is this day changed to KADENCE INTERNATIONAL PRIVATE LIMITED and this Certificate is issued pursuant to Section 23(1) of the said Act.

Given under my hand at Delhi this Ninth day of June Two Thousand Nine.

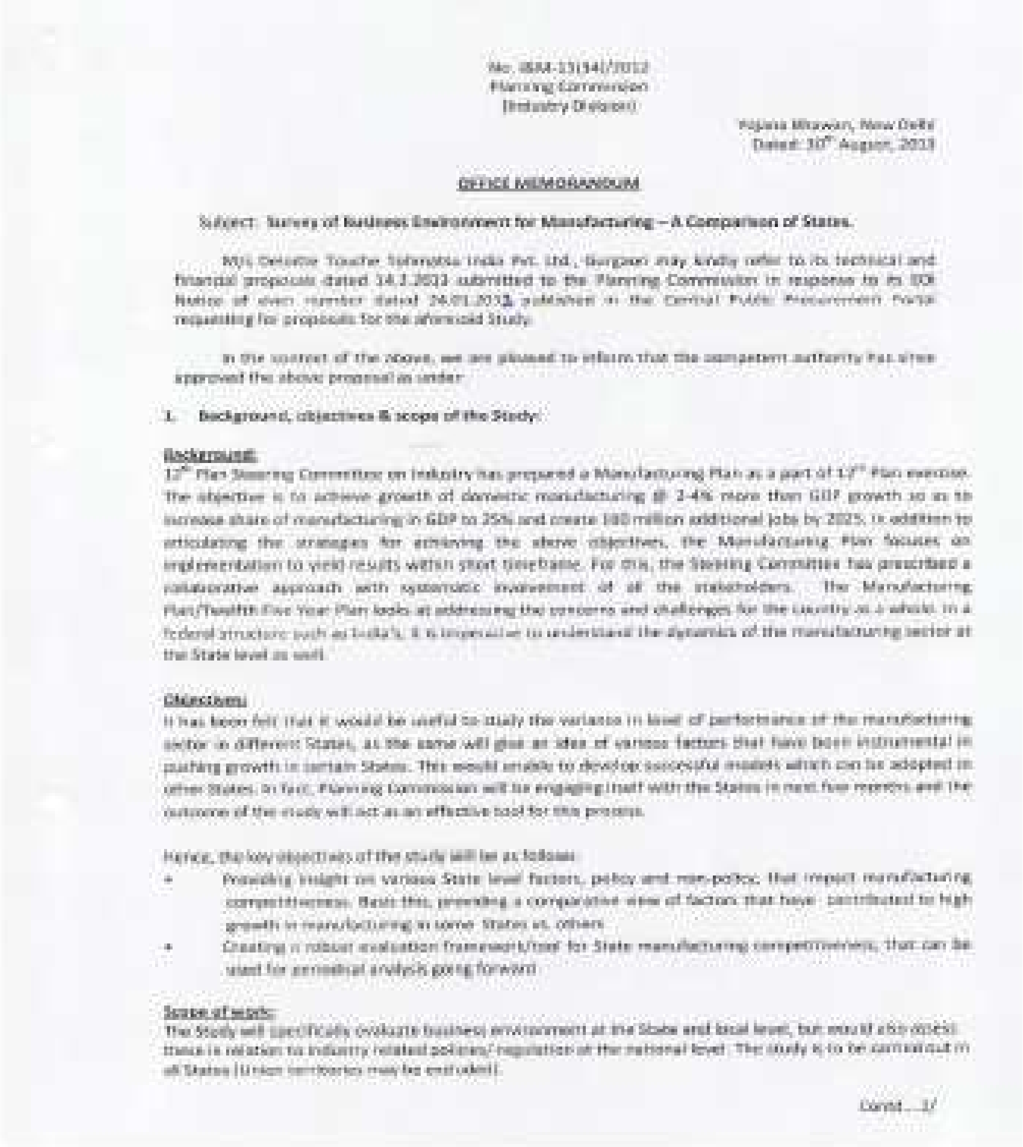
(Manmohan Juneja)
कम्पनी रजिस्ट्रार / Registrar of Companies
राष्ट्रीय राजधानी क्षेत्र दिल्ली एवं हरियाणा
National Capital Territory of Delhi and Haryana

Mailing Address as per record available in Registrar of Companies office:
KADENCE INTERNATIONAL PRIVATE LIMITED
23-A, 3rd floor, Times of India Building, Shivaji Marg (Najafgarh road),
New Delhi - 110015,
Delhi, INDIA

प्रमाणित प्रतिलिपि
26.3.10
प्र./सहायक कम्पनी रजिस्ट्रार
रा० रा० क्षेत्र दिल्ली एवं हरियाणा

Annexure 3: Copy of Work Orders

5.1: Survey of Business Environment for Manufacturing – A Comparison of Indian States



No. I&M-13(34)/2012
Planning Commission
(Industry Division)

Yojana Bhawan, New Delhi
Dated: 30th August, 2013

OFFICE MEMORANDUM

Subject: **Survey of Business Environment for Manufacturing – A Comparison of States.**

M/s Deloitte Touche Tohmatsu India Pvt. Ltd., Gurgaon may kindly refer to its technical and financial proposals dated 14.3.2013 submitted to the Planning Commission in response to its EOI Notice of even number dated 24.01.2013 published in the Central Public Procurement Portal requesting for proposals for the aforesaid Study.

In the context of the above, we are pleased to inform that the competent authority has since approved the above proposal as under:

1. **Background, objectives & scope of the Study:**

Background:
12th Plan Steering Committee on Industry has prepared a Manufacturing Plan as a part of 12th Plan exercise. The objective is to achieve growth of domestic manufacturing @ 2-4% more than GDP growth so as to increase share of manufacturing in GDP to 25% and create 100 million additional jobs by 2025. In addition to articulating the strategies for achieving the above objectives, the Manufacturing Plan focuses on implementation to yield results within short timeframe. For this, the Steering Committee has prescribed a collaborative approach with systematic involvement of all the stakeholders. The Manufacturing Plan/Twelfth Five Year Plan looks at addressing the concerns and challenges for the country as a whole. In a federal structure such as India's, it is imperative to understand the dynamics of the manufacturing sector at the State level as well.

Objectives:
It has been felt that it would be useful to study the variance in level of performance of the manufacturing sector in different States, as the same will give an idea of various factors that have been instrumental in pushing growth in certain States. This would enable to develop successful models which can be adopted in other States. In fact, Planning Commission will be engaging itself with the States in next few months and the outcome of the study will act as an effective tool for this process.

Hence, the key objectives of the study will be as follows:

- Providing insight on various State level factors, policy and non-policy, that impact manufacturing competitiveness. Basis this, providing a comparative view of factors that have contributed to high growth in manufacturing in some States vs. others.
- Creating a robust evaluation framework/tool for State manufacturing competitiveness, that can be used for periodical analysis going forward.

Scope of work:
The Study will specifically evaluate business environment at the State and local level, but would also assess these in relation to industry related policies/ regulation at the national level. The study is to be carried out in all States (Union territories may be excluded).

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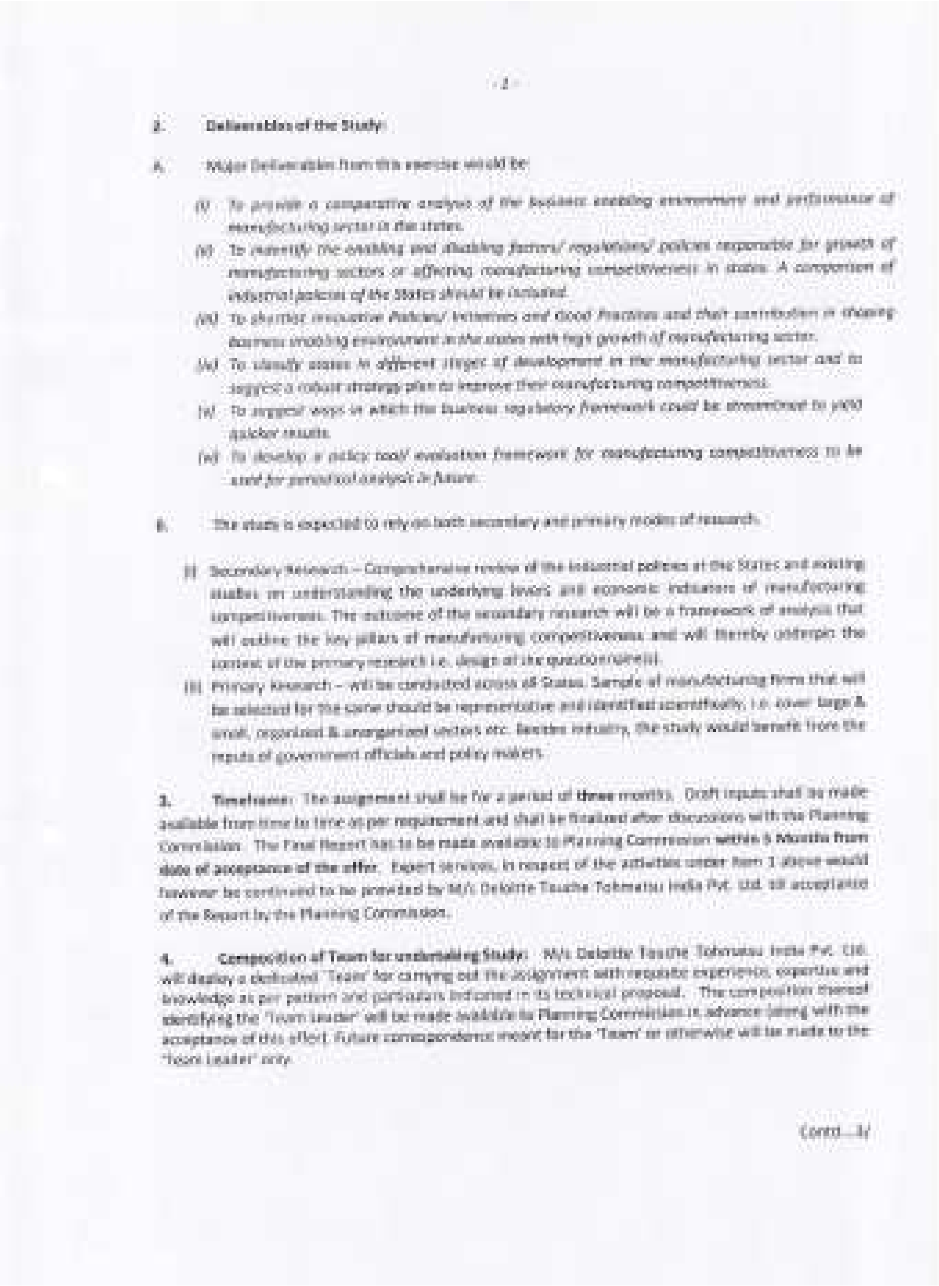

- 2 -

2. **Deliverables of the Study:**

A. Major Deliverables from this exercise would be:

(i) To provide a comparative analysis of the business enabling environment and performance of manufacturing sector in the states.

(ii) To identify the enabling and disabling factors/ regulations/ policies responsible for growth of manufacturing sectors or affecting manufacturing competitiveness in states. A comparison of industrial policies of the States should be included.

(iii) To shortlist innovative Policies/ Schemes and Good Practices and their contribution in shaping business enabling environment in the states with high growth of manufacturing sector.

(iv) To classify states in different stages of development in the manufacturing sector and to suggest a robust strategy plan to improve their manufacturing competitiveness.

(v) To suggest ways in which the business regulatory framework could be streamlined to yield quicker results.

(vi) To develop a policy tool/ evaluation framework for manufacturing competitiveness to be used for periodical analysis in future.

B. The study is expected to rely on both secondary and primary modes of research.

i) Secondary Research – Comprehensive review of the industrial policies of the States and existing studies on understanding the underlying levers and economic indicators of manufacturing competitiveness. The outcome of the secondary research will be a framework of analysis that will outline the key pillars of manufacturing competitiveness and will thereby underpin the context of the primary research i.e. design of the questionnaire(s).

ii) Primary Research – will be conducted across all States. Sample of manufacturing firms that will be selected for the same should be representative and identified scientifically, i.e. cover large & small, organized & unorganized sectors etc. Besides industry, the study would benefit from the inputs of government officials and policy makers.

3. **Timeframe:** The assignment shall be for a period of **three** months. Draft inputs shall be made available from time to time as per requirement and shall be finalized after discussions with the Planning Commission. The Final Report has to be made available to Planning Commission **within 5 Months from date of acceptance of the offer.** Expert services, in respect of the activities under item 1 above would however be continued to be provided by M/s Deloitte Touche Tohmatsu India Pvt. Ltd. till acceptance of the Report by the Planning Commission.

4. **Composition of Team for undertaking Study:** M/s Deloitte Touche Tohmatsu India Pvt. Ltd. will deploy a dedicated 'Team' for carrying out the assignment with requisite experience, expertise and knowledge as per pattern and particulars indicated in its technical proposal. The composition thereof identifying the 'Team Leader' will be made available to Planning Commission in advance (along with the acceptance of this offer). Future correspondence meant for the 'Team' or otherwise will be made to the 'Team Leader' only.

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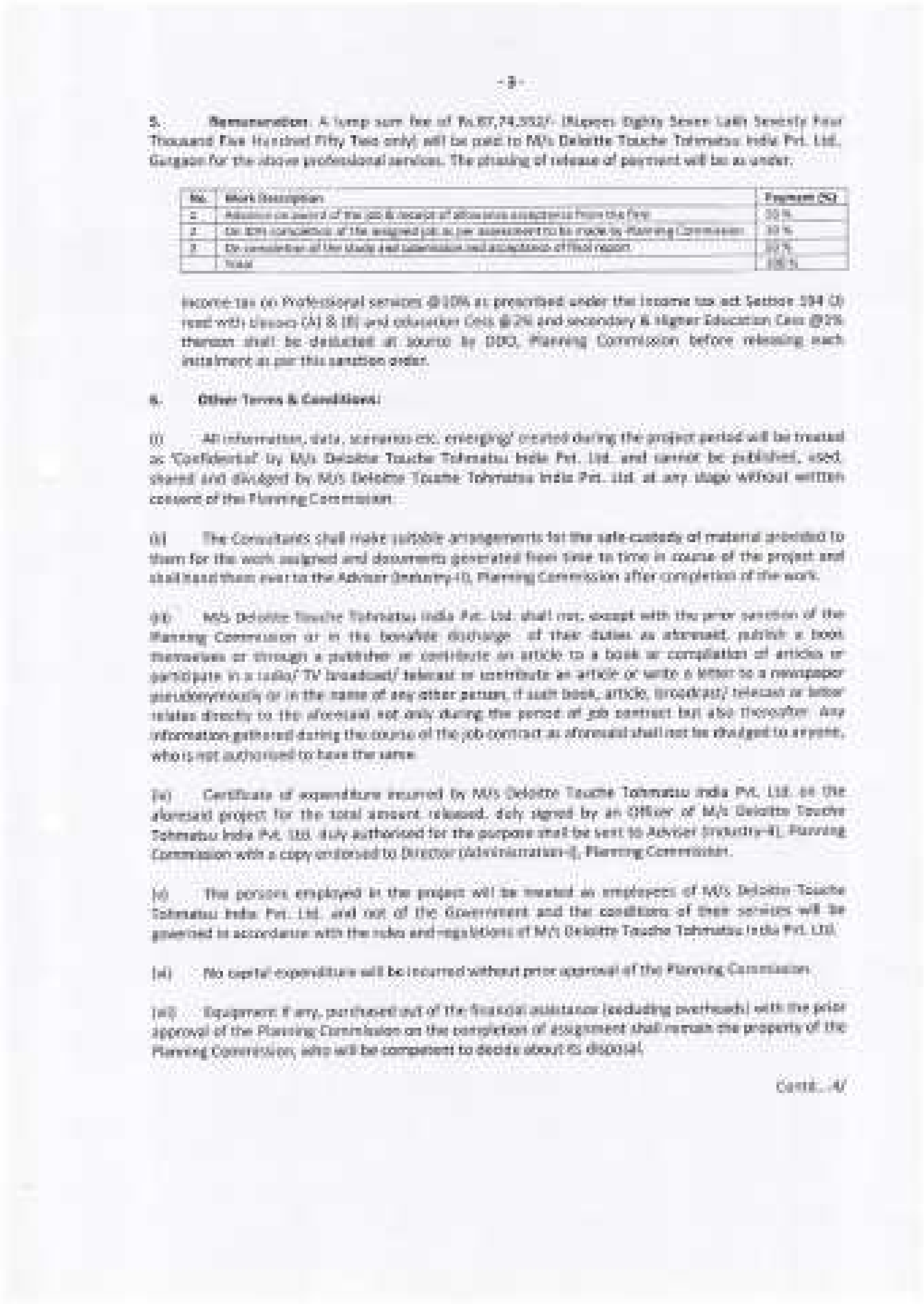

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5. **Remuneration**: A lump sum fee of Rs.87,74,552/- (Rupees Eighty Seven Lakh Seventy Four Thousand Five Hundred Fifty Two only) will be paid to M/s Deloitte Touche Tohmatsu India Pvt. Ltd. Gurgaon for the above professional services. The phasing of release of payment will be as under.

No.	Work Description	Payment (%)
1	Advance on award of the job & receipt of acceptance from the firm	30 %
2	On 50% completion of the assigned job as per assessment to be made by Planning Commission	30 %
3	On completion of the study and submission and acceptance of final report	40 %
	Total	100 %

Income tax on Professional services @10% as prescribed under the Income tax act Section 194 (J) read with clauses (A) & (B) and education Cess @2% and secondary & Higher Education Cess @1% thereon shall be deducted at source by DDO, Planning Commission before releasing each instalment as per this sanction order.

6. **Other Terms & Conditions:**

(i) All information, data, scenarios etc. emerging/ created during the project period will be treated as 'Confidential' by M/s Deloitte Touche Tohmatsu India Pvt. Ltd. and cannot be published, used, shared and divulged by M/s Deloitte Touche Tohmatsu India Pvt. Ltd. at any stage without written consent of the Planning Commission.

(ii) The Consultants shall make suitable arrangements for the safe custody of material provided to them for the work assigned and documents generated from time to time in course of the project and shall hand them over to the Adviser (Industry-II), Planning Commission after completion of the work.

(iii) M/s Deloitte Touche Tohmatsu India Pvt. Ltd. shall not, except with the prior sanction of the Planning Commission or in the bonafide discharge of their duties as aforesaid, publish a book themselves or through a publisher or contribute an article to a book or compilation of articles or participate in a radio/ TV broadcast/ telecast or contribute an article or write a letter to a newspaper pseudonymously or in the name of any other person, if such book, article, broadcast/ telecast or letter relates directly to the aforesaid not only during the period of job contract but also thereafter. Any information gathered during the course of the job contract as aforesaid shall not be divulged to anyone, who is not authorised to have the same.

(iv) Certificate of expenditure incurred by M/s Deloitte Touche Tohmatsu India Pvt. Ltd. on the aforesaid project for the total amount released, duly signed by an Officer of M/s Deloitte Touche Tohmatsu India Pvt. Ltd. duly authorised for the purpose shall be sent to Adviser (Industry-II), Planning Commission with a copy endorsed to Director (Administration-I), Planning Commission.

(v) The persons employed in the project will be treated as employees of M/s Deloitte Touche Tohmatsu India Pvt. Ltd. and not of the Government and the conditions of their services will be governed in accordance with the rules and regulations of M/s Deloitte Touche Tohmatsu India Pvt. Ltd.

(vi) No capital expenditure will be incurred without prior approval of the Planning Commission.

(vii) Equipment if any, purchased out of the financial assistance (excluding overheads) with the prior approval of the Planning Commission on the completion of assignment shall remain the property of the Planning Commission, who will be competent to decide about its disposal.

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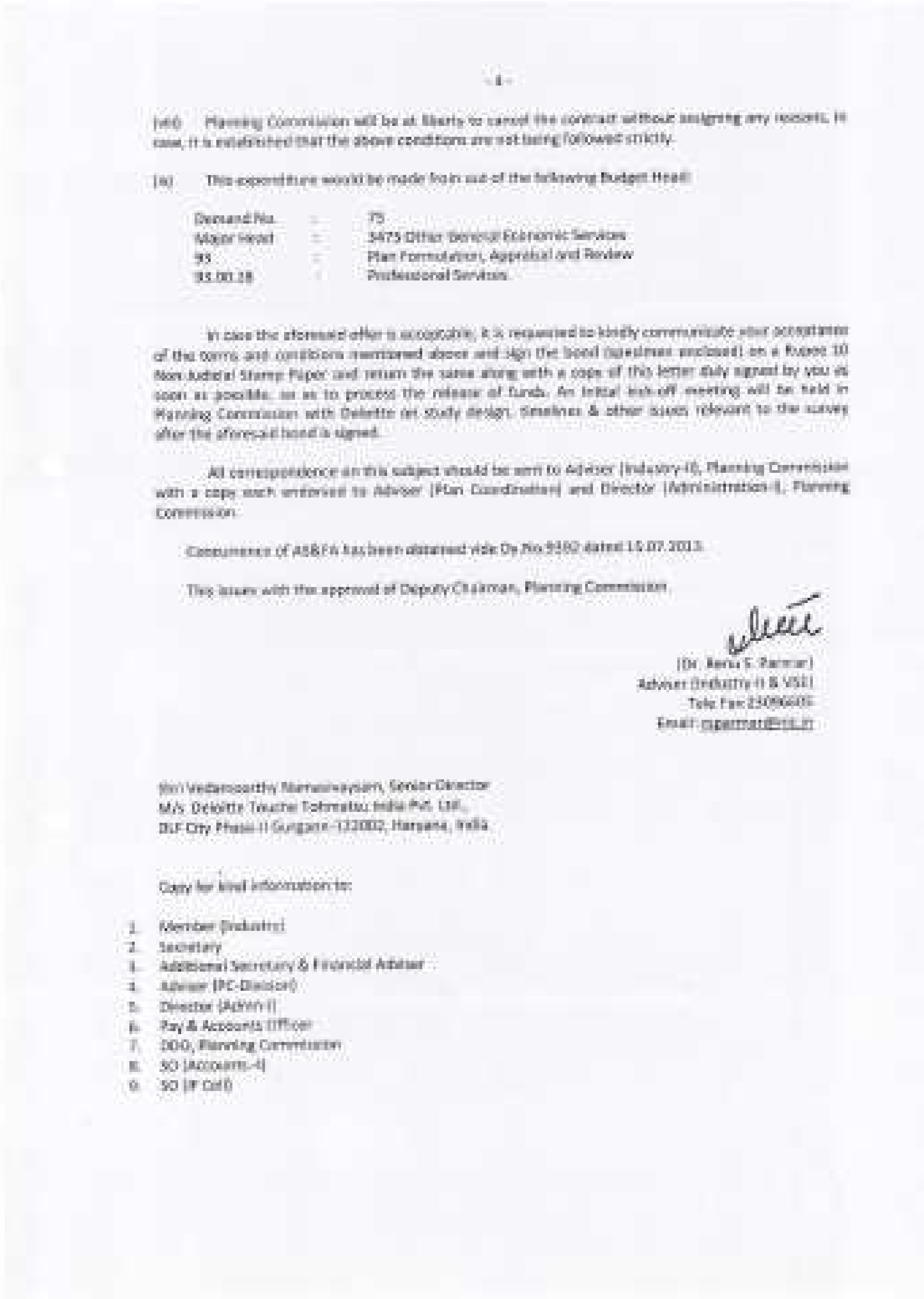


- 4 -

(viii) Planning Commission will be at liberty to cancel the contract without assigning any reasons, in case, it is established that the above conditions are not being followed strictly.

(ix) This expenditure would be made from out of the following Budget Head:

Demand No. : 75
Major Head : 3475 Other General Economic Services
99 : Plan Formulation, Appraisal and Review
99.00.28 : Professional Services

In case the aforesaid offer is acceptable, it is requested to kindly communicate your acceptance of the terms and conditions mentioned above and sign the bond (specimen enclosed) on a Rupees 10 Non-Judicial Stamp Paper and return the same along with a copy of this letter duly signed by you as soon as possible, so as to process the release of funds. An initial kick-off meeting will be held in Planning Commission with Deloitte on study design, timelines & other issues relevant to the survey after the aforesaid bond is signed.

All correspondence on this subject should be sent to Adviser (Industry-II), Planning Commission with a copy each endorsed to Adviser (Plan Coordination) and Director (Administration-I), Planning Commission.

Concurrence of AS&FA has been obtained vide Dy.No.9582 dated 15.07.2013.

This issues with the approval of Deputy Chairman, Planning Commission.

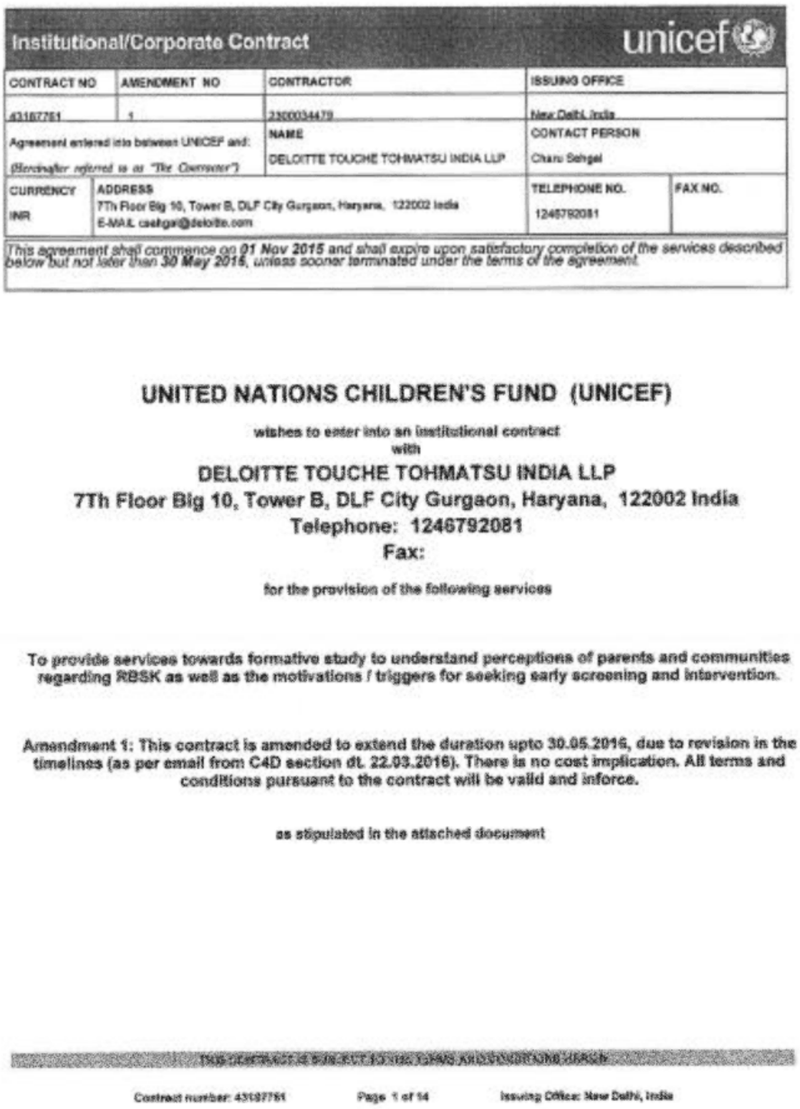
(Dr. Renu S. Parmar)
Adviser (Industry-II & VSE)
Tele Fax 23096605
Email: rsparmar@nic.in

Shri Vedamoorthy Namasivayam, Senior Director
M/s. Deloitte Touche Tohmatsu India Pvt. Ltd.,
DLF City Phase-II Gurgaon-122002, Haryana, India

Copy for kind information to:

1. Member (Industry)
2. Secretary
3. Additional Secretary & Financial Adviser
4. Adviser (PC-Division)
5. Director (Admn-I)
6. Pay & Accounts Officer
7. DDO, Planning Commission
8. SO (Accounts-I)
9. SO (IF Cell)

5.2: Formative study to understand perceptions of parents and communities regarding RBSK as well as the motivations/ triggers for seeking early screening and intervention across 5 States in India



Institutional/Corporate Contract unicef

CONTRACT NO	AMENDMENT NO	CONTRACTOR	ISSUING OFFICE	
43187761	1	2300034479	New Delhi, India	
Agreement entered into between UNICEF and: *(Hereinafter referred to as "The Contractor")*		NAME DELOITTE TOUCHE TOHMATSU INDIA LLP	CONTACT PERSON Charu Sehgal	
CURRENCY INR	ADDRESS 7Th Floor Big 10, Tower B, DLF City Gurgaon, Haryana, 122002 India E-MAIL csehgal@deloitte.com		TELEPHONE NO. 1246792081	FAX NO.

This agreement shall commence on ***01 Nov 2015*** *and shall expire upon satisfactory completion of the services described below but not later than* ***30 May 2016****, unless sooner terminated under the terms of the agreement.*

UNITED NATIONS CHILDREN'S FUND (UNICEF)

wishes to enter into an institutional contract
with

DELOITTE TOUCHE TOHMATSU INDIA LLP
7Th Floor Big 10, Tower B, DLF City Gurgaon, Haryana, 122002 India
Telephone: 1246792081
Fax:

for the provision of the following services

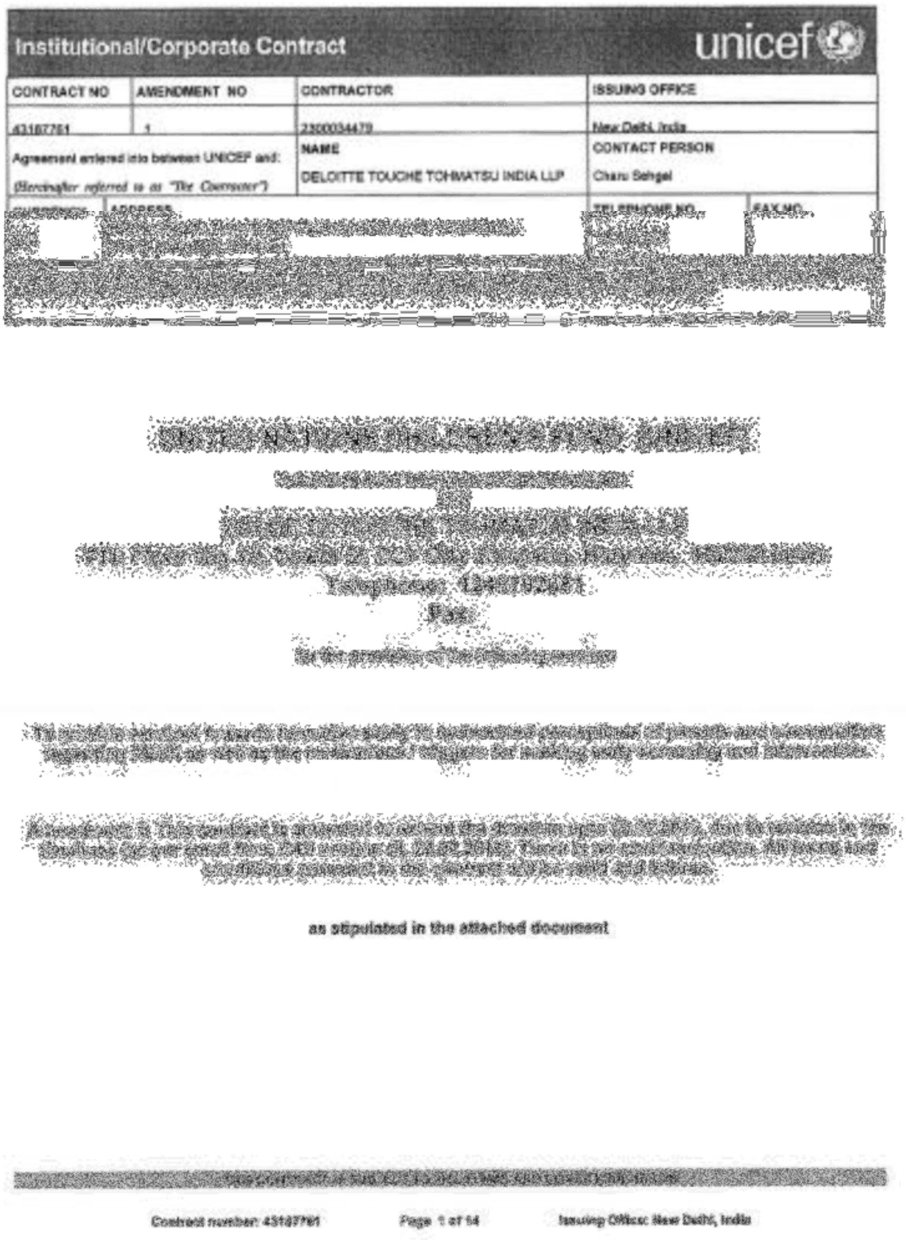
To provide services towards formative study to understand perceptions of parents and communities regarding RBSK as well as the motivations / triggers for seeking early screening and intervention.

Amendment 1: This contract is amended to extend the duration upto 30.05.2016, due to revision in the timelines (as per email from C4D section dt. 22.03.2016). There is no cost implication. All terms and conditions pursuant to the contract will be valid and inforce.

as stipulated in the attached document

THIS CONTRACT IS SUBJECT TO THE TERMS AND CONDITIONS HEREIN

Contract number: 43187761 Page 1 of 14 Issuing Office: New Delhi, India



Institutional/Corporate Contract unicef

CONTRACT NO	AMENDMENT NO	CONTRACTOR	ISSUING OFFICE
43187761	1	2300034479	New Delhi, India
Agreement entered into between UNICEF and: *(Hereinafter referred to as "The Contractor")*		NAME DELOITTE TOUCHE TOHMATSU INDIA LLP	CONTACT PERSON Charu Sehgal

[redacted]

[redacted]

[redacted]

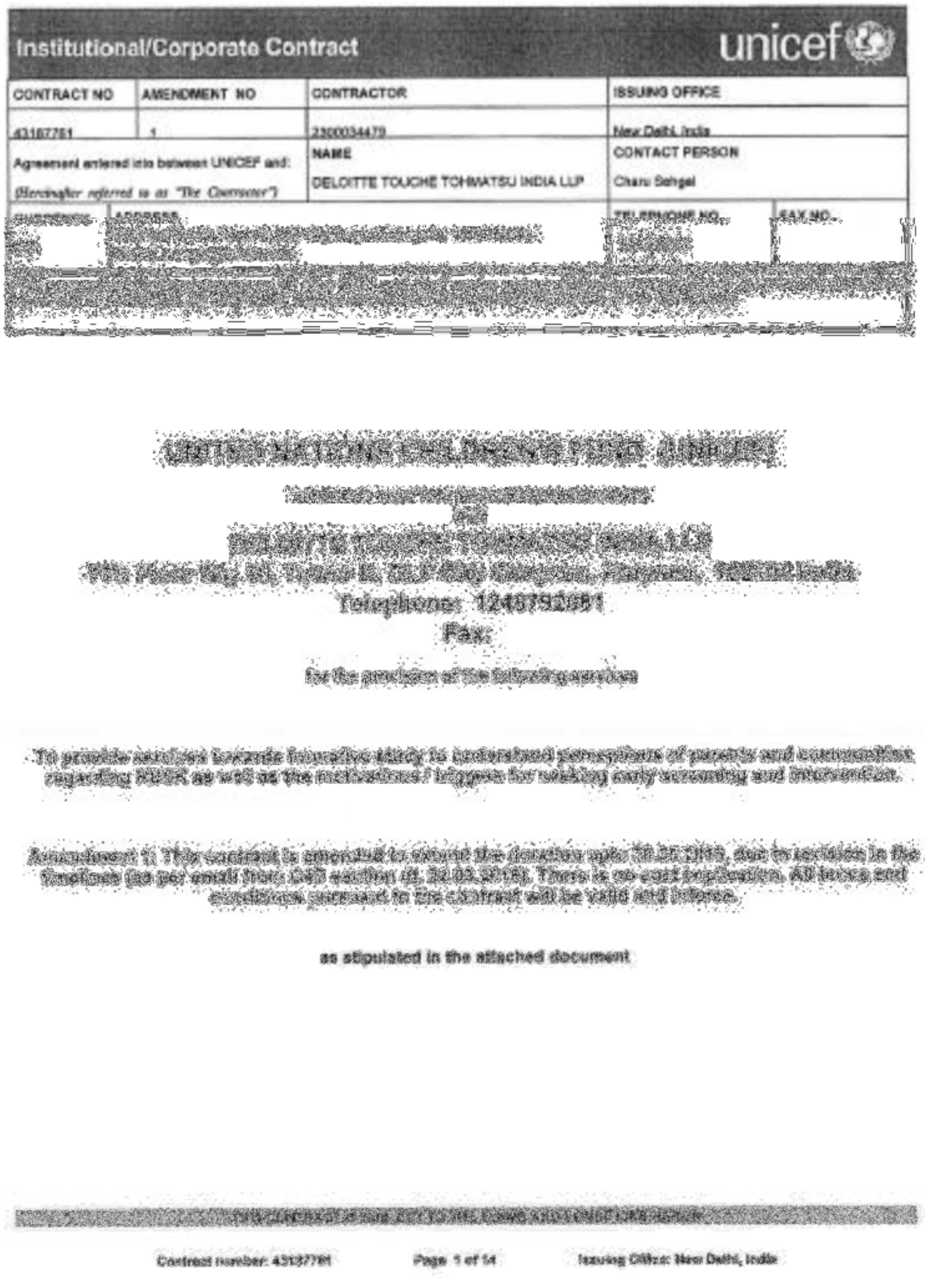
[redacted]

as stipulated in the attached document

[redacted]

Contract number: 43187761 Page 1 of 14 Issuing Office: New Delhi, India

Deloitte Touche Tohmatsu India LLP



Institutional/Corporate Contract unicef

CONTRACT NO	AMENDMENT NO	CONTRACTOR	ISSUING OFFICE
43187761	1	2300034479	New Delhi, India
Agreement entered into between UNICEF and: *(Hereinafter referred to as "The Contractor")*		NAME DELOITTE TOUCHE TOHMATSU INDIA LLP	CONTACT PERSON Charu Sehgal
CURRENCY [illegible]	ADDRESS [illegible]	TELEPHONE NO. [illegible]	FAX NO.

[illegible]

UNITED NATIONS CHILDREN'S FUND (UNICEF)
[illegible]
and
DELOITTE TOUCHE TOHMATSU INDIA LLP
[illegible]
Telephone: [illegible]
Fax:
for the provision of the following services

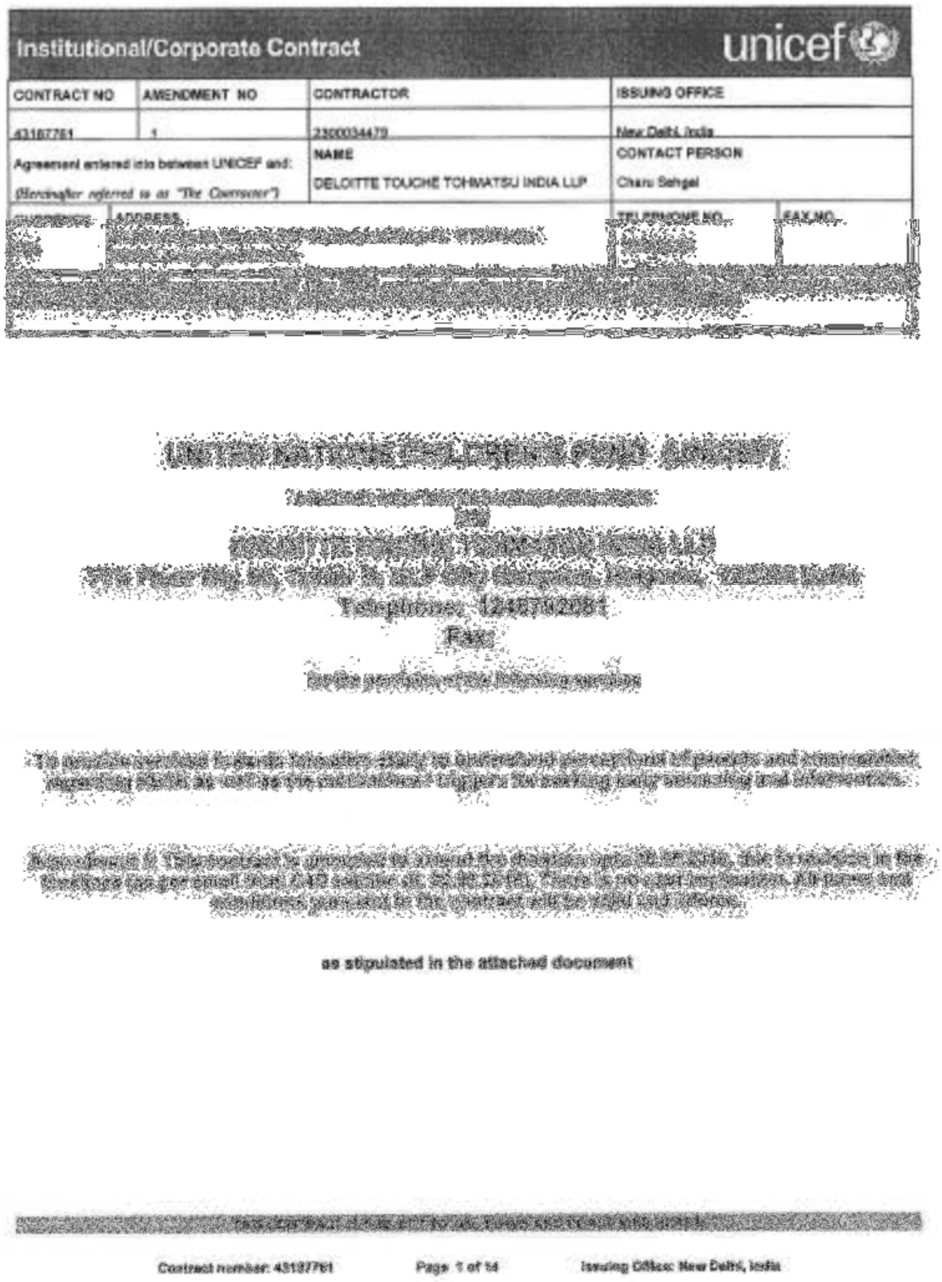
To provide services towards formative study to understand perceptions of parents and communities regarding [illegible] as well as the motivations / triggers for seeking early screening and intervention.

Amendment 1: This contract is amended to extend the duration upto [illegible], due to revision in the timelines (as per email from [illegible] section dt. [illegible]). There is no cost implication. All terms and conditions pursuant to the contract will be valid and inforce.

as stipulated in the attached document

[illegible]

Contract number: [illegible] Page 1 of 14 Issuing Office: New Delhi, India



Institutional/Corporate Contract unicef

CONTRACT NO	AMENDMENT NO	CONTRACTOR	ISSUING OFFICE
43187761	1	2300034479	New Delhi, India
Agreement entered into between UNICEF and: *(Hereinafter referred to as "The Contractor")*		NAME DELOITTE TOUCHE TOHMATSU INDIA LLP	CONTACT PERSON Charu Sehgal

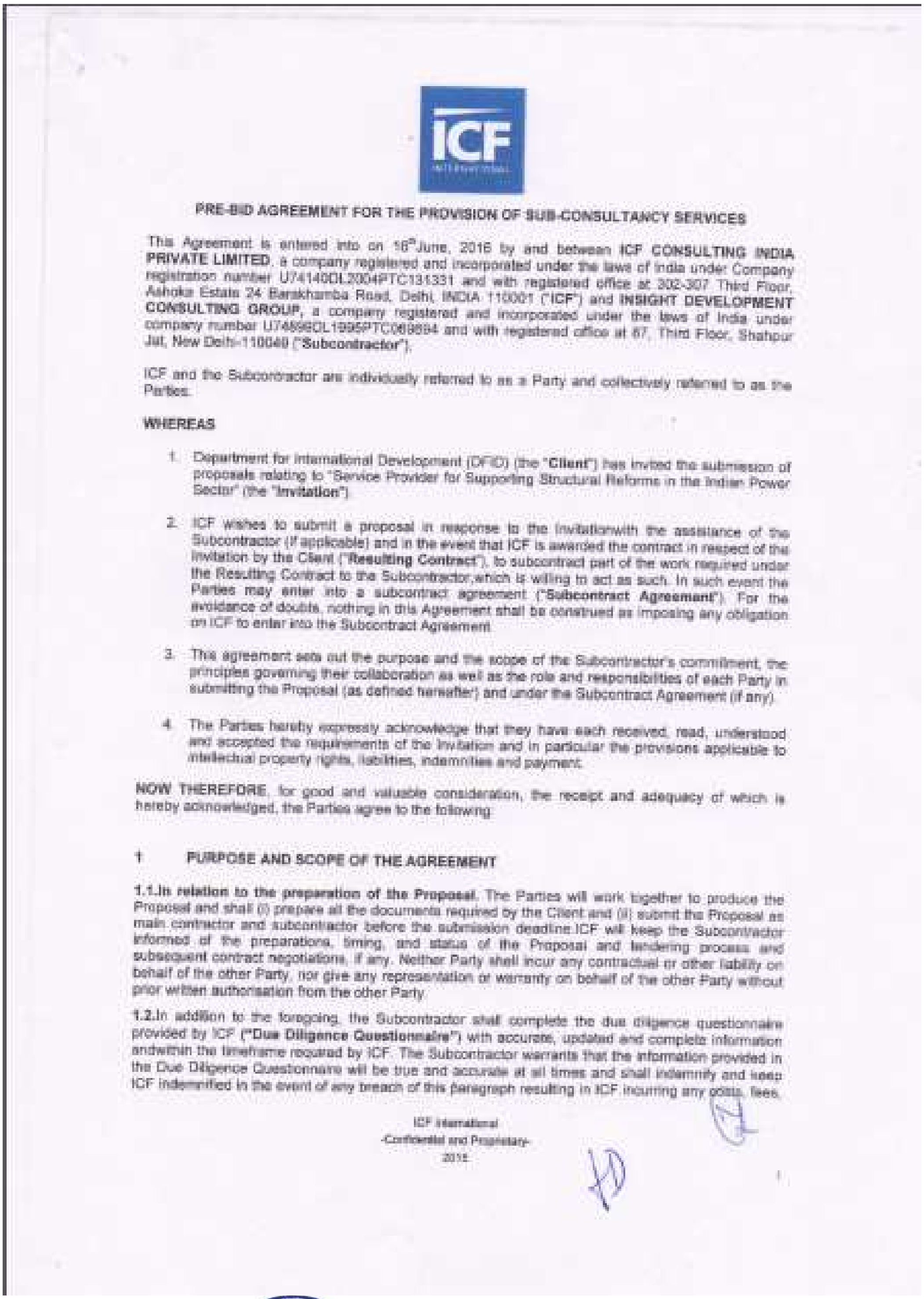
UNITED NATIONS CHILDREN'S FUND (UNICEF)

Fax:

as stipulated in the attached document

Contract number: 43187761 Page 1 of 14 Issuing Office: New Delhi, India

5.3: Mid-term and End-line Assessment as Part of Implementation of Asian Development bank (ADB) Assisted Investment Program Performance & Monitoring System Consultants (IPPMS) of Rajasthan Urban Sector Development Investment Program (RUSDIP)



PRE-BID AGREEMENT FOR THE PROVISION OF SUB-CONSULTANCY SERVICES

This Agreement is entered into on 16th June, 2016 by and between **ICF CONSULTING INDIA PRIVATE LIMITED**, a company registered and incorporated under the laws of India under Company registration number U74140DL2004PTC131331 and with registered office at 302-307 Third Floor, Ashoka Estate 24 Barakhamba Road, Delhi, INDIA 110001 ("**ICF**") and **INSIGHT DEVELOPMENT CONSULTING GROUP**, a company registered and incorporated under the laws of India under company number U74899DL1995PTC069694 and with registered office at 87, Third Floor, Shahpur Jat, New Delhi-110049 ("**Subcontractor**").

ICF and the Subcontractor are individually referred to as a Party and collectively referred to as the Parties.

WHEREAS

1. Department for International Development (DFID) (the "**Client**") has invited the submission of proposals relating to "Service Provider for Supporting Structural Reforms in the Indian Power Sector" (the "**Invitation**").
2. ICF wishes to submit a proposal in response to the Invitationwith the assistance of the Subcontractor (if applicable) and in the event that ICF is awarded the contract in respect of the Invitation by the Client ("**Resulting Contract**"), to subcontract part of the work required under the Resulting Contract to the Subcontractor,which is willing to act as such. In such event the Parties may enter into a subcontract agreement ("**Subcontract Agreement**"). For the avoidance of doubts, nothing in this Agreement shall be construed as imposing any obligation on ICF to enter into the Subcontract Agreement.
3. This agreement sets out the purpose and the scope of the Subcontractor's commitment, the principles governing their collaboration as well as the role and responsibilities of each Party in submitting the Proposal (as defined hereafter) and under the Subcontract Agreement (if any).
4. The Parties hereby expressly acknowledge that they have each received, read, understood and accepted the requirements of the Invitation and in particular the provisions applicable to intellectual property rights, liabilities, indemnities and payment.

NOW THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the Parties agree to the following:

1 PURPOSE AND SCOPE OF THE AGREEMENT

1.1.In relation to the preparation of the Proposal. The Parties will work together to produce the Proposal and shall (i) prepare all the documents required by the Client and (ii) submit the Proposal as main contractor and subcontractor before the submission deadline.ICF will keep the Subcontractor informed of the preparations, timing, and status of the Proposal and tendering process and subsequent contract negotiations, if any. Neither Party shall incur any contractual or other liability on behalf of the other Party, nor give any representation or warranty on behalf of the other Party without prior written authorisation from the other Party.

1.2. In addition to the foregoing, the Subcontractor shall complete the due diligence questionnaire provided by ICF ("**Due Diligence Questionnaire**") with accurate, updated and complete information andwithin the timeframe required by ICF. The Subcontractor warrants that the information provided in the Due Diligence Questionnaire will be true and accurate at all times and shall indemnify and keep ICF indemnified in the event of any breach of this paragraph resulting in ICF incurring any costs, fees,

ICF International
-Confidential and Proprietary-
2015

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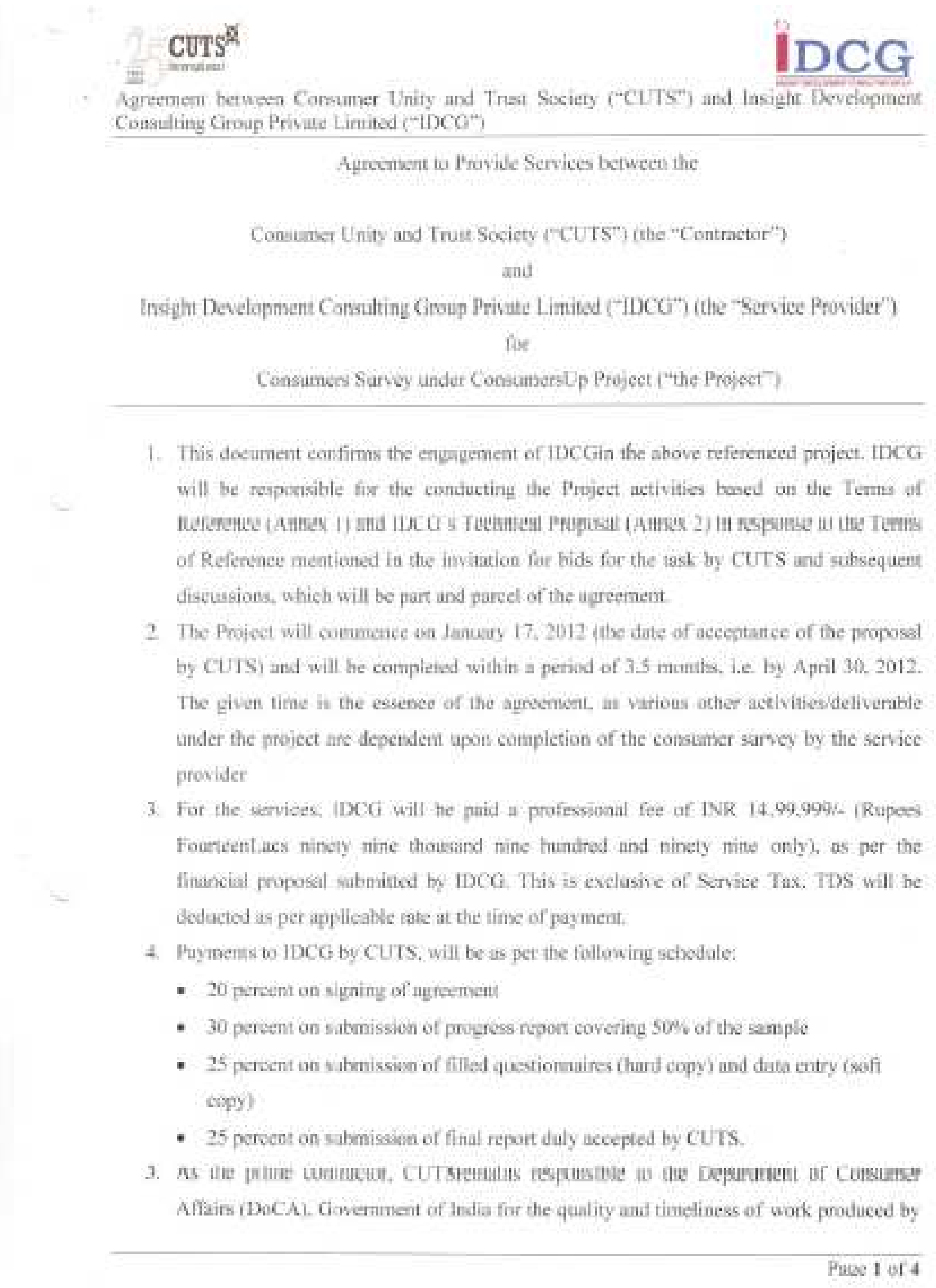
5.4: National Consumers Survey under "ConsumerUp" Project of Department of Consumer Affairs implemented by CUTS



Agreement between Consumer Unity and Trust Society ("CUTS") and Insight Development Consulting Group Private Limited ("IDCG")

Agreement to Provide Services between the

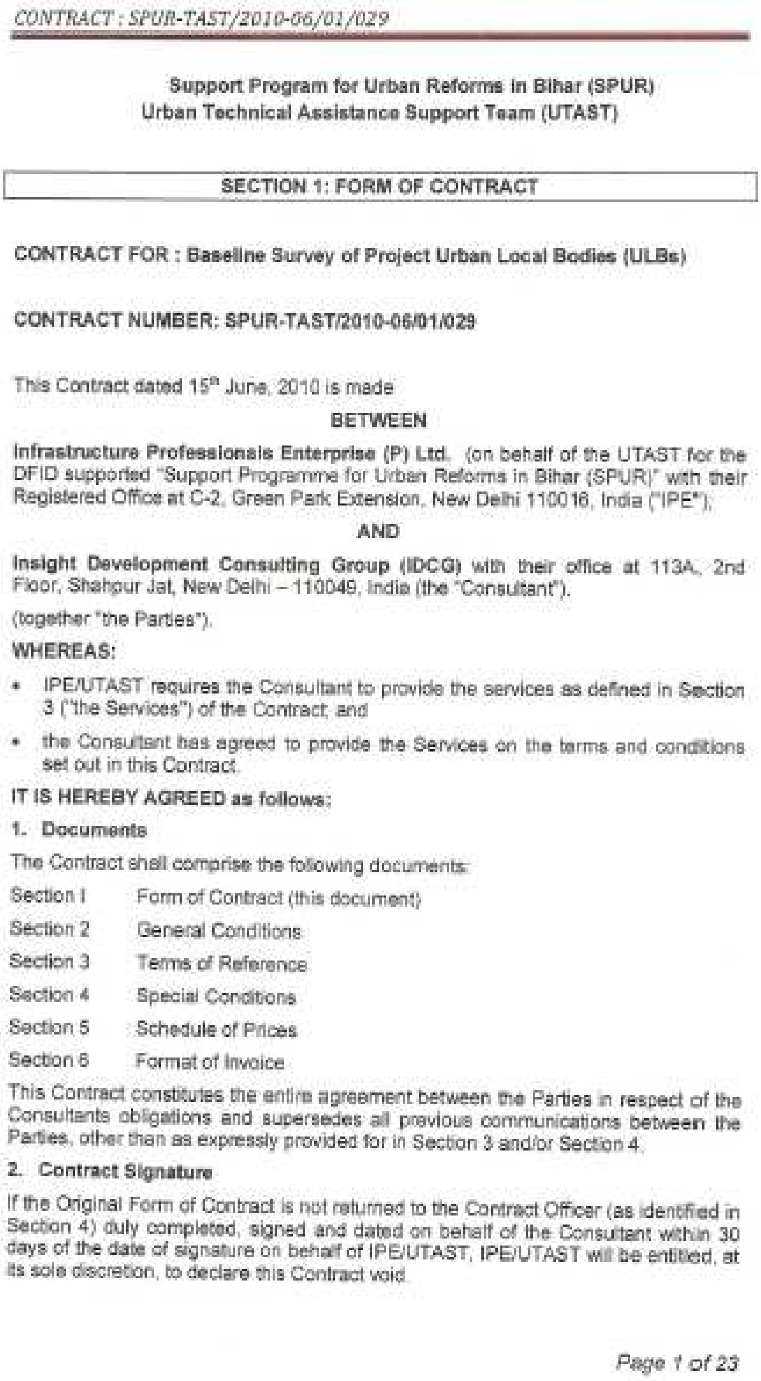
Consumer Unity and Trust Society ("CUTS") (the "Contractor")
and
Insight Development Consulting Group Private Limited ("IDCG") (the "Service Provider")
for
Consumers Survey under ConsumersUp Project ("the Project")

1. This document confirms the engagement of IDCGin the above referenced project. IDCG will be responsible for the conducting the Project activities based on the Terms of Reference (Annex 1) and IDCG's Technical Proposal (Annex 2) in response to the Terms of Reference mentioned in the invitation for bids for the task by CUTS and subsequent discussions, which will be part and parcel of the agreement.
2. The Project will commence on January 17, 2012 (the date of acceptance of the proposal by CUTS) and will be completed within a period of 3.5 months, i.e. by April 30, 2012. The given time is the essence of the agreement, as various other activities/deliverable under the project are dependent upon completion of the consumer survey by the service provider
3. For the services, IDCG will be paid a professional fee of INR 14,99,999/- (Rupees FourteenLacs ninety nine thousand nine hundred and ninety nine only), as per the financial proposal submitted by IDCG. This is exclusive of Service Tax. TDS will be deducted as per applicable rate at the time of payment.
4. Payments to IDCG by CUTS, will be as per the following schedule:
   - 20 percent on signing of agreement
   - 30 percent on submission of progress report covering 50% of the sample
   - 25 percent on submission of filled questionnaires (hard copy) and data entry (soft copy)
   - 25 percent on submission of final report duly accepted by CUTS.

3. As the prime contractor, CUTSremains responsible to the Department of Consumer Affairs (DoCA), Government of India for the quality and timeliness of work produced by

Page 1 of 4

5.5 Baseline Survey of Project Urban Local Bodies under "Support Program for Urban Reforms" (SPUR)



CONTRACT : SPUR-TAST/2010-06/01/029

Support Program for Urban Reforms in Bihar (SPUR)
Urban Technical Assistance Support Team (UTAST)

SECTION 1: FORM OF CONTRACT

CONTRACT FOR : **Baseline Survey of Project Urban Local Bodies (ULBs)**

CONTRACT NUMBER: SPUR-TAST/2010-06/01/029

This Contract dated 15th June, 2010 is made

BETWEEN

Infrastructure Professionals Enterprise (P) Ltd. (on behalf of the UTAST for the DFID supported "Support Programme for Urban Reforms in Bihar (SPUR)" with their Registered Office at C-2, Green Park Extension, New Delhi 110016, India ("IPE");

AND

Insight Development Consulting Group (IDCG) with their office at 113A, 2nd Floor, Shahpur Jat, New Delhi – 110049, India (the "Consultant").

(together "the Parties").

WHEREAS:

- IPE/UTAST requires the Consultant to provide the services as defined in Section 3 ("the Services") of the Contract; and
- the Consultant has agreed to provide the Services on the terms and conditions set out in this Contract.

IT IS HEREBY AGREED as follows:

1. Documents

The Contract shall comprise the following documents:

Section 1	Form of Contract (this document)
Section 2	General Conditions
Section 3	Terms of Reference
Section 4	Special Conditions
Section 5	Schedule of Prices
Section 6	Format of Invoice

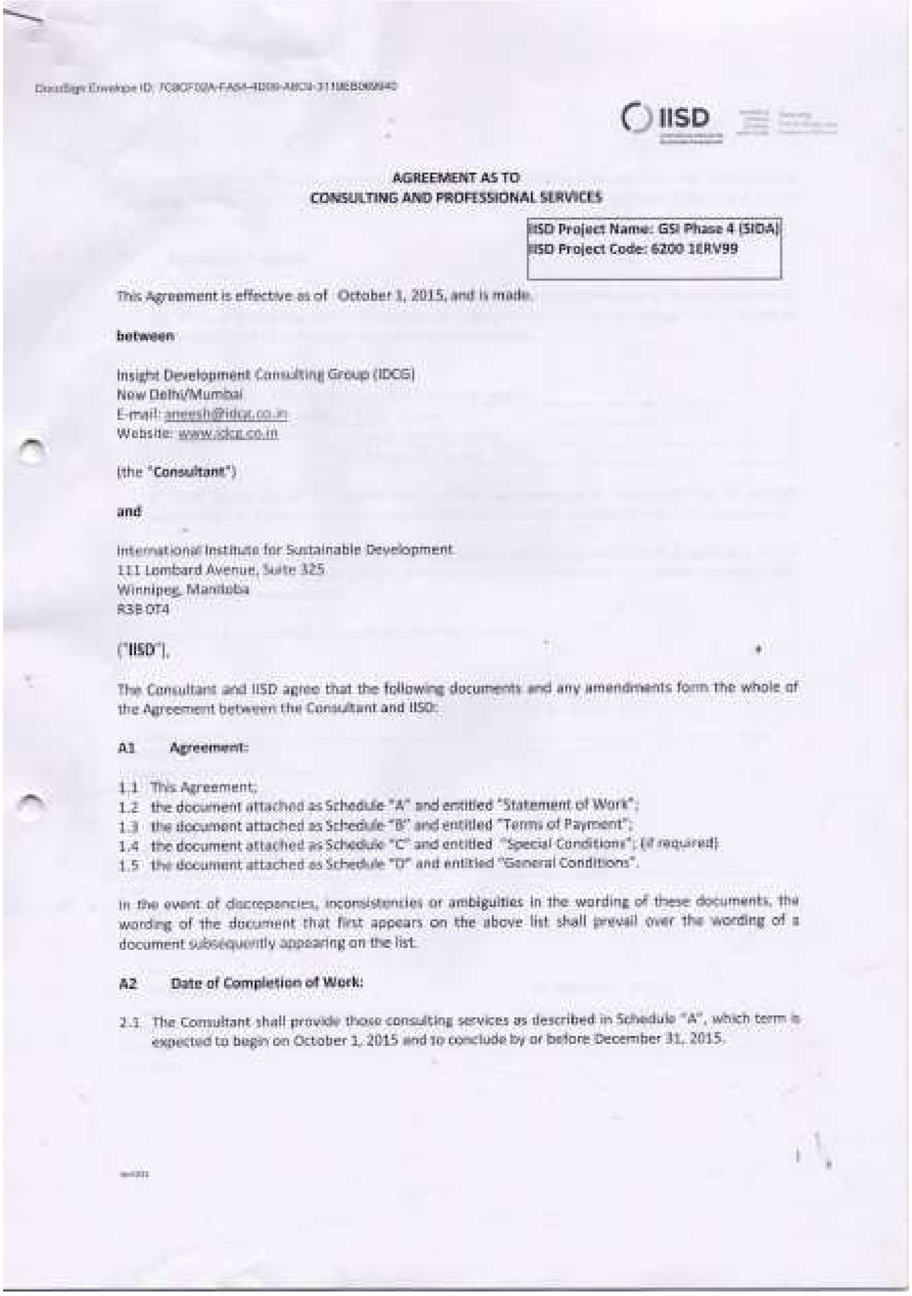
This Contract constitutes the entire agreement between the Parties in respect of the Consultants obligations and supersedes all previous communications between the Parties, other than as expressly provided for in Section 3 and/or Section 4.

2. Contract Signature

If the Original Form of Contract is not returned to the Contract Officer (as identified in Section 4) duly completed, signed and dated on behalf of the Consultant within 30 days of the date of signature on behalf of IPE/UTAST, IPE/UTAST will be entitled, at its sole discretion, to declare this Contract void.

Page 1 of 23

5.6 Household Consumer Survey for Understanding the Opportunities for End-user Electricity Tariff Reform



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AGREEMENT AS TO
CONSULTING AND PROFESSIONAL SERVICES

IISD Project Name: GSI Phase 4 (SIDA)
IISD Project Code: 6200 1ERV99

This Agreement is effective as of October 1, 2015, and is made

between

Insight Development Consulting Group (IDCG)
New Delhi/Mumbai
E-mail: aneesh@idcg.co.in
Website: www.idcg.co.in

(the "**Consultant**")

and

International Institute for Sustainable Development
111 Lombard Avenue, Suite 325
Winnipeg, Manitoba
R3B 0T4

("**IISD**"),

The Consultant and IISD agree that the following documents and any amendments form the whole of the Agreement between the Consultant and IISD:

A1 Agreement:

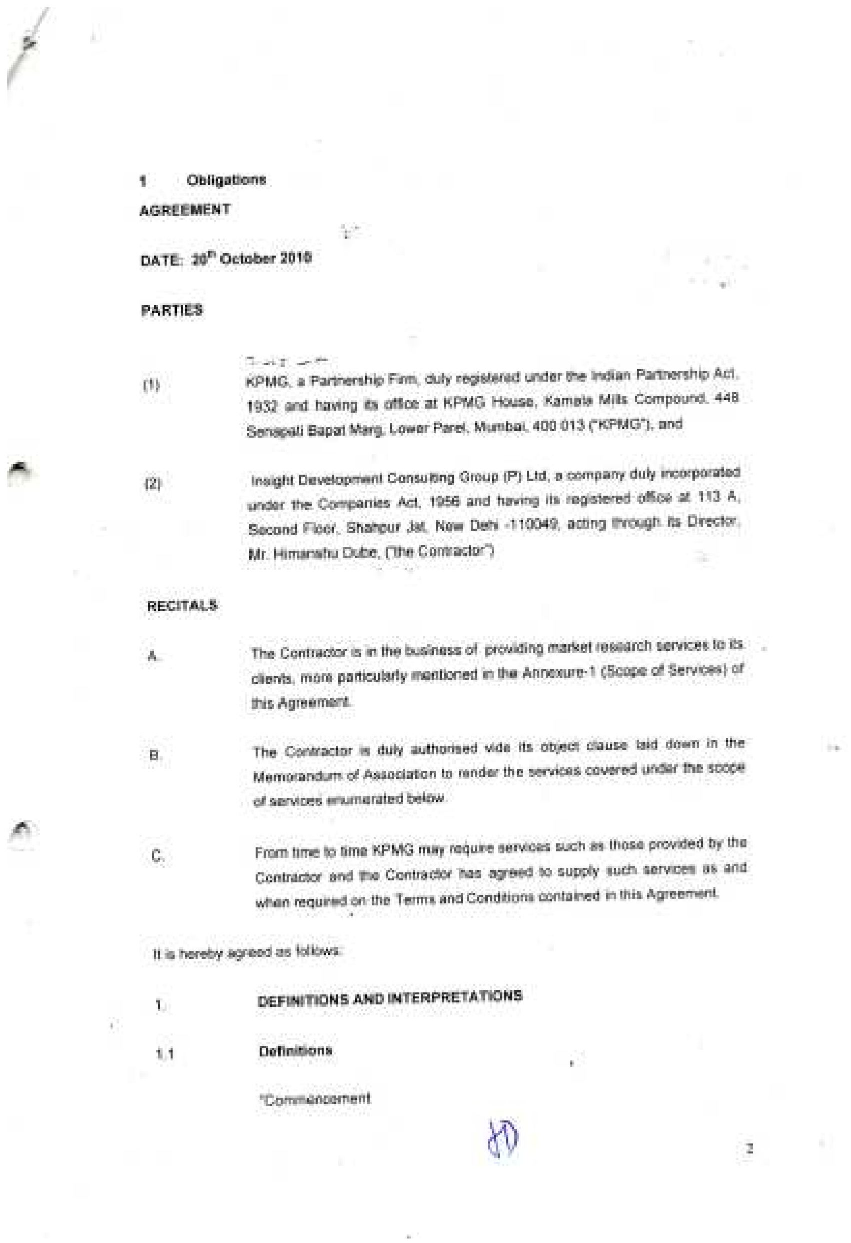
1.1 This Agreement;
1.2 the document attached as Schedule "A" and entitled "Statement of Work";
1.3 the document attached as Schedule "B" and entitled "Terms of Payment";
1.4 the document attached as Schedule "C" and entitled "Special Conditions"; (if required)
1.5 the document attached as Schedule "D" and entitled "General Conditions".

In the event of discrepancies, inconsistencies or ambiguities in the wording of these documents, the wording of the document that first appears on the above list shall prevail over the wording of a document subsequently appearing on the list.

A2 Date of Completion of Work:

2.1 The Consultant shall provide those consulting services as described in Schedule "A", which term is expected to begin on October 1, 2015 and to conclude by or before December 31, 2015.

5.7 Market assessment for a planned healthcare complexes in three States



1 **Obligations**

AGREEMENT

DATE: 20th October 2010

PARTIES

(1) KPMG, a Partnership Firm, duly registered under the Indian Partnership Act, 1932 and having its office at KPMG House, Kamala Mills Compound, 448 Senapati Bapat Marg, Lower Parel, Mumbai, 400 013 ("KPMG"), and

(2) Insight Development Consulting Group (P) Ltd, a company duly incorporated under the Companies Act, 1956 and having its registered office at 113 A, Second Floor, Shahpur Jat, New Delhi -110049, acting through its Director, Mr. Himanshu Dube, ("the Contractor")

RECITALS

A. The Contractor is in the business of providing market research services to its clients, more particularly mentioned in the Annexure-1 (Scope of Services) of this Agreement.

B. The Contractor is duly authorised vide its object clause laid down in the Memorandum of Association to render the services covered under the scope of services enumerated below.

C. From time to time KPMG may require services such as those provided by the Contractor and the Contractor has agreed to supply such services as and when required on the Terms and Conditions contained in this Agreement.

It is hereby agreed as follows:

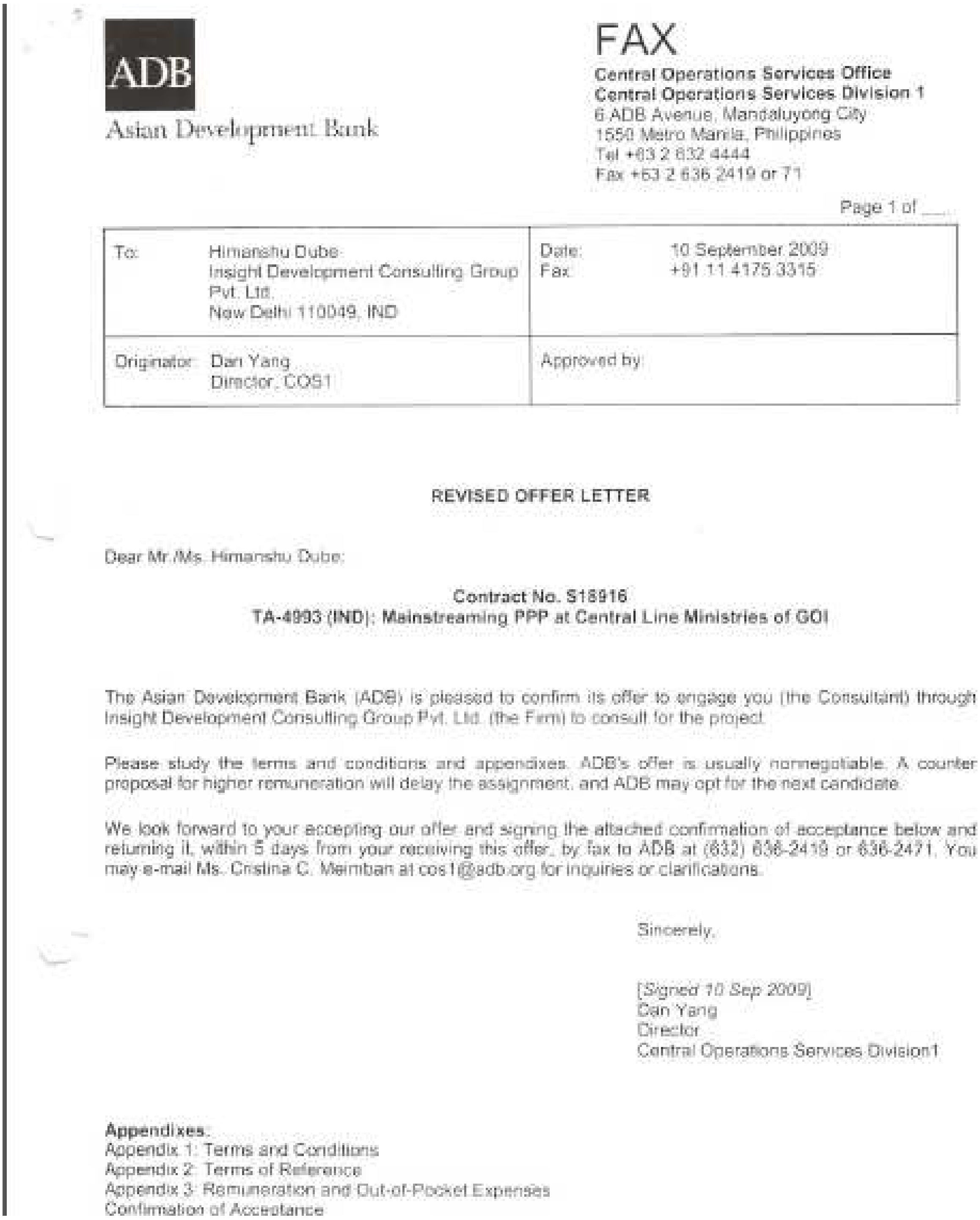
1. **DEFINITIONS AND INTERPRETATIONS**

1.1 **Definitions**

"Commencement

2

5.8 Market assessment for establishing schools in the state of Rajasthan under ADB TA 4993-IND: Mainstreaming PPP at Central Line Ministries



ADB
Asian Development Bank

FAX
Central Operations Services Office
Central Operations Services Division 1
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 632 4444
Fax +63 2 636 2419 or 71

Page 1 of ___

To:	Himanshu Dube Insight Development Consulting Group Pvt. Ltd. New Delhi 110049, IND	Date: Fax:	10 September 2009 +91 11 4175 3315
Originator:	Dan Yang Director, COS1	Approved by:	

REVISED OFFER LETTER

Dear Mr./Ms. Himanshu Dube:

Contract No. S18916
TA-4993 (IND): Mainstreaming PPP at Central Line Ministries of GOI

The Asian Development Bank (ADB) is pleased to confirm its offer to engage you (the Consultant) through Insight Development Consulting Group Pvt. Ltd. (the Firm) to consult for the project.

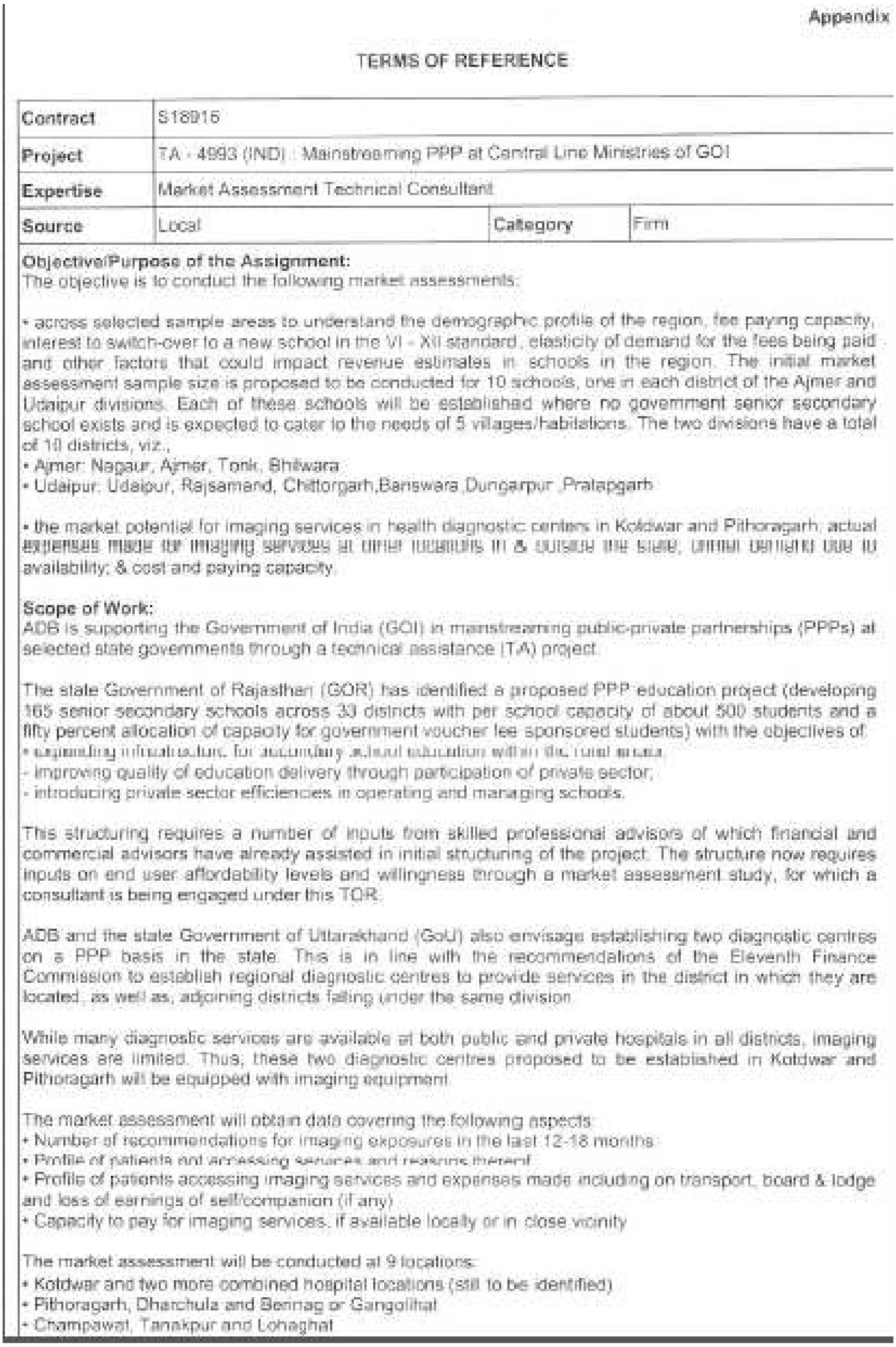
Please study the terms and conditions and appendixes. ADB's offer is usually nonnegotiable. A counter proposal for higher remuneration will delay the assignment, and ADB may opt for the next candidate.

We look forward to your accepting our offer and signing the attached confirmation of acceptance below and returning it, within 5 days from your receiving this offer, by fax to ADB at (632) 636-2419 or 636-2471. You may e-mail Ms. Cristina C. Memban at cos1@adb.org for inquiries or clarifications.

Sincerely,

[Signed 10 Sep 2009]
Dan Yang
Director
Central Operations Services Division1

Appendixes:
Appendix 1: Terms and Conditions
Appendix 2: Terms of Reference
Appendix 3: Remuneration and Out-of-Pocket Expenses
Confirmation of Acceptance



Appendix

TERMS OF REFERENCE

Contract	S18916		
Project	TA - 4993 (IND) : Mainstreaming PPP at Central Line Ministries of GOI		
Expertise	Market Assessment Technical Consultant		
Source	Local	**Category**	Firm

Objective/Purpose of the Assignment:
The objective is to conduct the following market assessments:

- across selected sample areas to understand the demographic profile of the region, fee paying capacity, interest to switch-over to a new school in the VI - XII standard, elasticity of demand for the fees being paid and other factors that could impact revenue estimates in schools in the region. The initial market assessment sample size is proposed to be conducted for 10 schools, one in each district of the Ajmer and Udaipur divisions. Each of these schools will be established where no government senior secondary school exists and is expected to cater to the needs of 5 villages/habitations. The two divisions have a total of 10 districts, viz.,
- Ajmer: Nagaur, Ajmer, Tonk, Bhilwara
- Udaipur: Udaipur, Rajsamand, Chittorgarh,Banswara,Dungarpur ,Pratapgarh

- the market potential for imaging services in health diagnostic centers in Kotdwar and Pithoragarh, actual expenses made for imaging services at other locations in & outside the state, unmet demand due to availability; & cost and paying capacity.

Scope of Work:
ADB is supporting the Government of India (GOI) in mainstreaming public-private partnerships (PPPs) at selected state governments through a technical assistance (TA) project.

The state Government of Rajasthan (GOR) has identified a proposed PPP education project (developing 165 senior secondary schools across 33 districts with per school capacity of about 500 students and a fifty percent allocation of capacity for government voucher fee sponsored students) with the objectives of:
- expanding infrastructure for secondary school education within the rural areas;
- improving quality of education delivery through participation of private sector;
- introducing private sector efficiencies in operating and managing schools.

This structuring requires a number of inputs from skilled professional advisors of which financial and commercial advisors have already assisted in initial structuring of the project. The structure now requires inputs on end user affordability levels and willingness through a market assessment study, for which a consultant is being engaged under this TOR.

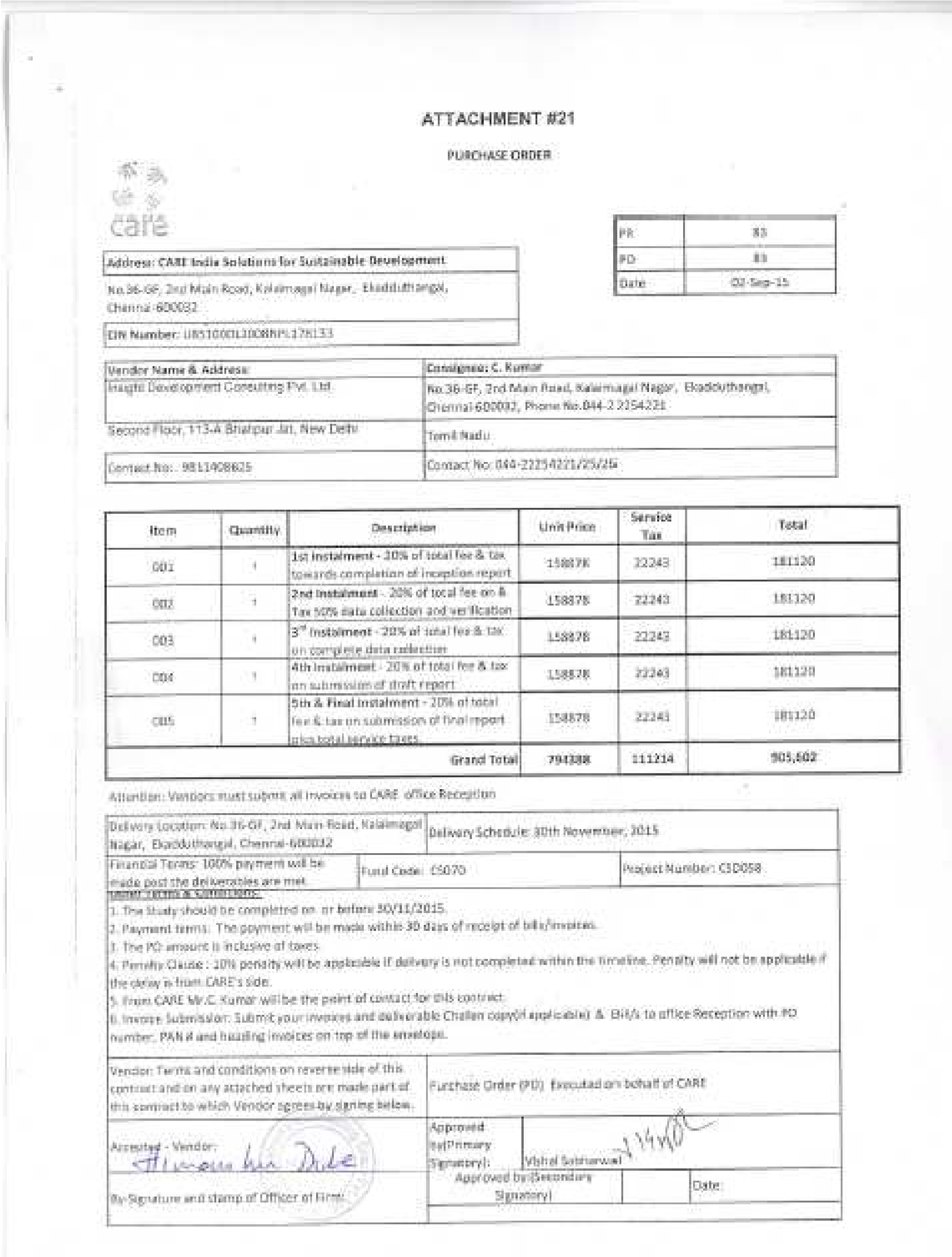
ADB and the state Government of Uttarakhand (GoU) also envisage establishing two diagnostic centres on a PPP basis in the state. This is in line with the recommendations of the Eleventh Finance Commission to establish regional diagnostic centres to provide services in the district in which they are located, as well as, adjoining districts falling under the same division.

While many diagnostic services are available at both public and private hospitals in all districts, imaging services are limited. Thus, these two diagnostic centres proposed to be established in Kotdwar and Pithoragarh will be equipped with imaging equipment.

The market assessment will obtain data covering the following aspects:
- Number of recommendations for imaging exposures in the last 12-18 months
- Profile of patients not accessing services and reasons thereof
- Profile of patients accessing imaging services and expenses made including on transport, board & lodge and loss of earnings of self/companion (if any)
- Capacity to pay for imaging services, if available locally or in close vicinity

The market assessment will be conducted at 9 locations:
- Kotdwar and two more combined hospital locations (still to be identified)
- Pithoragarh, Dharchula and Berinag or Gangolihat
- Champawat, Tanakpur and Lohaghat

5.9: Final Evaluation of Savings-Led, Community Managed Microfinance Project, "Banking on Change" in Delhi



ATTACHMENT #21

PURCHASE ORDER

care

PR	83
PO	83
Date	02-Sep-15

Address: CARE India Solutions for Sustainable Development
No.36-GF, 2nd Main Road, Kalaimagal Nagar, Ekaduthangal,
Chennai-600032
CIN Number: U85100DL2008NPL178133

Vendor Name & Address:	**Consignee: C. Kumar**
Insight Development Consulting Pvt. Ltd.	No.36-GF, 2nd Main Road, Kalaimagal Nagar, Ekaduthangal, Chennai-600032, Phone No.044-2 2254221
Second Floor, 113-A Bhaipur Jat, New Delhi	Tamil Nadu
Contact No.: 9811408625	Contact No: 044-22254221/25/26

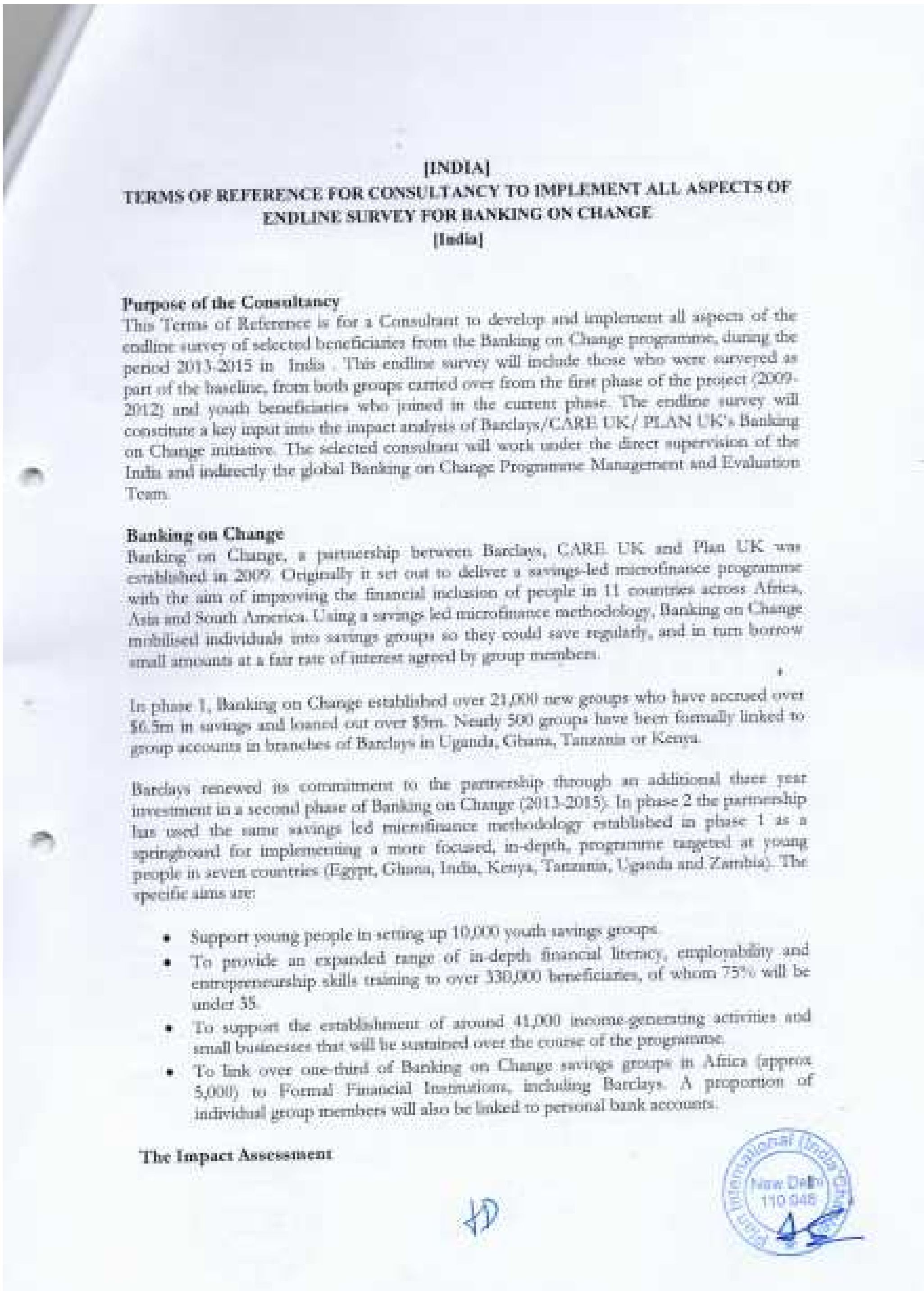
Item	Quantity	Description	Unit Price	Service Tax	Total
001	1	**1st instalment** - 20% of total fee & tax towards completion of inception report	158878	22243	181120
002	1	**2nd Instalment** - 20% of total fee on & Tax 50% data collection and verification	158878	22243	181120
003	1	**3rd instalment** - 20% of total fee & tax on complete data collection	158878	22243	181120
004	1	**4th instalment** - 20% of total fee & tax on submission of draft report	158878	22243	181120
005	1	**5th & Final instalment** - 20% of total fee & tax on submission of final report plus total service taxes	158878	22241	181120
		Grand Total	**794388**	**111214**	**905,602**

Attention: Vendors must submit all invoices to CARE office Reception

Delivery Location: No.36-GF, 2nd Main Road, Kalaimagal Nagar, Ekaduthangal, Chennai-600032	Delivery Schedule: 30th November, 2015	
Financial Terms: 100% payment will be made post the deliverables are met.	Fund Code: CS070	Project Number: CSD058

Other Terms & Conditions:
1. The Study should be completed on or before 30/11/2015.
2. Payment terms: The payment will be made within 30 days of receipt of bills/invoices.
3. The PO amount is inclusive of taxes.
4. Penalty Clause : 10% penalty will be applicable if delivery is not completed within the timeline. Penalty will not be applicable if the delay is from CARE's side.
5. From CARE Mr.C. Kumar will be the point of contact for this contract.
6. Invoice Submission: Submit your invoices and deliverable Challan copy(if applicable) & Bill/s to office Reception with PO number, PAN # and heading invoices on top of the envelope.

Vendor: Terms and conditions on reverse side of this contract and on any attached sheets are made part of this contract to which Vendor agrees by signing below.	Purchase Order (PO) Executed on behalf of CARE
Accepted - Vendor: Himanshu Dube	Approved by(Primary Signatory): Vishal Sabharwal
By Signature and stamp of Officer of Firm	Approved by (Secondary Signatory) Date:



[INDIA]
TERMS OF REFERENCE FOR CONSULTANCY TO IMPLEMENT ALL ASPECTS OF ENDLINE SURVEY FOR BANKING ON CHANGE
[India]

Purpose of the Consultancy
This Terms of Reference is for a Consultant to develop and implement all aspects of the endline survey of selected beneficiaries from the Banking on Change programme, during the period 2013-2015 in India . This endline survey will include those who were surveyed as part of the baseline, from both groups carried over from the first phase of the project (2009-2012) and youth beneficiaries who joined in the current phase. The endline survey will constitute a key input into the impact analysis of Barclays/CARE UK/ PLAN UK's Banking on Change initiative. The selected consultant will work under the direct supervision of the India and indirectly the global Banking on Change Programme Management and Evaluation Team.

Banking on Change
Banking on Change, a partnership between Barclays, CARE UK and Plan UK was established in 2009. Originally it set out to deliver a savings-led microfinance programme with the aim of improving the financial inclusion of people in 11 countries across Africa, Asia and South America. Using a savings led microfinance methodology, Banking on Change mobilised individuals into savings groups so they could save regularly, and in turn borrow small amounts at a fair rate of interest agreed by group members.

In phase 1, Banking on Change established over 21,000 new groups who have accrued over $6.5m in savings and loaned out over $5m. Nearly 500 groups have been formally linked to group accounts in branches of Barclays in Uganda, Ghana, Tanzania or Kenya.

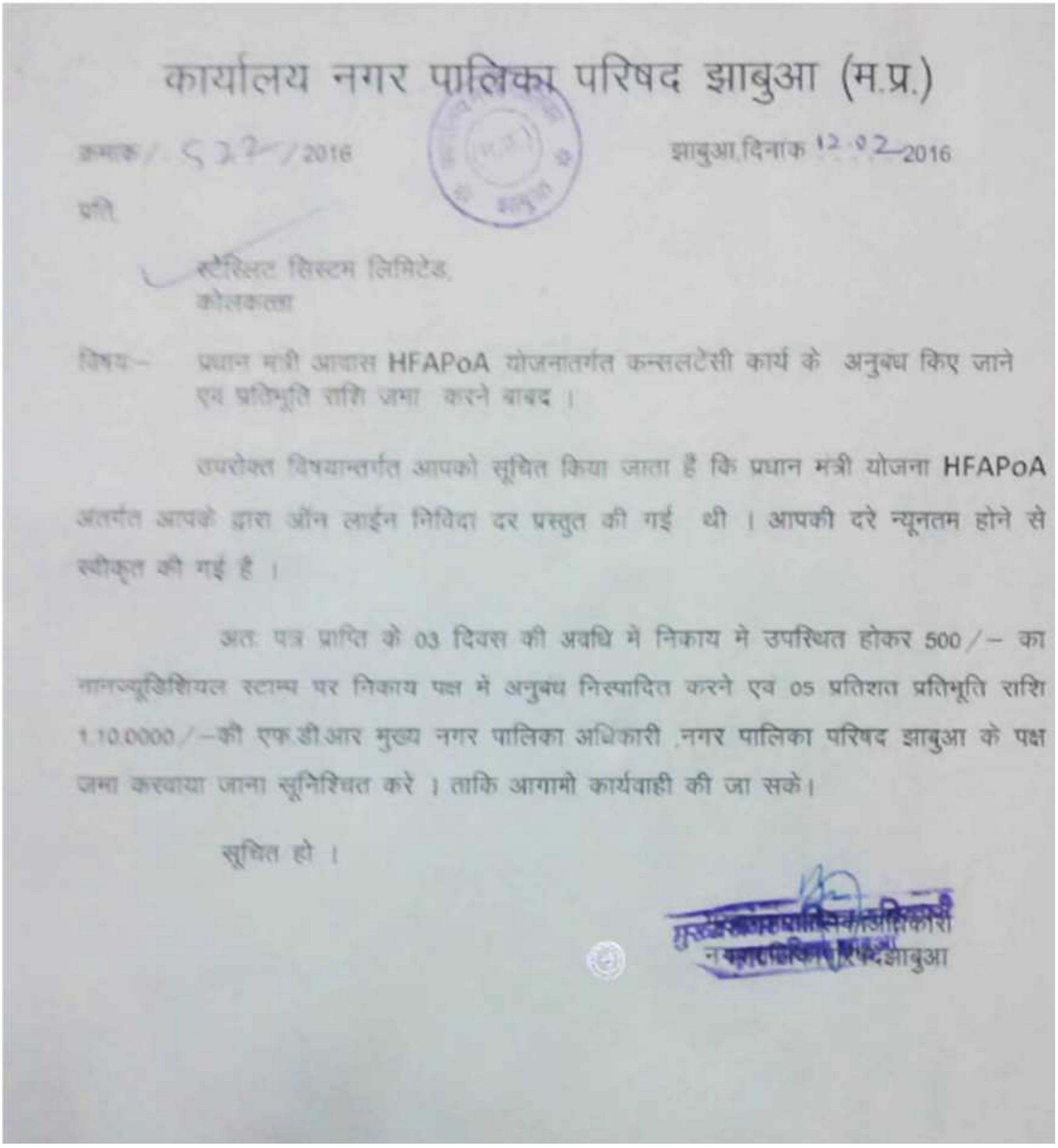
Barclays renewed its commitment to the partnership through an additional three year investment in a second phase of Banking on Change (2013-2015). In phase 2 the partnership has used the same savings led microfinance methodology established in phase 1 as a springboard for implementing a more focused, in-depth, programme targeted at young people in seven countries (Egypt, Ghana, India, Kenya, Tanzania, Uganda and Zambia). The specific aims are:

- Support young people in setting up 10,000 youth savings groups.
- To provide an expanded range of in-depth financial literacy, employability and entrepreneurship skills training to over 330,000 beneficiaries, of whom 75% will be under 35.
- To support the establishment of around 41,000 income-generating activities and small businesses that will be sustained over the course of the programme.
- To link over one-third of Banking on Change savings groups in Africa (approx 5,000) to Formal Financial Institutions, including Barclays. A proportion of individual group members will also be linked to personal bank accounts.

The Impact Assessment

New Delhi
110 048

5.10: Preparation of Housing For All Plan of Action (HFAPoA) & DPR with Construction Supervision & Quality Control in multiple ULBs under PMAY



कार्यालय नगर पालिका परिषद झाबुआ (म.प्र.)

क्रमांक/ 522 /2016 झाबुआ,दिनांक 12.02.2016

प्रति,

स्टेरलिंग सिस्टम लिमिटेड,
कोलकत्ता

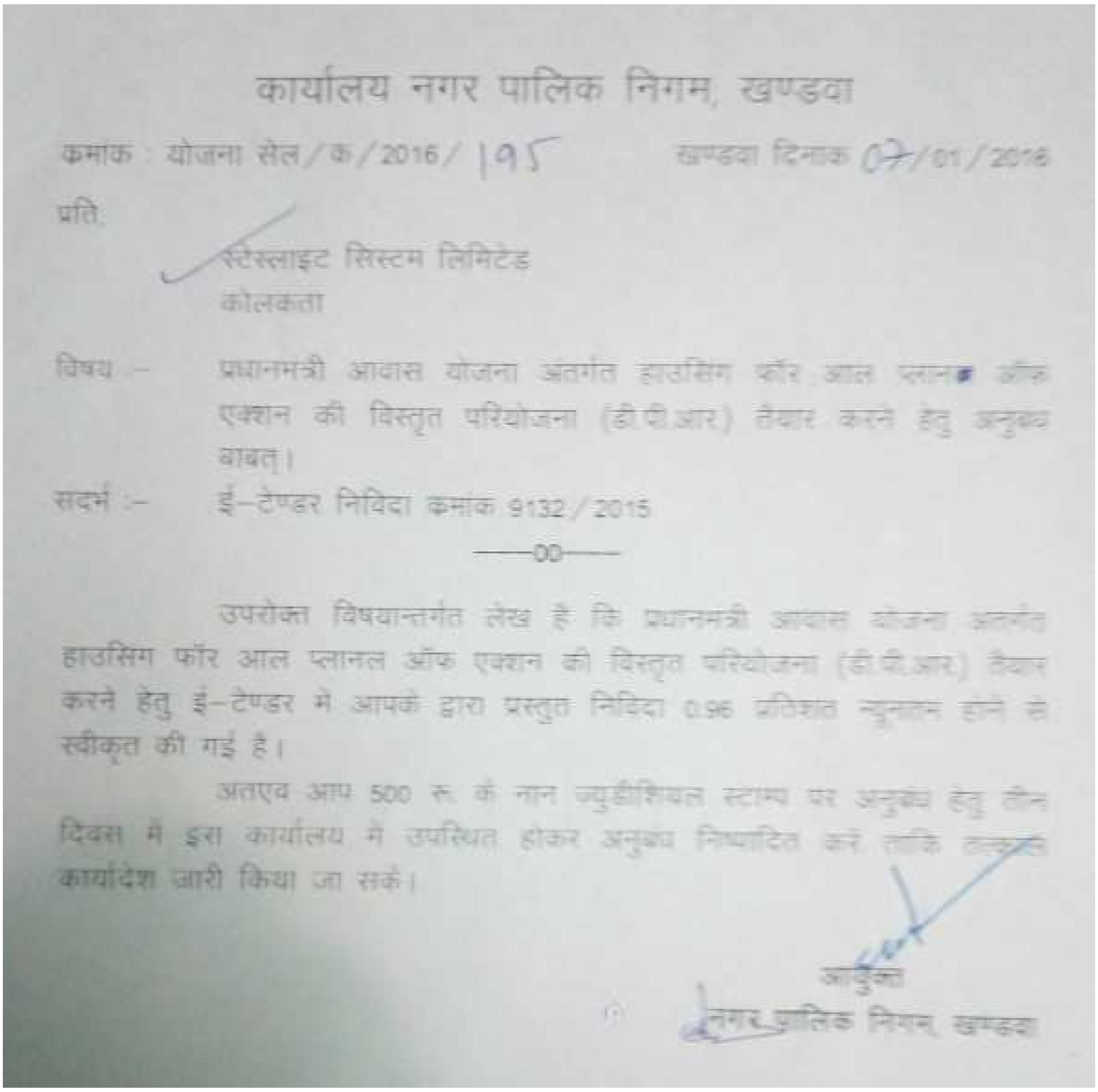
विषय– प्रधान मंत्री आवास HFAPoA योजनातर्गत कन्सलटेंसी कार्य के अनुबंध किए जाने एवं प्रतिभूति राशि जमा करने बाबद ।

उपरोक्त विषयान्तर्गत आपको सूचित किया जाता है कि प्रधान मंत्री योजना HFAPoA अंतर्गत आपके द्वारा ऑन लाईन निविदा दर प्रस्तुत की गई थी । आपकी दरे न्यूनतम होने से स्वीकृत की गई है ।

अतः पत्र प्राप्ति के 03 दिवस की अवधि मे निकाय मे उपस्थित होकर 500/– का नानज्यूडिशियल स्टाम्प पर निकाय पक्ष मे अनुबंध निस्पादित करने एव 05 प्रतिशत प्रतिभूति राशि 1.10.0000/–की एफ.डी.आर मुख्य नगर पालिका अधिकारी ,नगर पालिका परिषद झाबुआ के पक्ष जमा करवाया जाना सुनिश्चित करे । ताकि आगामी कार्यवाही की जा सके।

सूचित हो ।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद झाबुआ



कार्यालय नगर पालिक निगम, खण्डवा

क्रमांक : योजना सेल/क/2016/ 195 खण्डवा दिनांक 07/01/2016

प्रति,

स्टेस्लाइट सिस्टम लिमिटेड
कोलकता

विषय :– प्रधानमंत्री आवास योजना अंतर्गत हाउसिंग फॉर आल प्लान ऑफ एक्शन की विस्तृत परियोजना (डी.पी.आर) तैयार करने हेतु अनुबंध बाबत्।

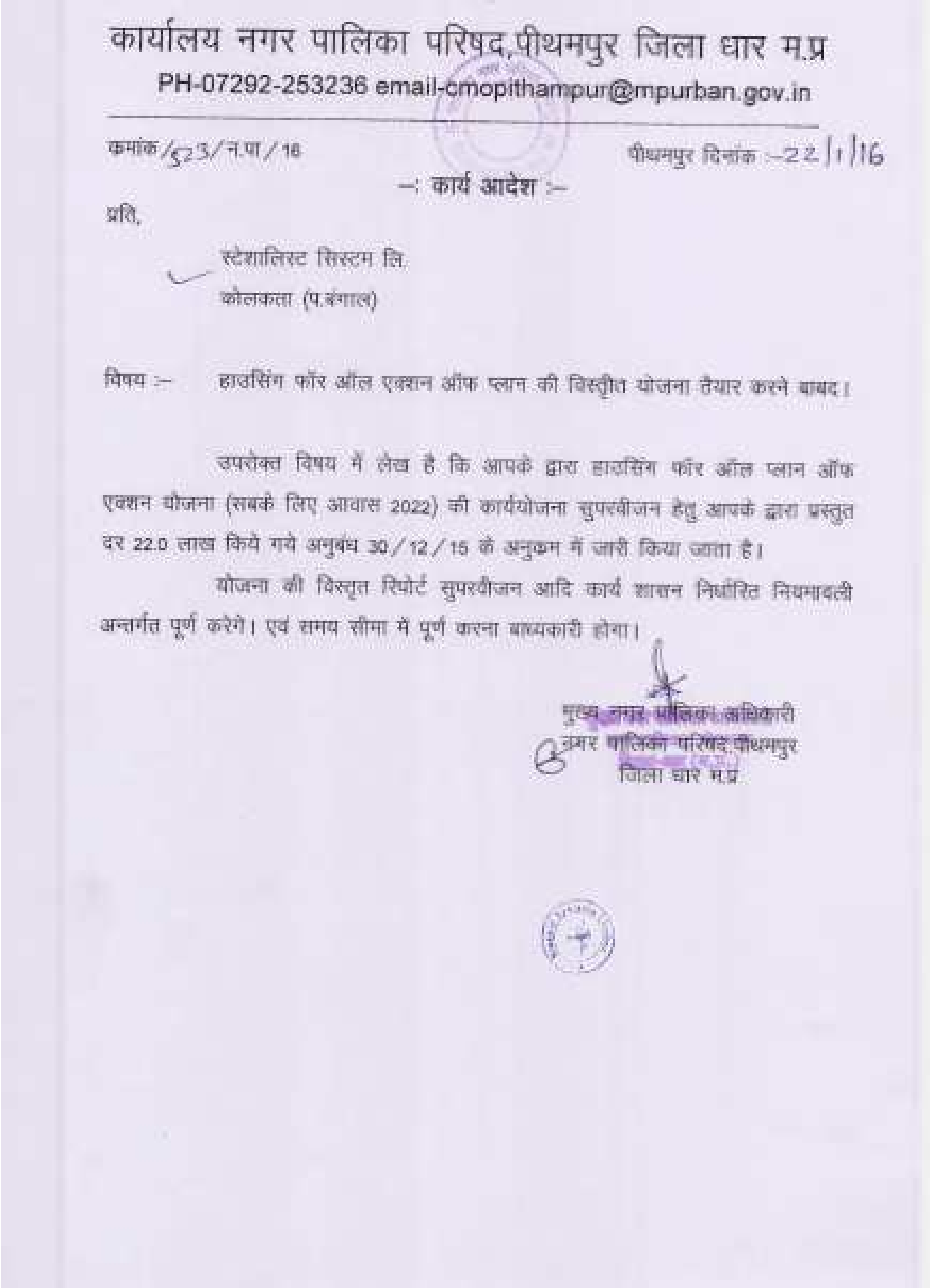
संदर्भ :– ई–टेण्डर निविदा क्रमांक 9132/2015

——00——

उपरोक्त विषयान्तर्गत लेख है कि प्रधानमंत्री आवास योजना अंतर्गत हाउसिंग फॉर आल प्लानल ऑफ एक्शन की विस्तृत परियोजना (डी.पी.आर) तैयार करने हेतु ई–टेण्डर मे आपके द्वारा प्रस्तुत निविदा 0.96 प्रतिशत न्यूनतम होने से स्वीकृत की गई है।

अतएव आप 500 रू. के नान ज्युडीशियल स्टाम्प पर अनुबंध हेतु तीन दिवस में इस कार्यालय में उपस्थित होकर अनुबंध निष्पादित करें ताकि तत्काल कार्यादेश जारी किया जा सके।

आयुक्त
नगर पालिक निगम, खण्डवा



कार्यालय नगर पालिका परिषद,पीथमपुर जिला धार म.प्र
PH-07292-253236 email-cmopithampur@mpurban.gov.in

क्रमांक/523/न.पा/16 पीथमपुर दिनांक -22/1/16

-: कार्य आदेश :-

प्रति,

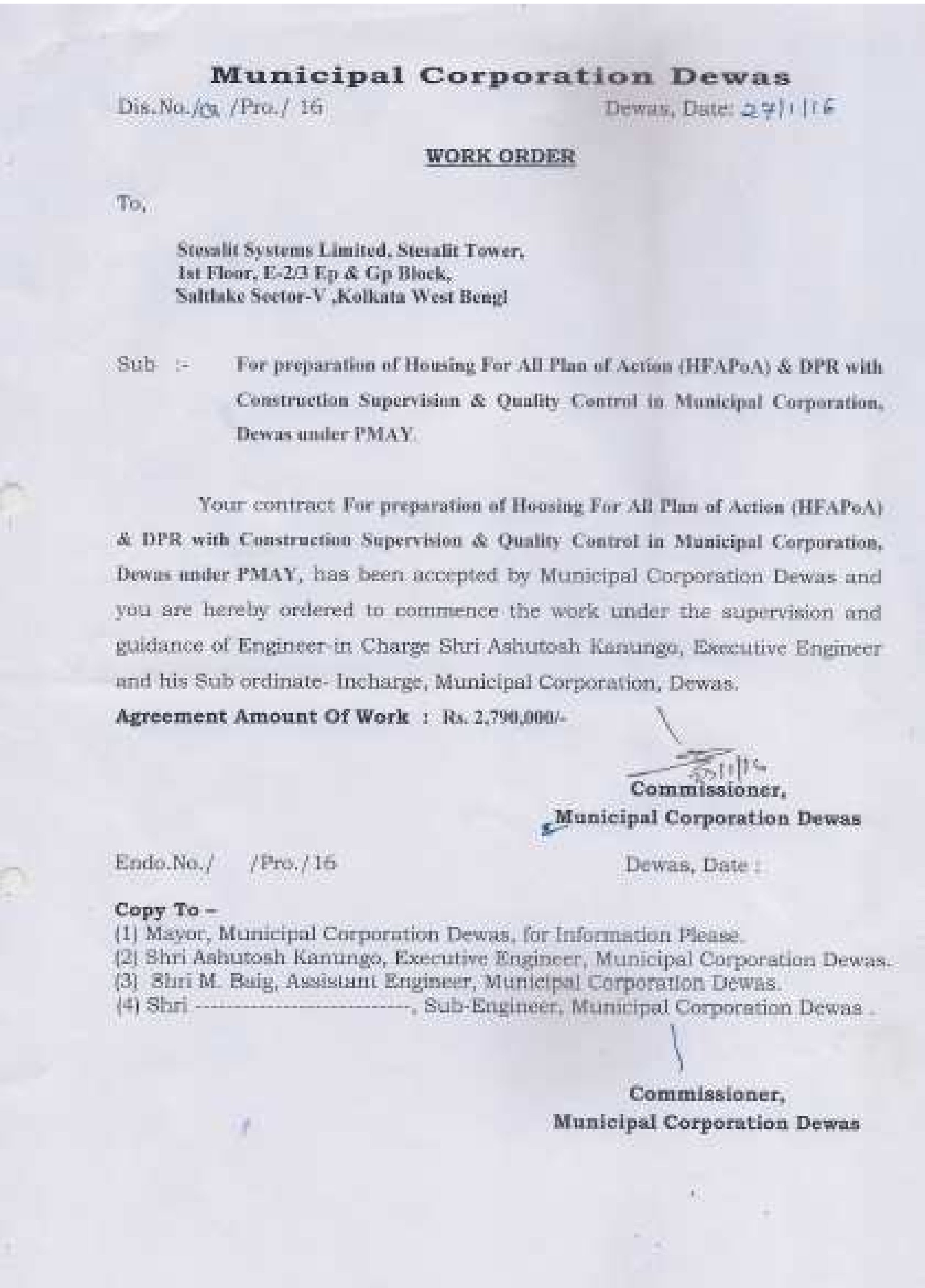
स्पेशालिस्ट सिस्टम लि.
कोलकता (प.बंगाल)

विषय :- हाउसिंग फॉर ऑल एक्शन ऑफ प्लान की विस्तृीत योजना तैयार करने बाबद।

उपरोक्त विषय में लेख है कि आपके द्वारा हाउसिंग फॉर ऑल प्लान ऑफ एक्शन योजना (सबके लिए आवास 2022) की कार्ययोजना सुपरवीजन हेतु आपके द्वारा प्रस्तुत दर 22.0 लाख किये गये अनुबंध 30/12/15 के अनुक्रम में जारी किया जाता है।

योजना की विस्तृत रिपोर्ट सुपरवीजन आदि कार्य शासन निर्धारित नियमावली अन्तर्गत पूर्ण करेंगे। एवं समय सीमा में पूर्ण करना बाध्यकारी होगा।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद पीथमपुर
जिला धार म.प्र



Municipal Corporation Dewas

Dis.No./[illegible] /Pro./ 16 Dewas, Date: 27/1/16

WORK ORDER

To,

Stesalit Systems Limited, Stesalit Tower,
1st Floor, E-2/3 Ep & Gp Block,
Saltlake Sector-V ,Kolkata West Bengl

Sub :- **For preparation of Housing For All Plan of Action (HFAPoA) & DPR with Construction Supervision & Quality Control in Municipal Corporation, Dewas under PMAY**

Your contract **For preparation of Housing For All Plan of Action (HFAPoA) & DPR with Construction Supervision & Quality Control in Municipal Corporation, Dewas under PMAY,** has been accepted by Municipal Corporation Dewas and you are hereby ordered to commence the work under the supervision and guidance of Engineer in Charge Shri Ashutosh Kanungo, Executive Engineer and his Sub ordinate- Incharge, Municipal Corporation, Dewas.

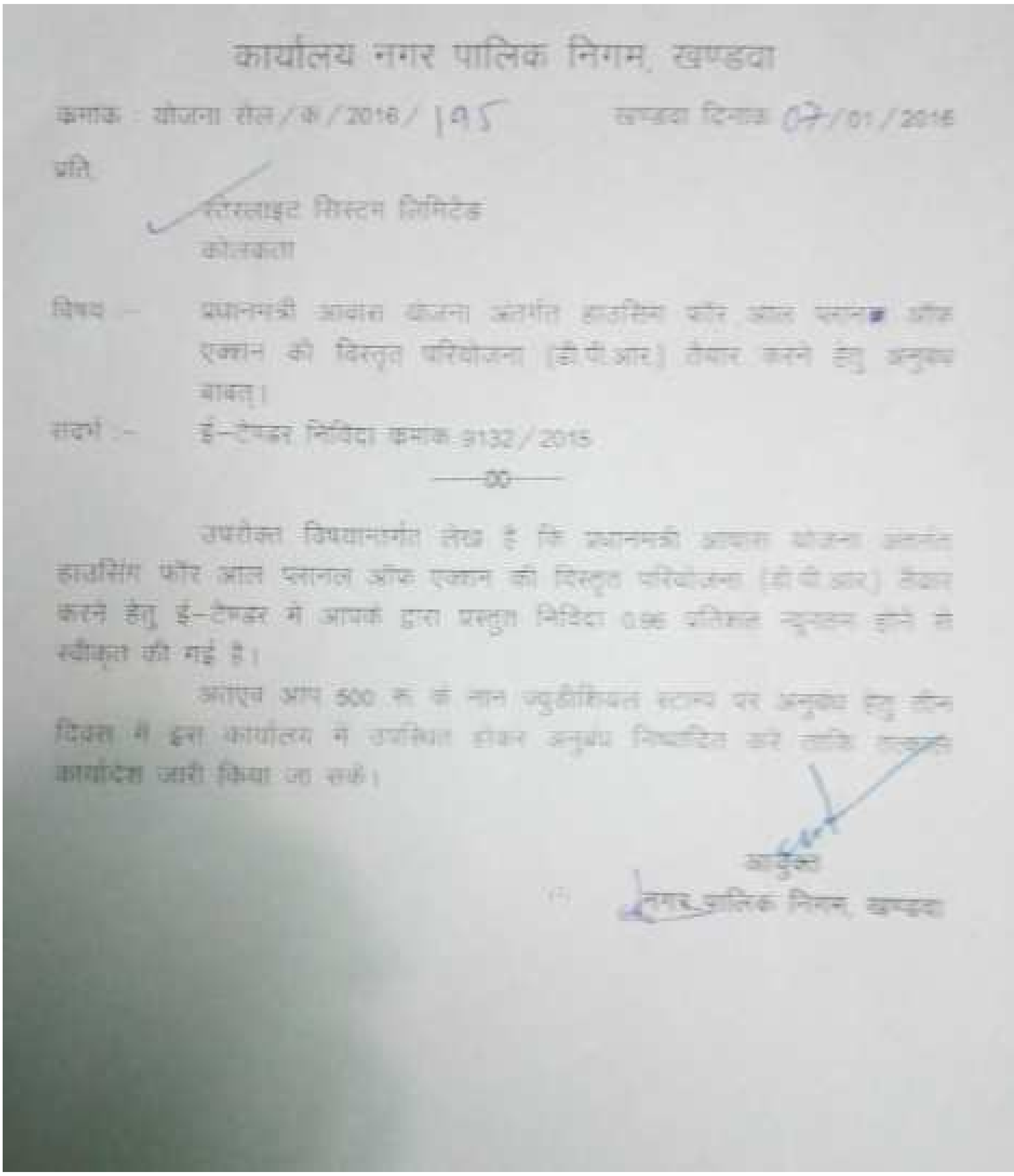
Agreement Amount Of Work : Rs. 2,790,000/-

Commissioner,
Municipal Corporation Dewas

Endo.No./ /Pro./16 Dewas, Date :

Copy To –
(1) Mayor, Municipal Corporation Dewas, for Information Please.
(2) Shri Ashutosh Kanungo, Executive Engineer, Municipal Corporation Dewas.
(3) Shri M. Baig, Assistant Engineer, Municipal Corporation Dewas.
(4) Shri ---------------------------, Sub-Engineer, Municipal Corporation Dewas .

Commissioner,
Municipal Corporation Dewas



कार्यालय नगर पालिक निगम, खण्डवा

क्रमांक : योजना सेल/क/2016/ 195   खण्डवा दिनांक 07/01/2016

प्रति,

रिस्लाइट सिस्टम लिमिटेड
कोलकता

विषय – प्रधानमंत्री आवास योजना अंतर्गत हाउसिंग फॉर आल प्लान ऑफ एक्शन की विस्तृत परियोजना (डी.पी.आर.) तैयार करने हेतु अनुबंध बाबत्।

संदर्भ – ई–टेण्डर निविदा क्रमांक 3132/2015

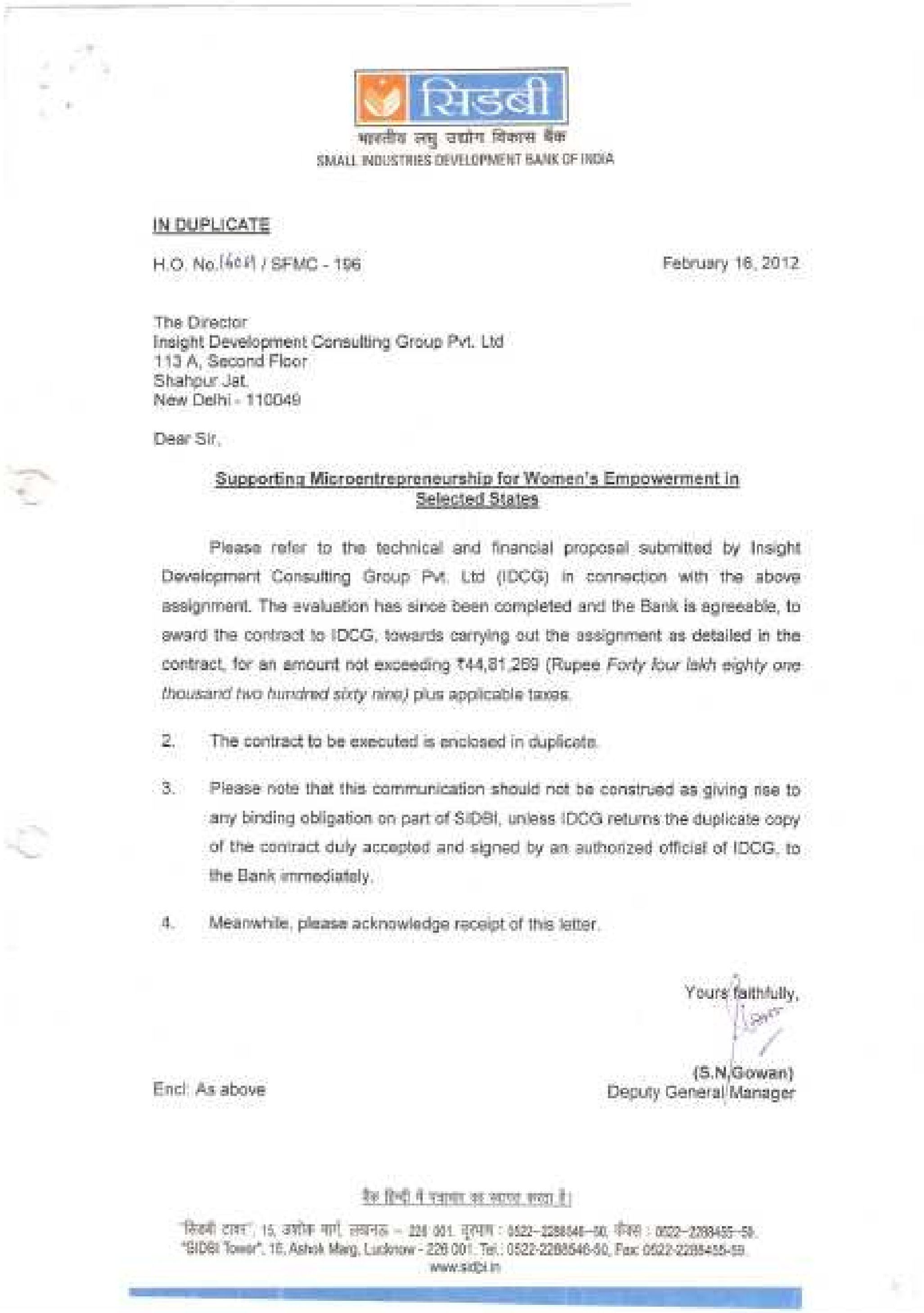
—00—

उपरोक्त विषयान्तर्गत लेख है कि प्रधानमंत्री आवास योजना अंतर्गत हाउसिंग फॉर आल प्लानल ऑफ एक्शन की विस्तृत परियोजना (डी.पी.आर.) तैयार करने हेतु ई–टेण्डर में आपके द्वारा प्रस्तुत निविदा 0.96 प्रतिशत न्यूनतम होने से स्वीकृत की गई है।

अतएव आप 500 रू. के नान ज्युडीशियल स्टाम्प पर अनुबंध हेतु तीन दिवस में इस कार्यालय में उपस्थित होकर अनुबंध निष्पादित करें ताकि तत्काल कार्यादेश जारी किया जा सके।

आयुक्त
नगर पालिक निगम, खण्डवा

6.2: National Research Institute for SIDBI under an Asian Development Bank project "Supporting Micro Entrepreneurship for Women's in Selected States"



सिडबी
भारतीय लघु उद्योग विकास बैंक
SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA

IN DUPLICATE

H.O. No.1608 / SFMC - 196 February 16, 2012

The Director
Insight Development Consulting Group Pvt. Ltd
113 A, Second Floor
Shahpur Jat
New Delhi - 110049

Dear Sir,

Supporting Microentrepreneurship for Women's Empowerment in Selected States

Please refer to the technical and financial proposal submitted by Insight Development Consulting Group Pvt. Ltd (IDCG) in connection with the above assignment. The evaluation has since been completed and the Bank is agreeable, to award the contract to IDCG, towards carrying out the assignment as detailed in the contract, for an amount not exceeding ₹44,81,269 (Rupee *Forty four lakh eighty one thousand two hundred sixty nine)* plus applicable taxes.

2. The contract to be executed is enclosed in duplicate.

3. Please note that this communication should not be construed as giving rise to any binding obligation on part of SIDBI, unless IDCG returns the duplicate copy of the contract duly accepted and signed by an authorized official of IDCG, to the Bank immediately.

4. Meanwhile, please acknowledge receipt of this letter.

Yours faithfully,

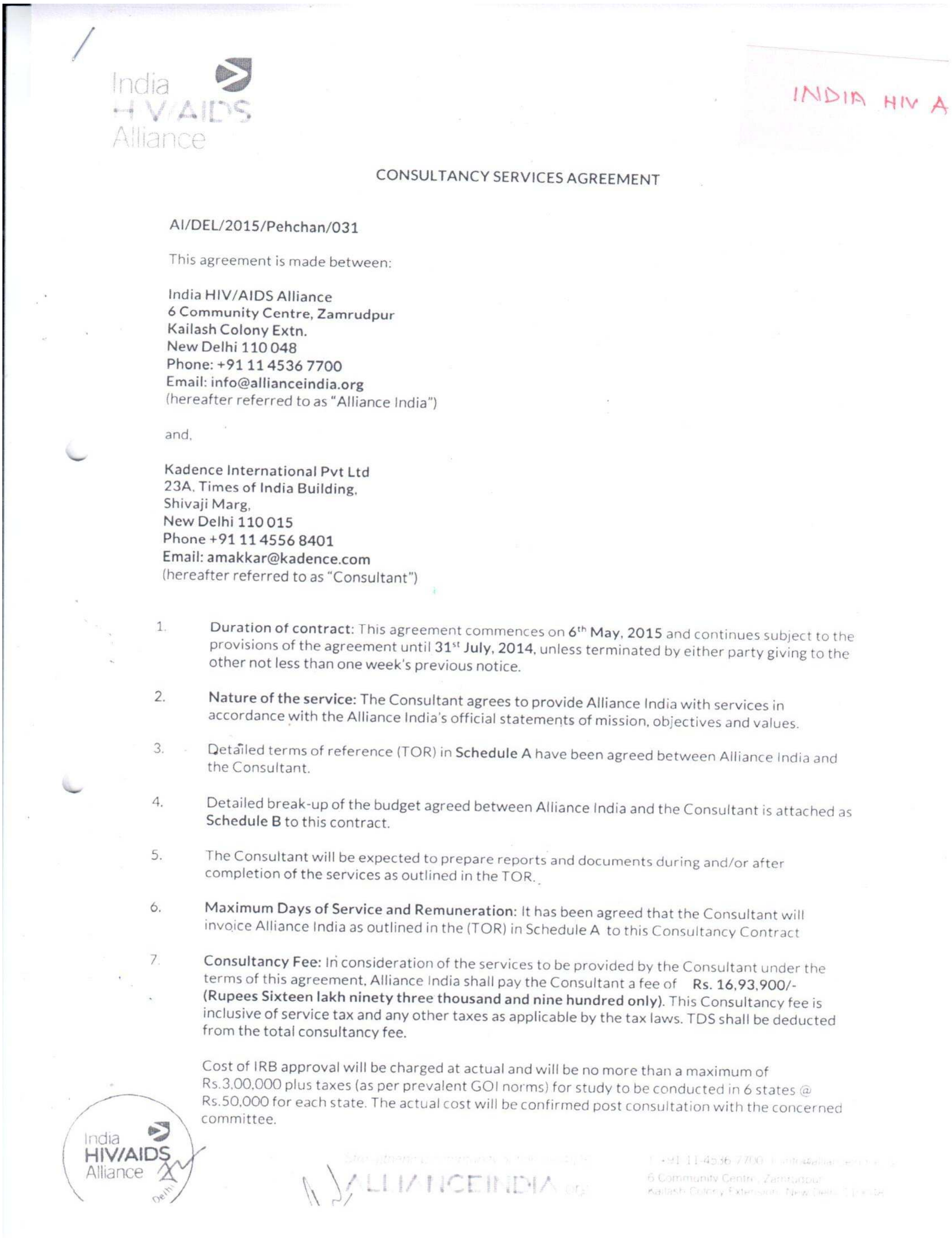
(S.N.Gowan)
Deputy General Manager

Encl: As above

बैंक हिन्दी में पत्राचार का स्वागत करता है।

"सिडबी टावर", 15, अशोक मार्ग, लखनऊ – 226 001. दूरभाष : 0522-2288546-50, फैक्स : 0522-2288455-59.
"SIDBI Tower", 15, Ashok Marg, Lucknow - 226 001. Tel.: 0522-2288546-50, Fax 0522-2288455-59.
www.sidbi.in

6.3 End Line Survey of MTH Pehchan Programe



India HIV/AIDS Alliance

INDIA HIV A

CONSULTANCY SERVICES AGREEMENT

AI/DEL/2015/Pehchan/031

This agreement is made between:

India HIV/AIDS Alliance
6 Community Centre, Zamrudpur
Kailash Colony Extn.
New Delhi 110 048
Phone: +91 11 4536 7700
Email: info@allianceindia.org
(hereafter referred to as "Alliance India")

and,

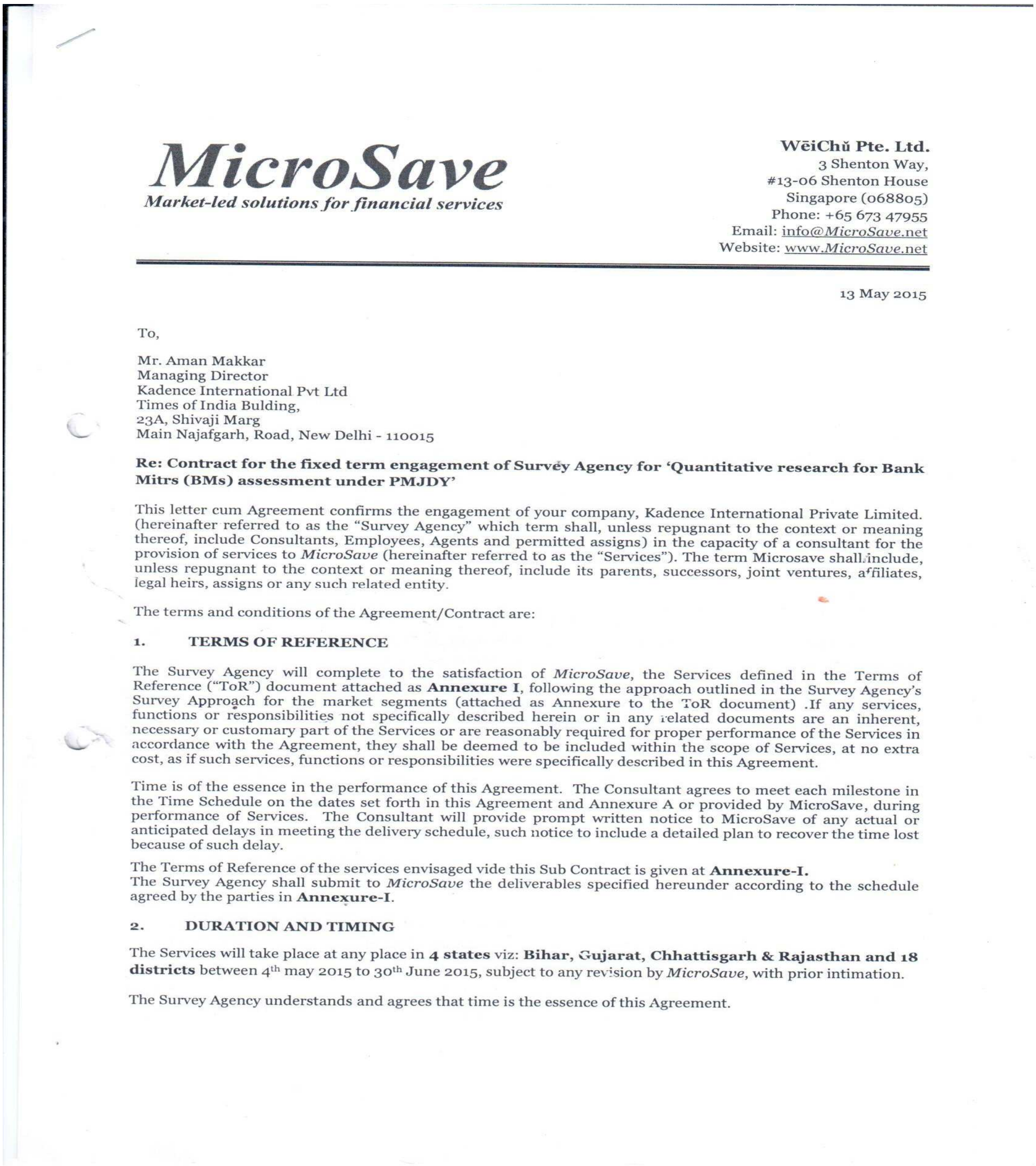
Kadence International Pvt Ltd
23A, Times of India Building,
Shivaji Marg,
New Delhi 110 015
Phone +91 11 4556 8401
Email: amakkar@kadence.com
(hereafter referred to as "Consultant")

1. **Duration of contract:** This agreement commences on 6th **May, 2015** and continues subject to the provisions of the agreement until 31st **July, 2014**, unless terminated by either party giving to the other not less than one week's previous notice.
2. **Nature of the service:** The Consultant agrees to provide Alliance India with services in accordance with the Alliance India's official statements of mission, objectives and values.
3. Detailed terms of reference (TOR) in **Schedule A** have been agreed between Alliance India and the Consultant.
4. Detailed break-up of the budget agreed between Alliance India and the Consultant is attached as **Schedule B** to this contract.
5. The Consultant will be expected to prepare reports and documents during and/or after completion of the services as outlined in the TOR.
6. **Maximum Days of Service and Remuneration:** It has been agreed that the Consultant will invoice Alliance India as outlined in the (TOR) in Schedule A to this Consultancy Contract
7. **Consultancy Fee:** In consideration of the services to be provided by the Consultant under the terms of this agreement, Alliance India shall pay the Consultant a fee of **Rs. 16,93,900/- (Rupees Sixteen lakh ninety three thousand and nine hundred only)**. This Consultancy fee is inclusive of service tax and any other taxes as applicable by the tax laws. TDS shall be deducted from the total consultancy fee.

   Cost of IRB approval will be charged at actual and will be no more than a maximum of Rs.3,00,000 plus taxes (as per prevalent GOI norms) for study to be conducted in 6 states @ Rs.50,000 for each state. The actual cost will be confirmed post consultation with the concerned committee.

ALLIANCEINDIA.org
+91 11-4536 7700
6 Community Centre, Zamrudpur
Kailash Colony Extension, New Delhi 110 048

6.4 Quantitative research for Bank Mitr (BMs) assessment under PMJDY



MicroSave
Market-led solutions for financial services

WēiChŭ Pte. Ltd.
3 Shenton Way,
#13-06 Shenton House
Singapore (068805)
Phone: +65 673 47955
Email: info@MicroSave.net
Website: www.MicroSave.net

13 May 2015

To,

Mr. Aman Makkar
Managing Director
Kadence International Pvt Ltd
Times of India Bulding,
23A, Shivaji Marg
Main Najafgarh, Road, New Delhi - 110015

Re: Contract for the fixed term engagement of Survey Agency for 'Quantitative research for Bank Mitrs (BMs) assessment under PMJDY'

This letter cum Agreement confirms the engagement of your company, Kadence International Private Limited. (hereinafter referred to as the "Survey Agency" which term shall, unless repugnant to the context or meaning thereof, include Consultants, Employees, Agents and permitted assigns) in the capacity of a consultant for the provision of services to *MicroSave* (hereinafter referred to as the "Services"). The term Microsave shall include, unless repugnant to the context or meaning thereof, include its parents, successors, joint ventures, affiliates, legal heirs, assigns or any such related entity.

The terms and conditions of the Agreement/Contract are:

1. TERMS OF REFERENCE

The Survey Agency will complete to the satisfaction of *MicroSave*, the Services defined in the Terms of Reference ("ToR") document attached as **Annexure I**, following the approach outlined in the Survey Agency's Survey Approach for the market segments (attached as Annexure to the ToR document) .If any services, functions or responsibilities not specifically described herein or in any related documents are an inherent, necessary or customary part of the Services or are reasonably required for proper performance of the Services in accordance with the Agreement, they shall be deemed to be included within the scope of Services, at no extra cost, as if such services, functions or responsibilities were specifically described in this Agreement.

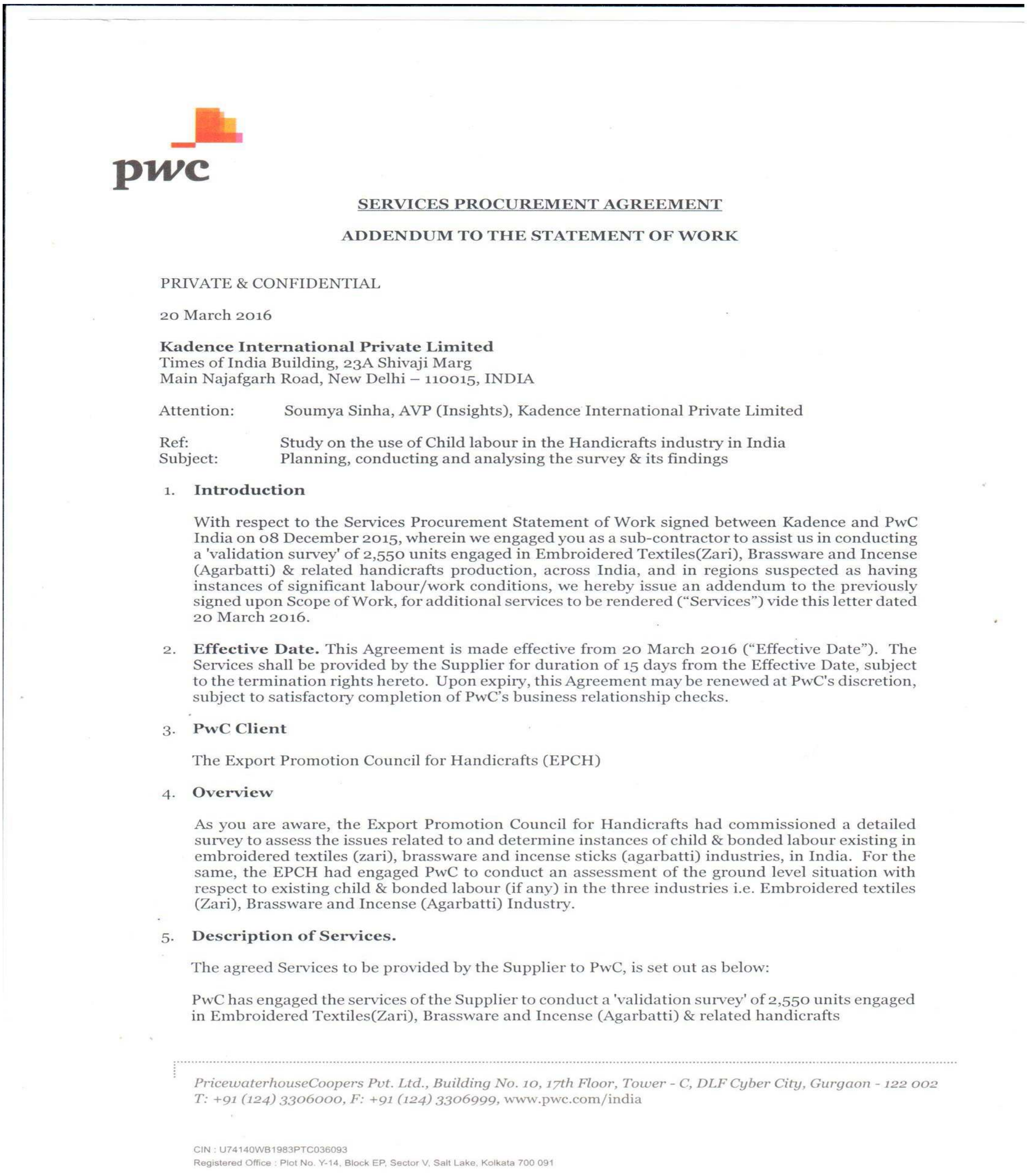
Time is of the essence in the performance of this Agreement. The Consultant agrees to meet each milestone in the Time Schedule on the dates set forth in this Agreement and Annexure A or provided by MicroSave, during performance of Services. The Consultant will provide prompt written notice to MicroSave of any actual or anticipated delays in meeting the delivery schedule, such notice to include a detailed plan to recover the time lost because of such delay.

The Terms of Reference of the services envisaged vide this Sub Contract is given at **Annexure-I.**
The Survey Agency shall submit to *MicroSave* the deliverables specified hereunder according to the schedule agreed by the parties in **Annexure-I**.

2. DURATION AND TIMING

The Services will take place at any place in **4 states** viz: **Bihar, Gujarat, Chhattisgarh & Rajasthan and 18 districts** between 4th may 2015 to 30th June 2015, subject to any revision by *MicroSave*, with prior intimation.

The Survey Agency understands and agrees that time is the essence of this Agreement.



pwc

SERVICES PROCUREMENT AGREEMENT

ADDENDUM TO THE STATEMENT OF WORK

PRIVATE & CONFIDENTIAL

20 March 2016

Kadence International Private Limited
Times of India Building, 23A Shivaji Marg
Main Najafgarh Road, New Delhi – 110015, INDIA

Attention: Soumya Sinha, AVP (Insights), Kadence International Private Limited

Ref: Study on the use of Child labour in the Handicrafts industry in India
Subject: Planning, conducting and analysing the survey & its findings

1. Introduction

With respect to the Services Procurement Statement of Work signed between Kadence and PwC India on 08 December 2015, wherein we engaged you as a sub-contractor to assist us in conducting a 'validation survey' of 2,550 units engaged in Embroidered Textiles(Zari), Brassware and Incense (Agarbatti) & related handicrafts production, across India, and in regions suspected as having instances of significant labour/work conditions, we hereby issue an addendum to the previously signed upon Scope of Work, for additional services to be rendered ("Services") vide this letter dated 20 March 2016.

2. **Effective Date.** This Agreement is made effective from 20 March 2016 ("Effective Date"). The Services shall be provided by the Supplier for duration of 15 days from the Effective Date, subject to the termination rights hereto. Upon expiry, this Agreement may be renewed at PwC's discretion, subject to satisfactory completion of PwC's business relationship checks.

3. PwC Client

The Export Promotion Council for Handicrafts (EPCH)

4. Overview

As you are aware, the Export Promotion Council for Handicrafts had commissioned a detailed survey to assess the issues related to and determine instances of child & bonded labour existing in embroidered textiles (zari), brassware and incense sticks (agarbatti) industries, in India. For the same, the EPCH had engaged PwC to conduct an assessment of the ground level situation with respect to existing child & bonded labour (if any) in the three industries i.e. Embroidered textiles (Zari), Brassware and Incense (Agarbatti) Industry.

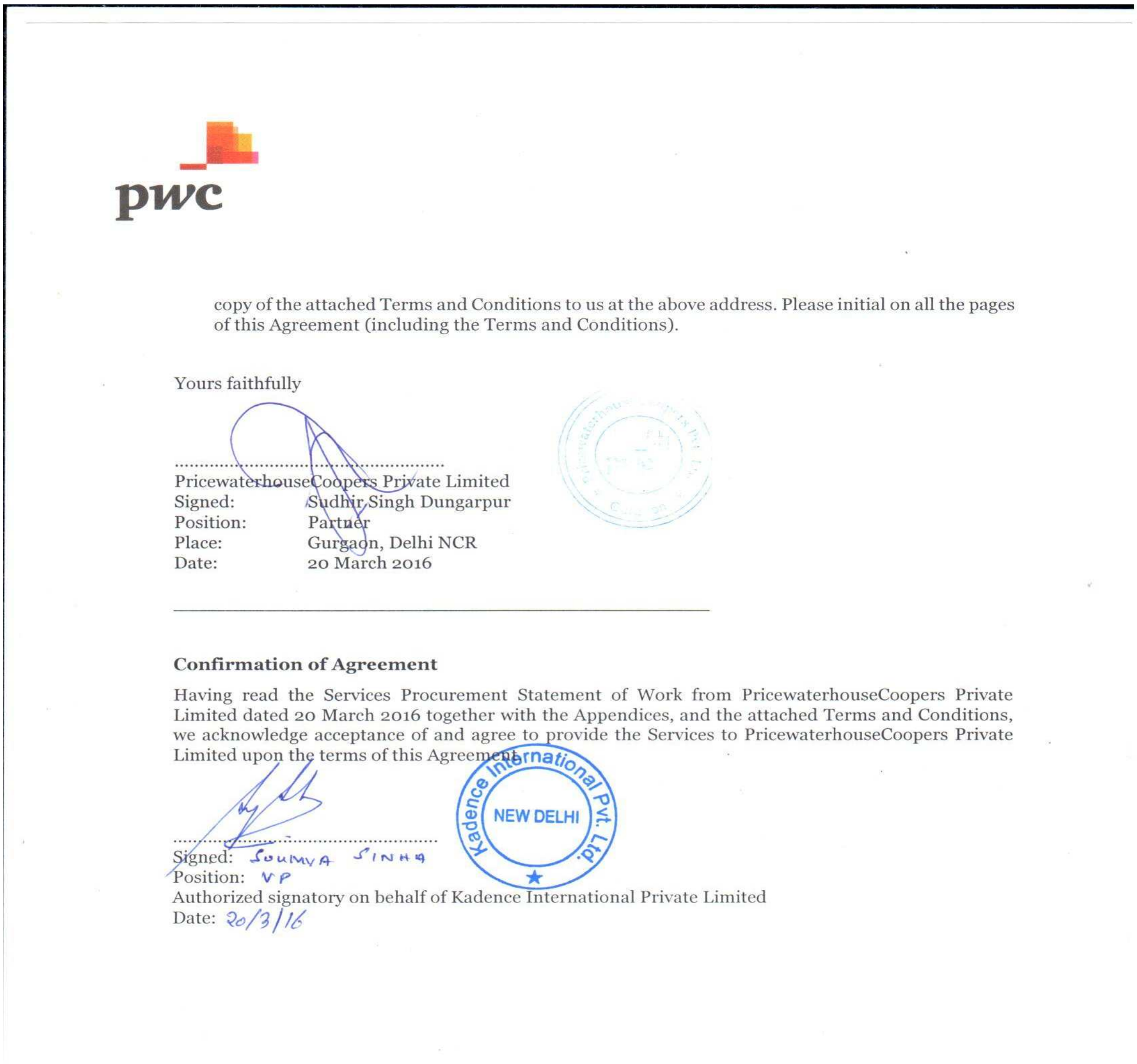
5. Description of Services.

The agreed Services to be provided by the Supplier to PwC, is set out as below:

PwC has engaged the services of the Supplier to conduct a 'validation survey' of 2,550 units engaged in Embroidered Textiles(Zari), Brassware and Incense (Agarbatti) & related handicrafts

PricewaterhouseCoopers Pvt. Ltd., Building No. 10, 17th Floor, Tower - C, DLF Cyber City, Gurgaon - 122 002
T: +91 (124) 3306000, F: +91 (124) 3306999, www.pwc.com/india

CIN : U74140WB1983PTC036093
Registered Office : Plot No. Y-14, Block EP, Sector V, Salt Lake, Kolkata 700 091



pwc

copy of the attached Terms and Conditions to us at the above address. Please initial on all the pages of this Agreement (including the Terms and Conditions).

Yours faithfully

....

PricewaterhouseCoopers Private Limited
Signed: Sudhir Singh Dungarpur
Position: Partner
Place: Gurgaon, Delhi NCR
Date: 20 March 2016

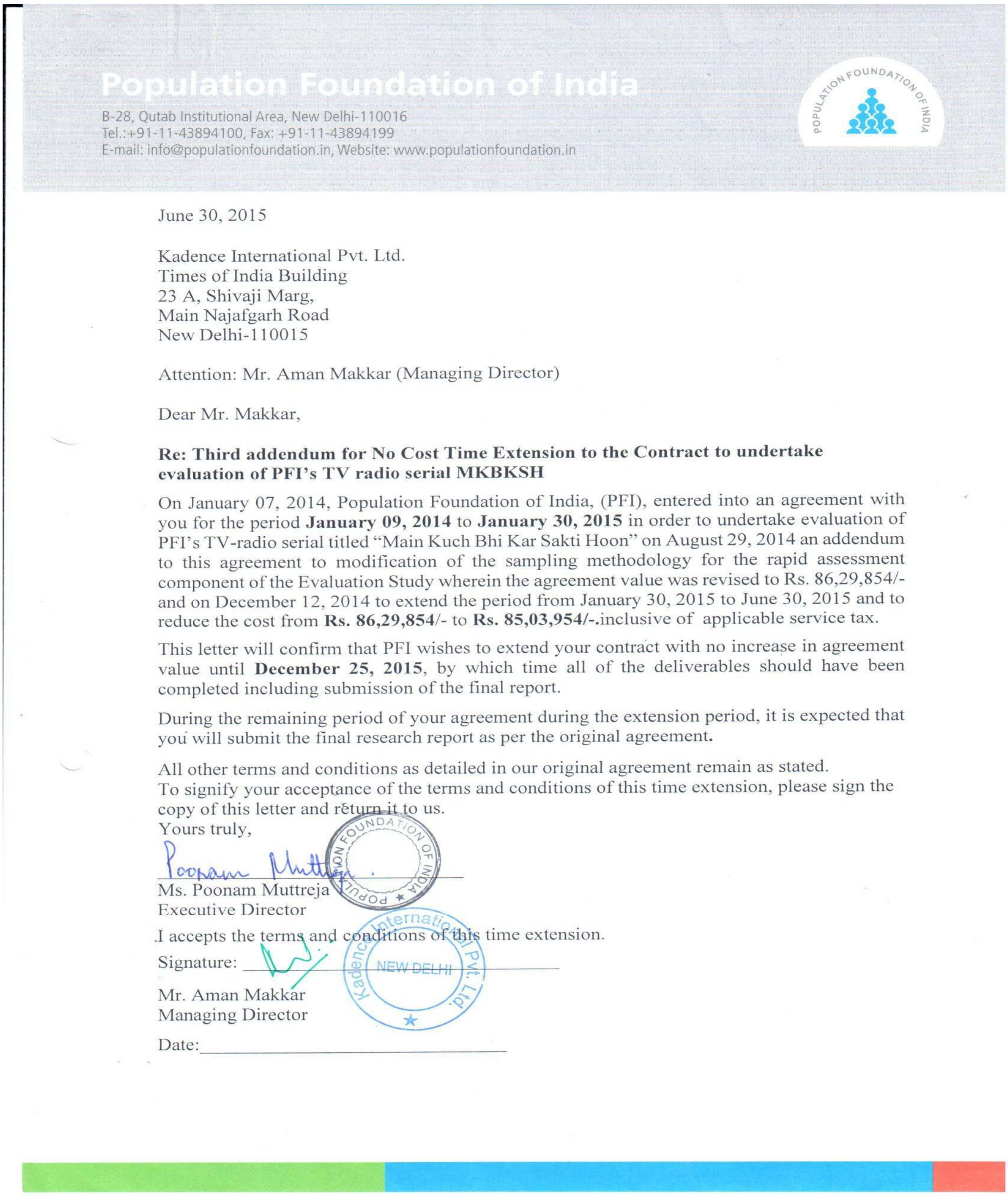
Confirmation of Agreement

Having read the Services Procurement Statement of Work from PricewaterhouseCoopers Private Limited dated 20 March 2016 together with the Appendices, and the attached Terms and Conditions, we acknowledge acceptance of and agree to provide the Services to PricewaterhouseCoopers Private Limited upon the terms of this Agreement.

....

Signed: SOUMYA SINHA
Position: VP
Authorized signatory on behalf of Kadence International Private Limited
Date: 20/3/16

6.5: End Line Evaluation of "Main Kuch Bhi Kar Sakti Hoon" Program



Population Foundation of India
B-28, Qutab Institutional Area, New Delhi-110016
Tel.:+91-11-43894100, Fax: +91-11-43894199
E-mail: info@populationfoundation.in, Website: www.populationfoundation.in

June 30, 2015

Kadence International Pvt. Ltd.
Times of India Building
23 A, Shivaji Marg,
Main Najafgarh Road
New Delhi-110015

Attention: Mr. Aman Makkar (Managing Director)

Dear Mr. Makkar,

Re: Third addendum for No Cost Time Extension to the Contract to undertake evaluation of PFI's TV radio serial MKBKSH

On January 07, 2014, Population Foundation of India, (PFI), entered into an agreement with you for the period **January 09, 2014** to **January 30, 2015** in order to undertake evaluation of PFI's TV-radio serial titled "Main Kuch Bhi Kar Sakti Hoon" on August 29, 2014 an addendum to this agreement to modification of the sampling methodology for the rapid assessment component of the Evaluation Study wherein the agreement value was revised to Rs. 86,29,854/- and on December 12, 2014 to extend the period from January 30, 2015 to June 30, 2015 and to reduce the cost from **Rs. 86,29,854**/- to **Rs. 85,03,954/-.**inclusive of applicable service tax.

This letter will confirm that PFI wishes to extend your contract with no increase in agreement value until **December 25, 2015**, by which time all of the deliverables should have been completed including submission of the final report.

During the remaining period of your agreement during the extension period, it is expected that you will submit the final research report as per the original agreement.

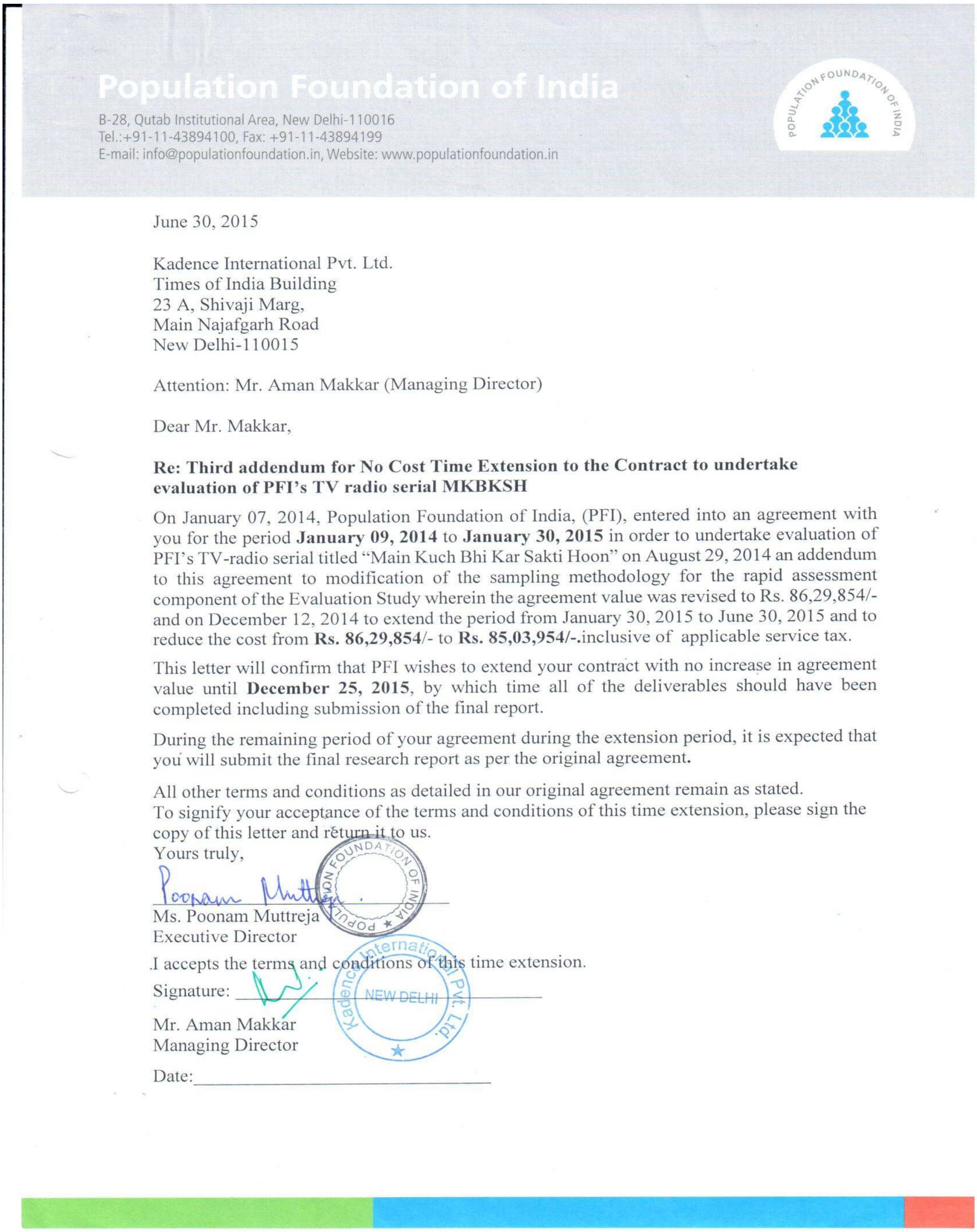
All other terms and conditions as detailed in our original agreement remain as stated.
To signify your acceptance of the terms and conditions of this time extension, please sign the copy of this letter and return it to us.
Yours truly,

Poonam Muttreja
Ms. Poonam Muttreja
Executive Director

.I accepts the terms and conditions of this time extension.
Signature: ______________________
Mr. Aman Makkar
Managing Director

Date:______________________

6.6 Base Line Evaluation of Entertainment Education Intervention (EEI)



Population Foundation of India
B-28, Qutab Institutional Area, New Delhi-110016
Tel.:+91-11-43894100, Fax: +91-11-43894199
E-mail: info@populationfoundation.in, Website: www.populationfoundation.in

June 30, 2015

Kadence International Pvt. Ltd.
Times of India Building
23 A, Shivaji Marg,
Main Najafgarh Road
New Delhi-110015

Attention: Mr. Aman Makkar (Managing Director)

Dear Mr. Makkar,

Re: Third addendum for No Cost Time Extension to the Contract to undertake evaluation of PFI's TV radio serial MKBKSH

On January 07, 2014, Population Foundation of India, (PFI), entered into an agreement with you for the period **January 09, 2014** to **January 30, 2015** in order to undertake evaluation of PFI's TV-radio serial titled "Main Kuch Bhi Kar Sakti Hoon" on August 29, 2014 an addendum to this agreement to modification of the sampling methodology for the rapid assessment component of the Evaluation Study wherein the agreement value was revised to Rs. 86,29,854/- and on December 12, 2014 to extend the period from January 30, 2015 to June 30, 2015 and to reduce the cost from **Rs. 86,29,854**/- to **Rs. 85,03,954/-.**inclusive of applicable service tax.

This letter will confirm that PFI wishes to extend your contract with no increase in agreement value until **December 25, 2015**, by which time all of the deliverables should have been completed including submission of the final report.

During the remaining period of your agreement during the extension period, it is expected that you will submit the final research report as per the original agreement.

All other terms and conditions as detailed in our original agreement remain as stated.
To signify your acceptance of the terms and conditions of this time extension, please sign the copy of this letter and return it to us.
Yours truly,

Poonam Muttreja

Ms. Poonam Muttreja
Executive Director

.I accepts the terms and conditions of this time extension.

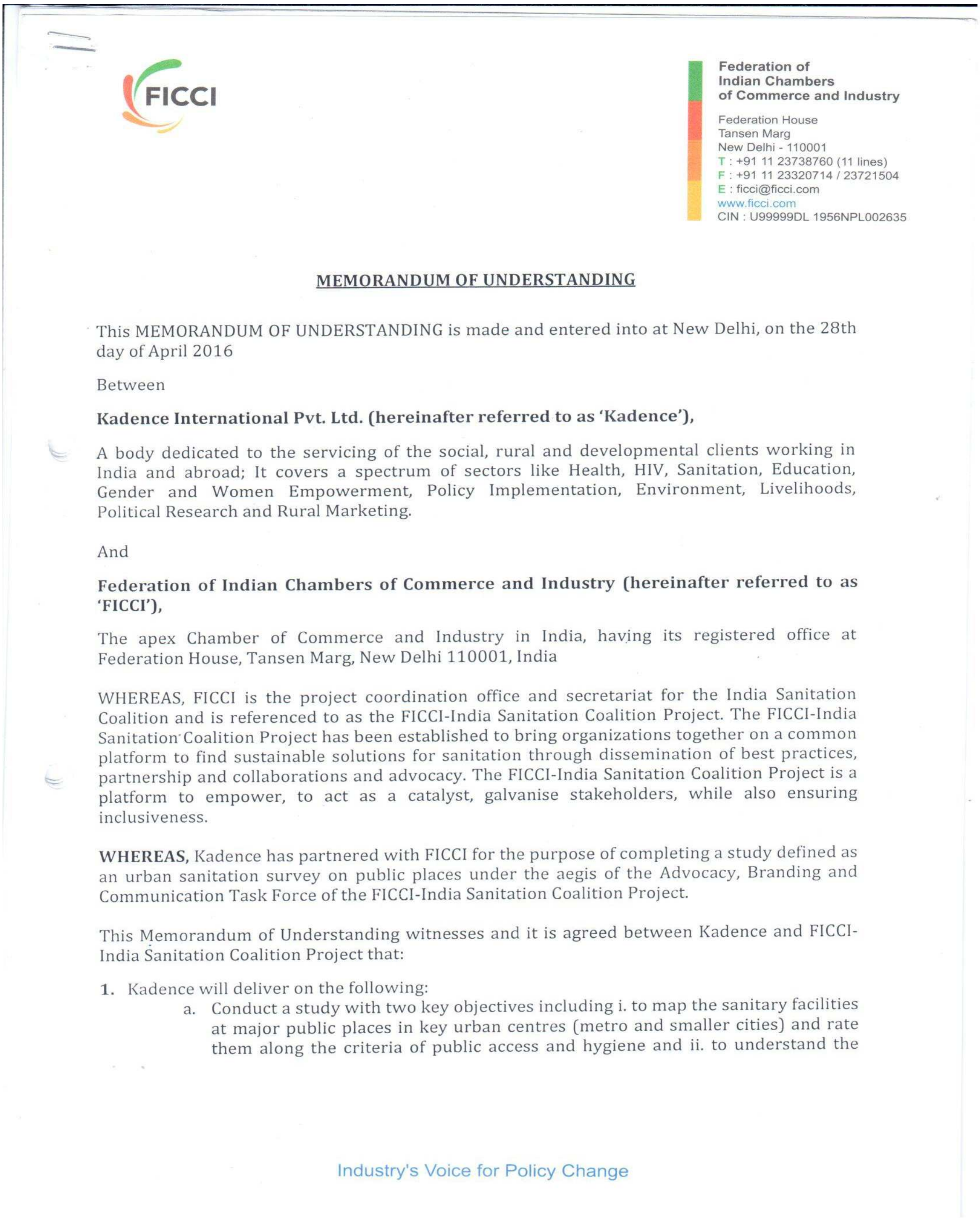
Signature: ______

NEW DELHI

Mr. Aman Makkar
Managing Director

Date:______

6.8: Urban Sanitation Study



FICCI

Federation of
Indian Chambers
of Commerce and Industry

Federation House
Tansen Marg
New Delhi - 110001
T : +91 11 23738760 (11 lines)
F : +91 11 23320714 / 23721504
E : ficci@ficci.com
www.ficci.com
CIN : U99999DL 1956NPL002635

MEMORANDUM OF UNDERSTANDING

This MEMORANDUM OF UNDERSTANDING is made and entered into at New Delhi, on the 28th day of April 2016

Between

Kadence International Pvt. Ltd. (hereinafter referred to as 'Kadence'),

A body dedicated to the servicing of the social, rural and developmental clients working in India and abroad; It covers a spectrum of sectors like Health, HIV, Sanitation, Education, Gender and Women Empowerment, Policy Implementation, Environment, Livelihoods, Political Research and Rural Marketing.

And

Federation of Indian Chambers of Commerce and Industry (hereinafter referred to as 'FICCI'),

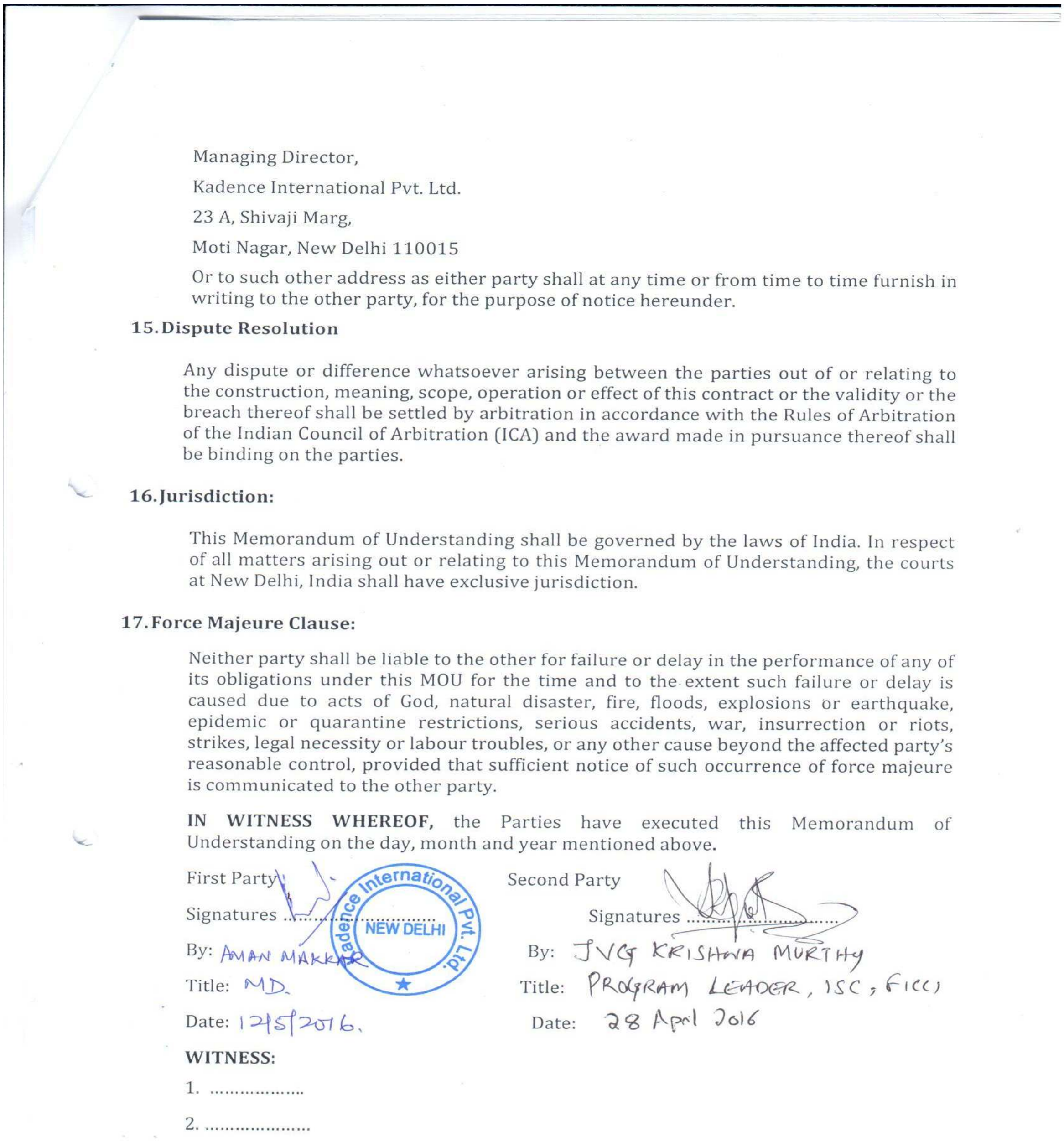
The apex Chamber of Commerce and Industry in India, having its registered office at Federation House, Tansen Marg, New Delhi 110001, India

WHEREAS, FICCI is the project coordination office and secretariat for the India Sanitation Coalition and is referenced to as the FICCI-India Sanitation Coalition Project. The FICCI-India Sanitation Coalition Project has been established to bring organizations together on a common platform to find sustainable solutions for sanitation through dissemination of best practices, partnership and collaborations and advocacy. The FICCI-India Sanitation Coalition Project is a platform to empower, to act as a catalyst, galvanise stakeholders, while also ensuring inclusiveness.

WHEREAS, Kadence has partnered with FICCI for the purpose of completing a study defined as an urban sanitation survey on public places under the aegis of the Advocacy, Branding and Communication Task Force of the FICCI-India Sanitation Coalition Project.

This Memorandum of Understanding witnesses and it is agreed between Kadence and FICCI-India Sanitation Coalition Project that:

1. Kadence will deliver on the following:
    a. Conduct a study with two key objectives including i. to map the sanitary facilities at major public places in key urban centres (metro and smaller cities) and rate them along the criteria of public access and hygiene and ii. to understand the



Managing Director,
Kadence International Pvt. Ltd.
23 A, Shivaji Marg,
Moti Nagar, New Delhi 110015

Or to such other address as either party shall at any time or from time to time furnish in writing to the other party, for the purpose of notice hereunder.

15. Dispute Resolution

Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration (ICA) and the award made in pursuance thereof shall be binding on the parties.

16. Jurisdiction:

This Memorandum of Understanding shall be governed by the laws of India. In respect of all matters arising out or relating to this Memorandum of Understanding, the courts at New Delhi, India shall have exclusive jurisdiction.

17. Force Majeure Clause:

Neither party shall be liable to the other for failure or delay in the performance of any of its obligations under this MOU for the time and to the extent such failure or delay is caused due to acts of God, natural disaster, fire, floods, explosions or earthquake, epidemic or quarantine restrictions, serious accidents, war, insurrection or riots, strikes, legal necessity or labour troubles, or any other cause beyond the affected party's reasonable control, provided that sufficient notice of such occurrence of force majeure is communicated to the other party.

IN WITNESS WHEREOF, the Parties have executed this Memorandum of Understanding on the day, month and year mentioned above.

First Party	Second Party
Signatures	Signatures ....
By: AMAN MAKKAR	By: JVG KRISHNA MURTHY
Title: MD	Title: PROGRAM LEADER, ISC, FICCI
Date: 12/5/2016.	Date: 28 April 2016

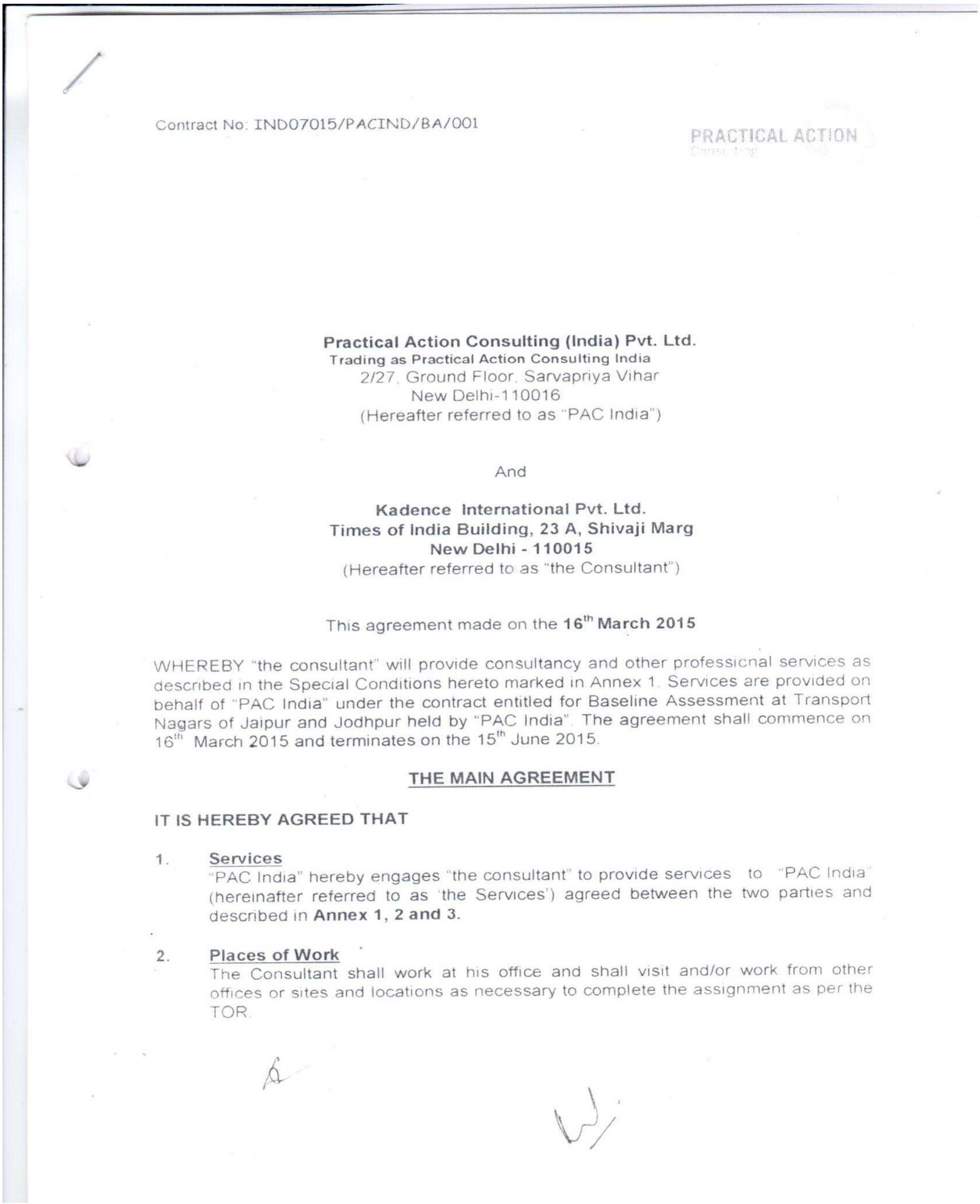
Kadence International Pvt. Ltd.
NEW DELHI

WITNESS:

1. ....

2. ....

6.9: Baseline Evaluation of the Basic Amenities Available in Transport Nagar of Jaipur & Jodhpur



Contract No: IND07015/PACIND/BA/001

PRACTICAL ACTION

Practical Action Consulting (India) Pvt. Ltd.
Trading as Practical Action Consulting India
2/27, Ground Floor, Sarvapriya Vihar
New Delhi-110016
(Hereafter referred to as "PAC India")

And

Kadence International Pvt. Ltd.
Times of India Building, 23 A, Shivaji Marg
New Delhi - 110015
(Hereafter referred to as "the Consultant")

This agreement made on the **16th March 2015**

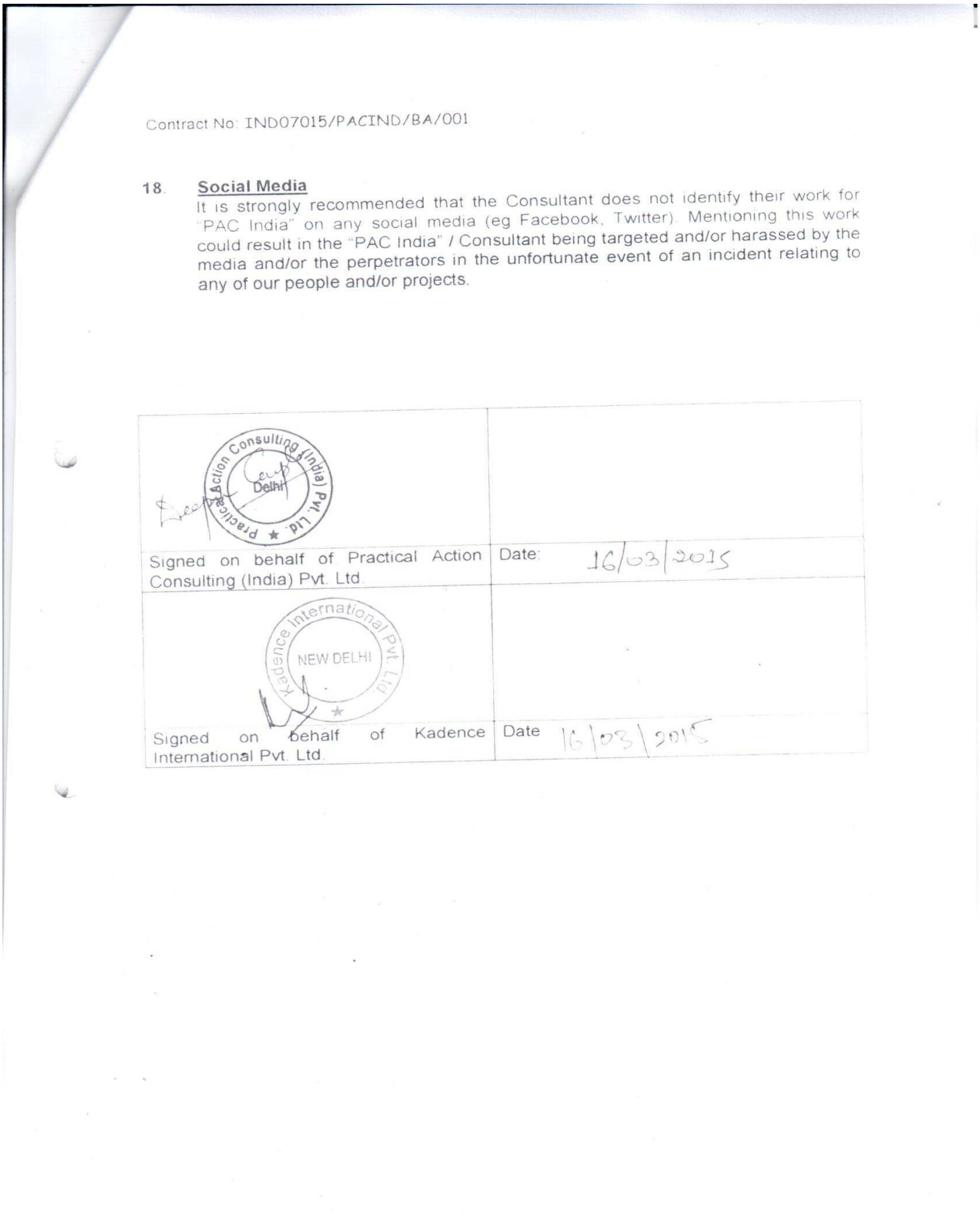
WHEREBY "the consultant" will provide consultancy and other professional services as described in the Special Conditions hereto marked in Annex 1. Services are provided on behalf of "PAC India" under the contract entitled for Baseline Assessment at Transport Nagars of Jaipur and Jodhpur held by "PAC India". The agreement shall commence on 16th March 2015 and terminates on the 15th June 2015.

THE MAIN AGREEMENT

IT IS HEREBY AGREED THAT

1. **Services**
   "PAC India" hereby engages "the consultant" to provide services to "PAC India" (hereinafter referred to as 'the Services') agreed between the two parties and described in **Annex 1, 2 and 3.**

2. **Places of Work**
   The Consultant shall work at his office and shall visit and/or work from other offices or sites and locations as necessary to complete the assignment as per the TOR.

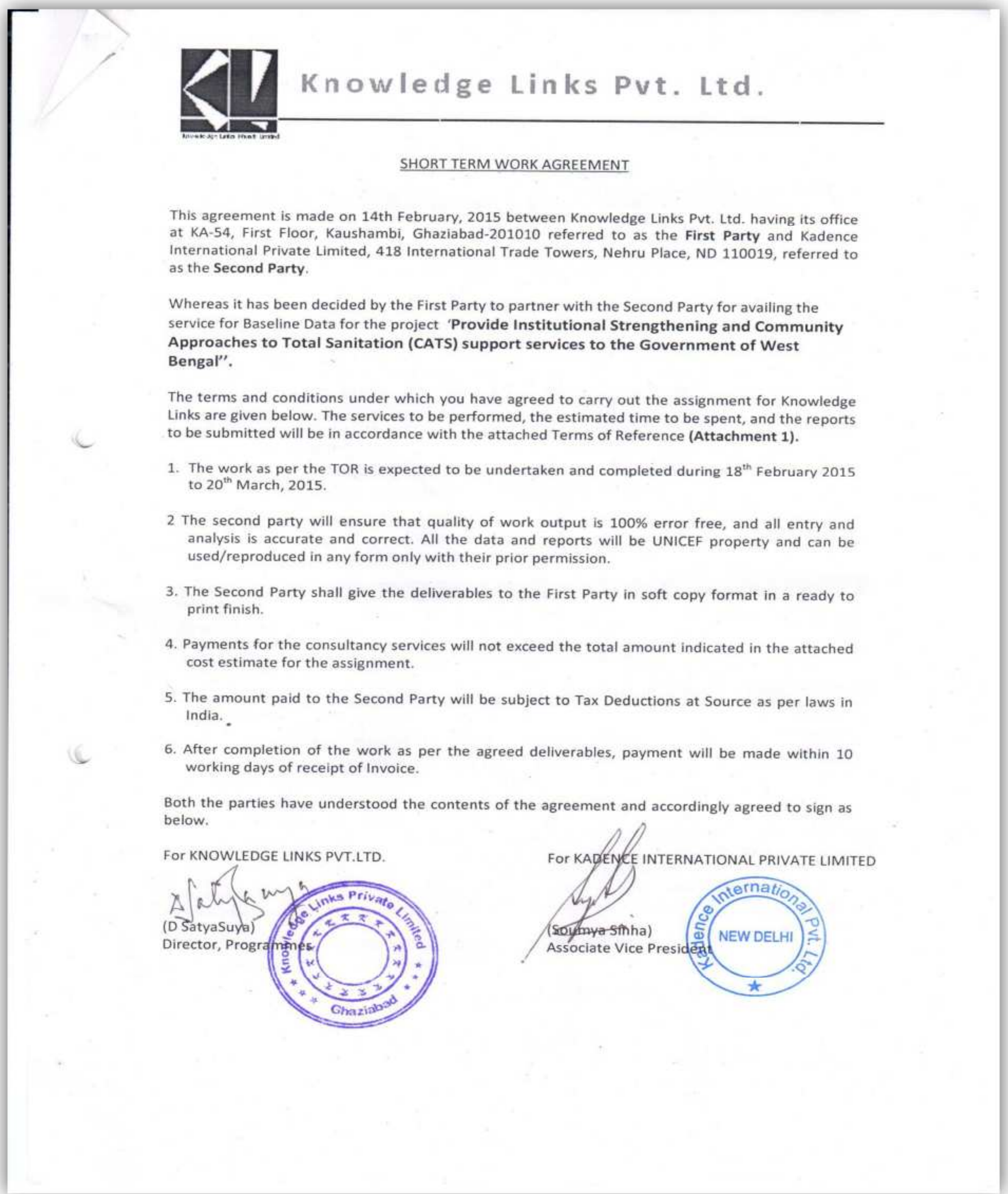


Contract No: IND07015/PACIND/BA/001

18. **Social Media**
It is strongly recommended that the Consultant does not identify their work for "PAC India" on any social media (eg Facebook, Twitter). Mentioning this work could result in the "PAC India" / Consultant being targeted and/or harassed by the media and/or the perpetrators in the unfortunate event of an incident relating to any of our people and/or projects.

Signed on behalf of Practical Action Consulting (India) Pvt. Ltd.	Date: 16/03/2015
Signed on behalf of Kadence International Pvt. Ltd.	Date 16/03/2015

6.10: Baseline Survey in the Districts of Malda and Murshidabad in West Bengal



Knowledge Links Pvt. Ltd.

SHORT TERM WORK AGREEMENT

This agreement is made on 14th February, 2015 between Knowledge Links Pvt. Ltd. having its office at KA-54, First Floor, Kaushambi, Ghaziabad-201010 referred to as the **First Party** and Kadence International Private Limited, 418 International Trade Towers, Nehru Place, ND 110019, referred to as the **Second Party**.

Whereas it has been decided by the First Party to partner with the Second Party for availing the service for Baseline Data for the project '**Provide Institutional Strengthening and Community Approaches to Total Sanitation (CATS) support services to the Government of West Bengal''.**

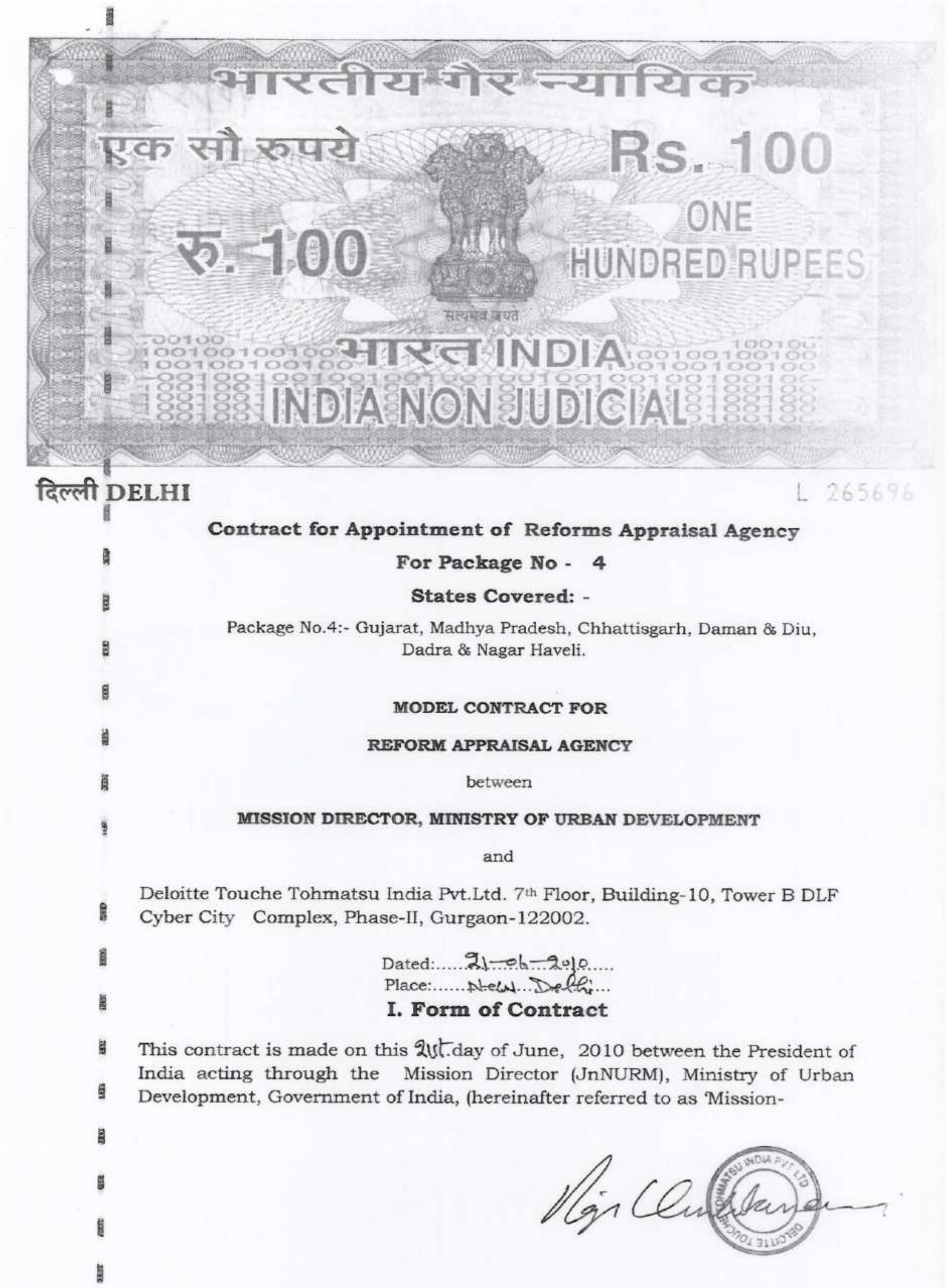
The terms and conditions under which you have agreed to carry out the assignment for Knowledge Links are given below. The services to be performed, the estimated time to be spent, and the reports to be submitted will be in accordance with the attached Terms of Reference **(Attachment 1).**

1. The work as per the TOR is expected to be undertaken and completed during 18th February 2015 to 20th March, 2015.
2. The second party will ensure that quality of work output is 100% error free, and all entry and analysis is accurate and correct. All the data and reports will be UNICEF property and can be used/reproduced in any form only with their prior permission.
3. The Second Party shall give the deliverables to the First Party in soft copy format in a ready to print finish.
4. Payments for the consultancy services will not exceed the total amount indicated in the attached cost estimate for the assignment.
5. The amount paid to the Second Party will be subject to Tax Deductions at Source as per laws in India.
6. After completion of the work as per the agreed deliverables, payment will be made within 10 working days of receipt of Invoice.

Both the parties have understood the contents of the agreement and accordingly agreed to sign as below.

For KNOWLEDGE LINKS PVT.LTD.	For KADENCE INTERNATIONAL PRIVATE LIMITED
(D SatyaSuya) Director, Programmes	(Soumya Sinha) Associate Vice President

7.1: Appraisal of Urban Reforms prescribed under Jawaharlal Nehru National Urban Renewal Mission



भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

ONE HUNDRED RUPEES

रु. 100

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

दिल्ली DELHI

L 265696

Contract for Appointment of Reforms Appraisal Agency

For Package No - 4

States Covered: -

Package No.4:- Gujarat, Madhya Pradesh, Chhattisgarh, Daman & Diu, Dadra & Nagar Haveli.

MODEL CONTRACT FOR

REFORM APPRAISAL AGENCY

between

MISSION DIRECTOR, MINISTRY OF URBAN DEVELOPMENT

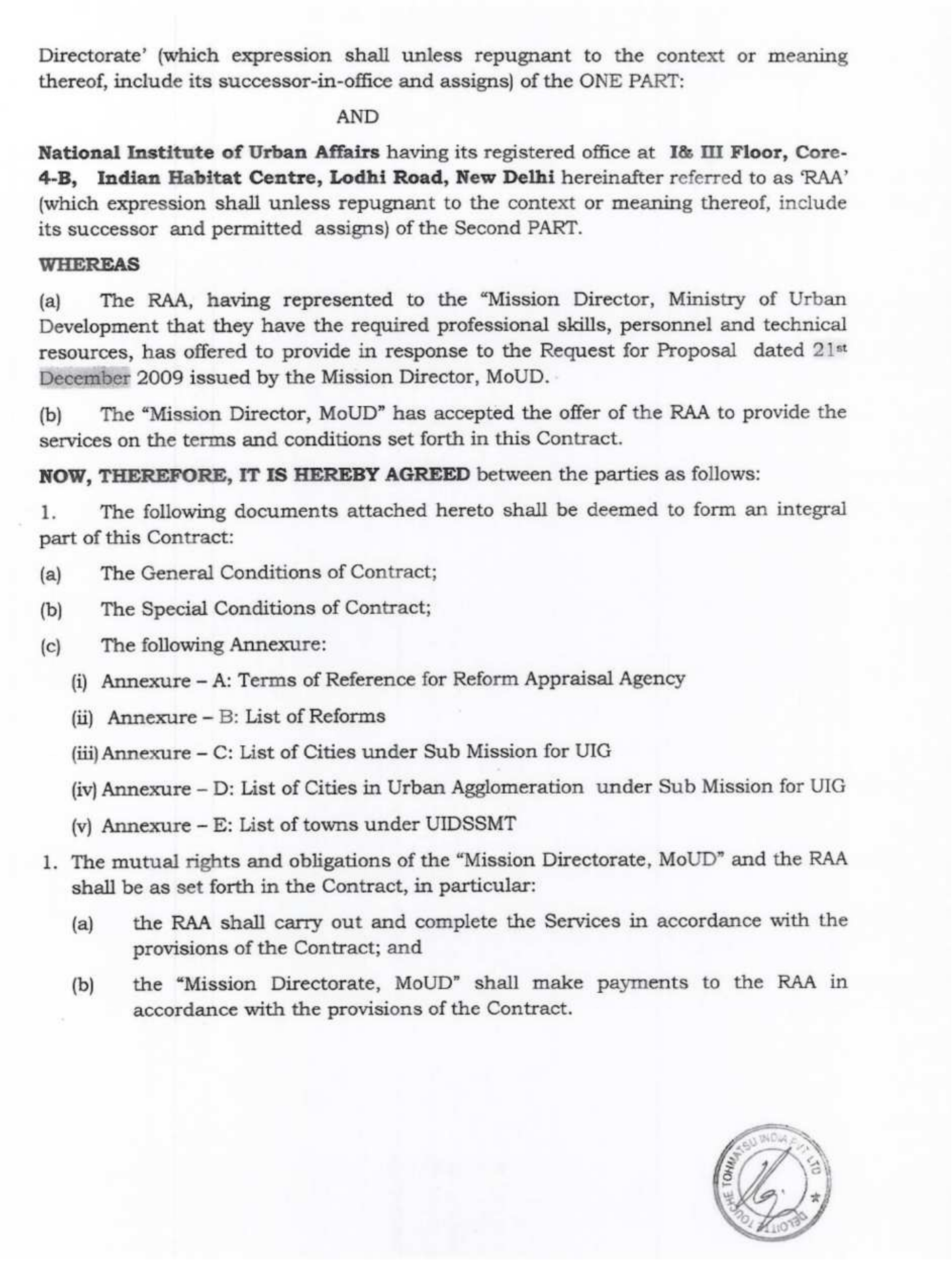
and

Deloitte Touche Tohmatsu India Pvt.Ltd. 7th Floor, Building-10, Tower B DLF Cyber City Complex, Phase-II, Gurgaon-122002.

Dated:......21-06-2010.....
Place:......New Delhi...

I. Form of Contract

This contract is made on this 21st day of June, 2010 between the President of India acting through the Mission Director (JnNURM), Ministry of Urban Development, Government of India, (hereinafter referred to as 'Mission-



Directorate' (which expression shall unless repugnant to the context or meaning thereof, include its successor-in-office and assigns) of the ONE PART:

AND

National Institute of Urban Affairs having its registered office at **I& III Floor, Core-4-B, Indian Habitat Centre, Lodhi Road, New Delhi** hereinafter referred to as 'RAA' (which expression shall unless repugnant to the context or meaning thereof, include its successor and permitted assigns) of the Second PART.

WHEREAS

(a) The RAA, having represented to the "Mission Director, Ministry of Urban Development that they have the required professional skills, personnel and technical resources, has offered to provide in response to the Request for Proposal dated 21st December 2009 issued by the Mission Director, MoUD.

(b) The "Mission Director, MoUD" has accepted the offer of the RAA to provide the services on the terms and conditions set forth in this Contract.

NOW, THEREFORE, IT IS HEREBY AGREED between the parties as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

(a) The General Conditions of Contract;

(b) The Special Conditions of Contract;

(c) The following Annexure:

  (i) Annexure – A: Terms of Reference for Reform Appraisal Agency
  (ii) Annexure – B: List of Reforms
  (iii) Annexure – C: List of Cities under Sub Mission for UIG
  (iv) Annexure – D: List of Cities in Urban Agglomeration under Sub Mission for UIG
  (v) Annexure – E: List of towns under UIDSSMT

1. The mutual rights and obligations of the "Mission Directorate, MoUD" and the RAA shall be as set forth in the Contract, in particular:

  (a) the RAA shall carry out and complete the Services in accordance with the provisions of the Contract; and

  (b) the "Mission Directorate, MoUD" shall make payments to the RAA in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

1. Signed by Shri P.K Srivastava, Joint secretary & Mission Director, Ministry of Urban Development(For and on behalf of the president of India)

Signature with seal

P.K. SRIVASTAVA

In presence of.

(Witnesses)

(i) Nitin

(ii)

2. Dr Raja Venkataramani, Director on behalf of Deloitte Touche Tohmatsu India Pvt.Ltd.

Signature with seal

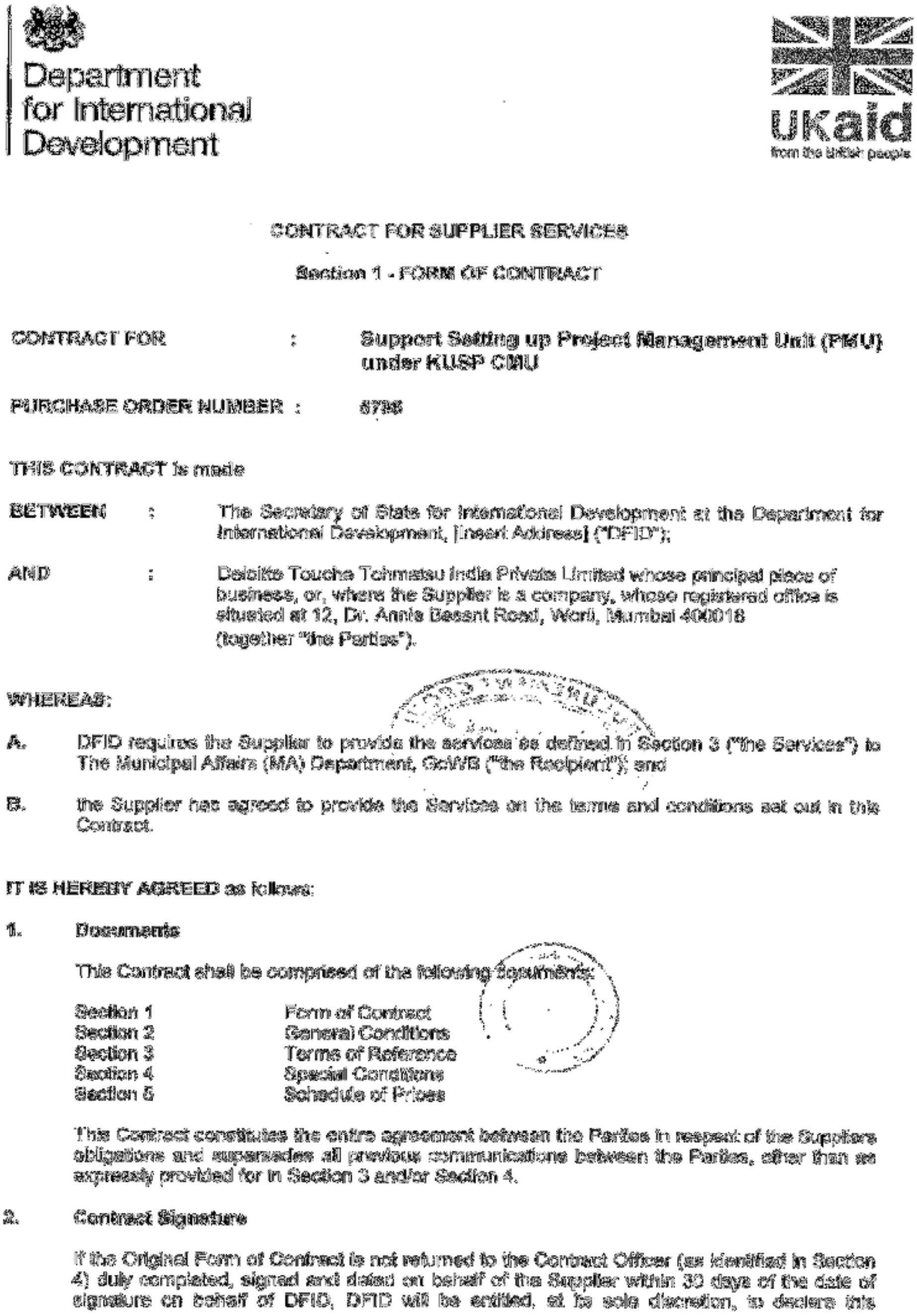
In presence of

(Witnesses)

(i) Shadab [M. SHADAB ZAHEER]

(ii) [JITENDER PAL]

7.2: Providing management support and technical assistance to Change Management Unit (CMU) KUSP to facilitate, coordinate, administer and execute Rajiv Awas Yojana (RAY) in West Bengal



Department for International Development

UKaid from the British people

CONTRACT FOR SUPPLIER SERVICES

Section 1 - FORM OF CONTRACT

CONTRACT FOR : **Support Setting up Project Management Unit (PMU) under KUSP CMU**

PURCHASE ORDER NUMBER : **6798**

THIS CONTRACT is made

BETWEEN : The Secretary of State for International Development at the Department for International Development, [Insert Address] ("DFID");

AND : Deloitte Touche Tohmatsu India Private Limited whose principal place of business, or, where the Supplier is a company, whose registered office is situated at 12, Dr. Annie Besant Road, Worli, Mumbai 400018
(together "the Parties").

WHEREAS:

A. DFID requires the Supplier to provide the services as defined in Section 3 ("the Services") to The Municipal Affairs (MA) Department, GoWB ("the Recipient"); and

B. the Supplier has agreed to provide the Services on the terms and conditions set out in this Contract.

IT IS HEREBY AGREED as follows:

1. Documents

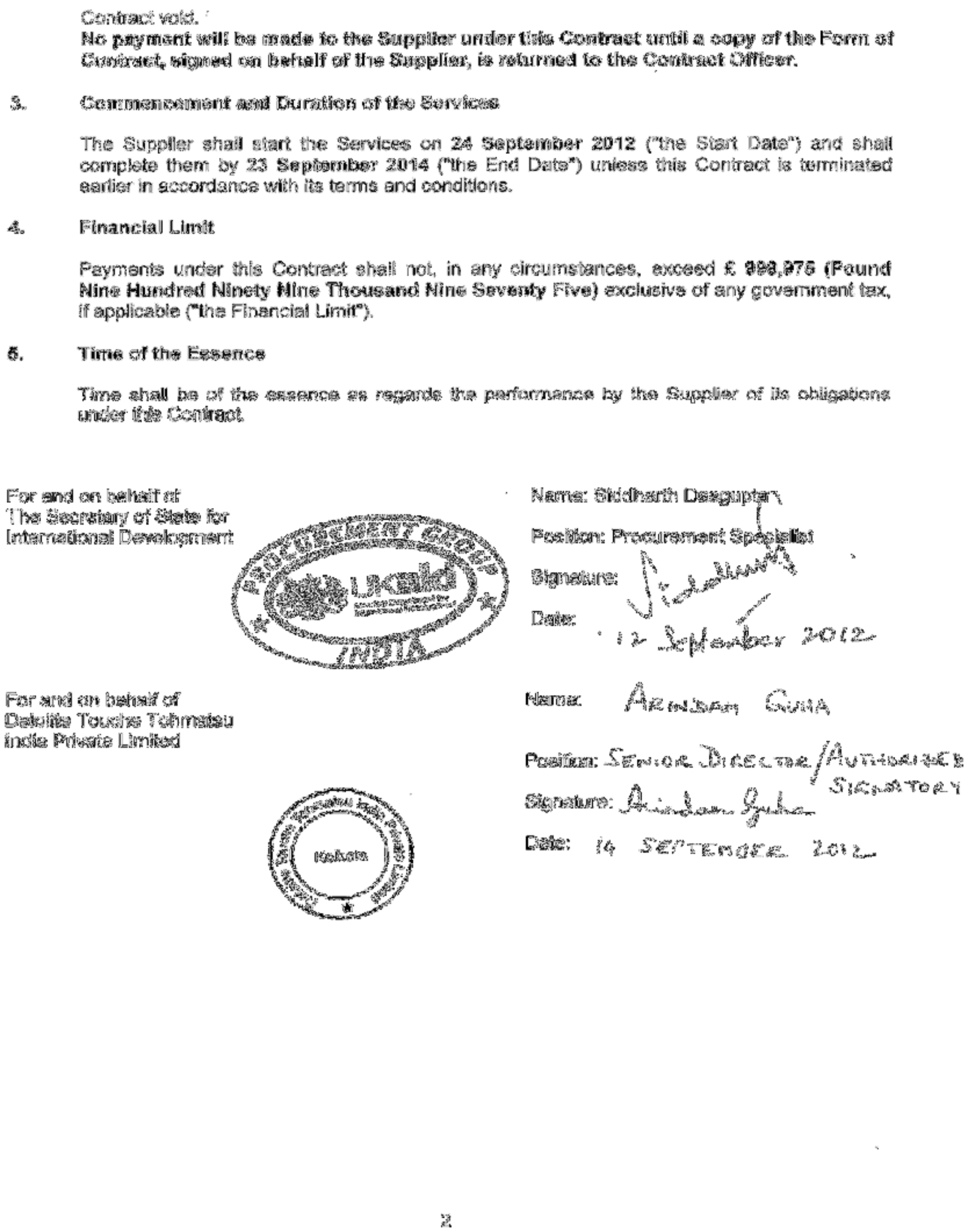
This Contract shall be comprised of the following documents:

Section 1	Form of Contract
Section 2	General Conditions
Section 3	Terms of Reference
Section 4	Special Conditions
Section 5	Schedule of Prices

This Contract constitutes the entire agreement between the Parties in respect of the Suppliers obligations and supersedes all previous communications between the Parties, other than as expressly provided for in Section 3 and/or Section 4.

2. Contract Signature

If the Original Form of Contract is not returned to the Contract Officer (as identified in Section 4) duly completed, signed and dated on behalf of the Supplier within 30 days of the date of signature on behalf of DFID, DFID will be entitled, at its sole discretion, to declare this



Contract void.

No payment will be made to the Supplier under this Contract until a copy of the Form of Contract, signed on behalf of the Supplier, is returned to the Contract Officer.

3. Commencement and Duration of the Services

The Supplier shall start the Services on **24 September 2012** ("the Start Date") and shall complete them by **23 September 2014** ("the End Date") unless this Contract is terminated earlier in accordance with its terms and conditions.

4. Financial Limit

Payments under this Contract shall not, in any circumstances, exceed **£ 999,975 (Pound Nine Hundred Ninety Nine Thousand Nine Seventy Five)** exclusive of any government tax, if applicable ("the Financial Limit").

5. Time of the Essence

Time shall be of the essence as regards the performance by the Supplier of its obligations under this Contract.

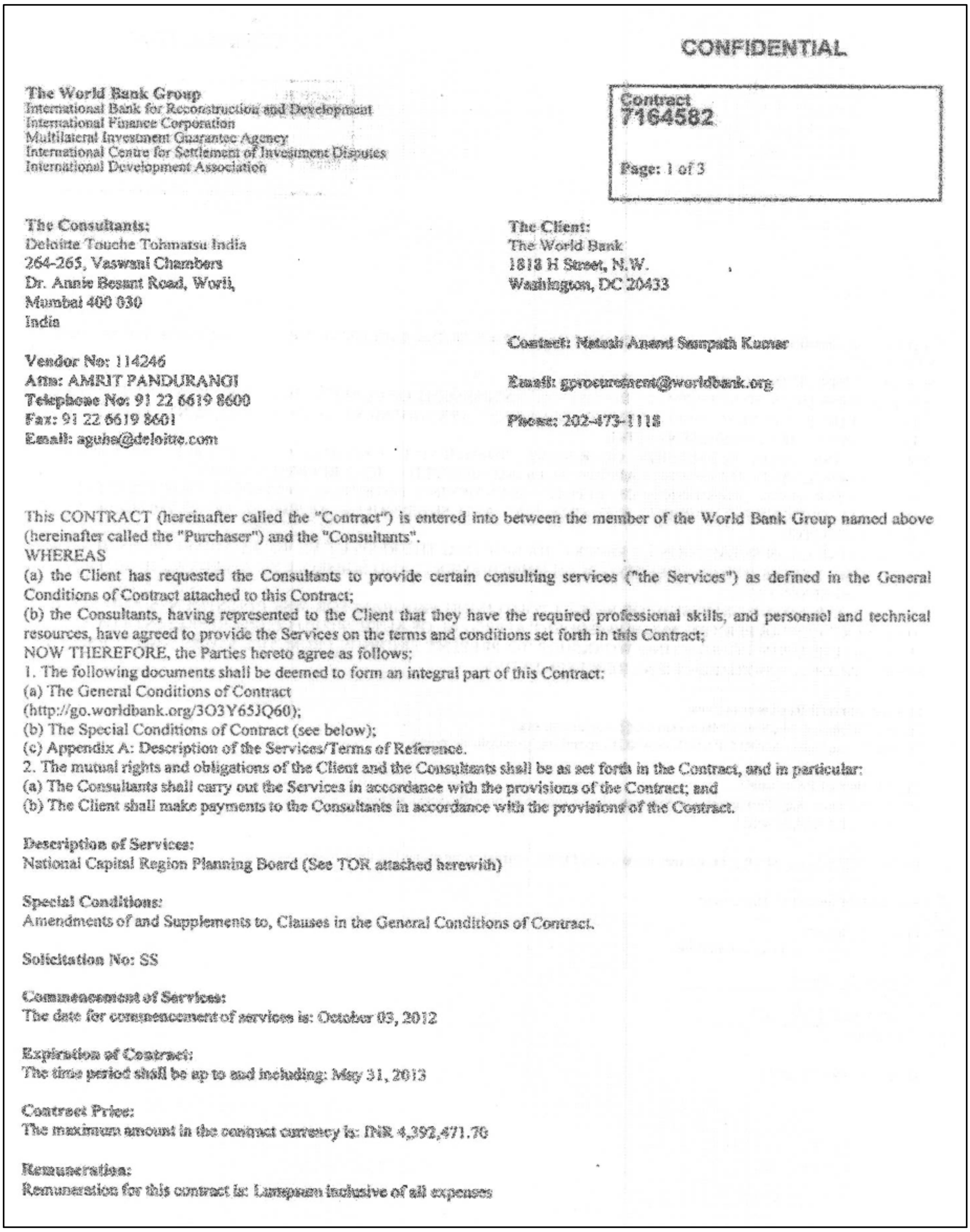
For and on behalf of
The Secretary of State for
International Development

Name: Siddharth Dasgupta
Position: Procurement Specialist
Signature: Siddharth
Date: 12 September 2012

For and on behalf of
Deloitte Touche Tohmatsu
India Private Limited

Name: ARINDAM GUHA
Position: SENIOR DIRECTOR/AUTHORISED SIGNATORY
Signature: Arindam Guha
Date: 14 SEPTEMBER 2012

7.3 Scoping Study to Assess Opportunities to Improve Performance of Water Supply and Sanitation in the Seven Metro Centers in the National Capital Region (NCR)



CONFIDENTIAL

The World Bank Group
International Bank for Reconstruction and Development
International Finance Corporation
Multilateral Investment Guarantee Agency
International Centre for Settlement of Investment Disputes
International Development Association

Contract
7164582

Page: 1 of 3

The Consultants:
Deloitte Touche Tohmatsu India
264-265, Vaswani Chambers
Dr. Annie Besant Road, Worli,
Mumbai 400 030
India

Vendor No: 114246
Attn: AMRIT PANDURANGI
Telephone No: 91 22 6619 8600
Fax: 91 22 6619 8601
Email: aguha@deloitte.com

The Client:
The World Bank
1818 H Street, N.W.
Washington, DC 20433

Contact: Natesh Anand Sampath Kumar

Email: gprocurement@worldbank.org

Phone: 202-473-1118

This CONTRACT (hereinafter called the "Contract") is entered into between the member of the World Bank Group named above (hereinafter called the "Purchaser") and the "Consultants".
WHEREAS
(a) the Client has requested the Consultants to provide certain consulting services ("the Services") as defined in the General Conditions of Contract attached to this Contract;
(b) the Consultants, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;
NOW THEREFORE, the Parties hereto agree as follows;
1. The following documents shall be deemed to form an integral part of this Contract:
(a) The General Conditions of Contract
(http://go.worldbank.org/3O3Y65JQ60);
(b) The Special Conditions of Contract (see below);
(c) Appendix A: Description of the Services/Terms of Reference.
2. The mutual rights and obligations of the Client and the Consultants shall be as set forth in the Contract, and in particular:
(a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and
(b) The Client shall make payments to the Consultants in accordance with the provisions of the Contract.

Description of Services:
National Capital Region Planning Board (See TOR attached herewith)

Special Conditions:
Amendments of and Supplements to, Clauses in the General Conditions of Contract.

Solicitation No: SS

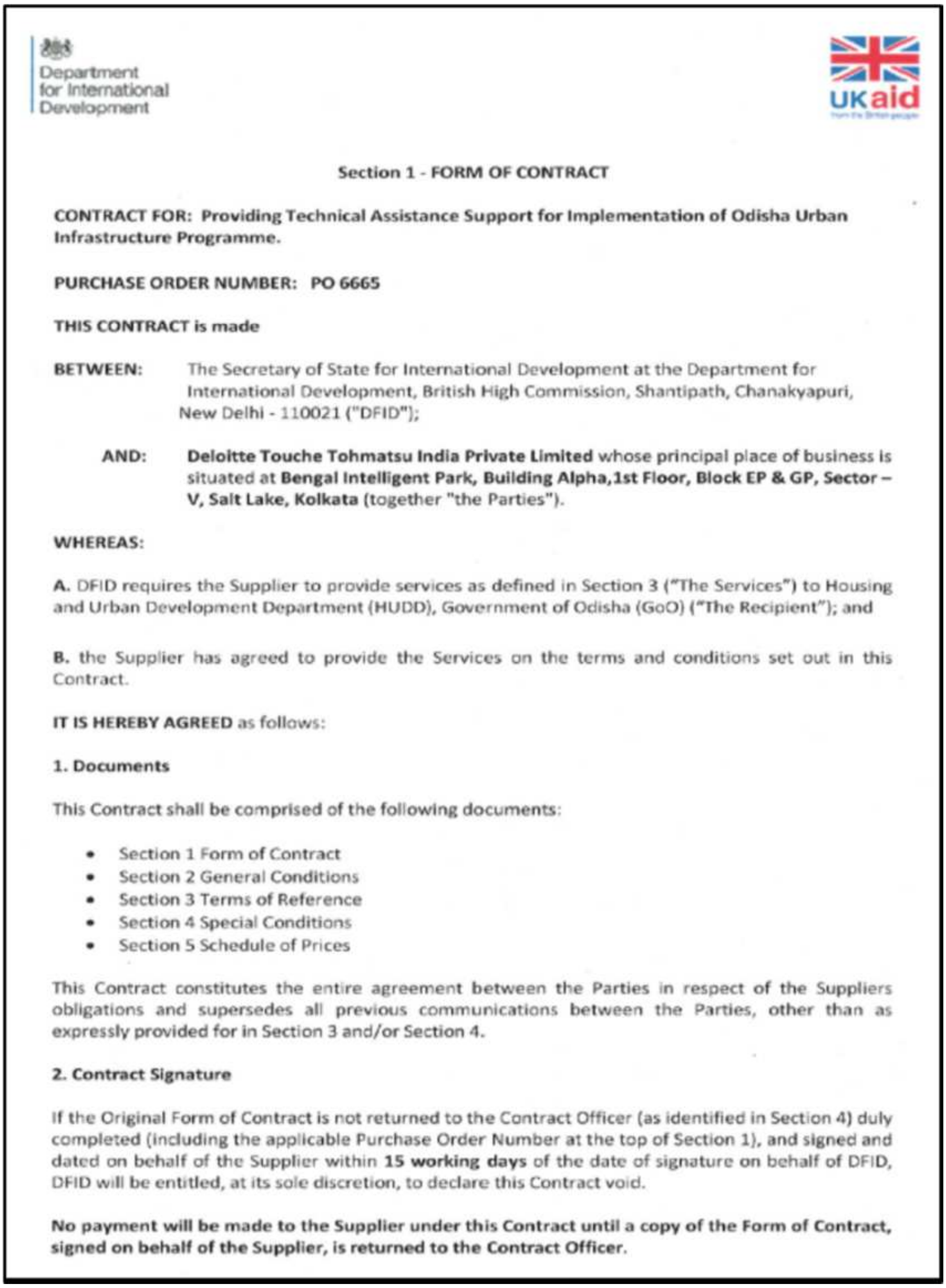
Commencement of Services:
The date for commencement of services is: October 03, 2012

Expiration of Contract:
The time period shall be up to and including: May 31, 2013

Contract Price:
The maximum amount in the contract currency is: INR 4,392,471.70

Remuneration:
Remuneration for this contract is: Lumpsum inclusive of all expenses

7.4 Providing Technical Assistance Support to Implementation of Odisha Urban Infrastructure Programme (OSUIP)



Department
for International
Development

UKaid

Section 1 - FORM OF CONTRACT

CONTRACT FOR: Providing Technical Assistance Support for Implementation of Odisha Urban Infrastructure Programme.

PURCHASE ORDER NUMBER: PO 6665

THIS CONTRACT is made

BETWEEN: The Secretary of State for International Development at the Department for International Development, British High Commission, Shantipath, Chanakyapuri, New Delhi - 110021 ("DFID");

AND: **Deloitte Touche Tohmatsu India Private Limited** whose principal place of business is situated at **Bengal Intelligent Park, Building Alpha,1st Floor, Block EP & GP, Sector – V, Salt Lake, Kolkata** (together "the Parties").

WHEREAS:

A. DFID requires the Supplier to provide services as defined in Section 3 ("The Services") to Housing and Urban Development Department (HUDD), Government of Odisha (GoO) ("The Recipient"); and

B. the Supplier has agreed to provide the Services on the terms and conditions set out in this Contract.

IT IS HEREBY AGREED as follows:

1. Documents

This Contract shall be comprised of the following documents:

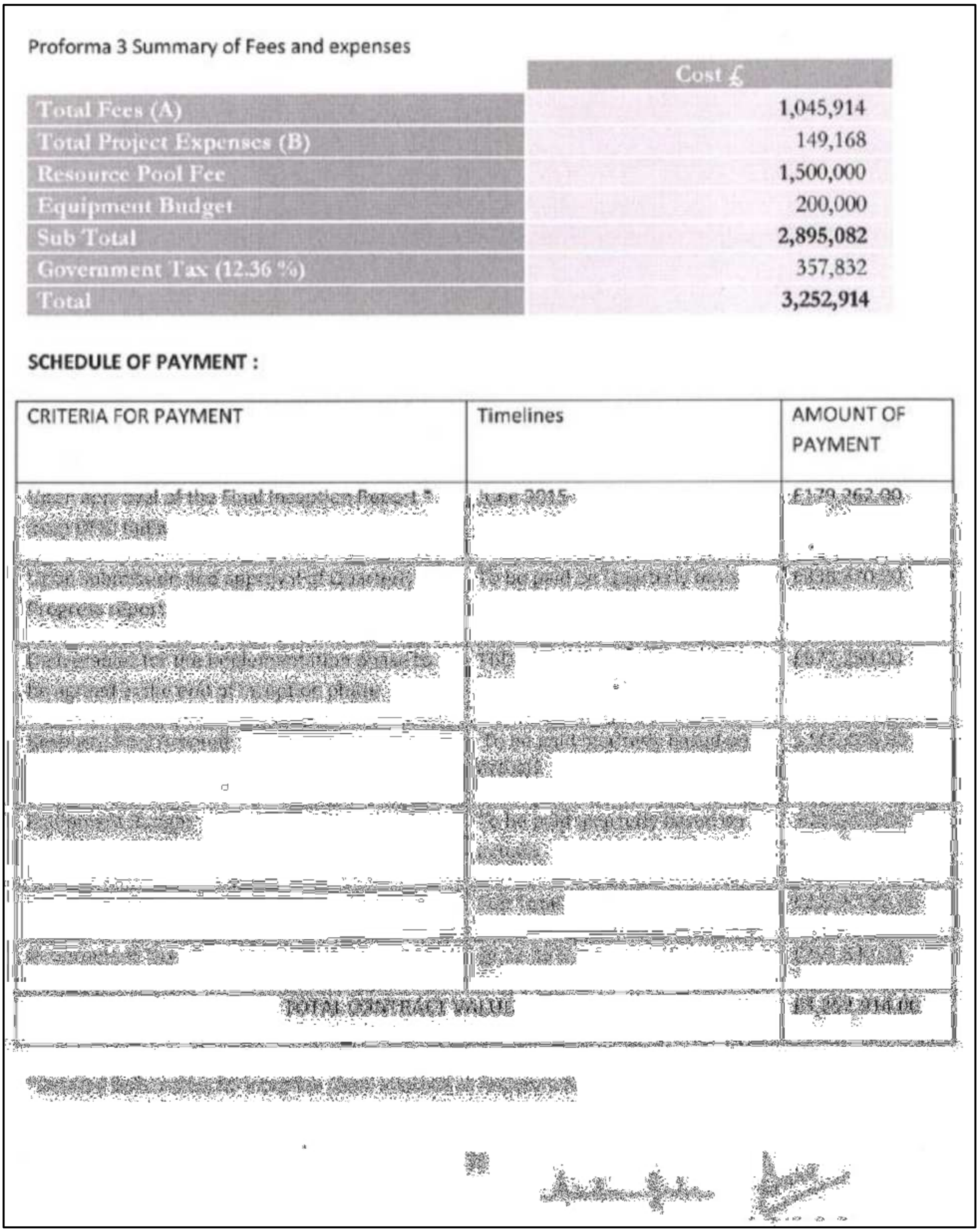
- Section 1 Form of Contract
- Section 2 General Conditions
- Section 3 Terms of Reference
- Section 4 Special Conditions
- Section 5 Schedule of Prices

This Contract constitutes the entire agreement between the Parties in respect of the Suppliers obligations and supersedes all previous communications between the Parties, other than as expressly provided for in Section 3 and/or Section 4.

2. Contract Signature

If the Original Form of Contract is not returned to the Contract Officer (as identified in Section 4) duly completed (including the applicable Purchase Order Number at the top of Section 1), and signed and dated on behalf of the Supplier within **15 working days** of the date of signature on behalf of DFID, DFID will be entitled, at its sole discretion, to declare this Contract void.

No payment will be made to the Supplier under this Contract until a copy of the Form of Contract, signed on behalf of the Supplier, is returned to the Contract Officer.



Proforma 3 Summary of Fees and expenses

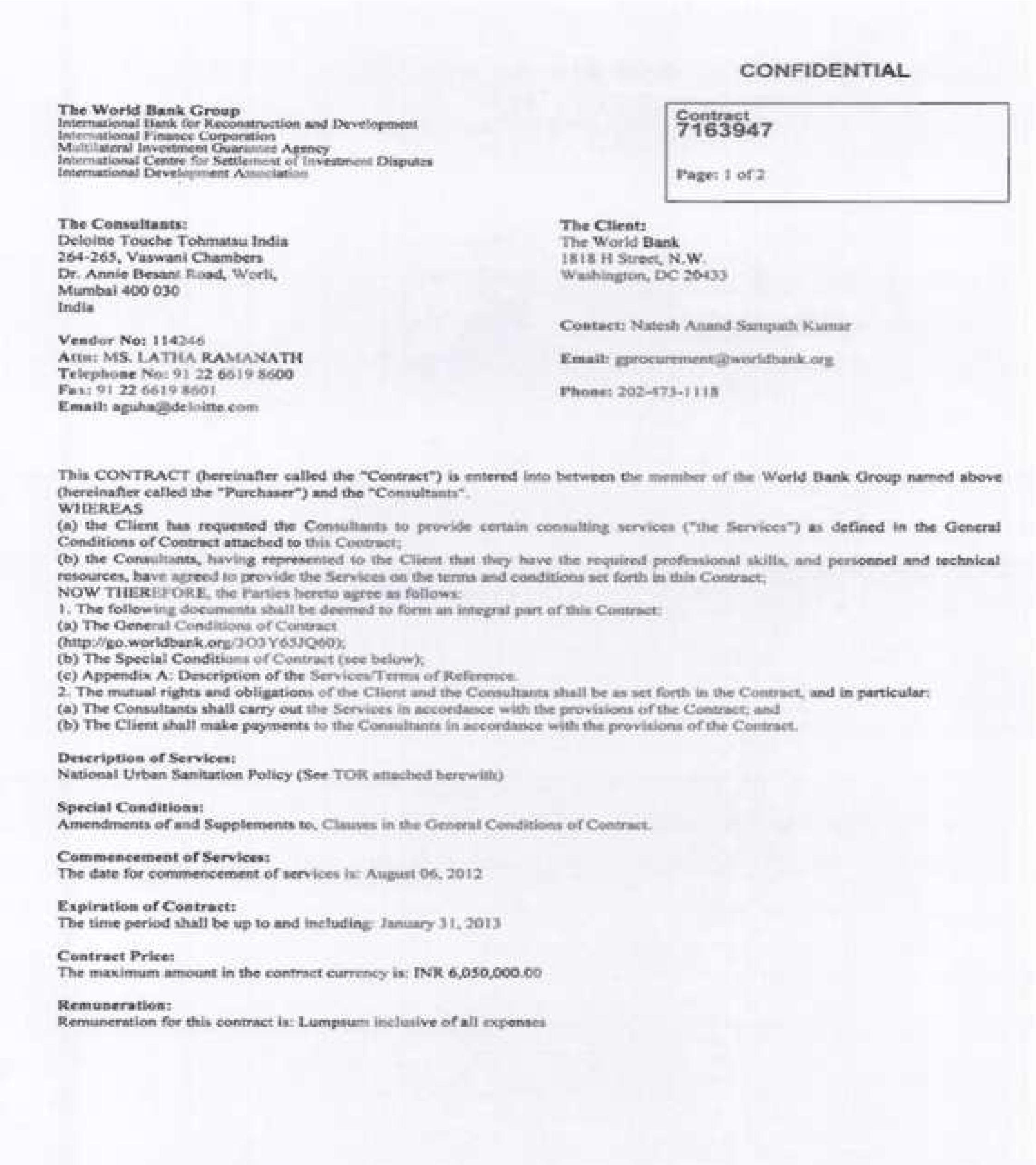
	Cost £
Total Fees (A)	1,045,914
Total Project Expenses (B)	149,168
Resource Pool Fee	1,500,000
Equipment Budget	200,000
Sub Total	**2,895,082**
Government Tax (12.36 %)	357,832
Total	**3,252,914**

SCHEDULE OF PAYMENT :

CRITERIA FOR PAYMENT	Timelines	AMOUNT OF PAYMENT
Upon approval of the Final Inception Report & [illegible]	June 2015	£179,262.00
Upon submission and approval of Quarterly Progress report	To be paid on quarterly basis	[illegible]
Deliverables for the implementation phase to be agreed at the end of inception phase	TBC	[illegible]
Resource Pool Amount	To be paid quarterly based on actuals	[illegible]
Equipment Budget	To be paid quarterly based on actuals	[illegible]
	Sub Total	[illegible]
Government Tax	[illegible]	[illegible]
TOTAL CONTRACT VALUE		£3,252,914.00

[illegible]

7.5 Identification and Evaluation of Options for Implementation of the National Urban Sanitation Policy (NUSP) at the State Level



CONFIDENTIAL

The World Bank Group
International Bank for Reconstruction and Development
International Finance Corporation
Multilateral Investment Guarantee Agency
International Centre for Settlement of Investment Disputes
International Development Association

Contract
7163947

Page: 1 of 2

The Consultants:
Deloitte Touche Tohmatsu India
264-265, Vaswani Chambers
Dr. Annie Besant Road, Worli,
Mumbai 400 030
India

Vendor No: 114246
Attn: MS. LATHA RAMANATH
Telephone No: 91 22 6619 8600
Fax: 91 22 6619 8601
Email: aguha@deloitte.com

The Client:
The World Bank
1818 H Street, N.W.
Washington, DC 20433

Contact: Natesh Anand Sampath Kumar

Email: gprocurement@worldbank.org

Phone: 202-473-1118

This CONTRACT (hereinafter called the "Contract") is entered into between the member of the World Bank Group named above (hereinafter called the "Purchaser") and the "Consultants".
WHEREAS
(a) the Client has requested the Consultants to provide certain consulting services ("the Services") as defined in the General Conditions of Contract attached to this Contract;
(b) the Consultants, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;
NOW THEREFORE, the Parties hereto agree as follows:
1. The following documents shall be deemed to form an integral part of this Contract:
(a) The General Conditions of Contract
(http://go.worldbank.org/3O3Y63JQ60);
(b) The Special Conditions of Contract (see below);
(c) Appendix A: Description of the Services/Terms of Reference.
2. The mutual rights and obligations of the Client and the Consultants shall be as set forth in the Contract, and in particular:
(a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and
(b) The Client shall make payments to the Consultants in accordance with the provisions of the Contract.

Description of Services:
National Urban Sanitation Policy (See TOR attached herewith)

Special Conditions:
Amendments of and Supplements to, Clauses in the General Conditions of Contract.

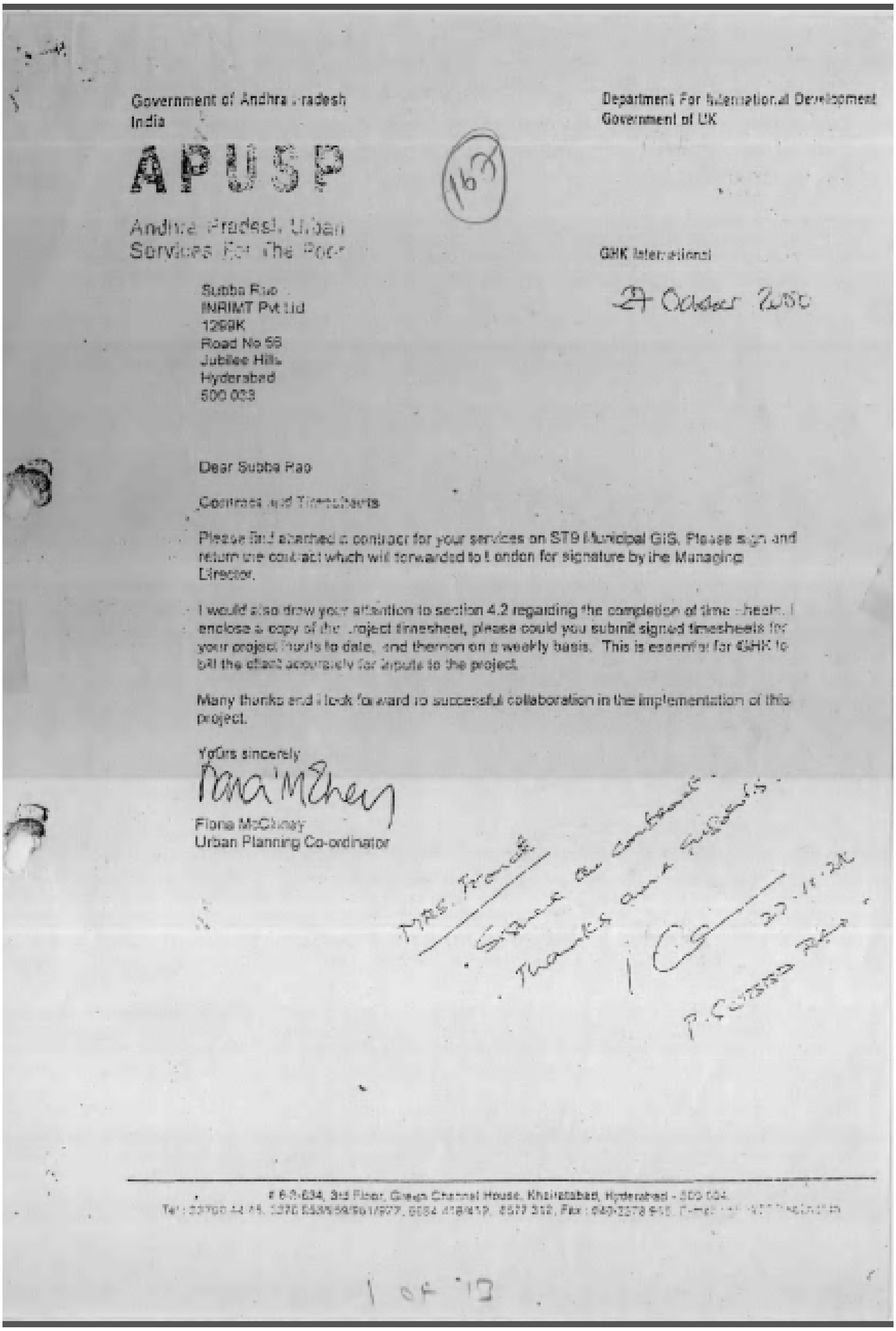
Commencement of Services:
The date for commencement of services is: August 06, 2012

Expiration of Contract:
The time period shall be up to and including: January 31, 2013

Contract Price:
The maximum amount in the contract currency is: INR 6,050,000.00

Remuneration:
Remuneration for this contract is: Lumpsum inclusive of all expenses

7.6: Technical Assistance for Implementation of Monitoring and Evaluation Framework in Urban Local Bodies by Andhra Pradesh Urban Services for the Poor (APUSP)



Government of Andhra Pradesh
India

APUSP

Andhra Pradesh Urban
Services For The Poor

Department For International Development
Government of UK

GHK International

(163)

24 October 2000

Subba Rao
INRIMT Pvt Ltd
1299K
Road No 56
Jubilee Hills
Hyderabad
500 033

Dear Subba Rao

Contract and Timesheets

Please find attached a contract for your services on ST9 Municipal GIS. Please sign and return the contract which will forwarded to London for signature by the Managing Director.

I would also draw your attention to section 4.2 regarding the completion of time sheets. I enclose a copy of the project timesheet, please could you submit signed timesheets for your project inputs to date, and thereon on a weekly basis. This is essential for GHK to bill the client accurately for inputs to the project.

Many thanks and I look forward to successful collaboration in the implementation of this project.

Yours sincerely

Fiona McChney

Fiona McChney
Urban Planning Co-ordinator

Mrs. French

Signed the contract.

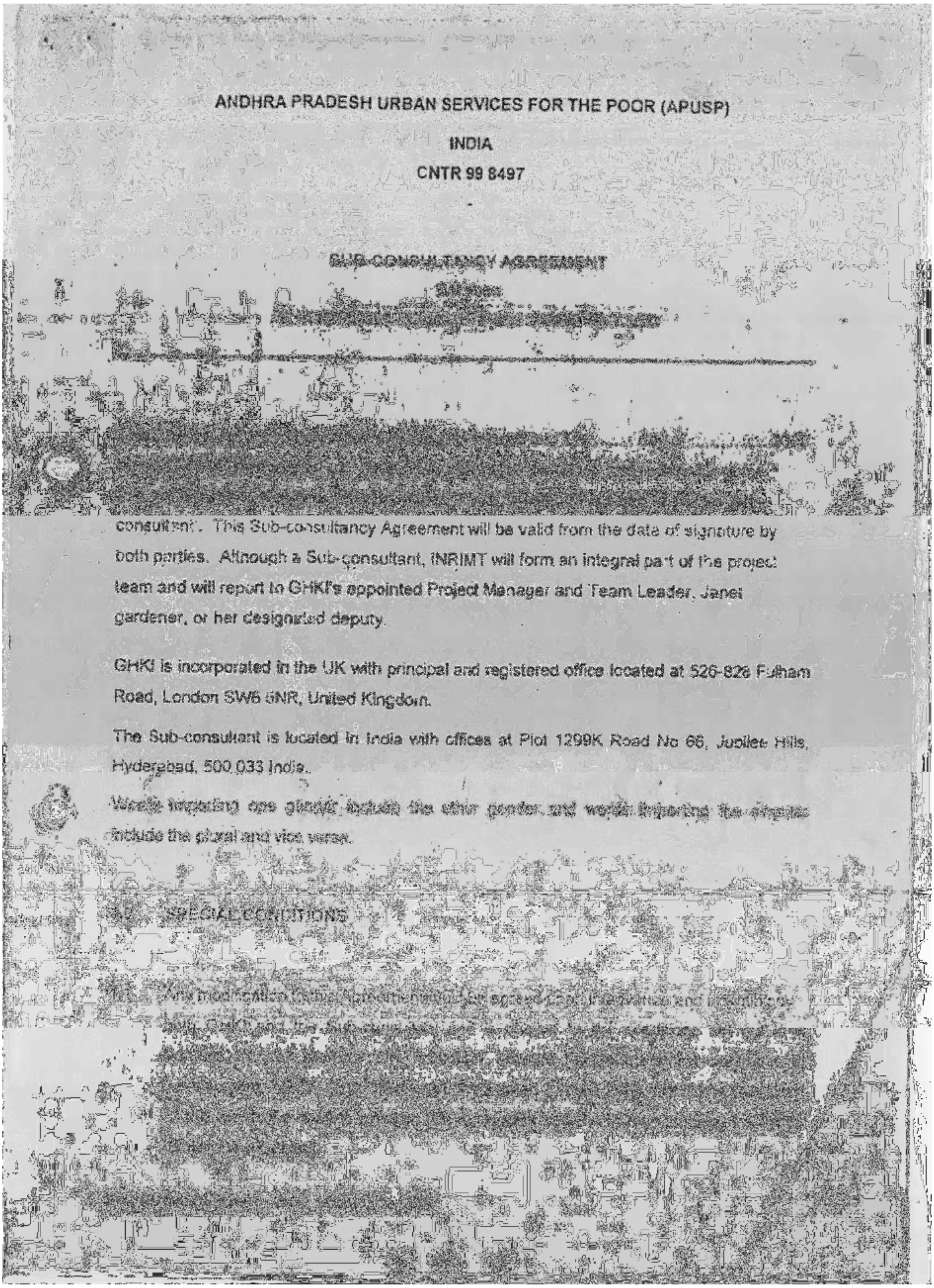
Thanks and regards.

27.11.2K

P. Subba Rao.

6-3-634, 3rd Floor, Green Channel House, Khairatabad, Hyderabad - 500 004.
Tel : 23700 44 45, 2370 6535/59/561/977, 6684 418/419, 6577 352, Fax : 040-2378 916, E-mail : [illegible]

1 of 13



ANDHRA PRADESH URBAN SERVICES FOR THE POOR (APUSP)

INDIA

CNTR 99 8497

SUB-CONSULTANCY AGREEMENT

[illegible]

consultant. This Sub-consultancy Agreement will be valid from the date of signature by both parties. Although a Sub-consultant, INRIMT will form an integral part of the project team and will report to GHKI's appointed Project Manager and Team Leader, Janet gardener, or her designated deputy.

GHKI is incorporated in the UK with principal and registered office located at 526-528 Fulham Road, London SW6 5NR, United Kingdom.

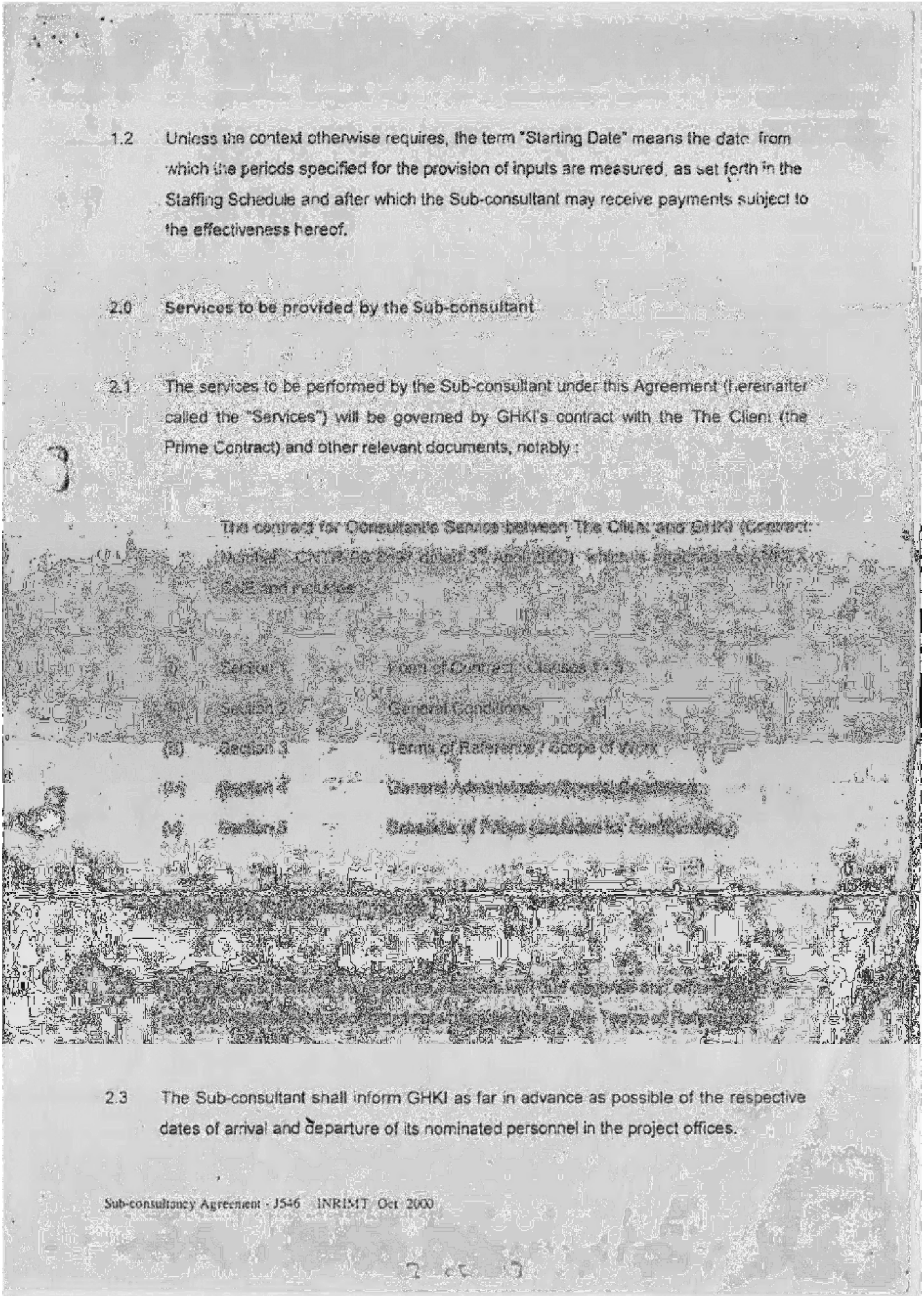
The Sub-consultant is located in India with offices at Plot 1299K Road No 66, Jubilee Hills, Hyderabad, 500 033 India.

Words importing one gender include the other gender and words importing the singular include the plural and vice versa.

SPECIAL CONDITIONS

Any modification to this Agreement [illegible] agreed [illegible] in advance and in writing by both GHKI and the Sub-[illegible]

[illegible]



1.2 Unless the context otherwise requires, the term "Starting Date" means the date from which the periods specified for the provision of inputs are measured, as set forth in the Staffing Schedule and after which the Sub-consultant may receive payments subject to the effectiveness hereof.

2.0 Services to be provided by the Sub-consultant

2.1 The services to be performed by the Sub-consultant under this Agreement (hereinafter called the "Services") will be governed by GHKI's contract with the The Client (the Prime Contract) and other relevant documents, notably :

The contract for Consultant's Service between The Client and GHKI (Contract Number: [illegible] dated 3rd April 2000) which is attached as ANNEX [illegible] and includes:

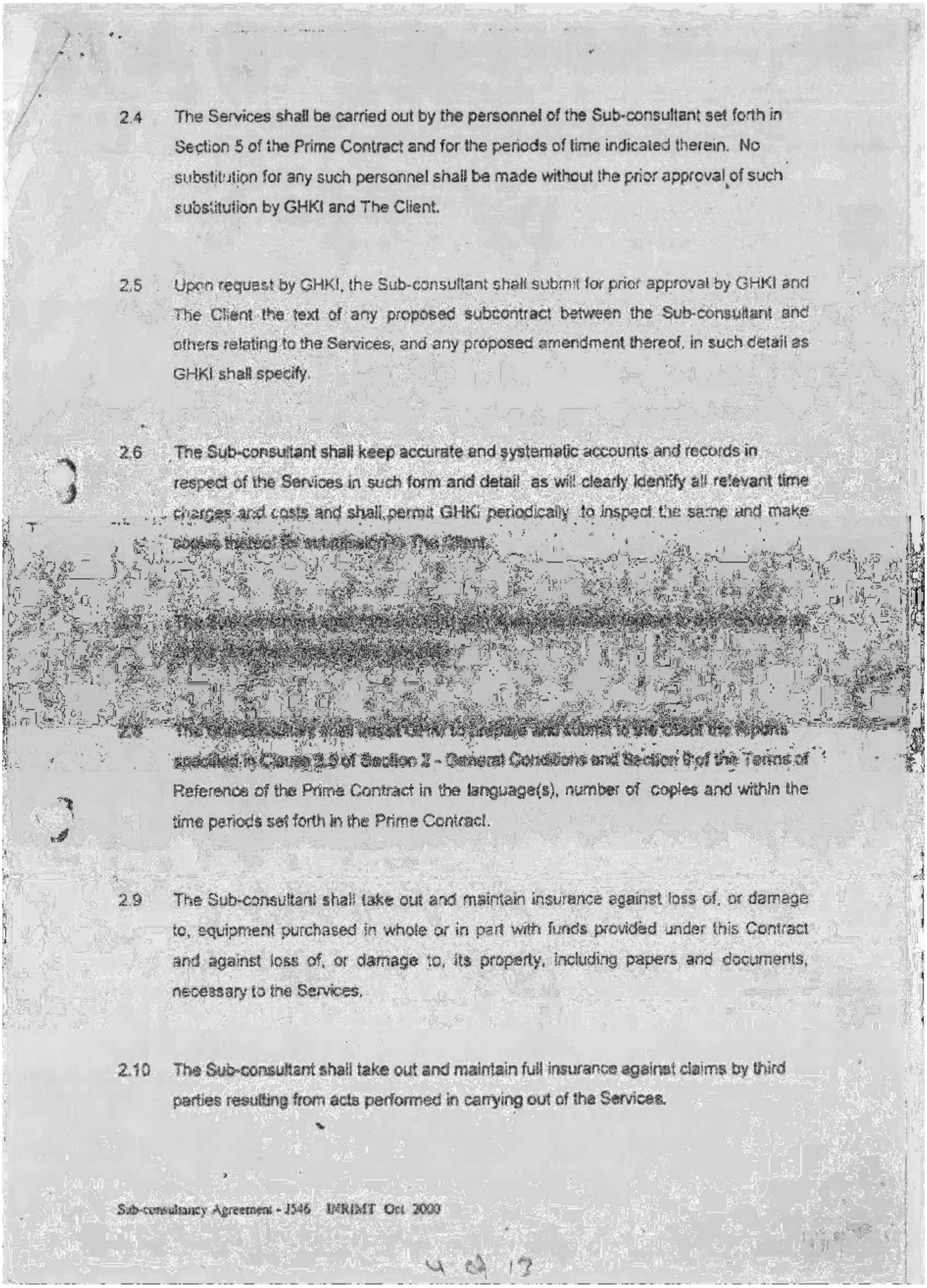
(i) Section 1 Form of Contract: Clauses 1-5
(ii) Section 2 General Conditions
(iii) Section 3 Terms of Reference / Scope of Work
(iv) Section 4 [illegible]
(v) Section 5 Schedule of Prices [illegible]

[illegible] with due diligence and efficiency [illegible] Terms of Reference.

2.3 The Sub-consultant shall inform GHKI as far in advance as possible of the respective dates of arrival and departure of its nominated personnel in the project offices.

Sub-consultancy Agreement - J546 INRIMT Oct 2000

Deloitte Touche Tohmatsu India LLP



2.4 The Services shall be carried out by the personnel of the Sub-consultant set forth in Section 5 of the Prime Contract and for the periods of time indicated therein. No substitution for any such personnel shall be made without the prior approval of such substitution by GHKI and The Client.

2.5 Upon request by GHKI, the Sub-consultant shall submit for prior approval by GHKI and The Client the text of any proposed subcontract between the Sub-consultant and others relating to the Services, and any proposed amendment thereof, in such detail as GHKI shall specify.

2.6 The Sub-consultant shall keep accurate and systematic accounts and records in respect of the Services in such form and detail as will clearly identify all relevant time charges and costs and shall permit GHKI periodically to inspect the same and make copies thereof for submission to The Client.

2.7 [illegible]

2.8 The Sub-consultant shall assist GHKI to prepare and submit to the Client the reports specified in Clause 2.5 of Section 2 - General Conditions and Section 5 of the Terms of Reference of the Prime Contract in the language(s), number of copies and within the time periods set forth in the Prime Contract.

2.9 The Sub-consultant shall take out and maintain insurance against loss of, or damage to, equipment purchased in whole or in part with funds provided under this Contract and against loss of, or damage to, its property, including papers and documents, necessary to the Services.

2.10 The Sub-consultant shall take out and maintain full insurance against claims by third parties resulting from acts performed in carrying out of the Services.

Sub-consultancy Agreement - J546 IMRIMT Oct 2000

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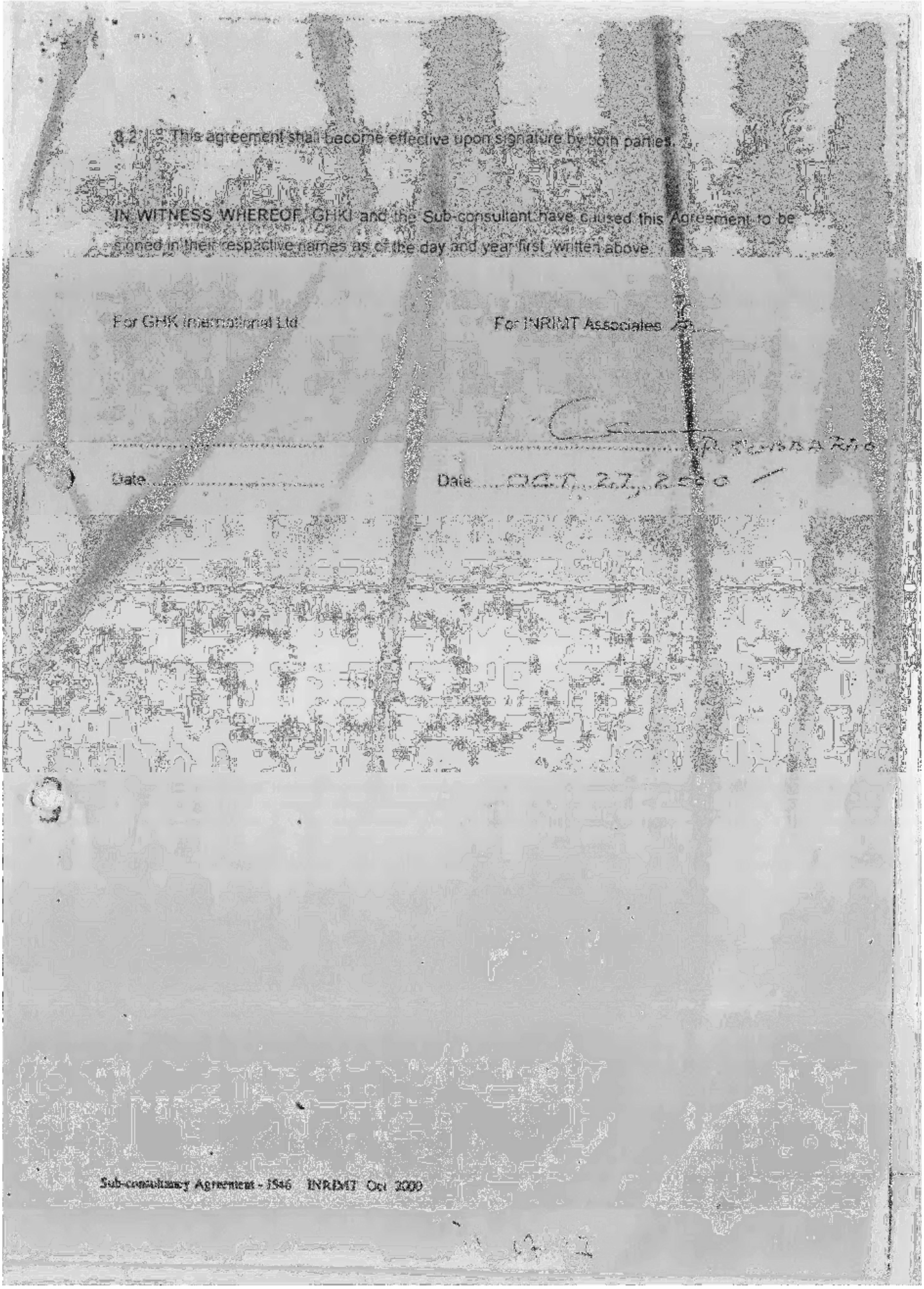


8.2 This agreement shall become effective upon signature by both parties.

IN WITNESS WHEREOF, GHKI and the Sub-consultant have caused this Agreement to be signed in their respective names as of the day and year first written above.

For GHK International Ltd

For INRIMT Associates

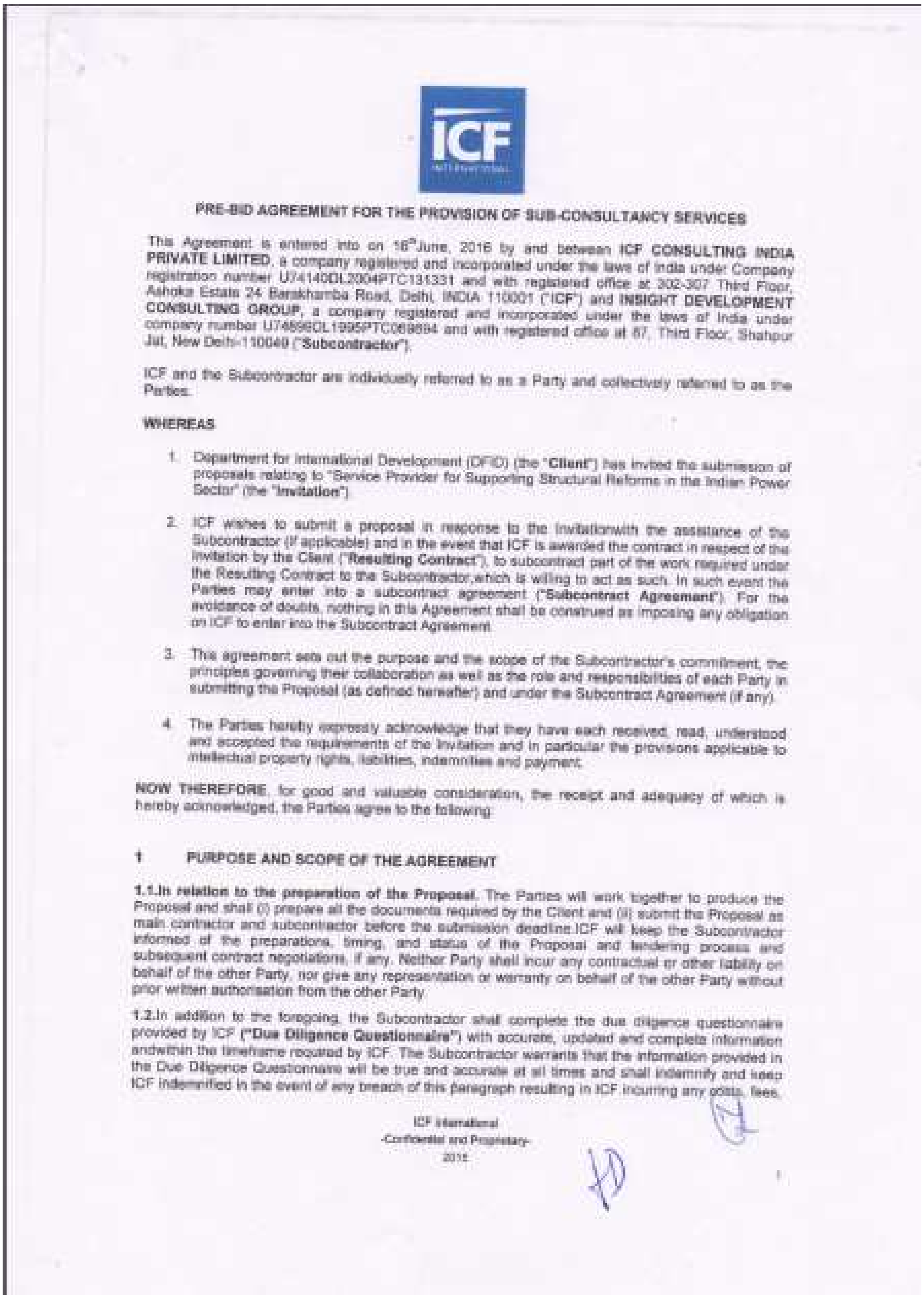
R. SUBBA RAO

Date.

Date OCT. 27, 2000

Sub-consultancy Agreement - 1546 INRIMT Oct 2000

7.7 Mid-term and End-line Assessment as Part of Implementation of Asian Development bank (ADB) Assisted Investment Program Performance & Monitoring System Consultants (IPPMS) of Rajasthan Urban Sector Development Investment Program (RUSDIP)



PRE-BID AGREEMENT FOR THE PROVISION OF SUB-CONSULTANCY SERVICES

This Agreement is entered into on 16th June, 2016 by and between **ICF CONSULTING INDIA PRIVATE LIMITED**, a company registered and incorporated under the laws of India under Company registration number U74140DL2004PTC131331 and with registered office at 302-307 Third Floor, Ashoka Estate 24 Barakhamba Road, Delhi, INDIA 110001 ("**ICF**") and **INSIGHT DEVELOPMENT CONSULTING GROUP**, a company registered and incorporated under the laws of India under company number U74899DL1995PTC068884 and with registered office at 67, Third Floor, Shahpur Jat, New Delhi-110049 ("**Subcontractor**").

ICF and the Subcontractor are individually referred to as a Party and collectively referred to as the Parties.

WHEREAS

1. Department for International Development (DFID) (the "**Client**") has invited the submission of proposals relating to "Service Provider for Supporting Structural Reforms in the Indian Power Sector" (the "**Invitation**").
2. ICF wishes to submit a proposal in response to the Invitationwith the assistance of the Subcontractor (if applicable) and in the event that ICF is awarded the contract in respect of the Invitation by the Client ("**Resulting Contract**"), to subcontract part of the work required under the Resulting Contract to the Subcontractor,which is willing to act as such. In such event the Parties may enter into a subcontract agreement ("**Subcontract Agreement**"). For the avoidance of doubts, nothing in this Agreement shall be construed as imposing any obligation on ICF to enter into the Subcontract Agreement.
3. This agreement sets out the purpose and the scope of the Subcontractor's commitment, the principles governing their collaboration as well as the role and responsibilities of each Party in submitting the Proposal (as defined hereafter) and under the Subcontract Agreement (if any).
4. The Parties hereby expressly acknowledge that they have each received, read, understood and accepted the requirements of the Invitation and in particular the provisions applicable to intellectual property rights, liabilities, indemnities and payment.

NOW THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the Parties agree to the following:

1 PURPOSE AND SCOPE OF THE AGREEMENT

1.1.In relation to the preparation of the Proposal. The Parties will work together to produce the Proposal and shall (i) prepare all the documents required by the Client and (ii) submit the Proposal as main contractor and subcontractor before the submission deadline.ICF will keep the Subcontractor informed of the preparations, timing, and status of the Proposal and tendering process and subsequent contract negotiations, if any. Neither Party shall incur any contractual or other liability on behalf of the other Party, nor give any representation or warranty on behalf of the other Party without prior written authorisation from the other Party.

1.2. In addition to the foregoing, the Subcontractor shall complete the due diligence questionnaire provided by ICF ("**Due Diligence Questionnaire**") with accurate, updated and complete information andwithin the timeframe required by ICF. The Subcontractor warrants that the information provided in the Due Diligence Questionnaire will be true and accurate at all times and shall indemnify and keep ICF indemnified in the event of any breach of this paragraph resulting in ICF incurring any costs, fees,

ICF International
-Confidential and Proprietary-
2015

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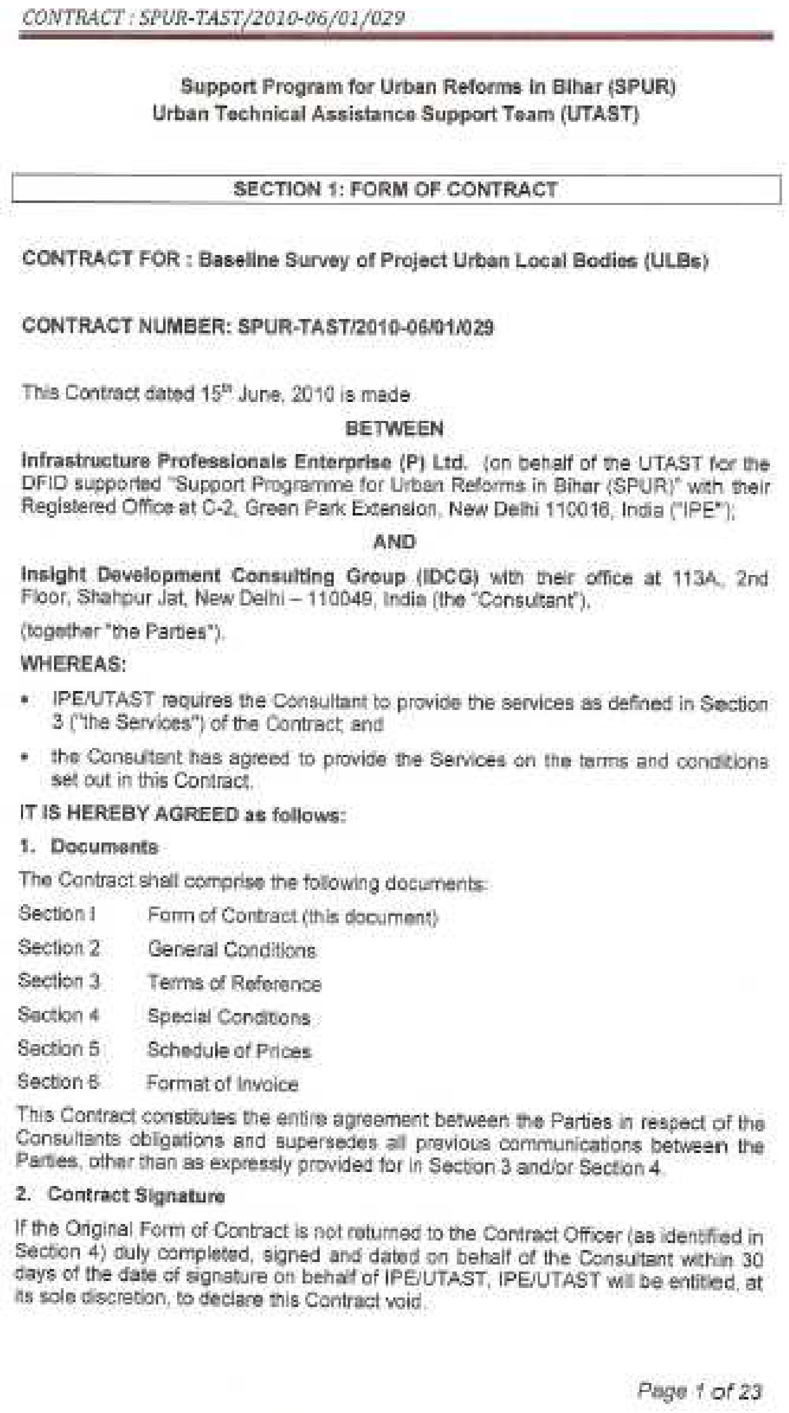
7.8 Baseline Survey of Project Urban Local Bodies under "Support Program for Urban Reforms" (SPUR)



CONTRACT : SPUR-TAST/2010-06/01/029

Support Program for Urban Reforms in Bihar (SPUR)
Urban Technical Assistance Support Team (UTAST)

SECTION 1: FORM OF CONTRACT

CONTRACT FOR : Baseline Survey of Project Urban Local Bodies (ULBs)

CONTRACT NUMBER: SPUR-TAST/2010-06/01/029

This Contract dated 15th June, 2010 is made

BETWEEN

Infrastructure Professionals Enterprise (P) Ltd. (on behalf of the UTAST for the DFID supported "Support Programme for Urban Reforms in Bihar (SPUR)" with their Registered Office at C-2, Green Park Extension, New Delhi 110016, India ("IPE");

AND

Insight Development Consulting Group (IDCG) with their office at 113A, 2nd Floor, Shahpur Jat, New Delhi – 110049, India (the "Consultant").

(together "the Parties").

WHEREAS:

- IPE/UTAST requires the Consultant to provide the services as defined in Section 3 ("the Services") of the Contract; and
- the Consultant has agreed to provide the Services on the terms and conditions set out in this Contract.

IT IS HEREBY AGREED as follows:

1. Documents

The Contract shall comprise the following documents:

Section I	Form of Contract (this document)
Section 2	General Conditions
Section 3	Terms of Reference
Section 4	Special Conditions
Section 5	Schedule of Prices
Section 6	Format of Invoice

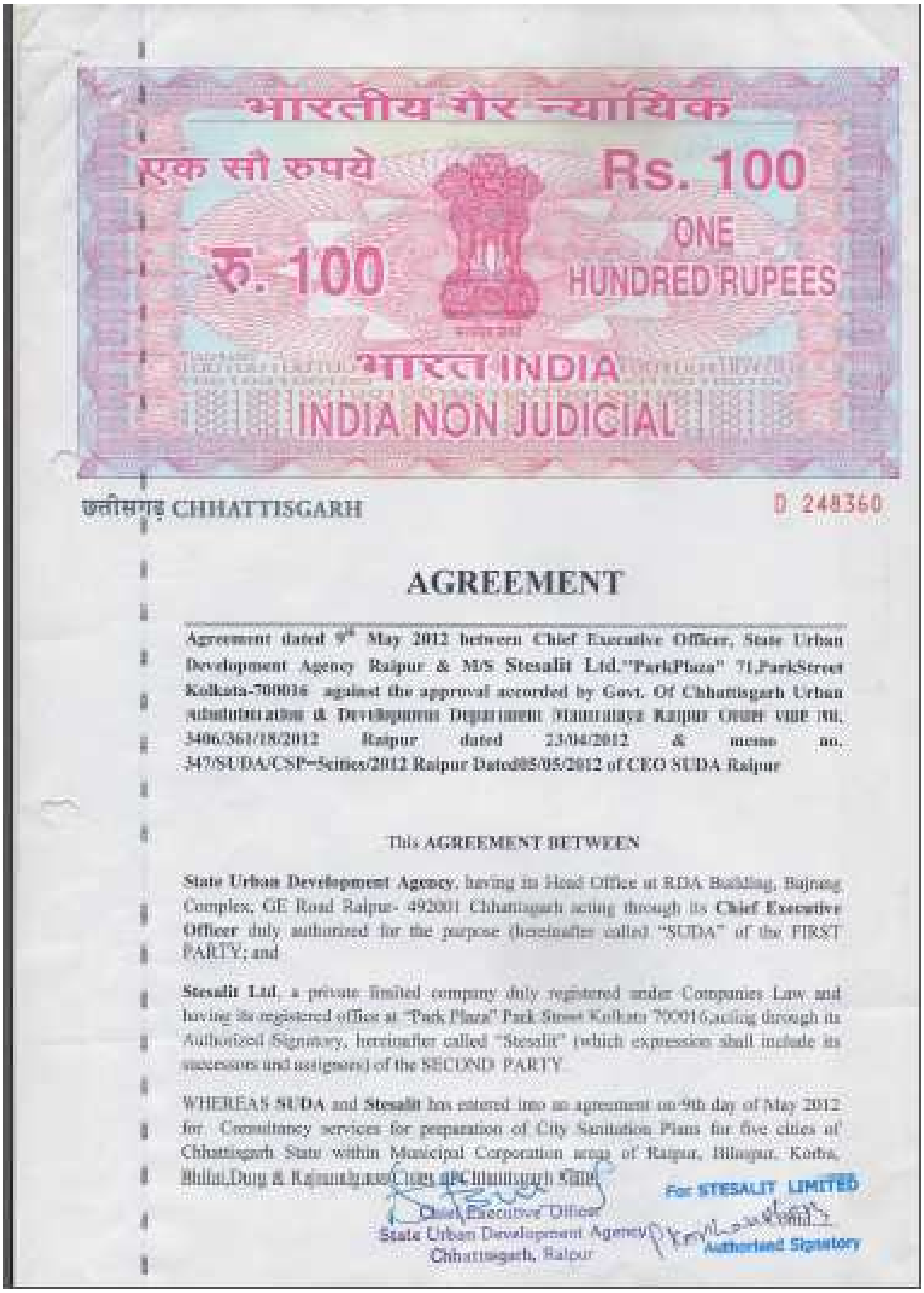
This Contract constitutes the entire agreement between the Parties in respect of the Consultants obligations and supersedes all previous communications between the Parties, other than as expressly provided for in Section 3 and/or Section 4.

2. Contract Signature

If the Original Form of Contract is not returned to the Contract Officer (as identified in Section 4) duly completed, signed and dated on behalf of the Consultant within 30 days of the date of signature on behalf of IPE/UTAST, IPE/UTAST will be entitled, at its sole discretion, to declare this Contract void.

Page 1 of 23

7.9: Consultancy services for preparation of City sanitation plans for five cities of Chhattisgarh state.



भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

छत्तीसगढ़ CHHATTISGARH D 248360

AGREEMENT

Agreement dated 9th May 2012 between Chief Executive Officer, State Urban Development Agency Raipur & M/S Stesalit Ltd."ParkPlaza" 71,ParkStreet Kolkata-700016 against the approval accorded by Govt. Of Chhattisgarh Urban Administration & Development Department Mantralaya Raipur Order vide no. 3406/361/18/2012 Raipur dated 23/04/2012 & memo no. 347/SUDA/CSP=5cities/2012 Raipur Dated05/05/2012 of CEO SUDA Raipur

This AGREEMENT BETWEEN

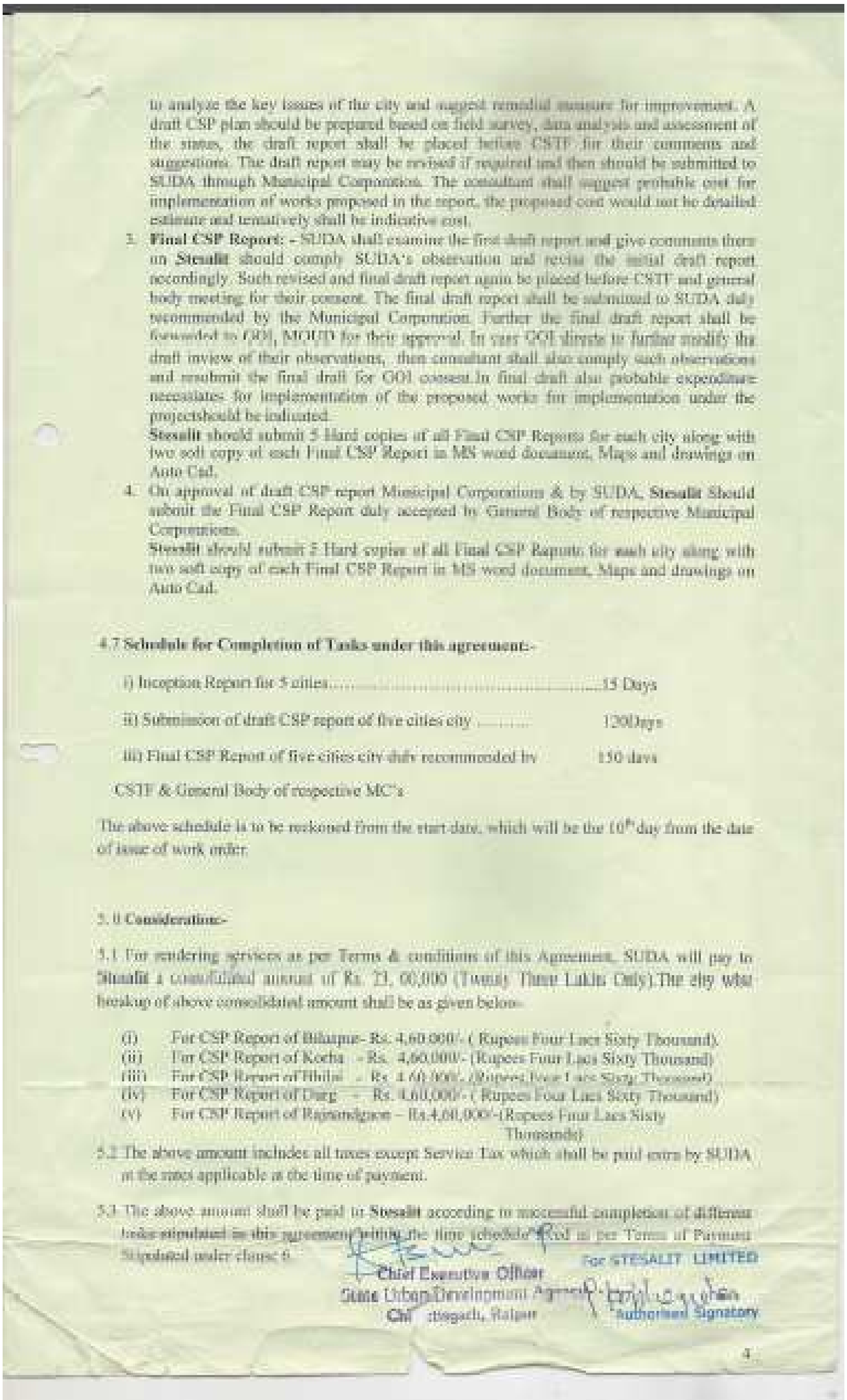
State Urban Development Agency, having its Head Office at RDA Building, Bajrang Complex, GE Road Raipur- 492001 Chhattisgarh acting through its **Chief Executive Officer** duly authorized for the purpose (hereinafter called "SUDA" of the FIRST PARTY; and

Stesalit Ltd, a private limited company duly registered under Companies Law and having its registered office at "Park Plaza" Park Street Kolkata 700016,acting through its Authorized Signatory, hereinafter called "Stesalit" (which expression shall include its successors and assignees) of the SECOND PARTY.

WHEREAS **SUDA** and **Stesalit** has entered into an agreement on 9th day of May 2012 for Consultancy services for preparation of City Sanitation Plans for five cities of Chhattisgarh State within Municipal Corporation areas of Raipur, Bilaspur, Korba, Bhilai,Durg & Rajnandgaon Cities of Chhattisgarh State.

Chief Executive Officer
State Urban Development Agency
Chhattisgarh, Raipur

For STESALIT LIMITED
Authorised Signatory



to analyze the key issues of the city and suggest remedial measure for improvement. A draft CSP plan should be prepared based on field survey, data analysis and assessment of the status, the draft report shall be placed before CSTF for their comments and suggestions. The draft report may be revised if required and then should be submitted to SUDA through Municipal Corporation. The consultant shall suggest probable cost for implementation of works proposed in the report, the proposed cost would not be detailed estimate and tentatively shall be indicative cost.

3. **Final CSP Report: -** SUDA shall examine the first draft report and give comments there on **Stesalit** should comply SUDA's observation and revise the initial draft report accordingly. Such revised and final draft report again be placed before CSTF and general body meeting for their consent. The final draft report shall be submitted to SUDA duly recommended by the Municipal Corporation. Further the final draft report shall be forwarded to GOI, MOUD for their approval. In case GOI directs to further modify the draft inview of their observations, then consultant shall also comply such observations and resubmit the final draft for GOI consent.In final draft also probable expenditure necessiates for implementation of the proposed works for implementation under the projectshould be indicated.

   Stesalit should submit 5 Hard copies of all Final CSP Reports for each city along with two soft copy of each Final CSP Report in MS word document, Maps and drawings on Auto Cad.

4. On approval of draft CSP report Municipal Corporations & by SUDA, **Stesalit** Should submit the Final CSP Report duly accepted by General Body of respective Municipal Corporations.

   Stesalit should submit 5 Hard copies of all Final CSP Reports for each city along with two soft copy of each Final CSP Report in MS word document, Maps and drawings on Auto Cad.

4.7 Schedule for Completion of Tasks under this agreement:-

i) Inception Report for 5 cities..15 Days

ii) Submission of draft CSP report of five cities city 120Days

iii) Final CSP Report of five cities city duly recommended by 150 days

CSTF & General Body of respective MC's

The above schedule is to be reckoned from the start date, which will be the 10th day from the date of issue of work order.

5. 0 Consideration:-

5.1 For rendering services as per Terms & conditions of this Agreement, SUDA will pay to **Stesalit** a consolidated amount of Rs. 23, 00,000 (Twenty Three Lakhs Only).The city wise breakup of above consolidated amount shall be as given below-

(i) For CSP Report of Bilaspur- Rs. 4,60,000/- (Rupees Four Lacs Sixty Thousand)
(ii) For CSP Report of Korba - Rs. 4,60,000/- (Rupees Four Lacs Sixty Thousand)
(iii) For CSP Report of Bhilai - Rs. 4,60,000/- (Rupees Four Lacs Sixty Thousand)
(iv) For CSP Report of Durg - Rs. 4,60,000/- (Rupees Four Lacs Sixty Thousand)
(v) For CSP Report of Rajnandgaon – Rs.4,60,000/-(Rupees Four Lacs Sixty Thousands)

5.2 The above amount includes all taxes except Service Tax which shall be paid extra by SUDA at the rates applicable at the time of payment.

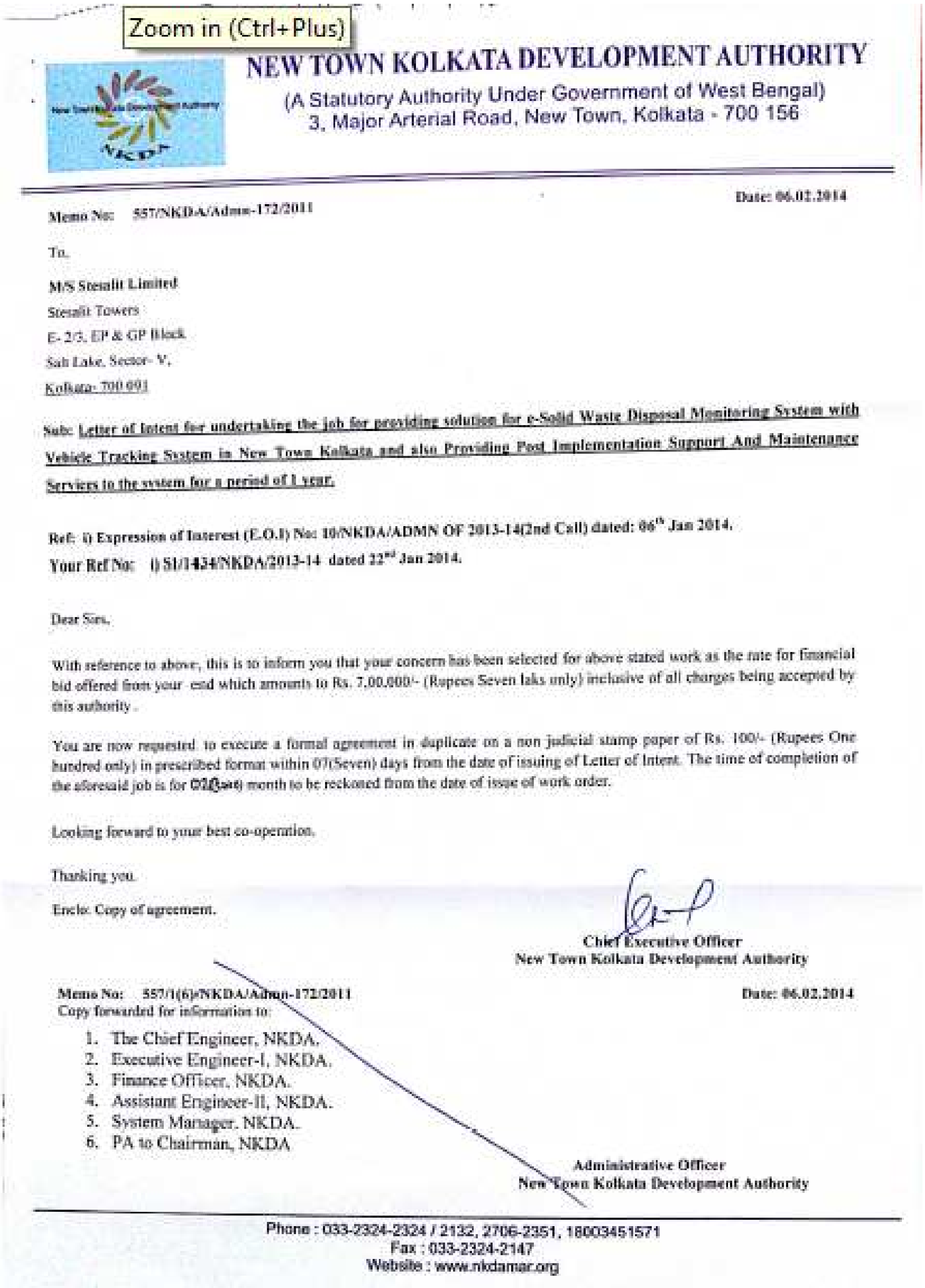
5.3 The above amount shall be paid to **Stesalit** according to successful completion of different tasks stipulated in this agreement within the time schedule fixed as per Terms of Payment Stipulated under clause 6.

Chief Executive Officer
State Urban Development Agency
Chhattisgarh, Raipur

For STESALIT LIMITED
Authorised Signatory

4

7.10: Supply, installation, execution and support for "e-Solid Waste Disposal Monitoring System"



Zoom in (Ctrl+Plus)

NEW TOWN KOLKATA DEVELOPMENT AUTHORITY
(A Statutory Authority Under Government of West Bengal)
3, Major Arterial Road, New Town, Kolkata - 700 156

Date: 06.02.2014

Memo No: 557/NKDA/Admn-172/2011

To,

M/S Stesalit Limited
Stesalit Towers
E- 2/3, EP & GP Block
Salt Lake, Sector- V,
Kolkata- 700 091

Sub: Letter of Intent for undertaking the job for providing solution for e-Solid Waste Disposal Monitoring System with Vehicle Tracking System in New Town Kolkata and also Providing Post Implementation Support And Maintenance Services to the system for a period of 1 year.

Ref: i) Expression of Interest (E.O.I) No: 10/NKDA/ADMN OF 2013-14(2nd Call) dated: 06th Jan 2014.
Your Ref No: i) SI/1434/NKDA/2013-14 dated 22nd Jan 2014.

Dear Sirs,

With reference to above, this is to inform you that your concern has been selected for above stated work as the rate for financial bid offered from your end which amounts to Rs. 7,00,000/- (Rupees Seven laks only) inclusive of all charges being accepted by this authority.

You are now requested to execute a formal agreement in duplicate on a non judicial stamp paper of Rs. 100/- (Rupees One hundred only) in prescribed format within 07(Seven) days from the date of issuing of Letter of Intent. The time of completion of the aforesaid job is for [illegible] month to be reckoned from the date of issue of work order.

Looking forward to your best co-operation.

Thanking you.

Enclo: Copy of agreement.

Chief Executive Officer
New Town Kolkata Development Authority

Memo No: 557/1(6)/NKDA/Admn-172/2011 Date: 06.02.2014
Copy forwarded for information to:

1. The Chief Engineer, NKDA.
2. Executive Engineer-I, NKDA.
3. Finance Officer, NKDA.
4. Assistant Engineer-II, NKDA.
5. System Manager, NKDA.
6. PA to Chairman, NKDA

Administrative Officer
New Town Kolkata Development Authority

Phone : 033-2324-2324 / 2132, 2706-2351, 18003451571
Fax : 033-2324-2147
Website : www.nkdamar.org

Annexure 5: Self – Certification for Claim of Completion

To

The Director
National Institute of Urban Affairs (NIUA)
Core 4 – B, Ist Floor, India Habitat Centre,
Lodhi Road, New Delhi - 11003

Sub: REOI: Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities – Self Certification for claim of completion

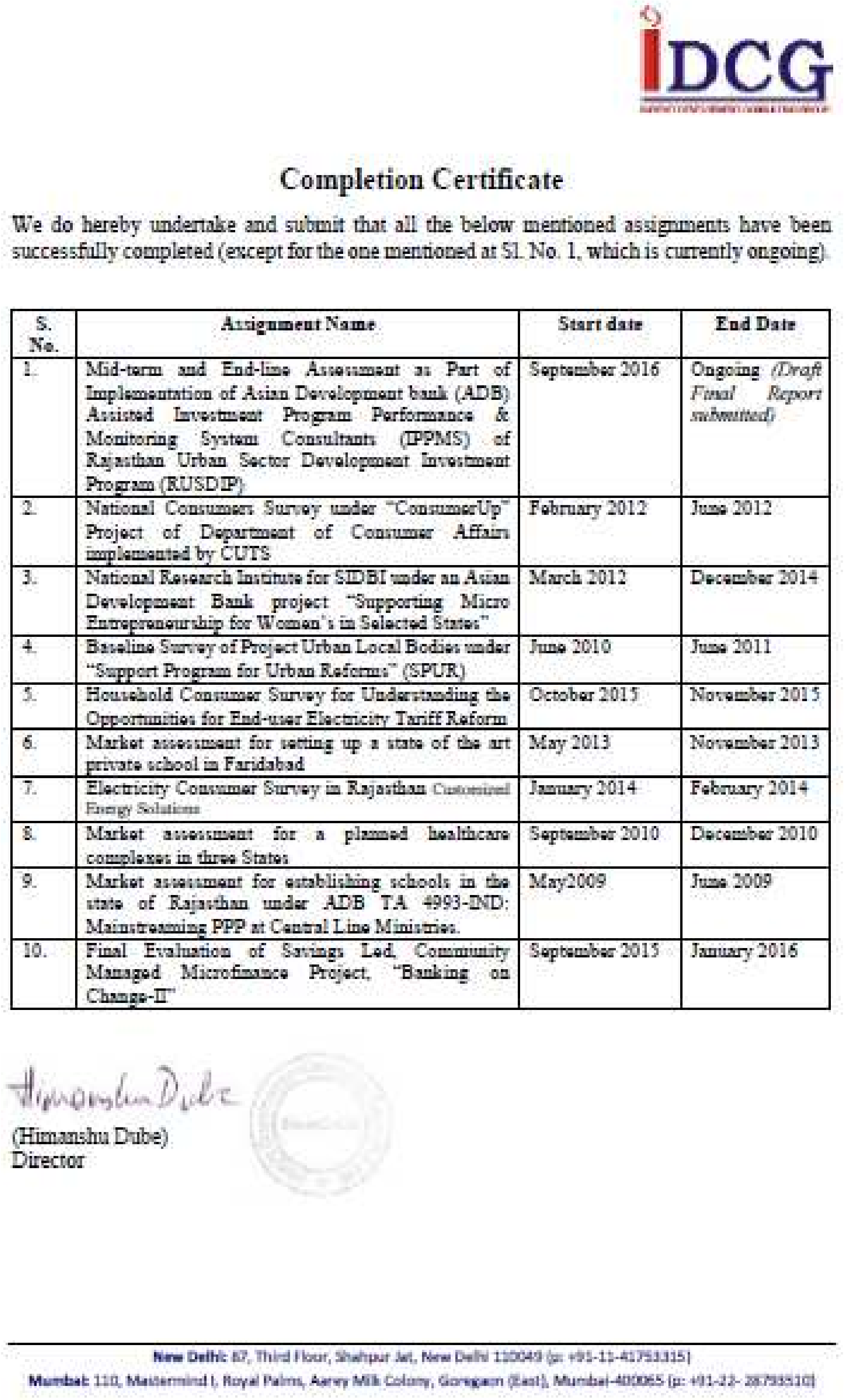
Dear Sir/ Madam,

This is to certify that the citation submitted along with this EOI is complete and correct to best of the knowledge.

Yours Sincerely,
On behalf of [**Deloitte Touche Tohmatsu India LLP**]

Anindya Mallick

Name and Title of Signatory: **Anindya Mallick,** Partner
Email: anmallick@deloitte.com



Completion Certificate

We do hereby undertake and submit that all the below mentioned assignments have been successfully completed (except for the one mentioned at Sl. No. 1, which is currently ongoing).

S. No.	Assignment Name	Start date	End Date
1.	Mid-term and End-line Assessment as Part of Implementation of Asian Development bank (ADB) Assisted Investment Program Performance & Monitoring System Consultants (IPPMS) of Rajasthan Urban Sector Development Investment Program (RUSDIP)	September 2016	Ongoing *(Draft Final Report submitted)*
2.	National Consumers Survey under "ConsumerUp" Project of Department of Consumer Affairs implemented by CUTS	February 2012	June 2012
3.	National Research Institute for SIDBI under an Asian Development Bank project "Supporting Micro Entrepreneurship for Women's in Selected States"	March 2012	December 2014
4.	Baseline Survey of Project Urban Local Bodies under "Support Program for Urban Reforms" (SPUR)	June 2010	June 2011
5.	Household Consumer Survey for Understanding the Opportunities for End-user Electricity Tariff Reform	October 2015	November 2015
6.	Market assessment for setting up a state of the art private school in Faridabad	May 2013	November 2013
7.	Electricity Consumer Survey in Rajasthan Customized Energy Solutions	January 2014	February 2014
8.	Market assessment for a planned healthcare complexes in three States	September 2010	December 2010
9.	Market assessment for establishing schools in the state of Rajasthan under ADB TA 4993-IND: Mainstreaming PPP at Central Line Ministries.	May2009	June 2009
10.	Final Evaluation of Savings Led, Community Managed Microfinance Project, "Banking on Change-II"	September 2015	January 2016

Himanshu Dube
(Himanshu Dube)
Director

New Delhi: 87, Third Floor, Shahpur Jat, New Delhi 110049 (p: +91-11-41753315)
Mumbai: 110, Mastermind I, Royal Palms, Aarey Milk Colony, Goregaon (East), Mumbai-400065 (p: +91-22- 28793510)

Request for Expression of Interest

May, 2017

SHORTLISTING OF CONSULTING FIRMS FOR ASSESSMENT OF LIVEABILITY IN SELECTED CITIES

Submitted to:

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Submitted by:

iDeCK

In association with :
Institute for Social and Economic Change (ISEC)
Public Affairs Center (PAC) and
SIGMA Research and Consulting Pvt. Ltd.

Infrastructure Development Corporation (Karnataka) Limited
9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension,
Off Race Course Road, Bangalore 560001 Tel. +91 80 43448000 Fax. +91 80 43448001
Email: ideckinfo@idfc.com, Website www.ideck.in

About the Consortium

The ***Consortium of Infrastructure Development Corporation (Karnataka) Limited (iDeCK), Bangalore, Institute for Social and Economic Change, Bengaluru (ISEC) & Public Affairs Centre (PAC), Bengaluru and Sigma Research and Consulting, New Delhi(SR&C)*** has been strategically planned to bring on board vast experiences in terms of providing complete package of consultancy services as specified for the execution of the project. The consortium will address all the project related services like primary surveys, data collection, data analysis and digitization as per the project requirements, urban planning, urban management, urban infrastructure assessment, municipal finances, city level regulatory frameworks and building byelaws to prepare aggregate data sets for all the standards as per the "Liveability Standards" specified by Ministry of Urban Development (MoUD). The key strengths of each member are indicated as listed below-

iDeCK, Bengaluru	**ISEC, Bengaluru**	**PAC, Bengaluru**	**SIGMA, New Delhi**
• Detail Engineering & Infrastructure Planning • Urban Planning & Policy framework • Understanding of smart city concept & proposal • Land Development models & fund raising • Legal Advisory • PPP Transaction advisory	• Interdisciplinary research in analytical and applied areas of social sciences • Assist central/ state governments by undertaking systematic studies of resource potential, identifying factors influencing growth and examining measures for reducing poverty • Collaborative research programmes and seminars, and to conduct training courses	• Public policy research and advocacy • Participatory research on governance and social accountability including monitoring and evaluation of public services and programmes • Citizen action support • Civic education of children and youth • Promoting citizen centred environmental governance and capacity enhancement of both the state and civil society	• Social Research, Product research, Brand Research, Advertising Research and development sector research • Data collection services for market and social research in almost all sectors. • Follow rigorous scientific methods and processes in data collection • Fieldwork using PAPI and CAPI • Conduct opinion polls • B2B

Infrastructure Development Corporation (Karnataka) Limited (iDeCK), Bengaluru is a joint venture between IDFC Foundation (a wholly owned not-for-profit subsidiary of IDFC Limited - India's leading integrated infrastructure finance player providing end to end infrastructure financing and project implementation services), Government of Karnataka (GoK) (under the egis of the Infrastructure Development Department, GoK), and the Housing Development Finance Corporation Ltd. (HDFC).

Over **the past 16 years iDeCK has built a strong domain experience in several infrastructure sectors.** iDeCK's mandate is to help GoK and other government agencies/ departments in **development of policies, sector strategies, render assistance in the selection of projects to attract private investment, advisory & engineering services for various urban infrastructure projects** undertake development & implementation of infrastructure projects in various sectors and undertake capacity building to officials of local/state/central governments in urban infrastructure sectors. iDeCK has the requisite expertise in carrying out various engineering **services in urban infrastructure viz, water supply, solid waste management, sanitation, urban transport, tourism development, lake development etc.,** Apart from this, it has **immense experience in feasibility studies, structuring of PPP projects, bid documentation, bid process management and monitoring of contracts.**

Over the years iDeCK has built a strong domain experience in urban services (urban infrastructure **design, planning, feasibility studies, structuring of PPP projects etc in the sectors of water supply, solid waste management, sanitation, urban transport, urban planning & allied services, townships and commercial, industrial parks), transportation (including roads, airports, ports), energy, tourism and related sectors** and developed a unified financial framework for various sectors. iDeCK has carried out pioneering work in various municipal services resulting in optimal utilization of existing assets and creation of new assets in a financially sustainable manner. Design and implementation of urban policy initiatives has been the mainstay of iDeCK's advisory services with development of structures of private sector participation in municipal projects (service contracts, management contracts, concessions, performance based deferred payment structures etc), measurement of effectiveness of delivery of municipal services, assessment of fiscal status of municipalities to ascertain the ability to borrow and implement projects and suggest approaches for augmenting the fiscal position through various possible options, which best deliver value to the municipalities. In recent years, iDeCK **has expanded its urban advisory services in the sectors of urban planning, master planning, urban design and area development projects.**

iDeCK participated in MoUD's Smart City Challenge in Round 1, 2 & 3. It was involved in the preparation of SCPs for two cities in Tamil Nadu in Round 1 (Madurai & Salem) and three cities in Karnataka in Round 2 (Hubbali-Dharwad, Tumakuru & Shivamogga) and one city in Kerala (Thiruvananthapuram). **Out these five cities SCPs are now approved by MoUD for the implementation stage.** Apart from this, area development projects like design & engineering for lake front development, master planning projects for industrial layouts, and transit oriented development projects have been successfully executed by the competent team of iDeCK.

The engineering division in **iDecK provides professional engineering services as project management consultants to projects such as Transport & Transit Management Centers (transportation hubs) at several locations, housing complexes and airports at many locations across the State of Karnataka**. Besides these, iDeCK also supervises construction of various other civil structures.

iDeCK also has established a strong presence in policy and framework developments for the Government of Karnataka as well as Government of India in terms of drafting sector specific policies and legislations, **preparation of a PPP Manual** to serve as a guidebook for practitioners in implementing projects on a **PPP framework and a PPP Compendium documenting the evolution of PPPs across various infrastructure sectors a**s evidence based with references to data resources and research. At the international level, iDeCK has provided national, provincial and municipal level workshops at Colombo, Kandy etc., for the Sri Lankan Government officials conducted on behalf of the World Bank including preparation of guidance notes to assist the government functionaries in undertaking projects on a PPP framework and identifying a list of potential projects that are amenable for implementation on PPP.

In addition to advisory work, iDeCK is also equipped to **conduct workshops for capacity building of various stakeholders in the infrastructure domain.** iDeCK personnel are Master Trainers for the National Level Capacity Building Programs for PPPs held by Government of India. Employees of iDeCK also act as Resource Persons for the ongoing programs conducted by the Administrative Training Institute and State Institute of Urban Development at Mysore. These programs are conducted throughout the year on behalf of Department of Personnel & Training, Government of India and the Government of Karnataka on various dates.

iDeCK has an **in-house legal team** which comprises of qualified lawyers who hold a post-graduation qualification in law. The **legal team provides advice to Government (Central and State) on several legal issues specific to regulatory framework, project implementation and other legal issues or disputes that may arise during the project cycle.** Further, iDeCK is also involved in legal reviewing of the documents pertaining to financial close and to ensure proper financial closure as per the terms and conditions of the contract.

The Institute for Social and Economic Change (ISEC), Bengaluru is an All India Institute for Interdisciplinary Research and Training in the Social Sciences, established in 1972 by the late Professor V K R V Rao. It is registered as a Society under the Karnataka Societies Registration Act, 1960, to create a blend of field-oriented empirical research and advances in social science theories leading to better public policy formulation. The Governor of Karnataka is the President of the ISEC Society. ISEC is governed by the Board of Governors consisting of eminent academicians and social scientists elected from among founder / life members and representatives of Government of India, Government of Karnataka and Indian Council of Social Science Research (ICSSR). The Director of ISEC is a member of the Board of Governors as well as the chief executive of the Institute.

The main areas of functioning and work area include:

- To conduct interdisciplinary research in analytical and applied areas of social sciences, encompassing diverse aspects of development.
- To assist both central and state governments by undertaking systematic studies of resource potential, identifying factors influencing growth and examining measures for reducing poverty.
- To establish fruitful contacts with other institutions and scholars engaged in social science research through collaborative research programmes and seminars, and to conduct training courses and refresher programmes for university and college teachers and public functionaries.

ISEC has worked on the understanding that research alone is not enough and equally important is to ensure that the findings of its research are disseminated among the stakeholders and for effecting changes in society through policy. Towards these ends, ISEC has showcased its research findings using various spaces and forums, and closely interacted with policy makers at various levels. Our efforts would be to consolidate goodwill and reputation that ISEC has earned so far and enhance it further.

Public Affairs Centre (PAC) is a Not-for-Profit Society – that is legally registered, FCRA approved, and compliant with regulations. We are located at Bengaluru (Bangalore) and operate across multiple-states and oversee pan-India programmes. PAC is dedicated to improving the quality of governance in India. Our focus is primarily in areas where citizens and civil society organizations can play a proactive role in improving governance. PAC undertakes and supports research, disseminates research findings, facilitates collective citizen action through awareness-raising and capacity-building activities, and provides advisory services to state and non-state agencies. PAC offers evidence-based recommendation for informed decision making and policy formulation.

PACs strength is its ability to provide strategic direction for long-term projects, with across the board support ranging from concept definition, methodology and research-design, plans for implementation, monitoring and evaluation and further on to measure the output, outcomes and impact of interventions. PAC has constantly built innovative tools and methodologies to suit specific requirements and aligned to dynamically changing needs of social development.

The institutions that have lent their support to us, over the years, include - Ford Foundation, World Bank, Bill and Melinda Gates Foundation (BMGF), The Asia Foundation (TAF), Department for International Development (DFID), Agency for Technical Cooperation and Development (ACTED), Many

Ministries and Departments of the Government of India (GoI) and various State Governments, Independent entities and Individuals.

PAC is listed with the International Centre for Climate Governance Think Tank Map. As a member of the IDRC - Think Tank Initiative (TTI) PACs research-focus for policy engagement, for the present (2014-18), has been programs covered broadly under five thematic areas of interest: | Urban-Resilience | Employment-Generation | Green-Economy | Vulnerability | Water-Security |

PAC Vision: In pursuit of realizing its vision to improve the quality of public governance in India by creating vibrant, informed and proactive citizen engagements with the state and its instituions, Public Affairs Centre's mission encompasses a multi-pronged approach synthesizing a range of strategies and interventions.

PAC Mission: The pivotal points of PAC's mission, around which the activities of the Centre are organized are: public policy research and advocacy; participatory research on governance and social accountability including monitoring and evaluation of public services and programmes; citizen action support; civic education of children and youth; promoting citizen centred environmental governance and capacity enhancement of both the state and civil society.

The Centre was founded by (Late) Dr. Samuel Paul, former Director of the Indian Institute of Management, Ahmedabad and Senior Consultant to the World Bank. PACs Board of Governance is overseen by individual of the highest credibility and integrity

PAC regularly works with the Government, Union and States, to assess the delivery of public services and ensuring citizen needs are addressed through systemic and process improvements. **PAC has undertaken many project relevant to Urban Development and assessment of Cities. Primary data-collection through surveys is one of the prominent Social Accountability Instruments applied by PAC to elicit relevant information. Surveys are carried out be a team of highly trained individuals, selected for their high standards and judicious assessment capabilities.** PAC has recently completed many projects for Government Owned Independently Operated Utility companies, regarding electricity, water, sewage, etc to assess the service delivery gaps and prepare recommendations to address them.

PAC team has developed the Public Affairs Index (PAI) with 82 indicators based upon Governance, which provides comparative ranking of all the states of India, on an annual basis. **PAC researches have over the past two years developed the Human Security based Urban Resilience Framework Index for cities** – which is readily available to assess the liveability in cities of India, the core objective of this project.

Sigma Research and Consulting, New Delhi is actively engaged in the social and development sector research. Since its inception in September 2008, it has been able to rapidly grow from strength to strength. The ∑ (or summation) in the logo of Sigma indicates the totality of the research arena that Sigma intends, and is equipped to, cover. The σ (or standard deviation, a powerful and very commonly used statistical measure) indicates the commitment of Sigma to minimise variation and maximise consistency in the data elicited and presented, which forms the basis for several crucial decisions at the end of a research study.

The Institutional Review Board of Sigma (Sigma-IRB) has been constituted to ensure quality of research and to prevent misuse of research on human subjects. The Sigma-IRB is registered with the Division of Assurance and Quality Improvement of the Office for Human Research Protections (OHRP), USA. The

Sigma IRB has eminent experts in the fields of social sciences research, medicine, public health, and legal aspects of research. **The company has vast experience on various projects w.r.t quality assurance in field and quality assurance in data processing.**
The Areas of expertise of the organisation includes

1. **Social Research Center (SRC)** – The services includes the Design and methodology, Questionnaire /Instrument Development, Sampling, Household listing and mapping, Recruitment of field staff and training, Field Work (Quantitative as well as Qualitative), Data Processing, Tabulation Plan, Content Analysis, Report and presentation.

2. **Field & Tabulation Unit -** In India, there is a need for a reliable and professional organization with an all India network to provide cost effective information gathering and cost effective process checks. Many a times, clients' expectations regarding high quality and integrity of data are not adequately addressed. In response to this, the Field and Tab Unit (FTU) of **Sigma strives to provide rigor in the data to clients in commercial and social / development sector** in India and abroad.

   Field work / Data Collection are a very critical component of any research project. Sigma offers data collection services for market and social research in almost all sectors. We follow **rigorous scientific methods and processes in data collection in order to minimize any kind of bias in the data**. FTU's expertise lies in delivering quality clean data or tables in an agreed time at an affordable cost. As per the need of clients, fieldwork is carried out using PAPI and CAPI with digital devices such as PDA, Tablets and Laptops. **The research studies include consumer research, social research, product research, brand research, opinion polls and related.**

3. **Data Processing Unit –** It includes software processing, data processing and analysis.

4. **Corporate Social Responsibility (CSR) studies -** Given the significant role research can play in the CSR, Sigma offers its services to the public as well as private sector companies involved in CSR activities. This could be in terms providing inputs for the CSR strategy through community needs assessment as well as analysis of secondary data. The Needs assessment can help in identifying the priorities of the community, which can become the basis for CSR initiatives to be implemented.

   Our expertise lies beyond this formative stage and covers process audit, impact assessment etc. We also can take up pre (baseline) and post (end line) research to assess the impact of the CSR interventions in terms of outcomes.

INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
Dr V.K.R.V Rao Road, Nagarabhavi Post, BENGALURU-560 072.
Registered under the Karnataka Societies Registration Act, 1960 (S.No- 327/71-72)

FAX : 91-80-23217008
✉ : registrar@isec.ac.in
URL : www.isec.ac.in
Off: 91-80-23217011
☎ : 91-80-23215468(112)

Smt. S. Ashwini
Registrar I/c

Letter No. No. Regr./Admn./2017-18/232

Date: 30th May 2017

To:
The Director,
National Institute of Urban Affairs,
Core 4- B, Ist Floor,
India Habitat Centre, Lodhi Road,
New Delhi 110003

Letter of Association

Dear Sir,

Sub: EOI for Assessment of Liveability standards in selected Cities

The Institute for Social and Economic Change (ISEC) is an all India premier Institute for interdisciplinary research and training in Social Sciences, established in 1972. The Honorable Governor of Karnataka is the President of the ISEC Society. The funds for ISEC are received from ICSSR, Government of Karnataka, Government of India viz., Ministry of Agriculture, ministry of Health and Family Welfare.

We, **Institute for Social and Economic Change** confirm to associate with Infrastructure Development Corporation (Karnataka) Limited (iDeCK) in submitting the Expression of Interest for the subject assignment.

We confirm that we are eligible to submit the Expression of Interest for the subject assignment as per requirements mentioned in your notice dated 9th May 2017 Request for Expression of Interest document.

We agree that iDeCK shall be the Lead Member of the Consortium and we shall be associated with iDeCK at all stages of the assignment. We authorize iDeCK to submit our credentials for the Expression of Interest on our behalf.

For **Institute for Social and Economic Change**

30/5

Name: **S Ashwini**
Designation: **Registrar I/c**
Company Seal

Registrar I/c
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

PUBLIC AFFAIRS CENTRE
Committed to good governance

Date: 30th May 2017

To:
The Director,
National Institute of Urban Affairs,
Core 4- B, Ist Floor,
India Habitat Centre, Lodhi Road,
New Delhi 110003

Letter of Association

Dear Sir,

Sub: EOI for Assessment of Liveability standards in selected Cities

We, **Public Affairs Centre** confirm to associate with Infrastructure Development Corporation (Karnataka) Limited (iDeCK) in submitting the Expression of Interest for the subject assignment.

We confirm that we are eligible to submit the Expression of Interest for the subject assignment as per requirements mentioned in your notice dated 9th May 2017 Request for Expression of Interest document.

We agree that iDeCK shall be the Lead Member of the Consortium and we shall be associated with iDeCK at all stages of the assignment. We authorize iDeCK to submit our credentials for the Expression of Interest on our behalf.

For Public Affairs Centre

PUBLIC AFFAIRS CENTRE
560 105
BANGALORE

Name: G. Gurucharan
Designation: Director

No. 15, KIADB Industrial Area, Jigani - Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore - 560105, Karnataka, India
Telefax: +91 80 2783 99 18/19/20 Email: mail@pacindia.org Website: www.pacindia.org

Σigma

Sigma Research and Consulting Pvt Ltd
C 23, South Extension I, First Floor
New Delhi 110 049

t (+ 91 11) 4619 5555
f (+ 91 11) 4619 5500
www.sigma-india.in

CIN No : U74140DL2008PTC182567

Date: 30th May 2017

The Director
National Institute of Urban Affairs
Core 4- B, Ist Floor
India Habitat Centre, Lodhi Road
New Delhi 110003

Letter of Association

Dear Sir,

Sub: EOI for Assessment of Liveability standards in selected Cities

We, **Sigma Research and Consulting Private Ltd.** confirm to associate with Infrastructure Development Corporation (Karnataka) Limited (iDeCK) in submitting the Expression of Interest for the subject assignment.

We confirm that we are eligible to submit the Expression of Interest for the subject assignment as per requirements mentioned in your notice dated 9th May 2017 Request for Expression of Interest document.

We agree that iDeCK shall be the Lead Member of the Consortium and we shall be associated with iDeCK at all stages of the assignment. We authorize iDeCK to submit our credentials for the Expression of Interest on our behalf.

For Sigma Research and Consulting

Name: **Dr U V Somayajulu**
Designation: CEO and Executive **Director**
Company Seal

प्रारुप० आई० आर०

Form I. R.

निगमन का प्रमाण-पत्र
CERTIFICATE OF INCORPORATION

ता०..............................का से०............................

No. 08/.27382...............of 2000.0................

मैं एतद्द्वारा प्रमाणित करता हूँ कि आज...

....

....

कम्पनी अधिनियम (1956 का 1) के अधीन निगमित की गई है और यह कम्पनी परिसीमित है ।

I hereby certify that....INFRASTRUCTURE DEVELOPMENT CORPORATION ....(KARNATAKA) LIMITED...

....

is this day incorporated under the Companies Act, 1956 (No. 1 of 1956) and that the Company is Limited.

मेरे हस्ताक्षर से आज ता०...को दिया गया ।

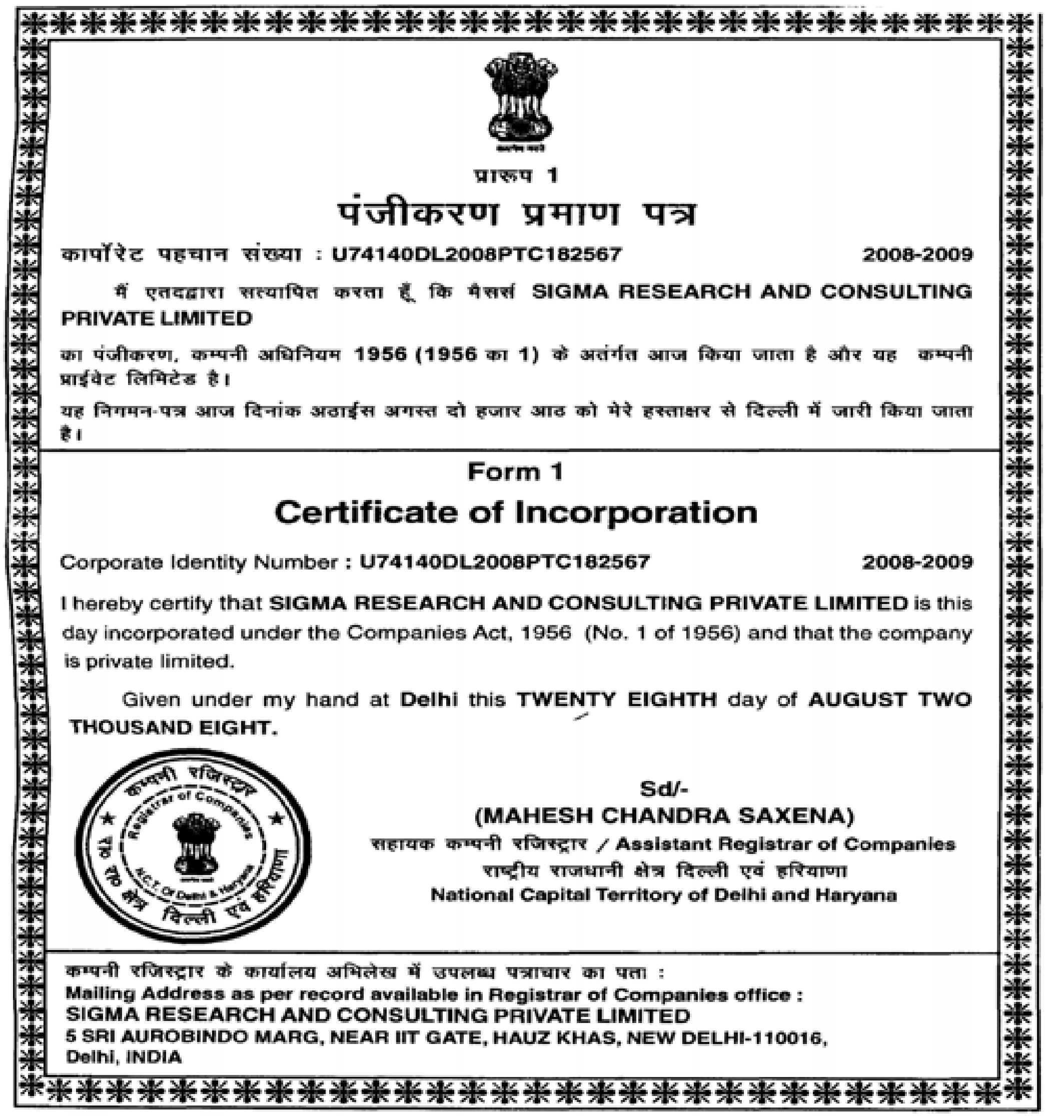
Given under my hand at BANGALORE this ......THIRTIETH.............. day of ....JUNE...........................Two Thousand...................................

(B.M. ANAND).

कम्पनियों का रजिस्ट्रार
कर्नाटक, बेंगलूर

Registrar of Companies
KARNATAKA, BANGALORE

CERTIFICATE OF INCORPORATION



प्रारूप 1

पंजीकरण प्रमाण पत्र

कार्पोरेट पहचान संख्या : U74140DL2008PTC182567 2008-2009

मैं एतदद्वारा सत्यापित करता हूँ कि मैसर्स **SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED**

का पंजीकरण, कम्पनी अधिनियम 1956 (1956 का 1) के अतंर्गत आज किया जाता है और यह कम्पनी प्राईवेट लिमिटेड है।

यह निगमन-पत्र आज दिनांक अठाईस अगस्त दो हजार आठ को मेरे हस्ताक्षर से दिल्ली में जारी किया जाता है।

Form 1

Certificate of Incorporation

Corporate Identity Number : **U74140DL2008PTC182567** **2008-2009**

I hereby certify that **SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED** is this day incorporated under the Companies Act, 1956 (No. 1 of 1956) and that the company is private limited.

Given under my hand at **Delhi** this **TWENTY EIGHTH** day of **AUGUST TWO THOUSAND EIGHT.**

Sd/-
(MAHESH CHANDRA SAXENA)
सहायक कम्पनी रजिस्ट्रार / Assistant Registrar of Companies
राष्ट्रीय राजधानी क्षेत्र दिल्ली एवं हरियाणा
National Capital Territory of Delhi and Haryana

कम्पनी रजिस्ट्रार के कार्यालय अभिलेख में उपलब्ध पत्राचार का पता :
Mailing Address as per record available in Registrar of Companies office :
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED
5 SRI AUROBINDO MARG, NEAR IIT GATE, HAUZ KHAS, NEW DELHI-110016,
Delhi, INDIA

Infrastructure Development Corporation (Karnataka) Limited
iDeCK

APPENDIX-1
Letter of Application

iDeCK/BD/2017-18/210
May 30, 2017

To,
The Director,
National Institute of Urban Affairs,
Core 4- B, Ist Floor,
India Habitat Centre, Lodhi Road,
New Delhi 110003

Ref: EOI for Assessment of Liveability standards in selected Cities

Dear Sir,

Being duly authorized to represent and act on behalf of **Infrastructure Development Corporation (Karnataka) Limited (Lead Member of Consortium)** and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from 30th May 2017

Yours faithfully,

Signature ____
Full Name **S Srinivasa Rao**
Designation: Senior Vice President,
Address: Infrastructure Development Corporation (Karnataka) Limited
2nd Floor, KCN Bhawan, 9/7 Yamunabai Road, Madhav Nagar Extension,
Off. Race course Road, Bangalore – 5600 001, Karnataka

iDeCK

EXTRACT OF THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF iDeCK HELD ON OCTOBER 27, 2014.

9c. AUTHORISATION TO NEGOTIATE CONTRACTS FOR ADVISORY ASSIGNMENTS

x x x x x

"RESOLVED THAT with effect from close of business hours of November 7, 2014, Mr. K. Jayakishan , Chief Executive Officer, be and is hereby authorized to sign quotations & proposals, negotiate and approve contracts for advisory/project development/consultancy assignments on behalf of the Company and do all other things as may be considered necessary for the purpose".

"FURTHER RESOLVED THAT Mr. K. Jayakishan be authorized to delegate these powers to such other officers of the Company as he considers appropriate".

'CERTIFIED TRUE COPY'
For Infrastructure Development Corporation (Karnataka) Limited

(Anil B Shenoy).
CFO & Company Secretary

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No. : IN-KA89477523268804P
Certificate Issued Date : 22-Feb-2017 12:32 PM
Account Reference : SHCIL (FI)/ ka-shcil/ MALLESHWARAM1/ KA-BA
Unique Doc. Reference : SUBIN-KAKA-SHCIL27859639377130P
Purchased by : K JAYAKISHAN
Description of Document : Article 41 Power of Attorney
Description : POWER OF ATTORNEY
Consideration Price (Rs.) : 0
(Zero)
First Party : K JAYAKISHAN
Second Party : S SRINIVASA RAO
Stamp Duty Paid By : K JAYAKISHAN
Stamp Duty Amount(Rs.) : 100
(One Hundred only)

T.C. THIMMARAJA
Reg. No. 8296

Authorised Signatory
for Stock Holding Corporation of India Ltd.

Please write or type below this line

Appendix 2: Power of Attorney

Know all men by these presents, we , **M/s Infrastructure Development Corporation (Karnataka) Limited** Registered office **9/7, KCN Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001,** do hereby constitute, appoint and authorise **Mr. S. Srinivasa Rao** son of **Mr. Sreeramamurthy** and presently residing at **342, NTI Layout, Vidyaranyapura, Bangalore-560 097, Karnataka** who is presently employed with us and holding the position of **Senior Vice President** as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "Assessment of Liveability in Selected Cities", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

Jayakishan

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For **Infrastructure Development Corporation (Karnataka) Limited**

Jayakishan

(K. Jayakishan)
Chief Executive Officer
Infrastructure Development Corporation (Karnataka) Limited
#9/7, K.C.N Bhavan, Yamuna Bai Road, Madhavnagar Extension,
Off Race Course Road, Bengaluru – 560001 Karnataka, India

Witnesses

1. ______________________
2. ______________________

Accepted

S. Srinivasa Rao
Senior Vice President
Infrastructure Development Corporation (Karnataka) Limited
#9/7, K.C.N Bhavan, Yamuna Bai Road, Madhavnagar Extension,
Off Race Course Road, Bengaluru – 560001 Karnataka, India

T.C. THIMMARAJA
BANGALORE
METROPOLITAN AREA
Reg. No. 8296

SWORN TO BEFORE ME

T.C. THIMMARAJA, B.A.,LL.B.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF INDIA
City Civil Court Complex, Premises
BANGALORE - 560 009.

PUBLIC AFFAIRS CENTRE
Committed to good governance

Resolution passed by the Board of Directors of Public Affairs Centre, in its meeting held on March 01, 2017

1. The Board of Directors of Public Affairs Centre hereby resolves that Mr.G.Gurucharan be appointed as Director of Public Affairs Centre with effect from February 01, 2017. He will also be the Ex-Officio member and Member-Secretary of the Board.

2. Further resolved that Mr. G. Gurucharan, Director and The Chief Functionary is hereby authorised to sign all the Legal Documents with effect from February 01, 2017 relating to various statutory authorities like

    a) Ministry of Home Affairs, Government of India. FCRA
    b) Income Tax Department
    c) Professional Tax Department
    d) Employees State Insurance Corporation
    e) Employees Provident Fund Organisation.
    f) Registrar of Societies
    g) Department of Labour, Government of Karnataka.
    h) Auditors Report
    i) Property Tax
    j) Fixed Deposits and Bank transactions at State Bank of Mysore, Karnataka Bank, ICICI Bank and HDFC Bank for and on behalf of Public Affairs Centre.
    k) All the legal contracts/ agreements of the centre

3. Further resolved by the Board of Directors of Public Affairs Centre, Bangalore, that Mr.G. Gurucharan is authorised to permit transactions with respect to the operations of Bank Accounts, Corporate Internet Banking and Fixed Deposits with effect from February 01, 2017 in the following manner:

    a) The Director may nominate officials of the Public Affairs Centre to open Bank Accounts, as and when required, in the name of Public Affairs Centre.

b) The Director is also authorised to specify the financial limits upto which the officials can sign, either singly or jointly, the cheques of existing and new Bank accounts, operations on the internet banking facility, opening and redemption of fixed deposits etc. on behalf of Public Affairs Centre, as and when necessary, having due regard to administrative convenience and other exigencies.

This Resolution shall supersede all the earlier Resolutions.

CHAIRMAN
Public Affairs Centre
March 01, 2017

Approved and signed by the Board of Directors present:

1. Justice M N Venkatachaliah
   (Chairman)
2. Dr.K.R.S. Murthy
3. Dr.K.Kasturirangan
4. Dr.A.Ravindra
5. Mr.Sudhakar Rao
6. Mr.Vivek Kulkarni

BYE-LAWS FOR APPOINTMENT OF REGISTRAR OF ISEC
(Please see Rule 13 of Rules and Regulations of ISEC Society)

The Bye-laws relating to the appointment of Registrar as approved by the Board of Governors of ISEC in its meeting dated December 17, 2008 are as below:

Introduction

1. Registrar is one of the authorities of the Institute. He shall be appointed by the Board of Governors in accordance with the bye-laws and his powers and functions will be prescribed by the bye-laws.

Aim

2. The aim of these bye-laws is to lay down the job responsibilities, procedures for selection, appointment, and other related issues in respect of the Registrar of the Institute.

Job Responsibilities

3. Registrar is the Administrative Officer responsible for the Administrative, co-ordination of all the activities in the Institute. Registrar will function under the instructions of the Director and report to the Director on all matters and perform such functions as may be assigned by the Director in addition to those listed hereunder. Registrar will be responsible for:

   (a) Co-ordination and facilitation of PhD Admission, Seminars & Workshops, Academic and research activities. All the project MoUs will be signed by the Registrar on behalf of the ISEC Society except those required specifically to be signed by the Director.

   (b) Under the instructions of the Director Registrar will prepare the Budget, keep Financial control, Interior Economy, supervise Auditing and preparation of annual report of the Institute in consultation with the Accounts Officer and others.

   (c) Making all the administrative arrangements for all the meetings, functions, conferences, seminars, public and memorial lectures and other events.

   (d) Safe and secure maintenance of all research schedules, records, research reports and property/assets of the Institute and keeping a proper inventory of all of them.

   (e) Ensure that all offices follow proper filing systems so that all papers, correspondence and records are securely kept and are easily accessible.

   (f) Controlling, Supervising and Monitoring the functioning of Accounts, Publication Section, Library and all other administrative and support groups and ensure their smooth functioning.

   (g) Initiate action under the instruction of the Director as per the ISEC Rules for all permanent and temporary recruitment, Performance Appraisal, Evaluation, Promotion and career advancement of all employees.

(h) Responsible welfare officer of the Institute and of the residents residing in the campus.

(i) Framing and issuing instructions for the campus and infrastructures management, general administration, Hospitality, Events and institutional management under the instructions of the Director.

(j) Lead as the Chief Security, Safety and Loss prevention Officer of the Institute, issuing instructions on these matters and ensure the same through the concerned staff.

(k) Ensure that the standard office procedures, official code of conduct and office secrecy is strictly observed by all employees. Initiate disciplinary action as per the Rules of ISEC against any defaulters under the instructions of the Director.

(l) The Registrar will be the Secretary to the Board of Governors and Annual General Body Meetings and member cum convener of all other committee meetings. All the meeting notices will be issued under the signature of the Registrar unless otherwise specified.

(m) Assist the Director in all activities of the Institute and perform any other duties assigned and delegated by the Director time to time.

Σigma

Sigma Research and Consulting Pvt Ltd
C 23, South Extension I, First Floor
New Delhi 110 049

t (+ 91 11) 4619 5555
f (+ 91 11) 4619 5500
www.sigma-india.in

CIN No. : U74140DL2008PTC182567

BOARD RESOLUTION

CERTIFIED COPY OF AN EXTRACT FROM THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF M/S SIGMA RESEARCH AND CONSULTING PVT LTD., HELD ON 08TH APRIL 2017 AT ITS REGISTERED OFFICE , C 23, SOUTH EXTENSION – I, NEW DELHI – 110 049,

RESOLVED FURTHER THAT ,Dr U V Somayajulu- CEO and Executive Director of the Company, be and are hereby authorized to make, sign and execute on behalf of the Company such deeds, documents, agreements, undertakings all other necessary papers as may be required

RESOLVED FURTHER THAT, if necessary, the common seal of the Company be affixed on such deeds and documents in the presence of any of M/s Mr KVR Subrahmanyam director, and Dr U V Somayajulu CEO and Executive Directors of the Company who shall sign the same in token thereof.

RESOLVED FURTHER THAT a certified true copy of the said resolution be furnished to all concerned under signatures of any one of the above mentioned directors."

CERTIFIED TRUE COPY

FOR SIGMA RESEARCH AND CONSULTING PVT LTD

For Sigma Research and Consulting Pvt. Ltd.
Director

DIRECTOR

For Sigma Research and Consulting Pvt. Ltd.
Director

DIRECTOR

CERTIFIED TRUE COPY

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No.	:	IN-KA41612246495718P
Certificate Issued Date	:	29-May-2017 03:16 PM
Account Reference	:	SHCIL (FI)/ ka-shcil/ MALLESHWARAM1/ KA-BA
Unique Doc. Reference	:	SUBIN-KAKA-SHCIL31828322918699P
Purchased by	:	IDECK
Description of Document	:	Article 41 Power of Attorney
Description	:	POA IN FAVOUR OF LEAD MEMBER
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	IDECK
Second Party	:	ISEC AND PAC AND SIGMA
Stamp Duty Paid By	:	IDECK
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

T.C. THIMMARAJA
BANGALORE
METROPOLITAN AREA
Reg. No. 8296

Authorised Signatory
For Stock Holding Corporation of India Ltd

..........Please write or type below this line..........

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

Whereas National Institute of Urban Affairs, has invited applications from interested parties for Assessment of Liveability in Selected Cities (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who,

Statutory Alert:
[illegible]

acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, **M/s Infrastructure Development Corporation (Karnataka) Limited** Registered office **9/7, KCN Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, Karnataka** (Lead Member), **M/s Institute for Social and Economic Change, Chandra Layout, Nagarbhavi, Bengaluru, Karnataka 560072** and **SIGMA Research and Consulting** do hereby designate **M/s. Infrastructure Development Corporation (Karnataka) Limited** being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the 29TH day of May.2016

S. Srinivasa Rao
Senior Vice President

For: Sigma Research and Consulting Pvt. Ltd

Dr. UV Somayajulu
CEO and Executive Director

For: Institute for Social and Economic Change (other Member)

S. Ashwini

S Ashwini
Registrar I/c

Registrar
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

For: Public Affairs Centre (other Member)

560 105

G. Gurucharan
Director

SWORN TO BEFORE ME

T.C. THIMMARAJA, B.A.LL.B.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF INDIA
City Civil Court Complex Premises
BANGALORE - 560 009.

Witness:

1 (DHEERAJ)

2 Ashok Kumar.

3 S. Ganesh

T.C. THIMMARAJA
BANGALORE METROPOLITAN AREA
Reg. No. 8296

Appendix 4: Details of Applicant

1	**Details of Applicant**	
a.	**Name of Consultant with full address:**	**Infrastructure Development Corporation (Karnataka) Limited** # 9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001
b.	**Telephone:**	+91 80 43448000
c.	**Fax No.**	+91 80 43448001
d.	**Email:**	ideckinfo@idfc.com
e.	**Year of Incorporation/Registration**	Year 2000
f.	**Name and address of the person holding the Power of Attorney.**	**S. Srinivasa Rao** Senior Vice President **Infrastructure Development Corporation (Karnataka) Limited** # 9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001 080-4344 8077 +91 - 7022003252
g.	**(i) Place of Business**	Bangalore , Karnataka
	(ii) Date of Registration	**13th June 2000**
h.	**Name of the Bankers with full address**	**HDFC Bank Limited.** 24-3, HDFC House No. 51, Kasturba Road, Bangalore, Karnataka **Account Number : 00090350000364** Account Type : Current Account MICR CODE : 560240002 IFSC CODE : HDFC0000009
i.	**Service Tax Registration Number**	**(CER)/AAACI7922EST001**
j.	**Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer?**	**NO**
k.	**Name and details (Tel / Mobile / E mail) of contact persons**	**S. Srinivasa Rao** Senior Vice President 080-4344 8077 +91 – 7022003252 srinivasarao.s@idfc.com

---

2	**Details of Joint Venture/Consortium Partners (in case of JV) :**	
	Name of Member	**Role (Specify Lead Member/ Other Member)**
1	**Infrastructure Development Corporation (Karnataka) Limited**	**Lead Member**
2	**Institute for Social and Economic Change (ISEC)**	**Other Member**
3		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	62 Permanent Employees and 14 Contract Employees

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	4 Employees

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	**164.11**
2015-16	**139.41**
2016-17	**294.11**

(To be certified by the Chartered Accountant)
Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date 30th May 2017

Place Bangalore

Name _ Srinivasa Rao S
Designation Senior Vice President
Tel No. 8043448000
Mobile No. 07022003252
E Mail ID ideckinfo@idfc.com
Seal/Stamp of the Firm

Appendix 4: Details of Applicant

1	Details of Applicant	
a.	Name of Consultant with full address:	**Istitute for Social and Economic Change (ISEC)** Dr. V K R V Rao Road, Nagarabhavi PO, Bengaluru 560 072
b.	Telephone:	+91 80 23215468, 23217011
c.	Fax No.	+91 80 23217008
d.	Email:	registrar@isec.ac.in
e.	Year of Incorporation/Registration	Year 1972
f.	Name and address of the person holding the Power of Attorney.	**S Ashwini** Registrar I/c **Istitute for Social and Economic Change (ISEC)** Dr. V K R V Rao Road, Nagarabhavi PO, Bengaluru 560 072 080-2321 0065
g.	(i) Place of Business	Bangalore , Karnataka
	(ii) Date of Registration	**20th January 1972**
h.	Name of the Bankers with full address	**State Bank of India** **ISEC Branch,** **ISEC Campus, Nagarabhavi,** **Bengaluru 560 072** **Account Number : 54051120703** Account Type : Savings Bank Account MICR CODE : 560006164 IFSC CODE : SBIN0040898
i.	Service Tax Registration Number	exempted
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer?	NO
k.	Name and details (Tel / Mobile / E mail) of contact persons	**S Ashwini** Accounts Officer & Registrar I/c **Istitute for Social and Economic Change (ISEC)** Dr. V K R V Rao Road, Nagarabhavi PO, Bengaluru 560 072 080-2321 0065

2	**Details of Joint Venture/Consortium Partners (in case of JV) :**	
	Name of Member	**Role (Specify Lead Member/ Other Member)**
1	**Infrastructure Development Corporation (Karnataka) Limited**	**Lead Member**
2	**Institute for Social and Economic Change (ISEC)**	**Non Lead Member 1**

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	**32 Faculty** **66 Non Faculty**
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	**32 Faculty**
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	Turn Over (in Crores)
2013-14	28.12
2014-15	28.55
2015-16	29.67

(To be certified by the Chartered Accountant)
Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the chort listing, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

S. Ashwini

Date 26th May 2017

Place : Bengaluru

Name : Smt. S Ashwini
Designation : Accounts Officer and Registrar I/c
Tel No. : : 080-2321 0065
E Mail ID : ao@isec.ac.in
Seal/Stamp of the Firm

Registrar
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	PUBLIC AFFAIRS CENTRE, No. 15, KIADB Industrial Area, Jigani-Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore - 560105
b.	Tel. No.	:	+91-80-27839918/19/20
c.	Fax No.	:	+91-80-27839918/19/20
d.	Email	:	pacfinance@pacindia.org
e.	Year of Incorporation.	:	1994
f.	Name and address of the person holding the Power of Attorney.	:	G. Gurucharan, Director S S Iyer, Administrator PUBLIC AFFAIRS CENTRE, No. 15, KIADB Industrial Area, Jigani-Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore - 560105
g.	(i) Place of Business.	:	Bangalore
	(ii) Date of Registration.	:	23/06/1994
h.	Name of Bankers with full address.	:	State Bank of India Koramangala Branch P.B.No. 3426, No. 170, II Cross, 7th Main, I Block, Koramangala, Bangalore - 560034 Branch Code - 40436
i.	Service Tax Registration Number (copy).	:	AAATP0947RSD001
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished	:	No
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	G. Gurucharan, Director PUBLIC AFFAIRS CENTRE, No. 15, KIADB Industrial Area, Jigani-Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore – 560105 91-80-27839918/19/20

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1 .	PUBLIC AFFAIRS CENTRE	Other Member

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	PUBLIC AFFAIRS CENTRE - 31
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	PUBLIC AFFAIRS CENTRE - 20
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	4.33
2015-16	6.09
2016-17	5.49

To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the
Firm Date Name **G. Gurucharan,**
Place **Bangalore**
Designation **Director**
Tel No. **91-80-27839918/19/20**
Mobile No:
E Mail ID: **director@pacindia.org**
Seal/Stamp of the Firm

560 105

RAJAGOPAL & BADRI NARAYANAN
CHARTERED ACCOUNTANTS

No. 25, Padmashree Mansions, 2nd Floor
1st Cross, Sampige Road, Malleswaram
Bangalore - 560 003. INDIA.
☎ : 91-80-2344 0987, 2331 0811, 2331 3911
Fax : 91-80-2331 3666
E-mail : bangalore@rnbca.com

TO WHOM SO EVER IT MAY CONCERN

This is to certify that INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LIMITED having its registered office at NO.9/7, K.C.NBhavan, Yamunabai Road, Madavanagar Extension, Off. Race Course Road, Bangalore-560 001 had achieved the following Turnover, Profit after tax during the preceding five years and these are in agreement with the audited accounts. We also certify the Networth as at the close of the respective financial year.

(Rs. Million)

Particular	FY12	FY13	FY14	FY15	FY16	Total	Average 5 Years	Average 3 Years
Net Worth	372.81	397.96	416.02	437.87	569.47	2194.13	438.83	474.45
Total Turnover	186.36	129.49	164.11	139.41	294.11	913.48	182.70	199.21
PAT	42.72	29.83	24.13	22.14	131.61	250.43	50.09	59.29

Date: 19.05.2016
Place: Bangalore

For RAJAGOPAL & BADRI NARAYANAN
Chartered Accountants

K.S JAGANNATHAN
Partner
Membership No.009722
Firm Reg No: 003024S

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only) (Lead Firm)**	1. Mysore 2. Davanagere 3. Chandigarh 4. Mumbai & Pune 5. Mysore
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	1. Bangalore, Mysore 2. 6 districts each in Tamil Nadu and Odisha 3. Bangalore 4.
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	1. Indore ,Bhopal ,Jabalpur, Gwalior, Ujjain, Sagar, Dewas,Satna , Ratlam, Rewa, Katni, Singrauli Burhanpur , Khandwa , Morena , Chhindwara 2. Bangalore Urban, Bangalore Rural, Kolar, Tumkur, Ramnagar, Chikkaballapur, Chitradurga, Davanagere

Appendix 5A

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas

Assignment name: Citizen Report Cards (CRCs) in Madhya Pradesh	**Value of the contract (in current INR):** Rs. 24,700,000/-
Country: India **Name of City/ Cities:** Indore ,Bhopal ,Jabalpur, Gwalior, Ujjain, Sagar, Dewas,Satna , Ratlam, Rewa, Katni, Singrauli Burhanpur , Khandwa , Morena , Chhindwara	**Duration of assignment (months):** 14 months
Name of Client: Department for International Development	**Total No of staff-months of the assignment:**
Address:	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	November 2014 to December 2015
Narrative description of Project: Citizen Report Cards (CRCs) conducted in 16 cities of Madhya Pradesh	
Description of actual services provided by your staff within the assignment: Secondary data collection, literature review, scoping exercise, designing data collection instruments, sampling design, field survey and monitoring, data analysis and interpretation, presentation of findings, report preparation.	

Department
for International
Development

UKaid
from the British people

18/12/14

Accountable Grant Arrangement

Between

The Government of the United Kingdom of Great Britain and Northern Ireland acting through the Department for International Development ("DFID")

and

The Public Affairs Centre, Bangalore

("The Partner")

together called "the Participants"

Conduct Citizen Report Cards (CRCs)
in Madhya Pradesh

(Purchase Order No 40088284)

1. The arrangements and the purpose for which the grant will be used are set out in this accountable grant arrangement and its annex's and the corresponding project proposal, collectively referred to as "this Arrangement".

2. DFID, will make available a sum not exceeding Rs 43,232,400/- **(Rupees Four Crores Thirty Two Lakhs Thirty Two Thousand Four Hundred only).** The amount is expected to be paid in the following tranches.

Indicative Amount (INR)

2014 : 3,370,800
2015 : 39,861,600

3. The funding amount is subject to revision and will depend on the fulfilment of the provisions of this arrangement, any revisions to budgets, actual expenditure and need and the continuing availability of resources to DFID.

f) In the event that the project ceases to be pursued for any reason other than by way of successful completion

g) The Partner uses the funds provided under this or any DFID grant arrangement for any purpose other than the purpose provided for

Additional Provisions

32. DFID funds must be separately accounted for by the Partner and therefore readily identifiable at all-time unless explicitly agreed otherwise by DFID and the Partner also gives consent for this arrangement (and any subsequent amendments) and associated funding to be published on DFID's website.

33. The Partner will work towards applying transparency standards in line with the UK aid Transparency Guarantee and the International Aid Transparency Imitative (IATI), to the funds received from DFID. In line with this guarantee and DFID's transparency commitment, the Partner will make substantive efforts to publish information about DFID funded projects, in line with relevant categories of the IATI standard, on their own website.

34. The Grant will not, unless approved by DFID in writing, be used to meet the cost of any import, customs duties or any other taxes or similar charges, applied directly or indirectly, by local Governments or by any local public authority on the goods / services provided.

35. If this arrangement is acceptable to the Partner it will place on record the understanding of the Participants and will come into operation on the date of signature below.

36. In the event of translation the English text of this document will prevail. Any amendments to the provisions contained within this arrangement will be set out in writing and approved by the authorised personal through DFID's standard amendment letter or, where significant, a revised arrangement.

Signed on behalf of DFID:

Name: Marshall Elliott

Position: Deputy Director and Head of DFID India

Address/Contact Details: Department for International Development, British High Commission, Shantipath, Chanakyapuri, New Delhi – 110021, Telephone: +91 11 3314 3001

Date: 15 December 2014

Signed on behalf of the Partner:

PUBLIC AFFAIRS CENTRE
562 106
BANGALORE

Name: Raghavan Suresh

Position: Director

Address/Contact Details: Public Affairs Centre, No. 15 KIADB Industrial Area, Bommasandra – Jigani Link Road Bangalore - 560105, Telephone: 080-27839918

Date: 18 December 2014

Assignment name: Assessment of BWSSB Services	**Value of the contract (in current INR):** Rs. 25,77,371/-
Country: India **Name of City/ Cities:**	**Duration of assignment (months):** 2 years
Name of Client:	**Total No of staff-months of the assignment:**
Address:	**Value of the contract per city (in current INR):**
Start **date (month/year):** **Completion date (month/year):**	December 2014 December 2016
Narrative description of Project: Assessment of BWSSB Services in Bangalore city for services provided to citizens.	
Description of actual services provided by your staff within the assignment: Secondary data collection, literature review, scoping exercise, designing data collection instruments, sampling design, field survey and monitoring, data analysis and interpretation, presentation of findings, report preparation	

GOVT. OF KARNATAKA 21216 कर्नाटक

ಈ ದಸ್ತಾವೇಜು ಹಾಳೆಯನ್ನು ಕರ್ನಾಟಕ ಸರ್ಕಾರದ
ಆದೇಶ ಸಂಖ್ಯೆ ಕಂಇ 152 ಮುನೋಮು 2003
ದಿನಾಂಕ 09–05–2003ರ ಪ್ರಕಾರ ಮುದ್ರಿಸಲಾಗಿದೆ.

DEPT. OF STAMPS & REGISTRATION

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
Government of Karnataka

INDIA Rs.0000100

10:10
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Document Sheet
PB6946

STAMP DUTY KARNATAKA

ನೋಂದಣಿ ಹಾಗೂ ಮುದ್ರಾಂಕ ಇಲಾಖೆ
Registration and Stamps Department

ಬೆಲೆ : ರೂ. 2/–

ಈ ಹಾಳೆಯನ್ನು ಯಾವುದೇ ದಸ್ತಾವೇಜಿಗೆ ಉಪಯೋಗಿಸಬಹುದು
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ದಸ್ತಾವೇಜನ್ನು ಬರೆದುಕೊಟ್ಟ ದಿನಾಂಕ
Date of execution

ಪಾವತಿಸಿದ ಒಟ್ಟು ಮುದ್ರಾಂಕ ಶುಲ್ಕ ರೂ.
Total stamp duty paid Rs.

MEMORANDUM OF UNDERSTANDING/AGREEMENT

THIS AGREEMENT OF UNDERSTANDING/AGREEMENT IS MADE AND EXECUTED ON THIS THE NINETEENTH DAY OF OCTOBER YEAR TWO THOUSAND TWELVE (19.10.2012) AT BANGALORE:

BANGALORE ELECTRICITY SUPPLY COMPANY

A Company registered under the provisions of companies Act, 1956, (owned by the Govt. of Karnataka), having its Corporate office at K.R Circle, Bangalore represented by its General Manager, Customer Relations, hereinafter called as BESCOM.

AND

Public Affairs Centre (PAC)

(a body registered under the Karnataka Societies Act) (hereinafter referred to as the **"PAC"** which expression shall, unless excluded by or repugnant to the context, shall be deemed to include its successors, executors, administrators, representatives and assigns) of the other part.

For

Conduct of the Study:

ASSESSMENT OF BESCOM SERVICES

WHEREAS the "BESCOM" is desirous to entrust the study, **"Assessment of BESCOM services"**, AND "PAC" has accepted the offer and has agreed to the terms and conditions hereafter contained.

NOW, THEREFORE, this agreement witnesses as follows:-

(ಎನ್. ಜಯಂತಿ)
ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು (ಗ್ರಾ.ಸಂ)
ನಿಗಮ ಕಾರ್ಯಾಲಯ, ಬೆ.ವಿ.ಕಂ.
ಕೆ.ಆರ್.ವೃತ್ತ, ಬೆಂಗಳೂರು.

GOVT. OF KARNATAKA 21215 कर्नाटक

ಈ ದಸ್ತಾವೇಜು ಹಾಳೆಯನ್ನು ಕರ್ನಾಟಕ ಸರ್ಕಾರದ
ಆದೇಶ ಸಂಖ್ಯೆ ಕಂಇ 152 ಮುನೋಮು 2003
ದಿನಾಂಕ 09-05-2003ರ ಪ್ರಕಾರ ಮುದ್ರಿಸಲಾಗಿದೆ.

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
DEPT. OF STAMP & REGISTRATION INDIA Rs.0000100 P86946
Government of Karnataka
10:10
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Document Sheet

STAMP DUTY KARNATAKA

ಟೌ

ನೋಂದಣಿ ಹಾಗೂ ಮುದ್ರಾಂಕ ಇಲಾಖೆ
Registration and Stamps Department

ಬೆಲೆ : ರೂ. 2/-

ಈ ಹಾಳೆಯನ್ನು ಯಾವುದೇ ದಸ್ತಾವೇಜಿಗೆ ಉಪಯೋಗಿಸಬಹುದು
This sheet can be used for any document

ದಸ್ತಾವೇಜನ್ನು ಬರೆದುಕೊಟ್ಟ ದಿನಾಂಕ
Date of execution

ಪಾವತಿಸಿದ ಒಟ್ಟು ಮುದ್ರಾಂಕ ಶುಲ್ಕ
Total stamp duty paid Rs.

Scope of Work:

The assessment should involve the following steps:

1. Initial discussions with BESCOM officials – PAC shall meet with BESCOM officials at various levels to understand norms followed for dealing with – receiving applications of power supply, forwarding the application to the sanctioning authority, releasing service connection, maintenance of lines, attending to consumer complaints regarding power supply in terms of its quality and other technical matters and action taken on complaints.

2. Questionnaire Design – Data collection instruments shall be developed as per discussions with the BESCOM officials, and finalized after piloting the same and vetting with BESCOM. These shall include –
    a. Interview schedule for BESCOM officials
    b. Interview schedule for BESCOM customers

3. Sampling Design – The study shall cover 100 sub-divisional and section offices through random selection representing all three zones and all 8 circles of BESCOM.
    6 BESCOM officials per office should be interviewed:
        1. Assistant Executive Engineer (AEE)
        2. Assistant Engineer (AE)/ Junior engineer (JE)
        3. Mechanic Grade 1/ Mechanic Grade 2
        4. Line Man
        5. Assistant Line man and
        6. Overseer/Meter Reader/Operator

Among the customers, 20 customers should be selected from the database or register kept at each of the selected office and shall be interviewed in their homes. If the sample universe is taken, then the total data collection would be

Jayanthi
(ಎಸ್. ಜಯಂತಿ)
[illegible] (ಗ್ರಾ.ಸಂ)
[illegible], ಬೆ.ವಿ.ಕಂ,
[illegible] ಬೆಂಗಳೂರು.

Interviews with BESCOM staff	600
Interviews with Consumer	2000
TOTAL	**2600**

4. Field Survey – The surveys at the selected offices and their jurisdictions (both BESCOM officials and Consumer) shall be carried out by a survey organization /team appointed and supervised by PAC. A comprehensive training programme involving briefing on the data collection instruments, mock call exercises, and pilot field visits shall be carried out before actual implementation of the survey. The actual field survey that shall commence immediately after the training programme will be closely monitored by the PAC Research Team through spot checks, back checks and on-site scrutiny of the data collection instruments.

5. Data entry, Analysis and Report writing – Data entry and analysis shall be carried out in Bangalore. A presentation of findings shall be made to the BESCOM followed by preparation and submission of the report.

6. Deliverables – PAC shall submit fortnightly progress reports to BESCOM during the study period. Upon completion, PAC shall submit one soft copy along with five hard copies of the report.

7. Dissemination and Further Action on the Report- The final report shall be disseminated widely through a publication by PAC. The findings of the study shall be uploaded on BESCOM website.

Payment terms:

The total cost of the study is Rs. 28,29,112/- (Twenty eight lakh twenty nine thousand one hundred and twelve only)

The project budget would be paid to PAC in installments as given below:

Sl.No		Amount in Rs.
1	Upon signing of the contract - 40%	11,31,645/-
2	Upon completion of survey, analysis and submission of draft report – 40%	11,31,645/-
3	Upon submission of the final report – 20%	5,65,822/-
	Total	**28,29,112/-**

Jayanthi

(ಎಸ್. ಜಯಂತಿ)
ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು (ಗ್ರಾ.ಸಂ)
ನಿಗಮ ಕಾರ್ಯಾಲಯ, ಬೆ.ವಿ.ಕಂ.
ಕೆ.ಆರ್.ವೃತ್ತ, ಬೆಂಗಳೂರು.

Other terms & conditions

1. Engaged personnel through PAC are not entitled for any permanency benefits in BESCOM.
2. PAC and its engaged personnel have no right to disclose any Technical and Commercial secrecy of BESCOM to others.
3. In case of any unsatisfactory situations, BESCOM has the right to cancel the order by giving 15 days notice to the agency.
4. BESCOM shall not be liable to pay any allowance, salary or any other amount under any law in force for the staff engaged by the Agency. BESCOM shall not be liable for breach of any Labour Laws or any other Laws which are in force. The Agency shall not be entitled to any other allowances or benefits which are not included in the contract.
5. In case of any accidents, injuries etc., to the engaged personnel/ infrastructure of the agency, compensation shall be payable by PAC only and BESCOM will not be responsible whatsoever in this regard.

Performance Standards

PAC undertakes to perform the study with the highest standards of professional and ethical competency and integrity.

Force Majeure

Neither party will be liable for any delay in performing nor is failure to perform any of its obligations under this Agreement if such delay or failure is caused by force majeure, such as civil disorder, military action, natural disaster and others which are beyond the control of the party in question. In such event, the party will give immediate notice in writing to the other party of existence of such cause or event and of the likelihood of delay may take place.

Confidentiality

PAC shall not, during the term of this study, disclose any confidential information relating to the study, without the prior consent of the General Manager (CR. BESCOM.

(ಎಸ್. ಜಯಂತಿ)
ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು (ಗ್ರಾ.ಸಂ)
ನಿಗಮ ಕಾರ್ಯಾಲಯ, ಬೆ.ವಿ.ಕಂ.
[illegible]

Support from the BESCOM:

The Bangalore Electricity Supply Company **(BESCOM) department** will designate a person to coordinate with PAC in matters of facilitating data collection.

Termination of Contract:

The Contract is liable to be terminated on grounds such as:

1. Deficiency of services.
2. Breach of any terms of the contract.

(ಎನ್. ಜಯಂತಿ)
ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು (ಗ್ರಾ.ಸಂ)
ನಿಗಮ ಕಾರ್ಯಾಲಯ, ಬೆ.ವಿ.ಕಂ.
ಕೆ.ಆರ್.ವೃತ್ತ, ಬೆಂಗಳೂರು

Mrs. N. Jayanthi
General Manager (CR)
Bangalore Electricity Supply Company (BESCOM)

With Seal

Witness

Name: BHANOPRAKASHA P.T.

Address:
BESCOM
corporate office
K.R. Circle, Bangalore.

Date: 25.10. 2012

Mr. R. Suresh
Director
PUBLIC AFFAIRS CENTRE

With Seal

Witness Meena Nair

Name: MEENA NAIR

Address:
Public Affairs Centre
15, KIADB Industrial Area
Bommasandra-Jigani Link Road
Bangalore - 562106.

Date: 19.10. 2012

Address for notices:

General Manager(CR)
Block -II, IV Floor
Room No:406
Corporate Office BESCOM
K R Circle, Bangalore 560001
Ph: +91 80 – 22251927
+91 94498 44778

Public Affairs Centre
15, KIADB Industrial Area
Bommasandra – Jigani Link Road
Hennagara Post, Anekal Taluk
Bangalore – 562 106. India
Telefax (Switchboard):
Ph: +9180 - 27839918/ 19/ 20

Assignment name: Pilot assessment of urban transport governance in Karnataka with the use of the Transport Governance Indicator Assessment Toolkit	**Value of the contract (in current INR):** 3,85,000
Country: **Name of City/ Cities:** Bangalore, Mysore	**Duration of assignment (months):** 12
Name of Client: World Resources Institute	**Total No of staff-months of the assignment:** 12
Address: 10 G Street, NE Suite 800 Washington, DC 20002	**Value of the contract per city (in current INR):** 1,92,500
Start date (month/year): **Completion date (month/year):**	**September 2015-September 2016**

Narrative description of Project:

We conducted a pilot assessment of urban transport governance in Bengaluru and Mysuru, with elaborate institutional arrangements for urban transport. The aim was to develop a framework for assessing governance and decision-making in the urban transport sector. For the assessment, we used the Transport Governance Indicator Assessment Toolkit developed by the WRI which consists of 39 indicators in 6 different functional categories—policy, planning, standards, execution, budgeting, and regulation. The methodology of the study was to assess the indicators by choosing an organization for each functional category in each of the selected cities, and was based on analysis of documents, and discussions with relevant officials in the selected cities. The final analysis and scoring on each indicator was based on the guidance assessment provided by the WRI, and our own judgement.

Each indicator in our assessment broadly relates to one of the aspects of governance, namely Transparency (T), Accountability (A), Participation (P) and Capacity (C)-TAP-C for both government and civil society. With respect to policy, the indicators are the mandate and capacity of the policy making body, its effective functioning, transparency and public participation in its functioning. In planning, the same indicators are used, but in addition, legislative review of plans and the role of consultants/advisory groups, are included. With respect to standards, the mandate, functioning and enforcement are assessed. In execution, the functioning of the executive authority, staffing policies, performance-based incentives, reporting, project selection and specification, contracting process and execution, audit, transparency during execution, post-implementation review and environmental and social impact assessment of projects, are assessed. In budgeting, the elements assessed are as follows: budget process, audit, public inputs and legislative review. With respect to regulation, the autonomy and mandate, neutrality of the regulatory authority, its tariff philosophy, and performance reporting were assessed.

We find based on our assessments that Mysuru's urban transport governance is much more transparent, accountable, participatory than the counterparts in Bengaluru. Nonetheless, accountability of institutions is better than accountability of the agencies to the public in both the cities. While capacity is the only dimension on which all agencies rank highly in Bengaluru, Mysuru has some limitations on its capacity, due to its size and resources. Another reason which explains Mysuru's better ranking with respect to the TAP-C indicators when compared with Bengaluru is that in Mysuru, parastatal entities such as KSRTC are executing agencies, whereas in Bengaluru, BMTC is an independent, corporatized entity. A caveat of the study is that if other cities are examined, these findings could be different, if not entirely new.

Description of actual services provided by your staff within the assignment:

All of the above.

WORLD
RESOURCES
INSTITUTE

10 G Street, NE Suite 800 Washington, DC 20002 USA (PH) +1 (202) 729-7600 (FAX) +1 (202) 729-7610 www.WRI.org

August 8, 2015

Professor M.R.Narayana
Director-in-Charge
Institute for Social and Economic Change (ISEC)
Dr.VKRV Rao Road, Nagarabhavi
Bangalore 560072 INDIA

Dear Professor M.R.Narayana:

The World Resources Institute's (WRI) Governance Program is pleased to award ISEC $5830 in support of the Transport Governance Initiative, as described in Section A of Attachment 1 of this subagreement.

Your point of contact for this project will be Bharath Jairaj. (BJairaj@wri.org)

Please indicate your acceptance of the award pursuant to the terms of this subagreement by signing this letter and Attachment 1, retaining a copy for your files, and returning the original to our office.

Sincerely,

Elsie Velez Whited
Grants and Contracts Director

SUBRECIPIENT'S ACKNOWLEDGMENT: ______________________________

Attachments:
1) Mandatory Standard Provisions
2) Request for Payment
3) Budget and Financial Status Expenditure Report
4) Project Status Report

cc: Contract Files

v.3.4.2015

Assignment name: *Improving governance and accountability of the Nirmal Bharat Abhiyan by including citizen voices*	**Value of the contract (in current INR):** 107,546,460
Country: **Name of City/ Cities:** 6 districts each in Tamil Nadu and Odisha	**Duration of assignment (months):** 36
Name of Client: Bill and Melinda Gates Foundation, when Prof.Kala S Sridhar was with Public Affairs Centre, Bangalore	**Total No of staff-months of the assignment:** 36
Address: PO Box 23350, Seattle, WA 98102, USA	**Value of the contract per city (in current INR):** 8,962,205
Start date (month/year): **Completion date (month/year):**	July 2013-2016

Narrative description of Project:

The project aims to improve the governance of NBA. The general objectives of the project are to increase the voice of consumers in NBA implementation and monitoring sanitation debate in 6 districts of Orissa (a poor-performing state with respect to the NBA) and 6 districts of Tamil Nadu (a well-performing state with respect to the NBA). Hence the demand-side objectives of the research are to raise awareness on the NBA in 6% and 2% respectively of study area population in each of the 2 states—Orissa and Tamil Nadu. On the supply side, the project intends to heighten the accountability of service providers to meet NBA targets and associated obligations in 6 districts each of Orissa and 6 districts of Tamil Nadu, and strengthen the responsiveness of the service providers by reducing time taken to release funds.

The above-mentioned objectives are proposed to be accomplished through national policy analysis and review of secondary data, interviews and in-depth discussions with officials in the selected states, citizen report cards (CRCs) to capture the voices of consumers with respect to the NBA, followed up with the implementation of a CRC-plus exercise of fund and function flow in the selected states with respect to relevant components of NBA funds. The above methods will be combined with community score cards and focus group discussions with citizens, stakeholders such as public officials, private service providers and other actors in the supply chain of providing sanitation infrastructure. Given that we propose to examine both well-performing and poor-performing districts in the selected states, we expect that in-depth case studies would be prepared on aspects of the programme or experience of the users, as a complement to the survey data. Further, we propose to have advocacy workshops to disseminate sharing, learning and ongoing monitoring of the program to ensure the project's sustainability beyond the project period.

We will be partnering in the above project with the sister organization of PAC, the Public Affairs Foundation (PAF), which has had the opportunity to experiment with CRCs repeatedly in various countries across the globe and has nearly perfected the art of CRCs. Besides, we are partnering with WaterAid who have been domain experts in the water and sanitation sector. Hence their substantive knowledge of the sector and their networks will be tapped for roll out of the project and its continued monitoring.

The outcomes we expect from the above project are to increase the number of applications for toilet construction, which would result in a toilet, in each of the 2 states—Orissa and Tamil Nadu, from a demand side. From a supply-side perspective, the outcome we expect from the project is to augment the supply of funds – to assess, and if possible, to reduce the actual time taken for the central share to reach the states, districts and villages, and the amount released vis-à-vis the claims.

The indicators used to measure the above outcomes from a demand side perspective would be:

- to ensure that X communities (covered under the CSCs) would receive regular reports on project status;
- to assess the timeliness of the construction of toilets;
- to understand the design of the toilet which reflects on its ease of use and maintenance; and
- the proximity of the customer's location to a sanitary mart for procurement of toilet accessories.

From a supply-side perspective, the indicators would be:

- to assess time taken by state to release NBA funds to the district;
- time taken by the district to release NBA funds to the toilet user / Panchayati Raj Institution (PRI) / implementing agency, and
  - funds utilized as a proportion of what was released on various components of the program.

BILL & MELINDA
GATES foundation

PO Box 23350
Seattle, WA 98102, USA
V 206.709.3100
F 206.709.3180
www.gatesfoundation.org

July 8, 2013

Suresh Raghavan
Director
Public Affairs Centre
15, KIADB Industrial Area
Bommasandra-Jigani Link Road
Hennagara Post, Anekal Taluka
Bangalore – 562 106
India

Re: Global Development Grant Number OPP1038515
Improving Consumer Voices and Accountability in the Nirmal Bharat Abhiyan

Dear Mr. Raghavan:

The Bill & Melinda Gates Foundation (the "Foundation") is pleased to award Public Affairs Centre ("PAC") a grant in the amount of $1,792,441.00 for the period beginning on the date you sign this agreement (the "Start Date") to June 30, 2016 (the "Grant Period"). This agreement (the "Grant Agreement") contains the terms and conditions of this grant.

Charitable Purpose of the Grant. The charitable purpose of this grant is to improve governance and accountability of the Nirmal Bharat Abhiyan, a sanitation campaign in India, by including citizen voices, as described in your proposal (the "Proposal") and budget (the "Budget") dated May 22, 2013 (together, the "Project").

Tax Status. PAC confirms that under the United States Internal Revenue Code of 1986 (the "Code") it is not an organization described in Section 501(c)(3) of the Code. You agree to advise us immediately if there is any change in your organization's tax status during the Grant Period.

Use of Grant Funds. Foundation grant funds, and any income earned on those funds, may not be spent:

(a) for any purpose other than the Project;
(b) for any purpose other than charitable, scientific, literary or educational purposes;
(c) to carry on propaganda or otherwise attempt to influence legislation;
(d) to influence the outcome of any election for public office or to carry on any voter registration drive;
(e) to make a grant to any individual for travel, study, or similar purpose;

You may not use the grant funds to reimburse any expenses you chose to incur prior to the Start Date. Any Budget cost category change of more than 10% must be approved in writing by the Foundation in advance.

Segregation of Grant Funds. Grant funds must be maintained in a separate account dedicated to the Project. This account must be a physically separated bank account.

Investment of Grant Funds. Grant funds must be invested in highly liquid investments (such as interest-bearing bank accounts) with the primary objective of preservation of principal so that the grant funds are available for the Project. The Foundation requires you to report the amount of any interest or

Azim Premji
University

29th Feb, 2016

Dear Kala Sridhar,

On behalf of the Azim Premji University, I am pleased to inform you that we are awarding your project “**The Story Of An Indian Metropolis Revisited**”, bearing ID no. **D012**, with a grant of Rs. 19.573 lakh, payable over 2 years with start and end dates of April 1st, 2016 and March 31st, 2018 respectively.

As detailed in your proposal, we expect that your project will result in high quality academic research. We expect that datasets and related code developed through an APU grant will be made available (unless proprietary) as an open source resource, with attribution, to the broader social science research community.

We anticipate that your research will be particularly useful since it addresses a current void in the understanding of the landscape.

All questions regarding your grant should be directed to this e-mail address and must quote the ID number. We will be in touch with you in the next two or three weeks regarding the administration of your grant.

We anticipate publically announcing our slate of grantees in early April. Our Communications Office will be in touch with you to discuss publicizing your APF award. Until that time, we ask that you do not make any public announcements regarding your grant.

We are happy that you will be part of our cohort of inaugural grantees, and we look forward to working with you.

With Best Wishes,

Venu Narayan
Director, School of Liberal Studies
Azim Premji Univeristy

other income generated by the grant funds, including currency conversion gains (collectively "Interest") in the Progress and Final Reports defined below. Any Interest must be used for the Project.

Return of Unused Funds. Any grant funds or Interest not spent or committed for the Project must be returned to the Foundation at the end of the Grant Period.

Anti-Terrorism. You confirm that you are familiar with the U.S. Executive Orders and laws prohibiting the provision of resources and support to individuals and organizations associated with terrorism and the terrorist related lists promulgated by the U.S. Government. You will use reasonable efforts to ensure that you do not support or promote terrorist activity or related training, or money laundering.

FCRA Registration. The Foundation will disburse grant funds only after receiving a copy of your registration with the Ministry of Home Affairs under the Foreign Contribution (Regulation) Act ("FCRA"), 1976, or written evidence that you are exempt from such registration requirements. You may not incur any expenses for the Project until you have provided the Foundation with a copy of your FCRA registration or evidence of exemption, and the Foundation has acknowledged receipt in writing. You are not permitted to use grant funds to pay or reimburse any expenses you incur prior to fulfilling this requirement. You agree to advise us immediately if there is any change in your FCRA registration during the Grant Period.

Subgrants and Subcontracts. You have the exclusive right to select subgrantees and subcontractors for the Project. The Foundation has not earmarked the use of the grant funds for any specific subgrantee or subcontractor. You, and not the Foundation, are responsible for ensuring that all subgrantees and subcontractors use grant funds consistent with this Grant Agreement and the Proposal. Neither you nor your subgrantees or subcontractors may make any statement or otherwise imply to donors, investors, media or the general public that the Foundation directly funds the activities of any subgrantee or subcontractor. Any agreements with subgrantees and subcontractors you engage to assist with the Project must include the following language: "Your organization has been selected to participate in this Project at our discretion. You may not make any statement or otherwise imply to donors, investors, media or the general public that you are a direct grantee of the Bill & Melinda Gates Foundation ("Foundation"). You may state that Public Affairs Centre is the Foundation's grantee and that you are a subgrantee or subcontractor of Public Affairs Centre for the Project."

If you make subgrants using Foundation grant funds to an organization that is not a U.S. public charity or a government agency or instrumentality, you agree to comply with procedures known as "expenditure responsibility" for each subgrant. These procedures are in Appendix B to this Grant Agreement. These procedures are intended to supplement the other due diligence and subgrant procedures that your organization may use. At the Foundation's discretion, we may monitor your subgrantee(s)'s compliance under the subgrant(s) and your organization hereby designates the Foundation and its representatives as its designees for such purposes.

Payments and Reports. This table shows the deliverables (including reports) and milestones for this grant. Where indicated, the Foundation's payment is contingent on satisfaction of the listed deliverable and/or milestone. The Foundation may authorize changes to the payment and reporting schedules from time to time where appropriate. The Foundation will confirm any such changes in writing.

Payment Date	**Payment Amount**	**Milestone or Deliverable**	**Due by**	**Reporting Period**
Within 15 days following receipt of the countersigned Grant Agreement	$792,441.00	Countersigned Grant Agreement	-----	-----

-----	-----	Quarterly Progress Report	December 13, 2013	Start Date – October 31, 2013
August 2014	$500,000.00	Progress Report	June 2, 2014	Start Date - March 31, 2014
January 2015	$500,000.00	Progress Report	June 1, 2015	April 1, 2014 - March 31, 2015
-----	-----	Final Report	September 1, 2016	Entire Grant Period
AWARD TOTAL	$1,792,441.00			

Milestones. For a report to be satisfactory, you must demonstrate meaningful progress against the milestones contained in Appendix A of this Grant Agreement and the Proposal. Milestones may be added or modified during the Grant Period. The Foundation will confirm any agreed changes to the milestones in writing.

Reports. All payments are contingent on the timely receipt of the reports described below. The report templates and guidelines are subject to change. The appropriate report template will be sent to you approximately two months before the due date. Submit all reports electronically to your Program Officer and Grants Coordinator. All reports must be signed by an officer of your organization.

Progress Reports. Progress Reports must include a: (a) breakdown of how grant funds were expended during the report period compared to the amounts detailed in the Budget; (b) description of your progress on the Project during the report period; and (c) statement that you have fully complied with this Grant Agreement.

Final Reports. The Final Report must include for the entire Grant Period a: (a) breakdown of how grant funds were expended (including expenditures for salaries, travel and supplies) compared to the amounts detailed in the Budget; (b) description of your progress on the Project; and (c) statement that you have fully complied with this Grant Agreement. If any information provided in your Final Report is based on financial data that is drawn from an open accounting period or unaudited books, you must notify the Foundation of any changes or corrections to such data that result from a subsequent close of an accounting period or audit.

Capital Equipment. If the Budget includes capital equipment (e.g., computers, copiers, furniture, medical equipment, vehicles, etc.) with a value of $5,000 or greater, you agree to (a) purchase the equipment during the first year of the Project and (b) submit equipment reports for all such equipment. The $5,000 threshold is to be applied on an item by item basis. Equipment reports must list the equipment and the date purchased. Equipment reports must be provided for a minimum of three years from the date of purchase, even if this time period extends beyond the Grant Period. The Foundation will inform you of the appropriate reporting period for each item of capital equipment purchased with Foundation funds.

Record Maintenance and Inspection. The Foundation requires that you maintain adequate records for the Project to enable the Foundation to easily determine how the grant funds were expended. Your books and records must be made available for inspection by the Foundation or its designee at reasonable times to permit us to monitor and conduct an evaluation of operations under this grant.

Records Retention. You must retain accounting records related to the Project and copies of the reports submitted to the Foundation for at least four years after the grant funds have been fully expended.

Compliance. The Foundation has the right at its discretion to terminate or suspend the grant or withhold payment if (a) the Foundation is not reasonably satisfied with your progress on the Project; or (b) significant leadership or other changes occur that the Foundation believes may threaten the Project; or (c) you fail to comply with any term or condition of this Grant Agreement or any other grant agreement you have with the Foundation. On termination, if requested by the Foundation, you agree to promptly return to the Foundation any unspent and uncommitted grant funds (as of the date of termination) previously distributed to you by the Foundation for the Project.

Public Access. You will make the results of the Project or any reports or other publications regarding the Project funded by this grant (collectively, the "Materials") available to the public: (i) on hard copy media free of charge (other than reasonable processing and shipping costs) and/or (ii) for free unlimited access and use via an Internet site, which you will use reasonable efforts to have listed with major Internet search engines.

Grant Announcements, Public Reports and Use of Foundation Name and Logo. The Foundation will include information on this grant in our periodic public reports and may make grant information public at any time on its web page and as part of press releases, public reports, speeches, newsletters, and other public documents. If you wish to issue a press release or announcement regarding the award of this grant, you must obtain advance approval from the Foundation of the press release and the date of release. You also agree to obtain advance approval from the Foundation for any other use of the Foundation's name or logo. The Foundation requests an opportunity to review and comment on subsequent press releases or reports that are directly related to the grant. Please contact the Foundation at Grantee.Comms@gatesfoundation.org at least two weeks before any press release, announcement or other publication date. Further information is available at:

http://www.gatesfoundation.org/grantseeker/Documents/Guidelines_Communications_for_Grantees.doc.

Counterparts; Original. This Grant Agreement, including any amendments, may be executed in counterparts which, when taken together, will constitute one Grant Agreement. Copies of this Grant Agreement will be equally binding as originals and faxed or scanned and emailed counterpart signatures will be sufficient to evidence execution, though the Foundation may require you, the grantee, to deliver original signed documents.

Assignment. This Grant Agreement or any of the rights or obligations under this Grant Agreement may not be assigned without the Foundation's prior written consent. An assignment includes (a) any transfer of the Project; (b) an assignment by operation of law, including a merger or consolidation, or (c) the sale or transfer of all or substantially all of your organization's assets.

Entire Agreement, Severability and Amendment. This Grant Agreement is our entire agreement and supersedes any prior oral or written agreements or communications between us regarding its subject matter. The provisions of this Grant Agreement are severable so that if any provision is found to be invalid, illegal, or unenforceable, such finding shall not affect the validity, construction, or enforceability of any remaining provision. This Grant Agreement may be amended only by a mutual written agreement of the parties.

Please sign and return to Kimberly Swanson, Grants Coordinator. Please keep a copy for your records. If you have questions, please contact Laura Sparks, Grants Administrator at *laura.sparks@gatesfoundation.org* or phone +001-206-770-1675.

On behalf of the Foundation, may I extend every good wish for the success of your work.

Sincerely,

Gabrielle Fitzgerald

Gabrielle Fitzgerald
Director, Global Program Advocacy
Global Policy & Advocacy
Bill & Melinda Gates Foundation

Public Affairs Centre, by its authorized representative, agrees to the terms and conditions of this Grant Agreement.

Suresh Raghavan Director	August 23, 2013 Date

Assignment name: The story of an Indian metropolis revisited	**Value of the contract (in current INR):** 19,57,300
Country: **Name of City/ Cities:** Bangalore	**Duration of assignment (months):** 48
Name of Client: Azim Premji University Research Grants Foundation	**Total No of staff-months of the assignment:** 48
Address: Pixel Park, B Block PES Institute of Engineering Campus, Electronics City, Hosur Road (Behind NICE Road) Bangalore – 560 100	**Value of the contract per city (in current INR):** 19,57,300
Start date (month/year): **Completion date (month/year):**	April 2016-present date (On-going)

Narrative description of Project:

We propose to answer the following research questions with this study:

How has the spatial evolution of Bengaluru changed since 2001?

With the city's spatial growth, how have public services such as water supply, solid waste, primary education, roads and commute time/traffic congestion changed? What is the extent of Bengaluru's functional labor market, in the sense of access and commute time to jobs?

What are the current urban development problems of Bengaluru?

Description of actual services provided by your staff within the assignment:

All of the above

Assignment name: Selection of a Private Partner for Leasing out Operations of MPM		Country: India
Country: India **Location within country:** Karnataka		**Duration of assignment (months):** 12 months
Name of Client: Mysore Paper Mills Limited (MPM)		**Total No. of staff-months of the assignment:** 60
Contact Person, Title/Designation, Tel. No./Address:		**Mr. Mohan D. Kulkarni,** Company Secretary Mysore Paper Mills Limited, Registered Office, Ali Askar Road, Bangalore
Start date (month/year):	**Completion date (month/year):**	**Approx. value of the contract (in Rupees)** Rs.51.2 lakhs (excluding applicable service tax)
6th June 2015	On-going	**No. of professional staff-months provided by your consulting firm/organization or your sub consultants:** 50
Name of associated Consultants, if any: None		**Name of senior professional staff of your consulting firm/organization involved and designation and/or functions performed (e.g. Project Director/Coordinator, Team Leader):** Mr. K. Jayakishan – Team Leader Mr. Debashis Ghosh – Project structure Expert Ms. Sandhya Prithesh – Project Manager Ms. Sumitha Rao – Legal Expert Mr. Manish Arora – Industry & Market Assessment Expert Mr. Divakaran – Finance Analyst

Description of Project: The scope of work of the project entailed the following tasks:

1. **Review off the industry and market for paper and sugar industry**
2. **Review of MPM – current business lines, products, financial & legal due diligence and so on**
3. Preparation of a review report on the current status
4. Develop implementation frameworks for leasing out operations of MPM
5. Bid documentation and process management for selection of private partner for leasing out operations of MPM

Description of actual services provided by your staff within the assignment:

- **Industry & Market assessment**
  Understand the current industry and market scenario for the paper and sugar industry.
  Point out the operational efficiency parameters in the industry
  Analysis the functioning of MPM – business, product lines, financial & legal due diligence
  Comparison with peer industry groups
- Develop the Review Report
  Based on technical inputs from the consultants (industry experts), develop a financial model for MPM estimating future cashflows, assess revival options for MPM and present the findings in the form of a review report
- Implementation Framework Report
  Assess several means of implementation of the lease framework; present the merits and demerits and risks associated with each of the options.
- Bid Documentation and Process
  Prepare bid documents based on the approved implementation framework and undertake the bid process management for selection of the private partner for leasing out operations of MPM. Also, provide assistance in signing the lease agreement with the select private partner.

AN ISO 14001 COMPANY

THE MYSORE PAPER MILLS LIMITED

Regd. Office : 16/4, Ali Asker Road, Bangalore - 560 052. (Karnataka)
Tel. (Off.) : (+91) (80) 2225 5459 / 2226 0323. Fax : (+91) (80) 2225 3478
E-mail : cmd@mpm.co.in / Website : www.mpm.co.in

ISO 14001 REGISTERED
MGMT.SYS. RvA C 425
DNV Certification B.V. The Netherlands
CIN: L99999KA1936SGC000173

NAVEEN RAJ SINGH, IAS
MANAGING DIRECTOR

NO:MPM/MD/401/2015
Date.06.06.2015

Sri. K. Jaikishan
The Chief Executive Officer,
Infrastructure Development Corporation (Karnataka) Limited
9/7, KCN Bhavan, Yamunabai Road,
Madhavnagar Extension, Off Race Course Road,
Bangalore – 560 001

Dear Jaikishan,

Sub: Selection of a Private Partner for Leasing out Operations of Mysore Paper Mills Limited.

Ref: Your proposal received vide No. iDeCK/2014-15/656, dated November 14, 2014

With reference to the above, the Company is pleased to assign the work of Selecting a Private Partner for Leasing out operations of the Mysore Paper Mills Limited. The advisory services fee payable to iDeCK shall be Rs. 51.2 Lakhs (Rupees Fifty One Lakhs and Twenty Thousand Only) exclusive of applicable service taxes. The scope of work, deliverables, timeframes, terms of payment and other terms and conditions would be as set out in the enclosed Annexure.

The order has been sent in duplicate. Please sign on all pages and send us duplicate copy of this order in acceptance of the same.

Thanking you,

Yours faithfully,
For THE MYSORE PAPER MILLS LIMITED

Managing Director

Encl: a/a

ANNEXURE

1. Scope of Services

The scope of services for the assignment is detailed out below:

A. Task 1: Rapid Assessment

- Review performance and trends of the paper and pulp industry.
- Review of financial statements of MPM for the last 5 years.
- Understand current operations and business aspects of MPM (based on interactions with MPM and review of secondary data/ literature).
- Review of peer companies (state owned paper mills) in other states
- Benchmarking performance of MPM vis-a-vis industry standards and identify areas requiring improvement.

B. Task 2: Options Analysis for Revival of MPM

- Identify various options for revival of MPM based on output of Task 1 and detail out the targets for improvement. This would be important to set out the scope and performance standards for the private partner (bidding documents).
- Undertake viability analysis for the identified options (multiple scenarios may need to be considered for arriving at the optimal option).

C. Task 3: Implementation Framework for Selection of a Private Partner

- Identify various options for implementation to develop an appropriate framework for selection of the private partner.
- Detail out the mode of selection of the private partner, terms & conditions and associated legal issues, legal procedures and compliances to be observed in implementing the chosen option.
- Identify possible risks and suggest suitable mitigation framework.

D. Task 4: Preparation of Tender Documents and Assistance in Bid Process Management

- Prepare the tender documents based on the agreed implementation framework. The tender documents would comprise Request for Qualification (RfQ) / Request for Proposal (RfP) Document, Draft Agreement and Information Memorandum.
- Draft advertisement inviting RFQ / RFP from suitable private partners .
- Assistance in short listing of private partners for invitation of bids.

- Facilitate pre-bid meeting with qualified private partners.
- Define the role and responsibilities of selected private partner and other stakeholders in the exercise of restructuring and revival.
- Execution of transaction documents with processing of bids, evaluation of bids and thereafter making recommendations on the private partner, for approval by MPM and the Government of Karnataka, as may be applicable.

Note:

The following are not envisaged as part of the scope of this assignment:

a) Technical studies, surveys, audits, valuations, etc.

b) Implementation assistance in areas of performance improvement, technology upgrade, fund raising, achieving the optimum business mix, internal organisation and employee matters of MPM and similar work

c) Conducting an audit for determining the validity or authenticity of information received from MPM Limited.

2. Deliverables & Timeframe

The deliverables that would be submitted to MPM by iDeCK during the course of the assignment and the timeframe for such submission is set out in the table below:

Sl No.	Deliverables	Timeframe
1.	Review Report	45 days from the date of award of mandate
2.	Draft Implementation Framework Report	60 days from the date of award
3.	Final Implementation Framework Report	15 days from the date of providing comments on draft report
4.	Draft Bid Documents	30 days from the date of receipt of comments on the Implementation Framework Report
5.	Final Bid Documents	15 days from the date of comments on Draft Bid Documents
6.	Bid Evaluation Report	15 days from receipt of Bids by iDeCK for evaluation

3. Fee & Terms of Payment

The Fee for the assignment shall be Rs. 51.2 lakhs (Rupees Fifty One Lakhs and Twenty Thousand Only) exclusive of Service Tax payable at applicable rates. The payment schedule is set out in the table below:

Sl. No.	Milestones	Amount (as a percentage of the Fee)
1.	On submission of Review Report	20%
2.	On submission of Draft Implementation Framework Report	25%
3.	On submission of Final Implementation Framework Report	10%
4.	On submission of Draft Bid documents	15%
5.	On Submission of Final bid documents	10%
6.	On submission of Bid Evaluation Report	10%
7.	On Signing of Agreement with the Private Partner	10%

Note:

a) The Fee is inclusive of out of pocket expenses towards travel only within Karnataka, communication and documentation.

b) The Fee does not include any technical consultancy costs i.e. cost towards hiring and getting inputs on improving the operational efficiencies of plant. MPM shall provide all technical inputs as required for the assignment.

c) The Fee does not include cost involved for revaluation of physical assets such as buildings, equipment and any other assets.

4. Other Terms & Conditions

a) All technical inputs, financial statements of the company, contracts executed and other documentation available that is necessary to undertake the assignment shall be shared by MPM.

b) You are required to submit all Deliverables in Two Sets and a soft copy.

5. Contact Persons

a) From MPM the following persons shall be the point of contact:
   i. Chief Operating Officer
   ii. Chief Finance Officer
   iii. Chief Administrative Officer
   iv. Company Secretary

b) From iDeCK the point of contact shall be Ms. Sandhya Prithesh, Vice President

Assignment Name: Project Management Consultancy for Implementation of Smart City Project of Davanagere City		**Country:** India	
Location within Country: Davanagere, Karnataka		**Professional staff provided by your firm (Profile):** 25	
Name of the Client: Davanagere Smart City Ltd		**No. of staff :** 45	
Address: #255, opp Railwaystation , P.B.Road, Davangere, Karnataka		**No. of staff months :** 900	
Start Date (month/year): Dec 2016	**Completion Date (month/year):** On going	**Approx. Value of Services (in INR) : 1168/-**	**Project Cost (in INR):** 1.67% of TPC Appox 19.5 Crores Rupees
Name of Associated Consultants, if any **IDECK (Lead)** in Consortium with Fichtner Consulting Engineers India (Private) Limited and Delhi Integrated Multi-Modal Transit System Limited (DIMTS)		**No. of months of Professional Staff provided by Associated Consultants:** 40	

Name of Senior Staff Involved and Functions Performed:

1. **Jayan Attampully Madhavan** Team Leader cum Urban Management specialist, iDeCK
2. **K. Kanagaraj** - Infrastructure/ Engineering Specialist (Water Supply & Sewerage Expert)
3. **Mrutyunjaya -** Project Coordinator, iDeCK
4. **A Durga Giridhar** - Infrastructure/ Engineering Specialist (Road Expert), iDeCK
5. **Deepak S -** Urban Finance Specialist, Fichtner
6. **Narashima Murthy V.K** - Social Development Specialist, iDeCK
7. **Yogesh Khanduja –** e-Governance Specialist, DIMTS

Narrative Description of Project:

GoI has launched the Smart City Mission (SCM). Davanagere is one of the Cities selected under the Mission based on the Smart City Proposal (SCP) submitted by the city. It is proposed to avail the services of a Project Management Consultant (PMC) to assist the SPV in preparation of Detailed Project Reports (Civil, Electrical, Mechanical & IT) with necessary survey & investigations, designs, estimation, tenders, procurement assistance and implementation monitoring and management of sub-projects. The sub-projects identified are broadly classified as Area-based development and Pan-city initiatives.

KUIDFC, the nodal agency for Karnataka carried out the selection process of PMC for Davangere smart city. The main projects identified as per SCP are : Retrofitting of Mandakki Bhatti Area, Mandipet Area (KR Market) Economic Rejuvenation Programme, Old City Bus Stand Redevelopment - State of the Art Central Transit Hub, Heritage Block around Durgambika Temple Area (old city), Roof Top Solar Panels, Area Based Bin-less Solid Waste Management System, Solar Powered LED Street Lights, pedestrian footpaths & cycle track, Underground Utility Corridor, Underground Sewerage and Drainage System, ICT based Mobility Plan & Urban Transport Facility, ICT & E-governance.

Description of Actual Services Provided by our Staff:

The broad services for the above infrastructure elements can be broadly phased into Two Phases as listed below.

Phase-I: Project Conceptualization, Preparation of DPRs and Bid Process Management services

- **Collection of data, reports/information on the sub-projects**
- **Reconnaissance survey and Status Assessment**
- **Carrying out the surveys and Investigations** - Topographical surveys, soil investigations, traffic surveys, pavement/road condition assessment, water and wastewater sample analysis, social assessment surveys, heritage precinct survey and related visitor's survey, socio-economic surveys, air level pollution surveys, environmental assessment, other surveys and investigation, for preparation of project DPRs.
- Preparation of Project Reports – Concept Report, Draft Detail Project Report (DPR), Final DPR,
- Bid Process Management - Bid document and Final Bid document

Phase - II – Project Implementation

- Kick off meeting with Winning Bidder
- Review of work Plans, QAPs, Procurement, Resource and safety Plans
- Construction Supervision and Quality Control
- Progress Monitoring, Record keeping and Reporting
- Project Management
- On Job Training
- Implementation of Environmental and Social Safe Guards
- Project Commissioning and Contract Closure

ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರ ಕಾರ್ಯಾಲಯ,
ದಾವಣಗೆರೆ ಸ್ಮಾರ್ಟ್ ಸಿಟಿ ಲಿ.

Office of the Managing Director,
Davanagere Smart City Ltd..

#255, Opp. Railway Station, P.B. Road, DAVANGERE, KARNATAKA. Ph Off : 08192-232008 Fax : 08192-252899

No.DSCL/SPV/PMC/6/2016-17

Date: 01-12-2016

LETTER OF ACCEPTANCE

To,

Infrastructure development corporation
(Karnataka)limited. 9/7 KCN Bhavan,
2nd floor, yamanabhai road,
Madhavanagere extention,
Off race course road,
Banglore-560001, Karnataka.

Sir,

Sub: Procurement of Project Management Consultancy for implementation of Smart City Project of Davanagere city

Ref: Tender Notification No: DSCL/SPV/PMC/6/2016-17/PKG Date : 17-08-2016

******

This is to notify that your quote for consultancy fee for the Project Management Consultancy (PMC) services at *1.67% of the project value, exclusive of Service Taxes has been accepted by the Davanagere Smart City Limited (DSCL).* The payment terms for the said tender shall be in line with Appendix E of the RfP.

You are hereby requested to submit the *CVs of the 18 Development Professionals* and a *performance security of Rs. 1,00,00,000/-,(one crore) with a validity of 28 days from the intended date of completion of the project period,* within 10 days from the receipt of this letter for approval.

Further you are also hereby requested to appear before the undersigned *within 5 working days from the receipt of the letter for negotiations to work out final terms of reference etc..* as per conditions of bid document.

Yours faithfully,

Managing Director,
(Davanagere Smart City Limited)

Copy to:

1. The Secretary (M&UDA), Vikasa Soudha, Bangalore – 560 001
2. The Managing Director, KUIDFC
3. The Commissioner, Davanagere City Corporation
4. Office copy

Assignment Name: Structuring Options for Slum Rehabilitation Project at Chandigarh		**Country:** India
Location within Country: Chandigarh		**Professional staff provided by your firm (Profile):** Financial and Project Structuring experts
Name of the Client: Chandigarh Housing Board		**No. of staff :** Four
Address: 8, Jan Marg, Sector 9, Chandigarh, India.		**No. of staff months :** Four
Start Date (month/year): September 2005	**Completion Date:** January 2006	**Approx. value of services in current Indian Rupees :** Rs 11 Lakhs
Name of Associated Consultants, if any H&H Associates		**No. of months of Professional Staff provided by Associated Consultants:** One

Name of Senior Staff Involved and Functions Performed:

• Cherian Thomas	Team Leader
• DTV Raghu Rama Swamy	Project Structuring Expert
• Sumeet Shukla	Financial Expert
• V. Sathyanarayana	Legal Expert

Narrative Description of Project:

CHB, with the objective of improving the living conditions of an estimated 22,000 slum dwelling families, initiated a project to relocate them to new housing units in primarily two parts in the city – Maloya and Dhanas and intended to develop and analyze the framework and restructuring options for rehabilitation of slums in the city. iDeCK was appointed for carrying out the financial feasibility assessment and structuring of the project.

Description of Actual Services Provided by our Staff:

- Socio economic survey
- Review of Housing Finance Market in India
- Assessment of Demand and Design and Construction Requirements
- Development of Operational Framework
- Development of Implementation Framework

5545

100 100

Government of Karnataka
Registration & Stamps Department

MPL/C100/07-08 No. 634541
Issued by:
State Bank of Mysore

Certified that a sum of Rs. 100/- (Rupees One Hundred only) has been paid towards Karnataka Stamp duty by

Sri/Smt. IDECK

s/d/w/o ______ residing at ______

VYALIKAVAL-163
BANGALORE-560 003

Br. Name:

Date: 19 MAY 2008

For State Bank of Mysore

Manager

Authorised Agent to collect stamp duty on behalf of Government

Vyalikaval, Bangalore-3

100 100

Memorandum of Agreement

This Memorandum of Agreement (MoA) is mutually agreed and entered into on this _______ day of _______, Two Thousand and Eight at _____.

BETWEEN

Infrastructure Development Corporation (Karnataka) Limited, a Company incorporated under the Companies Act 1956, having its registered office at Infra House, 39, 5th Cross, 8th Main, RMV Extn. Sadashiv Nagar, Bangalore-560080 (hereinafter referred to as "iDeCK" which expression shall, unless repugnant to or inconsistent with the context, mean and include its successors and assigns);

AND

IDFC Projects Limited, a Company incorporated under the Companies Act, 1956 having its registered office at 6th Floor, The Capital Court, Olof Palme Marg, Munirka, New Delhi-110067 (hereinafter referred to as "IP" which expression shall unless excluded by or repugnant to the context, be deemed to include its successors and assigns);

'Parties' means the iDeCK and IP collectively and 'Party' shall mean any of the Parties to this Agreement individually.

WHEREAS,

A. IDFC Projects (IP) has been established to develop, implement, own and operate projects in the infrastructure space in active collaboration with State and Central Government and private sector. IP is contributing to the much needed capacities for implementation and management of large infrastructure projects.

B. iDeCK is Joint Venture of IDFC, Government of Karnataka and HDFC, having expertise in rendering assistance to various Government and private agencies around the country in developing infrastructure projects. Hence, IP has requested iDeCK to assist them in carrying out of its objectives. iDeCK has agreed to provide advisory services and dedicate its personnel, as required, for projects undertaken by IP from time to time.

C. This Agreement sets out the terms and conditions on which iDeCK shall provide advisory services and personnel (hereinafter ‘the Services) for carrying out various development projects of IP.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:-

1. COMMENCEMENT AND DURATION

This Agreement shall be effective on the date hereof and shall continue in full force and effect until terminated with mutual consent of the Parties.

2. OBLIGATIONS OF PARTIES

2.1 iDeCK shall undertake the projects assigned by IP from time to time with its available members of staff. For all Services, iDeCK shall deploy the personnel as required.

Presently, the details of personnel intended to provide Services are as given below:

INFRASTRUCTURE DEV. CORP. (KAR) LTD.
BANGALORE

Sl.No.	Name	Designation
1	Ajay Kurhekar	Senior Associate
2	Gaurav Purohit	Senior Associate
3	Sushma Nirmal	Senior Associate
4	Guleen Kaur	Associate
5	Robin SY	Associate

In addition to the above mentioned personnel, D.T.V. Raghu Rama Swamy, Chief Operations Officer, shall lead the team which will provide the Services. V. Sathyanarayana, Chief Legal Counsel shall also assist along with his team.

2.2 Costing on assignments

a. *Costing on complete assignments*

The complete assignments are those wherein the client fees are clearly known, with specific terms, deliverables, and settled fees. Third party pay-outs to consultants shall be recovered first, then the OPE of IP and iDeCK shall be recovered and of the balance amount. IDFC Projects will be entitled to get a 20% as sourcing fee and co-ordination time. Thereafter the balancing amount shall accrue to iDeCK.

For the purpose of illustration, an example is set out as following:

If the fee is Rs.30 Lakhs to IP:

		Rs. Lakhs
	Fees from Client (Excluding Service Tax)	30.00
	Less Third Party pay-out	1.00
	Less IP OPE	3.00
	Less iDeCK OPE	5.00
	Fees shared	22.00
	Sourcing and co-ordination Fees for IP	4.40
	Fees to iDeCK	17.60

For each Project/Assignment the Parties shall enter into the fee sharing memo in the format provided at Annexure I.

The billing and payment milestones for iDeCK shall be in the same proportion of the assignment fee as agreed between IP and the client.

b. *Costing on concept development assignments*

It is agreed between the Parties that in concept development assignments, wherein the deliverables would be unknown, and inputs are flexible and intermittent, the Parties agree to adopt a man–day rate of Rs. 16,000 per man-day for the current fiscal. It is also agreed that billing shall be done on monthly basis. This rate shall hold for a period upto 31st March 2009, and thereafter re-fixed with the mutual agreement of the Parties.

2.3 iDeCK would raise invoices on IP on the basis set out as in 2.2*a* & 2.2*b* above. In addition, service tax as applicable, would be charged by iDeCK.

3. OTHER TERMS OF SERVICE

3.1 IP shall provide to iDeCK such documents/ information/ reports as may be required by iDeCK to enable it to provide the services. IP undertakes and agrees to furnish to iDeCK from time to time such other documents/ reports/ information in its possession and/or knowledge as it may consider relevant to perform the Services, as and when such information is received by/ available with the IP.

3.2 iDeCK shall perform the Services based on information furnished to it by IP and iDeCK shall be entitled to rely upon such information as authentic. iDeCK shall not be required to check the veracity of the information provided and therefore not liable for any deficiency of service due to erroneous or incomplete information received. iDeCK shall have the discretion to adopt such methodology and procedure as it may deem fit for rendering the Services.

3.3 All document and reports prepared by iDeCK and delivered to IP while rendering the Services shall become the property of IP, once the payment for the same has been received by iDeCK.

3.4 All intellectual property conceived, originated, devised, developed or created by iDeCK, its sub-contractors, agents or consultants, specifically for the purpose of rendering the Services, shall vest with iDeCK, unless otherwise agreed, between iDeCK and IP. IP as sole beneficial owner shall be entitled to use such intellectual property for the purposes relating to the project only.

4. AMENDMENTS

This Agreement and the Schedules together constitute a complete and exclusive understanding of the terms of the Agreement between the Parties on the subject hereof and no amendment or modification hereto shall be valid and effective unless agreed to by the Parties hereto and evidenced in writing.

IN WITNESS WHEREOF THE, PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED SEALED AND DELIVERED

For and on behalf of iDeCK by:

(Signature)

(Name)

(Designation)

Corporation
Limited

INFRASTRUCTURE DEV CORP (KAR) LTD.
BANGALORE

For and on behalf of IP by:

(Signature)

(Name)

(Designation)

In the presence of:

1) V. Satyanarayana, iDeCK

2)

Annexure I

FORMAT

Fee sharing memo between IP and iDeCK

Name of the Project/Assignment:

Components	**Total Fees (Rs.Lakhs)**
Total Assignment Fee (Excluding Service Tax)	
Less:	
Operating Expense	
Out of pocket Expense for IP	0.00
Out of pocket Expense for iDeCK	
Outsourcing Expenses	
Total Expense	0.00
Balance	0.00
IP (20%) of Balance	0.00
iDeCK (80%) of Balance	0.00

For and on behalf of IDFC Projects Limited	For and on behalf of iDeCK Limited

Fee sharing memo between IP and iDeCK

Name of the Project/Assignment: Concept Note for Chennai-Bangalore-Mumbai Industrial Corridor

Components	**Total Fees (Rs.Lakhs)**
Total Assignment Fee (Excluding service tax)	**34.00**
Less:	
Operating Expense	
Out of pocket Expense for IP	0.00
Out of pocket Expense for iDeCK	3.00
Outsourcing Expenses	
3D Animation	1.50
TECSOK-Karnataka Data	1.41
Total Expense	**5.91**
Balance	**28.09**
IP (20%) of Balance	**5.61**
iDeCK (80%) of Balance	**22.47**

For and on behalf of
IDFC Projects Limited

Place:
Date:

For and on behalf of
iDeCK Limited

For Infrastructure Development Corporation
(Karnataka) Limited

(A[illegible]y)
CFO & Company Secretary.

Assignment Name: TA Services for Construction of Houses for Police Personnel under PPP Module in Maharashtra for MSPH&WC		**Country:** India
Location within Country: Mumbai & Pune (Maharashtra)		**Professional staff provided by firm (Profile):** Financial & Legal Experts
Name of the Client: Maharashtra State Police Housing & Welfare Corporation (MSPH&WC)		**No. of staff : 6**
Address : Plot No 89-89A, Sir Pochkhanwala Road, Worli, Mumbai–560001		**No. of staff months :** 24
Start Date (month/year) : August 2016	**Completion Date :** Ongoing	**Approx. Value of Services (in INR):** 33.89 Lakhs
Name of associated consultants (if any):		**No. of months of Professional Staff provided by Associate Consultant:**

Name of Senior Staff Involved and Functions Performed:

Harshana Ghanwat	Team Leader cum Urban Specialist
K. Jayakishan	Project Advisor cum PPP Expert
Avinash Chenna	Financial Expert
Sumitha V. Rao	Legal & Bid Documentation Expert

Narrative Description of Project :

MSPH&WC constructs the buildings and quarters facilities to police personnel as per the requirement/demand and also as per the availability of funds. However due to huge gap in the increasing demand and its fulfillment, it has become very difficult for the Corporation to meet all the present as well as future requirements of the police force through its own/state budgets. The Urban Development Department of Government of Maharashtra has announced a scheme with which the new and reconstruction of dilapidated houses can be constructed exploiting the commercial use of the extra FSI available on such plots after meeting some conditions. Taking this provision into consideration of redevelopment on the public land, MSPH&WC has planned to construct Police Housing on few selected plots in Mumbai and Pune in the Phase 1. In this regard, MSPH&WC has appointed Infrastructure Development Corporation (Karnataka) Ltd. (iDeCK) as the Transaction Advisory Consultant to assist in financial feasibility and bid process management for construction of houses for Police Personnel at seven locations (3 sites in Mumbai and 4 sites in Pune) under PPP mode.

Description of Actual Services Provided by our Staff:

- **Assess the market potential for commercial exploitation of the identified land parcels**
- Undertaking financial feasibility studies for various possible business models for all seven projects.
- Structuring each of the project to be implemented under a PPP framework
- Providing transaction advisory services including
- ○ Preparation of RFQ cum RFP and Draft Agreements
- ○ Marketing the project and handling pre-bid meetings
- ○ Evaluation of Applications for Qualifications and proposals.
- ○ Negotiations with selected developer/technology provider and signing of agreement

Maharashtra State Police Housing
& Welfare Corporation Ltd.
Sir Pochkhanwala Road,
Worli, Mumbai - 400 030.

By E-mail / By Post
No.PHC/TB/PPP/2501/2016
Date :- 20 AUG 2016

To,

M/s. Infrastructure Development
Corporation (Karnataka) Ltd.
#9/7 KCN Bhavan, Yamunabai Road,
Madhavnagar Extension,
Off. Race Course Road,
Bangalore – 560001.

Sub:- Work order for appointment of consultant Transaction Advisor for carrying out the financial feasibility and Bid Process Management for construction of houses for Police Personnel under PPP Module.

Ref.:- 1) Your technical and financial bid open on 15/06/2016.
2) Police Housing Corporation letter no. PHC / TB / MUM / PPP / 1862 / 2016, dt. 18/06/2016.
3) Infrastructure Development Corporation (Karnataka) Limited letter no.iDeck/2016-17/383, dt. 22/06/2016.

Sir,

1. With reference to above, contract for "**Appointment of consultant (Transaction Advisor) for carrying out the Financial Feasibility and Bid Process Management for construction of houses for Police Personnel under PPP Module"** is awarded to your firm.

2. Your Offer amounting **Rs.33,89,200/-** (Rupees Thirty Three Lacs Eighty Nine Thousand Two Hundred Only) including all application taxes & other expenses is accepted by this office.

3. The Deliverables and Timelines will be applicable as mentioned in RFP document. Clause No.5, Page No. 6 (Photo copy is enclosed for ready reference)

4. The payment schedule will be applicable as mentioned in RFP document, Clause No. 13, Page No. 9 (Photo copy is enclosed for ready reference).

5. The work will be supervised and monitored by Maharashtra State Police Housing & Welfare Corporation Ltd., Mumbai.

6. I wish you success and hope for the timely completion of the captioned work.

Yours faithfully,

(K. L. Bishnoi)
Additional Director General of Police
/ Jt. Managing Director

O/C
AE, 20/8/16

Copy submitted to ACS, Home Department, 2nd Floor, Mantralaya, Mumbai 400015 for information please.

Copy for information and necessary action to :-

1. Chief Engineer, M.S.P.H. & W.C. Ltd., Mumbai.
2. Superintending Engineer, M.S.P.H. & W.C. Ltd., Mumbai.
3. Executive Engineer, M.S.P.H. & W.C. Ltd., Mumbai.
4. F.A.& CAO, M.S.P.H. & W.C. Ltd., Mumbai.

www.maharashtra.gov.in and its Computer Code No. is 201408211640204507. The selected consultant will report to the Authority or any committee constituted for the purpose.

5. Deliverables and Timelines

The following deliverables are to be submitted as part of this activity:

S. No.	Deliverable	Details	Within week/s of commencement
Phase I: Structuring and Feasibility			
1.	Inception Report	An inception report including the methodology and strategy, market soundings etc.	**Two(2) Week**
2.	Draft Report.	Financial feasibility assessment on the basis of analysis of requirement, market potential for commercial exploitation etc.	**Three(3) Week**
3.	Final Report	This will include revalidation of existing Feasibility Report & Business Model, Potential Developers views with recommendations and recommended Financial and Institutional Model including principles of Bidding.	**Four(4) Week**
Phase II: Bid Process Management			
4	Principles of Project	Include the principles of Bidding and Agreement	**Four(4) Week**
5	Request for Proposal (RFP) document including the Draft Concession/Contract Agreement	TA would draw up tender documents (RFP) and Draft Concession/Contract Agreements keeping the basic conditions same in both and shall be based on the guidelines of the Authority and with the objective of being transparent and meticulous in all respect.	**Seven(7) Week**
6	Pre-bid Meeting & replies to queries	Assist the Authority in holding pre-bid conferences and interacting with the potential partners and prepare the possible replies to the queries. Preparation of pre-bid meeting minutes.	Within **Three (3)** weeks of issue of RFP
7	Finalizing Concession/Contract Agreement & Signing of Concession/Contract Agreement with the successful bidder.	Assist the Authority in negotiation of Contract / Concession Agreement and other related project documentation required for finalizing the approval.	Within **Four (4)** weeks of RFP evaluation report approved by the Authority.

supplemental information sought by the Authority for evaluation of the Proposal.

11.3. Such misrepresentation/ improper response may lead to the disqualification of the Applicant. If the Applicant is the Lead Member of a consortium, then the entire consortium may be disqualified / rejected. If such disqualification / rejection occurs after the Proposals have been opened and the highest ranking Applicant gets disqualified / rejected, then the Authority reserves the right to consider the next best Applicant, or take any other measure as may be deemed fit in the sole discretion of the Authority, including annulment of the Selection Process.

12. Pre Proposal Conference

The date, time and venue of Pre-Proposal Conference shall be:

Date: 07/04/2016
Time: 1130 hrs
Venue:
Maharashtra State Police Housing & Welfare Corporation Ltd.
Plot No.89-89A,Sir Pochkhanwala Road, Worli, Mumbai 400030.

Email: gm@msphc.org

13. Payment schedule

A lump sum fee would be quoted by the consultant. The fee structure will be based on milestones. The selected T.A. would have to be with the Authority throughout all the alterations in the biding process till the final agreement is signed with prospective bidders. 75% of the total fee would be paid as per the deliverables corresponding to the milestones mentioned in the following table and **of the** remaining 15 % fee will be paid after the final contract agreement is signed **with the developer and balance 10 % will be paid after the financial closure.** T.A. is supposed to give a broad layout stating proposed land use, broad estimates, revenue projections etc. The T.A. is also supposed to give basis of the relevant calculations and its justifications.

S. No.	Deliverable	Payment
1	After approval of Inception Report	10 % of the total Amount
2	After approval of Final Report	25% of the total Amount
3	After approval of RFQ, RFP and Draft Concession/Contract Agreement	40% of the total Amount
4	**After Final contract of agreement signing with developer.**	**15% of the total Amount**
5	**After Financial Closure**	**10% of the total Amount**

Signature of Contractor No. of Correction Signature of Client

Project Name: Development of Urban Recreation Centre at Mysore, Karnataka		**Country:** India	
Project Location within Country: Mysore, Karnataka		**Professional Staff Provided by the firm:** **No of Staff:** Five	
Name of Client: Mysore City Corporation		**No. of Person Months :** Twelve	
Start Date (Month/Year): December 2009	**Completion Date (Month/Year):** December 2011	**Approx. Value of Services:** Rs. 32 Lakhs	**Project Cost:** approx. Rs. 200 crores
Name of Associated Firm(s) if any : Vistar Consultants, Bangalore		**No. of Person Months of Professional Staff provided by Associated Firm(s) :** Six	

Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed :

- D.T.V. Raghu Rama Swamy -Team Leader
- V. Sathyanarayana -Legal Expert
- Manjunath Sekhar -Financial Analyst
- Smitha -Bid Documentation
- Sumitha Rao -Legal Expert

Description of Project:
Mysore city located about 146 km southwest of Bangalore is a tourism hot spot within the State of Karnataka and also acts as a base for other tourist places in the vicinity of the city. With an objective to provide the increasing number of tourists with a variety of tourism facilities and to provide the residents with a wholesome family entertainment destination, Mysore City Corporation (MCC) had decided to develop an Urban Recreation Centre (URC) at Mysore on a Design-Build-Finance-Operate-Transfer (DBFOT) framework over an area admeasuring about 154 acres located adjacent to State Highway 33. The Project was proposed to be developed in an area of about 70 acres. iDeCK was assigned this project by MCC as a transaction advisor.

Detailed Description of Actual Services provided:

- **Site Survey and Market Survey**
- Based on the Client's requirements preliminary estimates of investment required during execution of the project were estimated, in line with the real estate development, macro-development trends.
- Financial Viability Analysis
- Preparation of Concept Plans
- Preparation of Project Structure Note
- Preparation of Bid Documents
- Evaluation of proposals
- Assistance in signing of agreement with the preferred bidder

ANNEXURE - 1

MYSORE CITY CORPORATION

No. MCC/SE/UEC/103/2009-10.

Office of the Commissioner
Dated: 05-10-09

To
Managing Director
Infrastructure Development Corporation (Karnataka) Limited
Infra house, 39 5th Cross
8th Main, RMV Extn.
Sadashivnagar, Bangalore - 560080

Dear Sir,

Sub:- Development of Urban Entertainment Centre at Mysore on Public Private Partnership framework.
Ref:- Your letter iDeck/2009-1/863 dated August 25, 2009

* * * * *

This is with reference to your proposal for developing in an urban entertainment center in Mysore on PPP basis.

As discussed, we are agreeable to your undertaking the advisory assignment by utilizing the Project Development Fund (PDF) vested with iDeCK by the State Government While Mysore City Corporation would pay Rs. 5 Lakhs towards your fees, the remaining amount may be drawn from the PDF. Your fee as well as success fee payable may be recovered from the identified bidder and replenished to PDF account.

we look forward to your favourable and early action. working on the assignment.

Thanking you.

Yours faithfully

Commissioner
Mysore City Corporation
Mysore.

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria[ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only2) (Lead Firm)**	-
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	1. Bangalore 2. Bengaluru 3. Bengaluru 4. Mysore, Hubli, Dharwad, Bellary, Shimoga 5. Bangalore, New Delhi, Doddaballapur and Faridabad
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	1. Various cities in India
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	1. Bahadurgarh, Bhopal, Bhubaneswar, Coimbatore, Delhi, Guntur, Hyderabad, Kolkata, Lucknow & Mumbai 2. Bihar, Delhi, Himachal Pradesh, Madhya Pradesh, Meghalaya, Odisha, Rajasthan, Tamilnadu and Uttar Pradesh 3. Bangalore 4. Cities of Uttar Pradesh 5. Delhi, Mumbai, Chhattisgarh, Andhra Pradesh, Maharashtra, Assam, West Bengal 6. Bihar, Odisha, Rajasthan, Uttarakhand, Uttar Pradesh

Assignment name: Energy Saving Study	Approx. value of the contract INR **11,13,750/-** (USD
Country: India Location within country:	Duration of assignment (months):
Name of Client :	Total N^{o} of staff-months of the assignment:
Address: Edelman India Pvt Ltd Vatika Triangle, 6th Floor Sushant Lok 1, Block A Gurgaon Haryana 122 022	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): Completion date (month/year):	N^{o} of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, Tilak Mukherji, SVSRK Bharadwaj
Narrative description of Project: The study was conducted in 10 locations viz. Bahadurgarh, Bhopal, Bhubaneswar, Coimbatore, Delhi, Guntur, Hyderabad, Kolkata, Lucknow & Mumbai with an overall Sample Size (SS) of 2650 respondents. Enterprises were also covered under the study and 50 office buildings in Bhubaneswar, Delhi, Hyderabad, Coimbatore & Mumbai were visited for the same. The study was conducted to map users' awareness, attitude, opinion and beliefs, perceptual barriers etc vis-a-vis energy saving and efficiency. Which in turn would lead Bureau of Energy Efficiency to a communication strategy to address the gap.	
Description of actual services provided by your staff within the assignment: Research instruments, Fieldwork, Analysis and Report Writing	

Assignment name: Rural Sanitation Opinion Research	Approx. value of the contract INR 14,39,457/- (USD 23444)
Country: India Location within country: Bihar, Delhi, Himachal Pradesh, Madhya Pradesh, Meghalaya, Odisha, Rajasthan, Tamilnadu and Uttar Pradesh	Duration of assignment (months): 12
Name of Client : Edelman India Pvt Ltd	Total N° of staff-months of the assignment:
Address: Edelman India Pvt Ltd Vatika Triangle, 6th Floor Sushant Lok 1, Block A Gurgaon Haryana 122 022	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): Feb 2015 Completion date (month/year): Jan 2016	N° of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, Tilak Mukherji, SVSRK Bharadwaj
Narrative description of Project: World Sanitation Program was developing a technical work and communications strategy to help ensure that rural sanitation becomes a priority issue and the national policies and strategies focus on sanitation outcomes by the first quarter of 2015. As part of the communication strategy development, WSP conducted stakeholder mapping to gather data on opinions and attitudes towards sanitation. The study was conducted by Sigma with Edelman for World Bank to provide basis and inputs for the communication strategy. The inputs were stakeholder's opinion and attitudes toward sanitation at the local and national level. A mix of qualitative (exploratory and in depth information) (n= 70) and quantitative methods (n=720) were used.	
Description of actual services provided by your staff within the assignment: Research instruments, Fieldwork, Analysis	

Assignment name: Social Audit of Public Services in Greater Bangalore	Approx. value of the contract (in current US$ or Euro): USD 24520 (Rs. 1111514)
Country: India Location within country: Bangalore	Duration of assignment (months): 6 months
Name of Client: Public Affairs Centre	Total Nº of staff-months of the assignment:
Address: Public Affairs Centre No.15, KIADB Industrial Area Bommasandra – Jigani Link Road Hennagara Post Bangalore 562 106	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): May 2011 Completion date (month/year): October 2011	Nº of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, Tilak Mukherji, SVSRK Bharadwaj
Narrative description of Project: Quantitative, Head of the Household, sample size 4700	
Description of actual services provided by your staff within the assignment: Research instruments, Fieldwork, Analysis and Report Writing	

Assignment name: Baseline Survey for Behaviors Change Management (BCM) Project	Approx. value of the contract (inr): INR 6041200 (USD 100687)
Country: India Location within country: Uttar Pradesh	Duration of assignment (months): 7 motnhs
Name of Client : Population council	Total Nº of staff-months of the assignment:
Address: Population council Ideas. Evidence. Impact. One Dag Hammarskjold Plaza New York New York 10017	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): October 2014 Completion date (month/year): April 2015	Nº of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, Tilak Mukherji, SVSRK Bharadwaj
Narrative description of Project: Objective of the study is to set a benchmark regarding the behavior of women regarding the health of child and mother. This a quantitative study and there are three arms Experimental Arm (SHG + Health Intervention), 1st Comparison Arm (SHG + No Health Intervention) and 2nd Comparison Arm (Non-SHG + No Health Intervention). Experimental arm is Intervention which includes HHs receiving health intervention and both the comparison arms are in control group which includes HHs not receiving health intervention. Study covers 438 GPs across 12 districts of UP. Sample sizes are 6250 Currently Married Women aged 18-49 years who delivered a child during last one year prior to the survey, 6250 HH heads or any adult member of the HH, 3120 SHG office bearers (president / secretary / treasurer of SHG), 390 Village Officers, 1920 Panchayat sarpanch / panchayat member / school teacher. The total sample size is 17930	
Description of actual services provided by your staff within the assignment: Research instruments, Fieldwork, Analysis and Report Writing	

Assignment name: Baseline Survey for Sport for Development Project, including KAP study	Approx. value of the contract (in current US$ or Euro): US$ 37391 (Rs. 17,94,772)
Country: India Location within country: Delhi, Mumbai, Chhattisgarh, Andhra Pradesh, Maharashtra, Assam, West Bengal	Duration of assignment (months): 11
Name of Client: UNICEF	Total N^o of staff-months of the assignment:
Address: UNICEF 73 Lodi Estate New Delhi 110 003	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): February 09 Completion date (month/year): January 10	N^o of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, Tialk Mukherji, SVSRK Bharadwaj

Narrative description of Project:

The objective of the study is to develop a contextual data base of relevant quantitative indicators against outcome targets in the logical frame work, understanding prevalent KAP among the target communities, analyse the current ‘policy framework’ and ‘programming’ in the context of the project, and identify any sport and development related activities of children, youth, teachers and coaches.
The study covered 6 states - Delhi, Maharashtra, Chhattisgarh, Andhra Pradesh, Assam and West Bengal. The target groups covered include children, parents, teachers, youth leaders, community leaders, media representatives, district/state officials et al. The coverage included 7080 structured interviews with parents, 40 FGDs among children, 30 case studies, in depth interviews, observation of about 200 schools etc.

Description of actual services provided by your staff within the assignment:

Research instruments, Fieldwork, Analysis and Report Writing

Assignment name: Program Unit Impact Assessment	Approx. value of the contract Rs. 2141550 (USD- 32054)
Country: India Location within country: Bihar, Odisha, Rajasthan, Uttarakhand, Uttar Pradesh	Duration of assignment (months):
Name of Client : PLAN India	Total No. of staff-months of the assignment:
Address: E-12, Kailash Colony, New Delhi, Delhi 110048	Approx. value of the services provided by your firm under the contract (in current US$ or Euro):
Start date (month/year): DEC 2016 Completion date (month/year): ON GOING	No. of professional staff-months provided by associated Consultants: Nil
Name of associated Consultants, if any: Nil	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Dr U V Somayajulu, KVR Subramanyam, SVSRK Bharadwaj

Narrative description of Project:
Plan India has been planning and implementing child centred development programs in partnership with grassroots NGOs, to improve the access to basic services and rights by poor and marginalised children and their communities.
The study was conducted by Sigma with for Plan India to assess the extent to which the child centred community development programs in the 5 program units (PUs) have improved the child rights situation in the respective Plan communities, and consequently identify and elaborate upon the outcomes and impacts they have made in the lives of girls and boys.
A mix of qualitative (in depth interviews, Key informant interviews and focused group discussion) (n= 76 FGDs and 133 IDIs) and quantitative methods (n=1000) were used.
The qualitative information was gathered from 15 different stakeholders (Parents, teachers, HM, SMC members, PRI members, SHGs, CBOs, ANMs, AWWs, Children, adolescent, youth, networks, program staff and program head) and quantitative information was collected from the parents of the children who were the part of the programs during 2011-16

Description of actual services provided by your staff within the assignment:

Desk Research, Research instruments, Fieldwork, Analysis, PPT, Report

APPENDIX 6A

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name: Conducting primary surveys for "Will Bengaluru become smart or livable?"	**Value of the contract (in current INR):** 3,43,500
Country: India **Name of City/ Cities:** Bangalore	**Duration of assignment (months):** 6
Name of Client: Institute for Social and Economic Change, outsourced the study to Public and Social Research Centre	**Total No of staff-months of the assignment:** 6 months
Address: #380/5 opp KEB, Chandapura., Anekal taluk, Bangalore 560099	**Value of the contract per city (in current INR)** 3,43,500:
Start date (month/year): **Completion date (month/year):**	**August 2016-February 2016**

Narrative description of Project:

The PSRC conducted primary surveys of 1,500 households in Bangalore for the ISEC project "Will Bengaluru become smart or livable?" to answer various questions regarding socio-economic characteristics, commute time, distance to work, their reservation wages, and public services.

AGREEMENT

This Agreement is entered into on this 1st day of March Two Thousand and Sixteen (1-03-2016).

The Institute for Social and Economic Change (ISEC), Dr. V.K.R.V. Rao Road, Nagarbhavi, Bangalore -560072, hereinafter called the 'ISEC', which expression shall, unless repugnant to the content herein, includes its successors and permitted assigns.

And

Public and Social Research Centre , Bengaluru, #380/5 opp KEB, Chandapura,, Anekal taluk, Bangalore 560099, India, Herein referred to as **'PSRC'** which expression shall, unless repugnant to the content herein, includes its successors and permitted assigns.

Whereas the ISEC has signed an Agreement with Indian Council for Social Science Research, New Delhi, for a research project titled, **"Will Bengaluru become Smart or Livable? ".**

It is agreed between the parties hereto to enter into a Formal Agreement regarding the terms and conditions as mentioned herein below:

1. Recital Clause

The Institute for Social and Economic Change is desirous of collaborating with PSRC as part of the research project **""Will Bengaluru become Smart or Livable? "**

2. Scope of Work

The major task under this study is to facilitate and carry out a field survey among the households across various zones of Bengaluru city. The questionnaire translation, selection of investigators, their training, field level data collection, data entry in the prescribed format, scrutiny, validation, are part of the task. It would be the sole responsibility of PSRC to ensure that the data collected is of high quality through proper monitoring and supervision.

The total number of interviews will be 1,500 and will be indicated across specific zones of Bengaluu city.

Questionnaire

There are various themes across the questionnaires to be administered during the survey. It covers themes on (1) Socio-economic profile of the household (2) Education (3) Transportation and Commute (4) Health (5) Migration (6) Provision of Basic Services (7) Perceptions. The questionnaire will be around 25 pages..ISEC will be giving to PSRC the questionnaire to be administered, once its finalized.

Team Composition

The field enumeration will have one team from PSRC. ISEC will have an assigned person to overlook and monitor the survey. It is expected that the field work will be completed over a period of three months. Considering training and field practice etc, three months of time is provided for the service of the field investigators. In the mean time, the field supervisor has to ensuire that the data is being entered simultaneously , data validation, cleaning, table generation is taken up and completed within a period of six months..

3. Budget

ISEC will pay PSRC Rs.3,43,500 only including service tax for the services described above.

In words: Three lakhs forty three thousand five hundred only/-

Payment will be based on the following lines

It is hereby agreed that ISEC will transfer the amount based on the activities going to be undertaken at PSRC and shall broadly be deposited as per the schedule/ milestones indicated below.

Work to be Done	% Amount Released
Signing of Agreement	15%
Beginning of Field Survey	25%
On Completion of 50% Field Survey	20%
On Completed Field Survey	20%
On Submission of clean, verified and tabulated data	20%

4. Term

The term of this Agreement is from **15 March 2016 to August 31, 2016.** The entire work is expected to be completed by this date. In the event of the project not being completed within the time frame mentioned hereinabove, the same may be extended for a further period on such terms and conditions as will be mutually agreed by and between the parties in writing.

5. Reporting Requirement

PSRC shall provide ISEC with periodic reports on the progress, activities, achievements and results of the project, as agreed between the parties. PSRC shall maintain a separate ledger account under its financial rules and regulations for the grant receipt and administration of the funds disbursed to it from ISEC for the above project. PSRC assumes full programmatic and financial accountability for the funds disbursed to it.

PSRC, if so required, shall facilitate the financial and operational audit of the project by persons so designated by ISEC. The PSRC shall make available without restriction all relevant financial and operational information, as well as certified statement of account, relating to the project to persons so designated by ISEC and provide satisfactory explanations to all queries arising in connection herewith.

6. Force Majeure

Neither party shall be considered in breach of this Agreement if there is default in performing its obligations hereunder other than those which shall observe any or all of the terms of this Agreement be unperformed from causes beyond the reasonable control of such party, such as but not limited to, acts of God, civil or military action, acts of the national enemy, war, riots, civil disturbances, insurrections, accidents, explosions, fires, earthquakes, floods, epidemics, acts of government, its agencies or officers, or any other legitimate cause beyond the reasonable control of the parties. The party, whose performance is affected or is likely to get affected thereby, shall notify the other party within six (6) weeks of the occurrence of such cause, and the time allowed for performance by the affected party will be extended for the duration of such cause. Parties agree to meet and take remedial action or in the event no remedial action is possible for a mutually acceptable termination of the service.

7. Termination

Any party hereto shall be entitled to terminate this Agreement, by giving a written notice to the other party specifying the breach of terms and conditions of this Agreement and requiring it to be remedied, if such breach remains un-remedied at the end of a period of 30 days following the service of such written notice or as per further mutually agreed period thereon.

When this Agreement is terminated by efflux of time or otherwise each party shall return to the other party all confidential documents or any writing containing such confidential information, which has been shared to aid the project or as required by the project.

8. Confidentiality

It is agreed that each party shall act in confidence with other and shall not disclose and give benefit thereof to any other party. Confidential information would include:

i. The terms of agreement
ii. Business Policies and Practices of the parties or knowledge received by the party, which are required to be kept confidential
iii. Household surveys and Statistics

Manohar

9. Escalation Procedure

Should there be a dispute between the parties, both the parties will use their reasonable endeavours to settle the matter. Any such dispute, which has not been settled between the Project Managers of both the ends within 15 days of the matter being raised by one of the attention of the other, may be escalated to the next level by notices in writing. If, however, the dispute remains unresolved, within a further period of two months of such notice, either party may pursue any remedy it may be legally advised, including the right to terminate the Agreement.

10. Waiver

Failure to take action for a breach of any term of this Agreement by one party shall not be treated as a waiver by the party and the waiver shall be treated as valid only if it is given in writing.

11. Communication

Any notice to be served on either of the parties by the other shall be in English and be sent by registered post or electronic mail or hand-delivery at the addresses mentioned herein below:

The Institute for Social and Economic Change (ISEC)
Dr. V.K.R.V. Rao Road, Bangalore-560072

Public and Social Research Centre (PSRC)
#380/5 opp KEB, Chandapura,, Anekal taluk, Bangalore 560099

12. Entire Agreement

This Agreement contains the Entire Agreement between the parties which would include all the Annexures attached hereto and shall be amended or modified only by written instrument signed by both the parties.

13. Governing Law

This Agreement shall be governed by the Laws of India and in the event of dispute and/or difference arising out of or in connection with the terms of this Agreement, the Court of Bangalore shall have the exclusive Jurisdiction in respect thereof.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year herein above written.

SIGNED, SEALED AND
DELIVERBY BY

The Institute for Social and
Economic Change, (ISEC)
Through its Authorized Signatory

(Prof. Manohar Yadav)
Designation: Registrar
Date: 1-03-2016

Registrar
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

SIGNED, SEALED AND
DELIVERBY BY

Public and Social Research Centre
(PSRC)
through its Authorised Signatory

For PUBLIC & SOCIAL RESEARCH CENTER
Managing Trustee

(Uday Kumar G)
Designation: Project Manager
Date: 1-03-2016

Assignment Name Pathways to Sanitation: Growing Challenges and Access to Urban Poor – *A Study of Bangalore City,* **S. Manasi** sponsored by Human Settlements Management Institute, New Delhi.	**Value of the contract (in current INR):** 13,26,000
Country: India **Name of City/ Cities:** Bengaluru	**Duration of assignment (months):** 12 months
Name of Client: HUDCOs Human Settlement Management Institute, New Delhi	**Total No of staff-months of the assignment:** 4 Research Staff 6 Survey staff
Address: HUDCO House, Lodhi Road, New Delhi - 110003	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	Jan 2014 - June 2015

Narrative description of Project:
Bengaluru city faces severe challenges in providing sanitation infrastructure for the urban poor. The study was surveyed 400 respondents across twenty slums, 8 zones through survey instruments and FGDs to understand the problems with respect to toilet access and usage. Problems reiterate that although several interventions are made open defecation remains a challenge largely due to technical problems, lack of space and behavioural problems. Study provides some options in technologies and improved governance based on study findings and reviewed case studies.

डॉ. एस. के. गुप्ता
कार्यकारी निदेशक (प्रशिक्षण)
Dr. S. K. Gupta
Executive Director (Training)

हडको-ह्यूमन सैटलमेंट मैनेजमेंट इंस्टीट्यूट
हडको हाउस, लोधी रोड, नई दिल्ली – 110 003
Hudco's Human Settlement Management Institute
HUDCO House, Lodhi Road, New Delhi-110 003
दूरभाष / Tel. : 23408611, 24367834 (दूरभाष / Direct)
ईपीएबीएक्स / EPABX : 24369534, 24308600 फैक्स / Fax : 24365292
ई–मेल / E-mail : edthsmi2013@gmail.com, skgupta102003@gmail.com

हडको
hudco

हाउसिंग एण्ड अर्बन डेवलपमेंट कॉर्पोरेशन लिमिटेड
(भारत सरकार का उपक्रम)
आई. एस. ओ. 9001:2008 प्रमाणित कम्पनी
Housing and Urban Development Corporation Limited
(A Government of India Enterprise)
AN ISO 9001:2008 CERTIFIED COMPANY
CIN : U74899DL1970GOI005276

NO. HSMI/R&T/Res.Proposal/2013-14/ 3606

4th August, 2014

To
Group Captain (Retd.) Bhasker Kumar Das
Registrar
Institute for Social and Economic Change
Nagarabhavi
Bangalore 560072
E-mail: registrar@isec.ac.in

Sub: Grant for Undertaking Research under HSMI / HUDCO R&D Plan (Award Letter)

Ref.: Your letter dated 7/05/2013, regarding research proposal on 'Pathways to Sanitation - Growing Challenges and Access to the Urban Poor -A Study of Bangalore City'.

Sir,

With reference to above, we are pleased to communicate the approval of the competent authority for the following:

1.	Research Study to be undertaken (title)	: Pathways to Sanitation - Growing Challenges and Access to the Urban Poor – A Study of Bangalore City
2.	Period / duration of research	: 12 Months
3.	Progress reporting	: Quarterly
4.	Amount of grant	: ₹13,22,500
5.	Stages of release of grant funds	:

a. First instalment – 40% of the total approved budget for meeting faculty costs and expenditure for data collection, field work etc.

b. Second instalment – upto 40% of the total study costs on submission and acceptance of draft report together with Utilisation Certificate and expenditure statement. The draft report (data analysis, preliminary findings and results) will be presented in the research seminar / conference to be organised by HSMI before acceptance. The Draft Report is to be submitted within the specified time schedule as prescribed in the research study plan approved. 4

c. Third instalment – Balance amount (20%) of the total study costs on submission and acceptance of final report (to be submitted within the specified time schedule as prescribed in the research study plan approved) together with Utilisation Certificate and expenditure statement.

AO
~~DK~~ Manasi
11/8/14

6. Submission of utilisation and use of grant funds:

The grant shall be exclusively utilised for the purpose for which it is sanctioned as per prudent financial rules and regulations of the institute and Utilisation Certificate needs to be submitted.

4/8/2014

7. Re-call of grant fund in case of non-utilisation:

In case of unsatisfactory progress in research study the institution shall be issued recall notice by HUDCO in writing. The institute shall be required to pay HUDCO without any demur the amount or amounts specified in the recall notice within three months period after recall notice.

8. Right to research work:

HSMI / HUDCO shall have full rights to use the research work submitted by the Researcher / Institution for academic/training or any other purpose. However researchers are encouraged to publish the results of research. While doing so acknowledgement to the effect that the work had been supported and undertaken jointly with HSMI / HUDCO should be made in the research paper(s) published. HSMI / HUDCO faculty should be acknowledged in similar type of other published work/press reports.

9. Dispute resolution:

The CMD, HUDCO and Director / Head of Institution forwarding application shall jointly resolve any dispute(s) which shall be binding on all.

You are requested to kindly acknowledge the receipt of this letter and furnish the final research plan of this study along with acceptance and endorsement of the Institution (in the enclosed format) to carry out the study.

Thanking you,

Yours sincerely,

Dr. S.K. Gupta

Assignment Name Land Policy and Administration, supported by The World Bank, **S. Manasi**; Prof. Nadadur; Prof. P.G. Chengappa; Prof. N. Sivanna	**Value of the contract (in current INR):** 35 lakhs
Country: India **Name of City/ Cities:** Mysore, Hubli, Dharwad, Bellary, Shimoga	**Duration of assignment (months):** 12 months
Name of Client: World Bank	**Total No of staff-months of the assignment:** 15
Address:	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	2012 – 2013

Narrative description of Project:
Effective land governance has a been long pending initiative in India. The challenges posed by the recent global developments, especially rapid urbanization, unregulated migration to urban centres, ineffective land management practices, institutional fragmentation, decentralized reforms and lacuna in the legal system to guarantee land titles, have increased the complexity of land administration. It is with the intention of addressing these problems that the UPOR has been initiated in Karnataka. It is expected to promote efficiency in service delivery and enable citizen interface with the digital management of land records throughout the state. Our study identified the issues at the field level across the four cities and provided suggestions for better implementation.

CONFIDENTIAL

The World Bank Group
International Bank for Reconstruction and Development
International Finance Corporation
Multilateral Investment Guarantee Agency
International Centre for Settlement of Investment Disputes
International Development Association

Contract
7160273

Page: 1 of 2

The Consultants:
Institute for Social Economic Chang
Nagarbhavi PO
Bangalore 560 072
India

Vendor No: 8102
Attn: MANASI SESHAIAH
Telephone No: 910803217010

The Client:
The World Bank
1818 H Street, N.W.
Washington, DC 20433

Contact: Pauline D. Kokila

Email: pkokila@worldbank.org

Phone: 202-473-3716

This CONTRACT (hereinafter called the "Contract") is entered into between the member of the World Bank Group named above (hereinafter called the "Client") and the "Consultants".
WHEREAS
(a) the Client has requested the Consultants to provide certain consulting services ("the Services") as defined in the General Conditions of Contract attached to this Contract;
(b) the Consultants, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;
NOW THEREFORE, the Parties hereto agree as follows:
1. The following documents shall be deemed to form an integral part of this Contract:
(a) The General Conditions of Contract
(http://go.worldbank.org/3O3Y65JQ60);
(b) The Special Conditions of Contract (see below);
(c) Appendix A: Description of the Services/Terms of Reference.
2. The mutual rights and obligations of the Client and the Consultants shall be as set forth in the Contract, and in particular:
(a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and
(b) The Client shall make payments to the Consultants in accordance with the provisions of the Contract.

Description of Services:
Land Policy and Administration (See TOR attached herewith)

Special Conditions:
Amendments of and Supplements to, Clauses in the General Conditions of Contract.

Solicitation No: SS

Commencement of Services:
The date for commencement of services is: September 01, 2011

Expiration of Contract:
The time period shall be up to and including: June 30, 2012

Contract Price:
The maximum amount in the contract currency is: USD 49,900.00

Remuneration:
The remuneration for this contract is:Lumpsum Inclusive of all Expenses

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Contract
7160273

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Terms and Conditions of Payment:
Payments shall be made according to the following schedule:
10% upon signature of the contract 4,990.00 USD
Upon delivery of BKM outputs (i) and (ii) 11,227.00 USD
Upon delivery of UPOR outputs (i), (ii), and (iii) 11,227.00 USD
Upon delivery of BKM (iii) and (iv) and UPOR (iii) 11,228.00 USD
Upon delivery of BKM outputs (v), (vi), and UPOR output (iv) 11,228.00 USD

The Authorized Representatives:
For the Client: Mr Klaus W. Deininger (kdeininger@worldbank.org)
For the Consultants: MANASI SESHAIAH (manasi@isec.ac.in.)

Description of Personnel:
The Consultants' Key Personnel and Subconsultants who will provide the Services are:
1 Deshpande, Chengappa, Sivanna, Manasi.

IN WITNESS WHEREOF, the Parties have caused this Contract to be signed in their respective names.

For and on behalf of the Client

Name of Authorized Representative

Title

Signature

Date: August 31, 2011

For and on behalf of the Consultants

Authorized Representative

MANASI S.
Authorized Signature

Manasi S
Date
21 9 2011

Assignment name: A stake holder assessment of the implementation of the Right to Public Service (RTPS) Act in India	**Value of the contract (in current INR):** Rs.50,83,000/-
Country: India **Name of City/ Cities:** National Level	**Duration of assignment (months):** 5 months
Name of Client: Public Affairs Centre	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): **Completion date (month/year):**	26/05/2014 to 26/10/2014

Narrative description of Project: For collecting data at household level of 3 states i.e., Delhi, Madhya Pradesh and Karnataka for a stake holder assessment of the implementation of the Right to Public Service (RTPS) Act in India. The IMRB project team undertook fine-tuning the questionnaires and oversaw the field team for carrying out fieldwork in a timely manner and providing us with the data base. ***This paper assesses performance of RTPS Acts based on primary surveys fielded in the states of Delhi, Madhya Pradesh (MP) and Karnataka.*** The three states were selected because of their regional differences and implementation practices. Each of these states has guaranteed citizens time-bound and standardized service delivery–in one form or another–on paper. Have these states been able to deliver in practice?

Has their *de jure* intention to improve service delivery accompanied by a *de facto* improvements in outcomes? While establishing causation is beyond the scope of our current study, the following sections draw on primary survey data, focus group discussions, and interviews with officials, and review of implementation guidelines to answer these questions through benchmarking service delivery standards and analyzing the extent to which the states were successful in satisfactorily delivering services, and documenting their experiences. The study examined the preparatory activities for implementation undertaken by the service providers and key decision makers involved, user awareness of their rights, the ease of navigating the application process, the use of middlemen in completing this process, the issue of printed receipts as acknowledgement, compliance by providers with the stipulated timelines, and user satisfaction with the entire process.

CONTRACT FOR "A stake holder assessment of the implementation of the Right to Public Services (RTPS) Act in India"

This CONTRACT (hereinafter, together with all Appendices attached hereto and forming an integral part hereof, called the Contract) is made on 26th May, 2014 between, on the one hand, Public Affairs Centre, India, with its office at No.15, KIADB Industrial Area, Bommasandra - Jigani Link Road, Bangalore - 562 106(hereinafter referred to as Contractee) and on the other hand IMRB International, a division of Hindustan Thompson Associates Private Limited, a company registered under the Companies Act VII of 1913 with registered office at 4th Floor, Peninsula Chambers, Ganpatrao Kadam Marg, Lower Parel, Mumbai -400013 and office at 8, Balaji Estate, Guru Ravidass Marg, Kalkaji , New Dehli-110019 (hereinafter referred to as Contractor)".

WHEREAS

Public Affairs Centre, India has requested the Contractor to provide certain consulting services required for the Project hereinafter called a **stake holder assessment of the implementation of the Right to Public Services (RTPS) Act in India** as defined in Annexure I (Technical and Financial proposal).

The Contractor, having represented to Public Affairs Centre, India that they have the required professional skills, personnel and technical resources, have agreed to provide the services on the terms and conditions set forth in this Contract:

NOW therefore the parties hereby agree as follows:

1. GENERAL PROVISIONS

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) Applicable Law means the laws and any other instruments having the force of law in the Government of India, as they may be issued and in force from time to time;

(b) Contract means this Contract between Public Affairs Centre, India and IMRB International, a division of Hindustan Thompson Associates Private Limited

(c) Government means the Government of India/ State Government;

(d) "Local Currency" means the Indian Rupees;

(e) Personnel means persons hired by IMRB International, a division of Hindustan Thompson Associates Private Limited
or by any sub contractor employees and assigned to the performance of the service or any part thereof;

(f) Party means Public Affairs Centre, India or the IMRB International, a division of Hindustan Thompson Associates Private Limited, as the case may be;

(g) Project means to conduct "**a stake holder assessment of the implementation of the Right to Public Services (RTPS) Act in India**".

(h) Services means the work, as described in Annexure I, to be performed by the Contractor pursuant to this Contract for the purposes of the Project,

(i) Starting Date means the date referred to in Clause 2.3. hereof;

(j) Third Party means any person or entity other than, Public Affairs Centre, India and the Contractor;

1.2 Relation between the Parties

Nothing contained herein shall be construed as establishing a relation of master and servant or of agent and principal as between Public Affairs Centre, India and the Contractor. The Contractor, subject to this contract, has complete charge of personnel performing the services and shall be fully responsible for the services performed by them on their behalf hereunder.

1.3 Law Governing Contract

This contract, its meaning and interpretation and the relation between the parties shall be governed by the applicable law.

1.4 Language

This contract has been executed in the English Language, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this contract.

1.5 Location

The services shall be performed at such locations as are specified in Annexure I.

1.6 Authorized Representatives

Any action required or permitted to be taken, and any document required permitted to be executed under this contract, may be taken or executed;

(a) On behalf of Public Affairs centre, India by Mr. R. Suresh, Director or his designated representative;

On behalf of the IMRB International by Mr. AV Surya, Vice President or his designated representative;

(b) The Contractor shall liaise with Mr. R. Suresh on all contract management issues related to this contract. All communications on approvals, payment claims, information and technical assistance required under this contract will be addressed to him.

2. COMMENCEMENT, DURATION, COMPLETION,

2.8.1 By Public Affairs Centre, India

Public Affairs Centre, India may, by not less than thirty (30) days written notice of termination to the contractor, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause, terminate this contract;

(a) If the contractor fails to remedy a failure in the performance of their obligations here under, as specified in a notice of suspension pursuant to clause 2.7 herein above, within thirty (30) days of receipt of such notice of suspension or within such further period as Public Affairs Centre, India may have subsequently approved in writing;

(b) If the contractor becomes insolvent or bankrupt or enter into any agreement with their creditors for relief of debt or take advantage of any law for the benefit of the debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the contractor fails to comply with any final decision reached after discussions with Public Affairs Centre, India;

(d) If the contractor submits to Public Affairs Centre, India a statement which has a material effect on the rights, obligations or interests of Public Affairs Centre, India and which the contractor know to be false;

(e) If, as the result of Force Majeure, the contractor is unable to perform a material portion of the services for a period of not less than sixty (60) days or

(f) If Public Affairs Centre, India, in its sole discretion and for any reason whatsoever, decides to terminate this contract.

2.8.2 By the contractor

The contractor, may by not less than thirty (30) days written notice to Public Affairs Centre, India, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (c) of this Clause, terminate this contract:

(a) if Public Affairs Centre, India fails to pay any money due to the contractor pursuant to the contract and not subject to dispute pursuant to clause 8 hereof within forty-five (45) days after receiving written notice from the contractor that such payment is due; the payment becomes due only upon approval by the authorized representative of Public Affairs Centre, India;

(b) if Public Affairs Centre, India is in material breach of its obligations pursuant to this contract and has not remedied the same within forty-five (45) days (or such longer period as the contractor may have subsequently approved in writing) following the receipt by Public Affairs Centre, India of the contractor's notice specifying such breach.

2.8.3 Cessation of Rights and Obligations

MODIFICATION AND TERMINATION OF CONTRACT

2.1 Effective Date of Contract

This contract shall come into force from the date of signature.

2.2 Commencement of Service

The Contractor shall begin carrying out the services immediately if possible and not later than on a date (The "Starting Date") 7 days after the signature of the contract, or on such later date as the Parties may agree in writing.

2.3 Duration and starting date

Duration of the Contract	-	2 months
Starting date of the Contract	-	26/ 05/2014

2.4 Expiration of Contact

Unless terminated earlier pursuant to Clause 2.8 hereof, this contract shall terminate when, pursuant to the provisions hereof, the services have been certified by Public Affairs Centre, India to have been satisfactorily completed and the payments have been made.

2.5 Modification

Modification of the terms and conditions of this contract, including any modification of the scope of the services, change of activity key personnel, activity dates etc., may only be made by written agreement between the parties.

2.6 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under this contract in so far as such inability arises from an event of Force Majeure, provided that the party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this contract.

2.7 Suspension

Public Affairs Centre, India may, by written notice of suspension of the contractor, suspend all payments to the contractor hereunder if the contractor fails to perform any of their obligations under this contract, including the carrying out of the services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the contractor to remedy such failure within a period not exceeding thirty (30) days after receipt by the contractor of such notice of suspension.

2.8 Termination

3.1.2 Law Governing Services

The contractor shall perform the services in accordance with the Applicable Law and shall take all practicable steps to ensure that the Personnel and agents of the contractor, comply with the applicable law.

3.2 Liability of the contractor

The contractor shall be liable to Public Affairs Centre, India for the performance of the services in accordance with the provisions of this contract.

3.3 Contractor's Actions Requiring Public Affairs Centre, India's prior written approval

Any deviation from the proposal (Annexure I) needs Public Affairs Centre, India's prior written approval.

4 Contractor Personnel

4.1 The contractor shall employ and provide such qualified and experienced key personnel as are required to carry out the services.

4.2 Removal and/ or Replacement of key personnel

If, for any reason beyond the reasonable control of the contractor, it becomes necessary to replace any of the Key Personnel, the contractor shall forthwith provide as a replacement a person of equivalent or better qualifications with the prior approval of Public Affairs Centre, India

5. Obligations of Public Affairs Centre, India

5.1 Support of Public Affairs Centre, India

Public Affairs Centre, India shall make available to the contractor and its personnel, for the purposes of the services, any relevant data, information or other reasonable support that may be available readily.

5.2 Payment

In consideration of the Services performed by the contractor under this contract Public Affairs Centre, India shall make to the contractor such payments and in such manner as is provided by Clause 6 of this contract.

6. Contract Value

6.1 An all inclusive cost of the services excluding service tax and ceiling contract value payable in Indian rupees is Rs. (43,80,000). The contract is a total fee contract.

6.2 Payment Disbursement cycle

The payment, in INR value as per the prevalent conversion rate on the date of raising of invoice shall be made as follows:

Upon termination of this contract pursuant to clause 2.8.1 or 2.8.2 hereof, or upon expiration of this contract pursuant to clause 2.4 hereof, all rights and obligations of the parties hereunder shall cease, except

(a) such rights and obligations as may have accrued on the date of termination or expiration; and

(b) any right which a party may have under the Applicable Law.

2.8.4 Cessation of Services

Upon termination of this contract by notice of either party to the other pursuant to Clause 2.8.1 or 2.8.2 hereof, the contractor shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditure for this purpose to a minimum. The documents prepared by the contractor and the data furnished by Public Affairs Centre, India shall be handed over to Public Affairs Centre, India.

2.8.5 Payment upon Termination

Upon termination of this contract pursuant to Clauses 2.8.1 or 2.8.2 hereof, Public Affairs Centre, India shall make the payments to the contractor of remuneration pursuant to Clause 6 hereof for service satisfactorily performed and approved prior to the effective date of termination, unless the contractor is under obligation of clause 2.7.

2.9 Ownership (and use rights) of products

Public Affairs Centre, India will own all output, materials, tools, results, data and reports generated under this Agreement and can use these materials for any purpose.

Public Affairs Centre, India shall have the right to publish and disseminate the Study, study results, tools, and any other outputs or materials from the work under this agreement and may also use tools and materials for other purposes. Public Affairs Centre, India will give IMRB International the option of receiving any acknowledgement in any publication for its contributions to the Study.

3. OBLIGATIONS OF THE CONTRACTOR

3.1 General

3.1.1 Standard of Performance

The contractor shall perform the services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices. The contractor shall always act, in respect of any matter relating to this contract or to the services, as faithful advisers to Public Affairs Centre, India and shall at all times support and safeguard Public Affairs Centre, India legitimate interests in any dealings with Third Parties.

The contractor shall permit Public Affairs Centre, India's representative and other experts to monitor the execution of the project at every step at their discretion.

Activities	Break up of payments
Signing the contract	30%
Completion of field training	30%
Completion of fieldwork	20%
Submission of deliverables	20%

6.3 The contractor shall submit claim bills (in soft and hard copies) in duplicate to the Liaison Office (Director) of Public Affairs Centre, India, based in Bangalore.

6.4 Public Affairs Centre, India shall cause the payment of the contractor periodically as given in schedule of payment clause 6.2 within twenty days after the receipt by the Contractor claims of payment in the form of invoices and other relevant documents from the contractor.

6.5 The final payment under this clause shall be made only after the final deliverable is deemed satisfactory by Public Affairs Centre, India. Final payment will be made by Public Affairs Centre, India within ninety (90) calendar days after receipt of the final report unless within such ninety (90) day period, contractee gives written notice to the contractor specifying in detail the deficiencies in the services, or the final report or final statement. The contractor shall thereupon promptly make any necessary corrections, and upon completion of such corrections, the foregoing process shall be repeated. Any amount, which contractee has paid or caused to be paid in accordance with the clause in excess of the amounts actually payable in accordance with the provisions of this contract, shall be reimbursed by the contractor within thirty (30) days after receipt of notice thereof.

7. FAIRNESS AND GOOD FAITH

7.1 Good Faith

The parties undertake to act in good faith with respect to each other's rights under this contract and to adopt all reasonable measures to ensure the realization of the objectives of this contract.

7.2 Operation of the contract

The parties recognize that it is impractical in this contract to provide for every contingency which may arise during the life of the contact, and the parties hereby agree that it is their intention that this contract shall operate fairly as between them, and without detriment to the interest of either of them, and that if during the term of this contract either party believes that this contract is operating unfairly, the parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this clause shall give rise to a dispute subject to arbitration in accordance with Clause 8 hereof.

8. Amicable settlement

The parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this contract or the interpretation thereof as per the Indian Arbitration and Conciliation Act 1996. Any dispute between the parties as to matters arising pursuant to this contract which cannot be settled amicably will be decided by the committee constituted by an Arbitrator accepted by both Public Affairs Centre, India and the contractor.

9. Anti - Corruption Provision:

No offer, payment, consideration, or benefit of any kind, which constitutes an illegal or corrupt practice, shall be made, either directly or indirectly, as an inducement or reward for the award of this contract. Any such practice will be grounds for canceling the procurement, terminating an offer or consideration for award, or terminating the award of the contract and for such other additional actions, civil and or criminal, as may be applicable.

IN WITNESS WHEREOF, the parties hereto have caused this contract to be signed in their respective names as of the day and year first above written.

For and on behalf of Public Affairs Centre, India
BY

Name: R. Suresh
Title: Director
Public Affairs Centre, Bangalore

For and on behalf of IMRB International
Name and title: Mr. AV Surya (Vice President)/ Harprakash Madaan (Finance head-Delhi)
IMRB International, a division of Hindustan Thompson Associates Private Limited

Assignment name: The New Economic Context and changing migration patterns in India	**Value of the contract (in current INR):** USD 7500
Country: Name of City/ Cities: Bangalore, New Delhi, Doddaballapur and Faridabad	**Duration of assignment (months):** 12 months
Name of Client: Global Development Network	**Total No of staff-months of the assignment:**
Address: GDN, Second floor, West Wing, ISID Complex Vasant Kunj Institutional Area New Delhi 110070	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	

Narrative description of Project:
The study analyzed the migration patterns in 4 cities across India, namely 2 metro cities; Delhi and Bengaluru and two peripheral towns; Faridabad and Dodballapur respectively. Main objectives of the study were to study the changes in internal migration trends in India, from distress to aspiration and metropolitan to small town migration. Identify the complex factors and their inter linkages that contribute to migrant families capabilities of moving out of poverty. Review existing urban planning, policy and legislative guidelines that have implications for migration with sustainable poverty reduction. The study finds that most migrants are young people, in the age group of 21 and 30 years. Aspiring Migrants (AMs) are younger to Distress Migrants (DMs), the age gap being 2 years. Typically men migrate to cities with just 1 in every 10 migrants being female both among AMs and DMs. The study emphasizes on the need to track the migrant population in a more systematic manner to frame suitable urban policies to gear up the social and economic infrastructure requirements of the cities.

Description of actual services provided by your staff within the assignment:

Review of literature, Survey of about 2000 migrants (in all the four cities together) processed, analysed the data and report was generated.

INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
ಸಾಮಾಜಿಕ ಮತ್ತು ಆರ್ಥಿಕ ಬದಲಾವಣೆಯ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
Dr. V.K.R.V. Rao Road, Nagarabhavi P.O., Bengaluru - 560 072.
Fax : 91-80-2321 1798 / 2321 7008; E-mail : director@isec.ac.in, mgchandrakanth@gmail.com; Website : www.isec.ac.in

Professor M G Chandrakanth
Director

Phone : 91-80-2321 7010 (Direct)
91-80-2321 5468 (Extn. 201)
Mobile : 094494 86018

Ref: DPA/120/2017 29th May 2017

This is to certify that the following projects have been undertaken by the faculty of Institute for Social and Economic Change, Bengaluru.

Sl. No.	Project Title	Sponsors	Position	Period
1	Project No. CRUA/2: Pathways to Sanitation: Growing Challenges and Access to Urban Poor – *A Study of Bangalore City*	Human Settlements Management Institute, New Delhi.	Dr. S. Manasi Principal Investigator	Aug 2014 to September 2016
2	Project No. CRUA/1: A Pilot of Bangalore City Surveys-2	Institute for Social and Economic Change, Bengaluru	Prof. Kala S Sridhar and Dr. S. Manasi Co-Principal Investigator	December 2014- December 2015
3	Project No. CEENR/67: Land Policy and Administration	The World Bank, Washington DC	Dr. S. Manasi Principal Investigator	September 2011 to September 2014
4	Project No. CEENR/56: Eco-threats of E-Waste on Urban Ecology – A Case Study of Bangalore City	Institute for Social and Economic Change, Bengaluru	Dr. S. Manasi Principal Investigator	February 2009 to June 2009
5	Project No. CEENR/39: Urban Water Supplies: Emerging Alternatives (Hubli, Dharwad and Belgaum Cities of Karnataka), ISEC, Bangalore	Karnataka Urban Infrastructure and Finance Corporation, Government of Karnataka	Dr. K.V. Raju and Dr. S. Manasi Co-Principal Investigator	August 2005 to June 2007.

Macandrakanth
29/5/17
Director

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	Criteria[1]	Number and Name of Cities
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only2)(Lead firm)**	1. Madurai City 2. Tumakuru City 3. Hubballi – Dharwad City 4. Tiruvananthapuram City 5. Bangalore City 6. Mysore City 7. Kerala and Andhra Pradesh Cities 8. Bangalore City
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 1)**	--
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	1. State of India's Cities 2. Bidar, Gulbarga, Bijapur, Raichur, Belgaum, Hubli-Dharwad, Bellary, Davangere, Shimoga, Chitradurga, Udupi, Chikagalur, Mangalore, Bengaluru, Mysore

Appendix 7A

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation

Assignment Name: Preparation of Proposal for Assisting Madurai City to Participate in the Smart Cities Challenge	**Value of the contract (in current INR):** 17.10 lakhs
Country: India **Name of City/ Cities:** Madurai, Tamil Nadu	**Duration of assignment (months):** 4 months
Name of the Client: Madurai City Corporation	**Total No of staff-months of the assignment:** 3
Address: Madurai Corporation, Arignar Anna Maaligai, Outpost, Thallakulam, Madurai - 625 002	**Value of the contract per city (in current INR):** 17.10 lakhs
Start Date (month/year): September 2015 **Completion Date:** December 2015	

Narrative Description of Project:

The Ministry of Urban Development (MoUD) launched the Smart City Mission in June 2015. As per the Mission Guidelines, 100 shortlisted cities in the country participated in the ‘Smart Cities Challenge’ through preparation of Smart City Proposals. Consultants were selected by each shortlisted city from the empaneled list of consultants of MoUD. MoUD shortlisted consulting firms to assist States/ Union Territories through its World Bank assisted Capacity Building for Urban Development (CBUD) project in selection of the consulting firms which could help the States/ Cities to prepare Proposal.

TUFIDCO, the nodal agency for Tamil Nadu carried out the selection process on behalf of the 12 shortlisted cities and iDeCK was appointed by the Madurai City Corporation for assistance in the preparation of the Smart City Proposal.

Description of Actual Services Provided by our Staff:

- Preparation of the SCP in accordance with the Smart City Mission Guidelines, which involved;
  - Carrying out extensive stakeholder consultations, through various media (print, electronic, group discussions, one-on-one meetings etc) and channels (social networking sites, egov platform, webistes of the city corporation etc) at various stages during the preparation of the SCP.
  - Formulation of a ‘Vision’ for Smart City Salem, based on SWOT analysis, stakeholder consultations etc
  - Preparation of an Area Based Development model- assisting Salem in shortlisting and final selection of the area for ABD, preparing a strategy for improvement/ development, suggesting various options/ alternatives, designs etc for ABD area selected, including application of smart solutions
  - Selection, finalization and detailing of the pan-city solution
  - Cost estimations, project structuring, municipal finance assessment, financing plans, institutional framework etc
  - Presentations on SCP to State-Level Committees
  - Submission of the SCP as per format prescribed by MoUD

From

S. Shanthi, B.E.,
Deputy Commissioner and
Commissioner (i/c)
Madurai Corporation,
Madurai.

To

M/s. Infrastructure Development Corporation (Karnataka) Ltd.,
I Deck and IDFC Foundation
No. 9/7, K.C.N. Bhavan, Madhav Nagar Extension,
Race Course Road,
Bangalore – 560 080.

Ma.Po. 2/21705/2015, Dated: 31.08.2015

Sir,

LETTER OF AWARD

Sub: Consultancy Assignment for Preparation of Smart City Proposal as per the Government of India's Smart Cities Mission guidelines for Madurai Corporation – reg.

Ref: 1. Your Technical & financial proposal received and opened on 24.08.2015
2. Tender Evaluation Meeting held on 31.08.2015

*****

With reference to your proposal for the above Consultancy services, Madurai Corporation is pleased to inform you that your offer letter is accepted subject to the following main terms and conditions:

1. The Consultancy Services with respect to the area mentioned in the Terms of Reference, should be completed within a total cost of Rs. 17,10,000/- including services tax (Base cost Rs. 15,00,000 + Service Tax @ 14% Rs. 2,10,000/-) (Rupees Seventeen Lakh and Ten Thousand only) including service tax. The quoted price is inclusive of all taxes (including service tax), duties and expenses payable if any.

2. The scope of the assignment is enumerated in the Terms of Reference (TOR – copy enclosed) and subsequent correspondences of Madurai Municipal Corporation, if any.

3. The work should be commenced with in a week from receipt of this letter and the assignments enumerated in TOR and subsequent correspondences with COC, should be completed within the time schedule stipulated in the Terms of Reference.

4. Payment Schedule as per ToR:

S.N.	Deliverables	Time Period (Cumulative) from the date of start of Assignment	Payment Schedule
1	City-Wide Concept Plan	30 days	10% of the contract price on acceptance of Plan by ULB/SPV
2	Draft Smart City Proposal	80 days	40% of the contract price on acceptance of Plan by ULB/SPV
3	Final Smart City Proposal	100 days	40% of the contract price on acceptance of Plan by ULB/SPV and forwarding to MoUD.
4	10% of the contract price on acceptance of Plan by MoUD.		

5. The cost of the assignment is Rs. 17,10,000/- including services tax (Base cost Rs. 15,00,000/- + Service Tax @ 14% Rs. 2,10,000/-)

6. The above remuneration includes all the costs related to carrying out the services, including overhead and any taxes imposed on the Consultants.

7. Any breach in the scope of the assignment as enumerated in the TOR or the time schedules as stipulated in table above would be construed as non-compliance of performance criteria.

8. The Madurai Corporation, will make payments to consultants as per the payment schedule mentioned in point no.4.

9. The list of key personnel indicated should be strictly adhered to and should not be changed without the permission of Madurai Corporation.

10. Acceptance for Letter of Award shall be signed and sent to Madurai Corporation within 5 days on issue of Letter of Award (LoA and subsequently execute agreement with the client within 14 days from the date of issue of LoA. Failing to do adhere to this, the client reserves the right to cancel the consultancy work.

11. The consultants shall not link the captioned assignment with any other future assignments related to Madurai Corporation on technical, financial or on any other terms.

12. The TOR issued by Madurai Corporation, and subsequent correspondences from Madurai Corporation, should be deemed, as part of this letter of award and the provisions of these documents would apply to the contract to the extent they are applicable and relevant.

The consultant should submit hard copies of all the above reports (printed double sided) and soft copy of reports, design and drawings are to be submitted in formats like Word, excel, Auto CAD, etc. for review as per ToR.

31/8/15
Deputy Commissioner &
Commissioner (i/c)

Encl: Terms of Reference

Copy to:

1. The Chairperson & Managing Director,
   TUFIDCO
   490/1-2, Anna Salai,
   Nandanam,
   Chennai – 600 035

2. The Director of Municipal Administration
   Chepauk
   Chennai 600005

Assignment Name: Preparation of Proposal for Assisting Tumakuru City to Participate in the Smart Cities Challenges – Round 2	**Value of the contract (in current INR):** 8.5 lakhs
Country: India **Name of City/ Cities:** Tumakuru, Karnataka	**Duration of assignment (months):** 2 months
Name of the Client: Tumakuru Corporation	**Total No of staff-months of the assignment:** 3
Address: Tumakuru City Corporation Near Town Hall, Railway station Road, Tumkur	**Value of the contract per city (in current INR):** 8.5 lakhs
Start Date (month/year): May 2016 **Completion Date (month/year):** June 2016	

Narrative Description of Project:

The Ministry of Urban Development (MoUD) launched the Smart City Mission in June 2015. As per the Mission Guidelines, 100 shortlisted cities in the country were to participate in the 'Smart Cities Challenge' through preparation of Smart City Proposals. Consultants were selected by each shortlisted city from the empaneled list of consultants of MoUD. MoUD shortlisted consulting firms to assist States/ Union Territories through its World Bank assisted Capacity Building for Urban Development (CBUD) project in selection of the consulting firms which could help the States/ Cities to prepare Proposal.

KUIDFC, the nodal agency for Karnataka carried out the selection process on behalf of the 4 shortlisted cities for Round -2 smart city challenges and iDeCK was appointed by the Tumakuru City Corporation for assitance in the preparation of the Smart City Proposal.

Description of Actual Services Provided by our Staff:

Preparation of the SCP in accordance with the Smart City Mission Guidelines, involved the following activities:

Conceptualization:

- City Profile: Situation Analysis, SWOT and Key Performance Indicators
- Public Outreach:
  - Stakeholder consultations through FGDs with sector expert, line departments, elected representatives and service providers.
  - Citizen Engagement through media platforms such as social media, MyGov platform, Corporation Website, etc., at various stages during the preparation of the SCP.
- Formulation of a 'Vision' for City, based on SWOT analysis, stakeholder consultations etc

Proposal Formulation:

- Area Based Development: Assisting the city in shortlisting and finalization of the area for ABD, preparing a strategy for improvement/ development, suggesting various options/ alternatives, designs, etc., for ABD area selected, including application of smart solutions
- Pan City Solution: Selection, finalization and detailing of ICT based pan-city solution

Financial & Implementation Plan: Propose Cost of the proposal, funding pattern, assessment of current municipal finances and propose a financing plan for implementation.

Proposal Sanctioning:

- Presentations on SCP to State-Level Committees for approval from HPSC
  - Submission of SCP as per format prescribed by MoUD.

TUMAKURU CITY CORPORATION, TUMAKURU
Website: www.tumkurcity.gov.in Telephone ✆ 2278480. Fax :2275106
E-mail : itstaff_ulb_tumkur@yahoo.com Complaints ✆ : 0816-2272200, 2271200

Date: 02-12-2016

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Infrastructure Development Corporation (Karnataka) Limited (iDeCK) has provided consultancy services to Tumakuru Municipal Corporation for the below mentioned assignment

"Preparation of Proposal for Assisting Tumakuru City to Participate in the Smart Cities Challenges – Round 2"

iDeCK was appointed by Tumakuru Municipal Corporation for assisting it in preparation of SCP for Round-2 Smart City Challenge. The services provided by iDeCK for the assignment include:

- Conceptualization of smart city proposal
- Detailed Proposal Formulation as per MoUD formats
    a. City profile
    b. Area based proposal
    c. Pan city proposal
    d. Implementation Plan
    e. Financial Plan

The Consultancy fee paid to iDeCK for the above mentioned services was Rs 8.5 lakhs.

The proposal was submitted with the approval of City Corporation & State High Powered Committee to Ministry of Urban Development (MoUD) and was further approved by MoUD on 20.09.2016.

The services provided by Infrastructure Development Corporation (Karnataka) Limited (iDeCK) were to our satisfaction.

Commissioner
Tumakuru City Corporation
Tumakuru

Assignment Name: Preparation of Proposal for Assisting Hubballi – Dharwad City to Participate in the Smart Cities Challenges – Round 2	**Value of the contract (in current INR):** 8.5 lakhs
Country: India **Name of City/ Cities:** Hubballi - Dharwad, Karnataka	**Duration of assignment (months):** 2 months
Name of the Client: Hubballi - Dharwad Municipal Corporation	**Total No of staff-months of the assignment:** 3
Address: Hubballi - Dharwad City Corporation, Sir Siddappa kambli road, Hubballi-580028.	**Value of the contract per city (in current INR):** 8.5 lakhs
Start Date (month/year): May 2016 **Completion Date:** June 2016	

Narrative Description of Project:

The Ministry of Urban Development (MoUD) launched the Smart City Mission in June 2015. As per the Mission Guidelines, 100 shortlisted cities in the country were to participate in the 'Smart Cities Challenge' through preparation of Smart City Proposals. Consultants were selected by each shortlisted city from the empaneled list of consultants of MoUD. MoUD shortlisted consulting firms to assist States/ Union Territories through its World Bank assisted Capacity Building for Urban Development (CBUD) project in selection of the consulting firms which could help the States/ Cities to prepare the Proposal.

KUIDFC, the nodal agency for Karnataka carried out the selection process on behalf of the 4 shortlisted cities for Round -2 smart city challenges and iDeCK was appointed by the Hubballi - Dharwad City Corporation for assistance in the preparation of the Smart City Proposal.

Description of Actual Services Provided by our Staff:

Preparation of the SCP in accordance with the Smart City Mission Guidelines, which involved;

Conceptualization:

- City Profile: Situation Analysis, SWOT and Key Performance Indicators
- Public Outreach:
  - Stakeholder consultations through FGDs with sector expert, line departments, elected representatives and service providers.
  - Citizen Engagement through media platforms such as social media, MyGov platform, Corporation Website, etc., at various stages during the preparation of the SCP.
- Formulation of a 'Vision' for City, based on SWOT analysis, stakeholder consultations etc

Proposal Formulation:

- Area Based Development: Assisting the city in shortlisting and finalization of the area for ABD, preparing a strategy for improvement/ development, suggesting various options/ alternatives, designs, etc., for ABD area selected, including application of smart solutions
- Pan City Solution: Selection, finalization and detailing of ICT based pan-city solution

Financial & Implementation Plan:

- Propose Cost of the proposal, funding pattern, assessment of current municipal finances and propose a financing plan for implementation.

Proposal Sanctioning:

- Presentations on SCP to State-Level Committees for approval from HPSC
  - Submission of SCP as per format prescribed by MoUD.

HUBBALLI – DHARWAD MUNICIPAL CORPORATION

No: HDMC: 100:02:2016-17

Date: - 12 -2016

To,
Chief Executive Officer
Infrastructure Development Corporation Ltd.
Bengaluru.

WORK DONE CERTIFICATE

This is to certify that Infrastructure Development Corporation (Karnataka) Limited (iDeCK) has provided consultancy services to Hubballi-Dharwad Municipal Corporation for the below mentioned assignment.

"Preparation of Proposal for assisting Hubballi– Dharwad to participate in Smart Cities Challenges – Round 2"

iDeCK was appointed by Hubballi -Dharwad Municipal Corporation for assisting it in preparation of SCP for Round-2 smart city challenge. The services provided by iDeCK for the assignment include:

- Conceptualization of smart city proposal
- Detailed Proposal Formulation as per MoUD formats
    a. City profile (Total Population- 9,43,788)
    b. Area based proposal (retrofitting of core city area of 992 acres)
    c. Pan city proposal (ICT based solutions for e-Governance and SWM)
    d. Implementation Plan
    e. Financial Plan (Total Project Cost- Rs.1662 Crores)

The Consultancy fee paid to iDeCK for the above mentioned services was Rs 8.5 lakhs.

The proposal was submitted with the approval of City Corporation & State High Powered Committee to Ministry of Urban Development (MoUD) and was further approved by MoUD on 20.09.2016.

The services provided by Infrastructure Development Corporation (Karnataka) Limited (iDeCK) were to our satisfaction.

Executive Engineer (Project)
Hubballi-Dharwad Municipal Corporation
Hubballi.

Assignment Name: Preparation of Proposal for Assisting Tiruvananthapuram City to Participate in the Smart **Cities** Challenge	**Value of the contract (in current INR):** Rs 24.67 Lakhs
Country: India **Name of City/ Cities:** Tiruvananthapuram, Kerala	**Duration of assignment (months):** 4 months
Name of the Client: Tiruvananthapuram City Corporation	**Total No of staff-months of the assignment:** : 4
Address: Tiruvananthapuram Corporation, Museum **Junction**, Vikasbhavan, PO, PIN - 695033	**No. of staff months :** Rs 24.67 Lakhs
Start Date (month/year): December 2016 **Completion Date:** March 2017	

Narrative Description of Project: The Ministry of Urban Development (MoUD) launched the Smart City Mission in June 2015. As per the Mission Guidelines, 100 shortlisted cities in the country are to participate in the 'Smart Cities Challenge' through preparation of Smart City Proposals. Consultants were selected by each shortlisted city from the empaneled list of consultants of MoUD. MoUD has shortlisted consulting firms to assist States/ Union Territories through its World Bank assisted Capacity Building for Urban Development (CBUD) project in selection of the consulting firms which can help the States/ Cities to prepare Proposal.

KSUDP, the nodal agency for Kerala state carried out the selection process on behalf of the 8 shortlisted cities and iDeCK was appointed by the Thiruvananthapuram City Corporation for assisting it in the preparation of the SCP.

Description of Actual Services Provided by our Staff:

Preparation of the SCP in accordance with the Smart City Mission Guidelines, which involved;

Conceptualization:

- City Profile: Situation Analysis, SWOT and Key Performance Indicators
- Public Outreach:

1. *Stakeholder consultations through FGDs with sector expert, line departments, elected representatives and service providers.*
2. *Citizen Engagement through media platforms such as social media, MyGov platform, Corporation Website, etc., at various stages during the preparation of the SCP.*

- Formulation of a 'Vision' for City, based on SWOT analysis, stakeholder consultations etc.

Proposal Formulation:

- Area Based Development: Assisting the city in shortlisting and finalization of the area for ABD, preparing a strategy for improvement/ development, suggesting various options/ alternatives, designs, etc., for ABD area selected, including application of smart solutions
- Pan City Solution: Selection, finalization and detailing of ICT based pan-city solution

Financial & Implementation Plan: Propose Cost of the proposal, funding pattern, assessment of current municipal finances and propose a financing plan for implementation.

- Revenue Enhancement through Property Tax, Stamp Duty, Water charges and SWM Cess
- New Revenue Sources like user charges, entry fees for public recreational facilities, revenue monetization of street lights, advertisement revenue and parking fees
- Lease Rentals which include exploitation of lands for commercial establishments, office spaces, public recreational activities & parking lots
- Proposed Land Related Interventions

Proposal Sanctioning:

- Presentations on SCP to State-Level Committees for approval from HPSC
- Submission of SCP as per format prescribed by MoUD.

THIRUVANANTHAPURAM MUNICIPAL CORPORATION

No.E13/138341/15 **03/12/2016**

M/s Infrastructure Development Corporation (Karnataka) Limited,
(IDeCK), Bangalore

Sir,

Sub: - Selection of consultant to assist Municipal Corporation of Thiruvananthapuram (TMC) to prepare the Smart City Proposal (SCP) to participate the 2nd stage of Smart Cities Challenge –**Letter of Acceptance** -Reg .

Ref: - 1) Decision taken to invite RFP for appointing consultants in the 7th Sate Level High-Powered Steering Committee held on 2nd November 2016 at 2:30PM in the Committee Room of the Chief Secretary to Government of Kerala.

2) Your RFP Document submitted in this office on 19th November 2016.

3) Technical Bid Opening on 21st November 2016 at the chamber of Special Secretary, LSGD, Government of Kerala.

4) Presentation to select qualified consultants held on 29th November 2016 at the Committee Room of the Chief Secretary to Government of Kerala.

5) Minute of the 8th State level high powered steering committee (HPSC) held on 29th November at 03:00pm in the at the Committee Room of the Chief Secretary to Government of Kerala.

As per the references #2 cited above, eight firms had been submitted the tender documents and based on the reference read in #4 above, three firms out of the participated six had scored more than seventy marks were shortlisted for the price bid opening. On applying least cost method for selection of Consultant, the HPSC had taken decision, no 3.6 and 3.7 referred in #5 of above, to select M/s Infrastructure Development Corporation (Karnataka) Limited, (IDeCK), Bangalore as the consultancy to assist TMC for preparation of the Smart City Proposal (SCP) for Rs.24,67,670/- (Rupees Twenty Four Lakhs Sixty Seven Thousand Six Hundred and Seventy only).

TMC is pleased to inform you that, an agreement on stamp paper worth Rs200/- has to be executed with the Secretary for further actions. In view of this, you are requested to send the draft agreement on or before 05.12.2016. Please treat this as most urgent.

Yours truly,

Secretary.

Copy to : -

1. The Hon'able Mayor, TMC.
2. The Chief Secretary to Government of Kerala with Covering letter.
3. The Smart City Mission Director and the Principal Secretary to Government of Kerala with Covering letter.
4. The Project Director, KSUDP, Trans Towers, Thiruvananthapuram.

Museum Junction, Vikasbhavan –PO, PIN-695033, Ph. 04712332085, tvpmcorpn@gmail.com

Assignment name: State of India's Cities	**Value of the contract (in current INR)**: Rs. 11,61,200/
Country: India **Name of City/ Cities:**	**Duration of assignment (months):** 12 months
Name of Client: International Development Research Centre	**Total No of staff-months of the assignment**:
Address:	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	January 2011 to December 2011
Narrative description of Project: Cities in India, suffer from inadequate data and information, which has undermined their abiklity and that of analysts and policy-makers to comprehend the complex forces shaping cities and to develop and implement effective urban policies. Given the importance of cities in the country's economic growth and development, a review is doen of the country's four major cities – Delhi, Mumbai, Kolkata and Chennai, in the report.	
Description of actual services provided by your staff within the assignment: Secondary data collection, literature review, scoping exercise, designing data collection instruments, sampling design, field survey and monitoring, data analysis and interpretation, presentation of findings, report preparation.	

Assignment name: State of Karnataka's cities	**Value of the contract (in current INR)**: Rs. 13,30,000/-
Country: India **Name of City/ Cities:** Bidar, Gulbarga, Bijapur, Raichur, Belgaum, Hubli-Dharwad, Bellary, Davangere, Shimoga, Chitradurga, Udupi, Chikagalur, Mangalore, Bengaluru, Mysore	**Duration of assignment (months):** 12 months
Name of Client: International Development Research Centre	**Total No of staff-months of the assignment:**
Address:	**Value of the contract per city (in current INR):**
Start date (month/year): **Completion date (month/year):**	September 2013 to August 2014

Narrative description of Project: Massive urbanization has become a contemporary reality in India, with crucial implications for development and governance. Unfortunately. There is a dearth of data and information on cities in India. This pioneering work fills this vacuum through detailed case studies of 15 cities in the state of Karnataka.

Description of actual services provided by your staff within the assignment: Secondary data collection, literature review, scoping exercise, designing data collection instruments, sampling design, field survey and monitoring, data analysis and interpretation, presentation of findings, report preparation

Assignment name: Revision of City Development Plan for Bruhat Bangalore Mahanagara Palike (BBMP)	**Value of the contract (in current INR):** 10 Lakhs
Country: India **Name of City/ Cities:** Bangalore	**Duration of assignment (months):** 27 months
Name of Client: Karnataka Urban Infrastructure Development & Finance Company Ltd.	
Address: Silver Jubilee Block, 2nd Floor, Unity Building Annexe 3rd Cross, Mission Road, Bangalore 560027	**Total No of staff-months of the assignment:** 12 months
	Value of the contract per city (in current INR): 10 Lakhs
Start date (month/year): October 2007 **Completion date (month/year):** December 2009	

Narrative description of Project:

The constitution of the Bruhat Bangalore Mahanagara Palike (Greater Bangalore metropolitan limits), necessitated a revision of the City Development Plan prepared for erstwhile Bangalore Mahanagara Palike prepared under the JNNURM scheme. The assignment involved assessing the urban infrastructure required in the additional surrounding 100 villages that were added to the erstwhile BMP, estimating investments, conducting stakeholder meetings, assessing the strength of BBMP to sustain such development proposed, and preparation of a strategy plan for the city.

Description of actual services provided by your staff within the assignment:

- Preparation of City Development Strategy Plan through organizing strategy meetings with Municipal Corporation and other government agencies
- Integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets,
- Preparation of vision statement, preparation of investment plans for identified sectors, prepara reforms agenda
- Recommendation of suitable institutional mechanisms to carry out investment plans and sustainin measures for achieving the vision.

Dr. Nandan Kumar

ಕರ್ನಾಟಕ ನಗರ ಮೂಲಸೌಕರ್ಯ
ಅಭಿವೃದ್ಧಿ ಮತ್ತು ಹಣಕಾಸು ಸಂಸ್ಥೆ
ಸಿಲ್ವರ್ ಜ್ಯೂಬಿಲಿ ಬ್ಲಾಕ್, ಎರಡನೇ ಅಂತಸ್ತು, ಯೂನಿಟಿ ಬಿಲ್ಡಿಂಗ್
ಅನೆಕ್ಸ್, 3ನೇ ಅಡ್ಡ ರಸ್ತೆ, ಮಿಷನ್ ರಸ್ತೆ, ಬೆಂಗಳೂರು-560 027
ದೂರವಾಣಿ : 080-22232021, 22232134, ಫ್ಯಾಕ್ಸ್ : 22232157

Karnataka Urban Infrastructure
Development & Finance Corpn.
Silver Jubilee Block, 2nd Floor, Unity Building Annexe
3rd Cross, Mission Road, Bangalore-560 027.
Phone : 080-22232021 22232134, Fax : 22232157
E-Mail : info@kuidfc.com website:www.kuidfc.com

No.KUIDFC: JNNURM: CDP: 2007-08: 1693

October 1, 2007

The Managing Director,
Infrastructure Development Corporation (Karnataka) Ltd.,
'Infra House', 39, 5th Cross,
5th Main, RMV Extension,
Sadashiv Nagar,
BANGALORE - 560 080

3 - OCT 2007

Dear Sir,

Sub: Revision of CDP for Bangalore under JNNURM.

* * * *

As you are aware, 110 villages along with the 8 ULBs were merged with the Bangalore City Corporation at the time of formation of Bruhat Bangalore Mahanagara Palike (BBMP). The original City Development Plan for the Bangalore City under JNNURM was prepared for the erstwhile City Corporation and the ULB areas. With the merger of the 110 villages surrounding the city, there is a need to revise the CDP.

The original CDP was prepared by M/s. iDeCK and it has been decided that the revision of the City Development Plan will also be entrusted to M/s. iDeCK. The new version of the CDP will have to be prepared in association with the BBMP duly following the procedure prescribed for the purpose. I am enclosed herewith the Terms of Reference for revising the CDP, based on which the variation order will be issued to M/s. iDeCK. You are requested to send your formal letter of acceptance for the assignment and to execute the assignment in coordination with the BBMP.

Yours faithfully,

Managing Director

Assignment name: Revision of City Development Plan for Mysore	**Value of the contract (in current INR):** 12 Lakhs
Country: India **Name of City/ Cities:** Mysore	**Duration of assignment (months):** 27 months
Name of Client: Mysore City Corporation	**Total No of staff-months of the assignment:** 3 months
Address: Mysore City Corporation, Opposite City Bus Stand, Mysore	**Value of the contract per city (in current INR):** 12 months
Start date (month/year): January 2012 **Completion date (month/year):** March 2014	

Narrative description of Project:

The City Corporation of Mysore requested iDeCK to undertake revision of the City Development Plan prepared for the city under the JNNURM scheme. This involved reassessment of infrastructure requirement, estimating investments, conducting stakeholder consultations and assessing municipal finances to sustain development

Description of actual services provided by your staff within the assignment:

- Preparation of City Development Strategy Plan through organizing strategy meetings with Municipal Corporation and other government agencies
- Integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessme existing condition of assets,
- Preparation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda
- Recommendation of suitable institutional mechanisms to carry out investment plans and sustaining meas for achieving the vision.

Assignment Name: Preparation for guidelines for integrated wastewater and septage management for Kerala and Andhra Pradesh	**Approx. value of the contract (in current INR):** Rs. 36.5 lakhs
Country: India **Location within Country:** Kerala and Andhra Pradesh	**Duration of assignment (months):** Six
Name of the Client: Deutshe Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH	**No. of staff months :** Six
Address: New Delhi	**Approx. value of services in current Indian Rupees :** Rs. 36.5 lakhs
Start Date (month/year): March 2016 **Completion Date:** Ongoing	

Narrative Description of Project:

The overall goal is to support the state governments of Karnataka and Andhra Pradesh for implementation for National Urban Sanitation Policy and overall improvement of waste water and septage management systems in urban local bodies.

The scope of work is to prepare guidelines for integrated wastewater and septage management in urban local bodies of Kerala, Andhra Pradesh and in Indian context (generic guidelines). These guidelines are to be developed in line with the existing guidelines, policies and ongoing schemes of state and national government.

Description of Actual Services Provided by our Staff: The services include the following packages.

Task 1: Development of guidelines for integrated waste water and septage management for ULBs in Kerala

Task 2: Development of guidelines for integrated waste water and septage management for ULBs in Andhra Pradesh

- *Review of past and ongoing programmes in this area*
- *Primary surveys to understand the local practices in various geographical regions*
- *Secondary data collection and analysis*
- *Stakeholder consultations at various levels*
- *Concept development*
- *Preparation of Draft and Final guidelines*

Task 3: Development of generic guidelines for integrated waste water and septage management for ULBs in India.

Based on the above studies, develop guidelines that can be applied anywhere in the country.

CONTRACT FOR CONSULTING FIRMS AND OTHER SERVICE PROVIDERS

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Contract no.:	83224666
Project:	Sanitation Phase II - Beratung zur Umsetzung der National Urban Sanitation Policy in Indien, Phase II
Processing no.:	13.2110.8-001.00
Processed by:	Sanjay Dhar
Telephone:	

Based on the General Terms of Contract (local) the present Contract is concluded between the
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, represented by

German Development Cooperation
Deutsche Gesellschaft für Internationale Zusammenarbeit
GIZ Office, 21, Jor Bagh
New Delhi 110 003
INDIEN
(referred to hereinafter as "GIZ")

and

Infrastructure Development Corporation (Karnataka) Ltd. (IDECK)

9/7, K.C.N Bhavan, Yamunabai Road, Madhavnagar Extension
560001 Bangalore
India
+91-080-43448000

(referred to hereinafter as "Contractor").

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Sitz der Gesellschaft Bonn und Eschborn

Friedrich-Ebert-Allee 40
53113 Bonn, Deutschland
T +49 228 44 60-0
F +49 228 44 60-17 66

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Deutschland
T +49 61 96 79-0
F +49 61 96 79-11 15

E info@giz.de
I www.giz.de

Amtsgericht Bonn
Eintragungs-Nr. HRB 18384
Amtsgericht Frankfurt am Main
Eintragungs-Nr. HRB 12394
USt-IdNr. DE 113891176
Steuernummer 040 250 56973

Vorsitzender des Aufsichtsrats
Staatssekretär Dr. Friedrich Kitschelt

Vorstand
Tanja Gönner (Vorstandssprecherin)
Dr. Christoph Beier (Stellv. Vorstandssprecher)
Dr. Hans-Joachim Preuß
Cornelia Richter

Commerzbank AG Frankfurt am Main
BLZ 500 400 00
Konto 58 89 555 00
BIC (SWIFT): COBADEFFXXX
IBAN: DE45 5004 0000 0588 9555 00

1. Purpose of the Contract

Contract for Preparation of guidelines for integrated wastewater and septage management for Kerala & Andhra Pradesh

2. Terms of Reference

The Contractor undertakes to perform the services listed in the Special Agreement (Annex 1).

3. Assignment of Personnel

In order to perform the services, it is anticipated that during the period from 08.03.2016 to 30.09.2016, the Contractor shall assign the following experts:

Mr. K. Jayakishan & Other Experts as Expert

4. Reports/Appraisals

Reporting/Submission of the study/The handover of work is governed by the Special Agreement (see Annex 1).

5. Remuneration

For the performance of services, the Contractor shall be remunerated as follows:

Dinesh

Mr. K. Jayakishan & Other Experts

Expert

2,932,000.00	INR	x up to	1.0	Expert day/s		
lump sum				up to	2,932,000.00	INR

Professional fee to experts, Ref. Spl. Agr.

Per diem/ daily allowance

17,000.00	INR	x up to	1.0	Day/s		
lump sum				up to	17,000.00	INR

Perdiem upto 17 days @ INR 1,000/day

Accommodation

50,000.00	INR	x up to	1.0	Night/s		
against provision of evidence				up to	50,000.00	INR

Stay on actuals upto 10 overnights @ INR 5,000/night

Other costs

20,000.00	INR	x up to	1.0	without quantity		
lump sum				up to	20,000.00	INR

Cost towards communication expenses upto max. INR 20,000

Other costs

462,405.00	INR	x up to	1.0 without quantity			
against provision of evidence				up to	462,405.00	INR
Service Tax @ 14.5%						

Travel expenses

170,000.00	INR	x up to	1.0 without quantity			
against provision of evidence				up to	170,000.00	INR
Air/Train+Local Travel on actuals upto max. of INR 170,000						

Total remuneration **up to** **3,651,405.00 INR**
(in words: Indian Rupees Thirty Six Lac Fifty One Thousand Four Hundred Five Only)

All costs incurred in connection with the performance of the services are deemed settled herewith.

The tax provisions are listed in the Special Agreement in the section entitled "Other Provisions".

6. Payments

Payment of the remuneration agreed on in Section 5 shall be effected, depending on the type of remuneration, following the performance of services, submission of reports (see Special Agreement), acceptance of services performed, and invoicing.

Interim payment after settlement of services provided:

	Anticipated date	Payment up to (INR)
1.	28.03.2016	1,095,421.00
2.	15.06.2016	1,095,422.00

Final payment after final invoice anticipated by 30.09.2016 up to 1,460,562.00 INR.

The invoice must be submitted as 1 original with 1 copy(ies).

7. Other provisions

7.1 The original vouchers must be submitted for all items of the Contract for which documentary proof is required.

7.2 The Contractor shall carry out project accounting in keeping with the principles of proper bookkeeping.

7.3 GIZ shall have an unrestricted right to examine the project accounts at any time. This shall not affect the obligation of the Contractor to submit original vouchers.

8. General Terms of Contract

8.1 The Special Agreement shall constitute an integral component of the Contract.

8.2 The General Terms of Contract (local) shall constitute an integral component of this Contract. The Contractor hereby declares that it is familiar with the General Terms of Contract (local).

8.3 The Contract shall be drawn up in 2 originals. The Contractor shall receive one original.

8.4 All modifications to this Contract shall be made only in writing.

NEW DELHI 04.03.2016

For the GIZ

Ms. Luigina Blaich

Mr. Dirk Walther

Bangalore______________

Infrastructure Development Corporation
(Karnataka) Ltd. (IDECK)

Tax number
AAACI7922E

Annexes
1. Special Agreement
2. General Terms of Contract (local) enclosed/known

Assignment Name: Rapid Traffic Study for identification of Traffic Corridors in Bangalore	**Value of the contract (in current INR):** Rs. 3.5 lakhs
Country: India **Name of City/ Cities:** Karnataka	**Duration of assignment (months):** 4 months
Name of the Client : Infrastructure Development Department, Government of Karnataka	**Total No of staff-months of the assignment:** Three
Address: No. Vikas Soudha, Bangalore- 01	**Value of the contract per city (in current INR):** 3.5 lakhs
Start Date (month/year) : August 2005 **Completion Date :** November 2005	

Narrative Description of Project:

IDD initiated this study with the objective of assessing the current traffic scenario in the city, mapping the various initiatives that are being carried out by various government agencies, identify the traffic corridors in the city for three scenarios and a horizon year of 2015 and suggest possible interventions along these corridors. The study was based on available data from past studies and plans of govt. agencies like BDA, BMP, BMTC, BMRC and BTP.

M/s RITES was appointed as the technical consultants to assimilate data from various agencies and carry out the travel demand forecasts.

The study concluded with a workshop under the Chairmanship of the Chief Secretary, GoK with participation from concerned agencies (UDD, BDA, BMP, BMTC, DMA, BTP, BMRDA, Railways etc) to discuss the findings of the study and to finalise the way forward.

Description of Actual Services Provided by our Staff:

- Co-ordination of technical studies
- Coordination with various government agencies
- Traffic research and analysis
- Identification of traffic corridors in the city
- Suggestion on possible interventions along the identified corridors
- Preparation of Rapid Traffic Study Report

GOVERNMENT OF KARNATAKA

No. IDD 63 NSW 2005

Karnataka Government Secretariat,
Ground Floor, V Stage, MS Bldgs.,
Bangalore, dated: 01-8-2005.

From,

The Principal Secretary to Government,
Infrastructure Development Department
BANGALORE.

To,
The Chief Executive Officer
IDeCK,
39, 5th Cross, 8th Main, RMV Extn.
Sadashiv Nagar Bangalore-560 080.

Sir,

Sub: Rapid Traffic Study – Bangalore..

Ref: 1) Decision taken in a meeting held by PRS, IDD on 14-6-05.
2) Your letter No.IDeCK/2005-06/298, dated 17-6-05.

With reference to the subject cited above and the decision taken in the meeting held on 14-6-2005 referred to above at Sl. No. (1), I am directed to inform you that Government of Karnataka has agreed to your proposal dated 17-6-2005 to take up the Rapid Traffic Study in Co-ordination with Bangalore Mahanagara Palika Bangalore Development Authority, BMTC and Traffic Police with a view to identifying the suitable corridors of various densities to workout the system requirement for the present and future traffic along these corridors. The study to be completed within six weeks and the report to be submitted thereafter immediately.

Yours faithfully,

(T.B. Renuka Prasad)
Under Secretary to Government,
Infrastructure Development Department.

Copy to: 1. PS to Principal Secretary to Government, Infrastructure Development Department.
2. PA to Additional Secretary to Government, Infrastructure Development Department.

सत्यमेव जयते

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Government of Karnataka

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Certificate No.	:	IN-KA40049039688987P
Certificate Issued Date	:	26-May-2017 11:44 AM
Account Reference	:	SHCIL (FI)/ ka-shcil/ MALLESHWARAM1/ KA-BA
Unique Doc. Reference	:	SUBIN-KAKA-SHCIL28677339872101P
Purchased by	:	SRINIVASA RAO S
Description of Document	:	Article 4 Affidavit
Description	:	AFFIDAVIT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	SRINIVASA RAO S
Second Party	:	NA
Stamp Duty Paid By	:	SRINIVASA RAO S
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

T.C. THIMMARAJA
BANGALORE
METROPOLITAN AREA
Reg. No. 8296

Authorised Signatory
for Stock Holding Corporation of India Ltd.

Please write or type below this line

Appendix 8:

Affidavit

I Srinivasa Rao S, M/s Infrastructure Development Corporation (Karnataka) Limited, 9/7, KCN Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001 hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 30th May 2017

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 30th Day of May, 2017

M/s Infrastructure Development Corporation (Karnataka) Limited

Srinivasa Rao S

SWORN TO BEFORE ME

T.C. THIMMARAJA, B.A.,LL.B.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF INDIA
City Civil Court Complex Premises
BANGALORE - 560 009.

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

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Government of Karnataka

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Certificate No. : IN-KA40162577025531P
Certificate Issued Date : 26-May-2017 12:37 PM
Account Reference : NONACC (FI)/ kaksfcl08/ BANGALORE5/ KA-BA
Unique Doc. Reference : SUBIN-KAKAKSFCL0828944928900551P
Purchased by : INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
Description of Document : Article 4 Affidavit
Description : AFFIDAVIT
Consideration Price (Rs.) : 0 (Zero)
First Party : INFRASTRUCTURE DEVELOPMENT CORPORATION LTD
Second Party : INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
Stamp Duty Paid By : INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
Stamp Duty Amount(Rs.) : 100 (One Hundred only)

SPANDANA CREDIT SOUHARDA
SAHAKARI NIYAMITHA

Please write or type below this line

Affidavit

I Smt. S Ashwini, Registrar I/c, Institute for Social and Economic Change (ISEC), Dr. V K R V Rao Road, Nagarabhavi, Bengaluru 560072 hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any State Government or Central Government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 26th May 2017.

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 26th Day of May, 2017

Name of the Applicant : Institute for Social and Economic Change (ISEC)

Signature of the Authorised Person: S. Ashwini

Name of the Authorised Person : Smt. S Ashwini
Registrar I/c

Registrar
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

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Government of Karnataka

e-Stamp

सत्यमेव जयते

Certificate No.	:	**IN-KA41146115460836P**
Certificate Issued Date	:	29-May-2017 11:21 AM
Account Reference	:	NONACC (FI)/ kacrsfl08/ ANEKAL/ KA-BN
Unique Doc. Reference	:	SUBIN-KAKACRSFL08308970824588886P
Purchased by	:	PUBLIC AFFAIRS CENTRE
Description of Document	:	Article 12 Bond
Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PUBLIC AFFAIRS CENTRE
Second Party	:	NIUA MOUD GOI
Stamp Duty Paid By	:	PUBLIC AFFAIRS CENTRE
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

For VSSSN JIGANI
Sandhya. M
Authorised Signatory

Please write or type below this line

Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted is attached

29.5.2017

Statutory Alert:

1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate
3. In case of any discrepancy please inform the Competent Authority.

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. G. Gurucharan, Director PUBLIC AFFAIRS CENTRE, No. 15, KIADB Industrial Area, Jigani-Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore – 560105 ~~(Sole Applicant / Lead Member/~~ Other Member /s), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 29th May 2017.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 29 Day of May, 2017

Name of the Applicant

PUBLIC AFFAIRS CENTRE

29.5.2017

Signature of the Authorised Person

Name of the Authorised Person

G. Gurucharan,

Director

Note:
To be executed separately by all the Members in case of Consortium

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

सत्यमेव जयते

Certificate No. : **IN-DL87714612121732P**
Certificate Issued Date : 30-May-2017 11:47 AM
Account Reference : IMPACC (IV)/ dl775903/ DELHI/ DL-DLH
Unique Doc. Reference : SUBIN-DLDL77590376287292582489P
Purchased by : NATIONAL INSTITUTE OF URBAN AFFAIRS
Description of Document : Article 48(c) Power of attorney - GPA
Property Description : Not Applicable
Consideration Price (Rs.) : 0
(Zero)
First Party : NATIONAL INSTITUTE OF URBAN AFFAIRS
Second Party : SIGMA RESEARCH AND CONSULTING PVT LTD
Stamp Duty Paid By : NATIONAL INSTITUTE OF URBAN AFFAIRS
Stamp Duty Amount(Rs.) : 100
(One Hundred only)

....Please write or type below this line..

Affidavit

I M/s. **Dr U V Somayajulu, CEO and Executive Director of Sigma Research and Consulting Private Limited, C- 23, South Extension Part I, First Floor, New Delhi.** (Other Member /s), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on 30th May 2017.

Statutory Alert:
1 The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2 The onus of checking the legitimacy is on the users of the certificate.
3 In case of any discrepancy please inform the Competent Authority.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this 30 Day of May, 2017

Name of the Applicant
Sigma Research and Consulting Private Limited

Signature of the Authorised Person
Dr U V Somayajulu, CEO and Executive Director of

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No.	IN-KA41610374453143P
Certificate Issued Date	29-May-2017 03:15 PM
Account Reference	SHCIL (FI)/ ka-shcil/ MALLESHWARAM1/ KA-BA
Unique Doc. Reference	SUBIN-KAKA-SHCIL31826704843188P
Purchased by	IDECK
Description of Document	Article 37 Note or Memorandum
Description	MOU
Consideration Price (Rs.)	0 (Zero)
First Party	IDECK
Second Party	ISEC AND PAC AND SIGMA
Stamp Duty Paid By	IDECK
Stamp Duty Amount(Rs.)	1,000 (One Thousand only)

T.C. THIMMARAJA
Reg. No. 8296

Authorised Signatory
for Stock Holding Corporation of India Ltd.

Please write or type below this line

Appendix 9: Memorandum of Understanding (MoU)

This Memorandum of Understanding (MoU) entered into this 29th day of May 2017 at Bangalore among **M/s Infrastructure Development Corporation (Karnataka) Limited** and having its registered office at **9/7, KCN Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001,** (hereinafter referred as "Lead Member", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

And

M/s Institute for Social and Economic Change and having its registered office at **Chandra Layout, Nagarbhavi, Bengaluru, Karnataka 560072,** (hereinafter referred as" Consortium Partner -1", which

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

And

M/s Public Affairs Centre and having its registered office at **No. 15, KIADB Industrial Area, Jigani-Bommasandra Link Road, Jigani Post, Anekal Taluk, Bangalore - 560105** (hereinafter referred as" Consortium Partner -2", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

M/s Sigma Research and Consulting, having registered office at C-23, South Extension I, First Floor, New Delhi 110 049 (hereafter referred as Consortium Partner -3"which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the third Part

The parties are individually referred to as Party and collectively as Parties

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

For: Infrastructure Development Corporation (Karnataka) Limited (Lead Member)

BANGALORE

S. Srinivasa Rao
Senior Vice President

For: Institute for Social and Economic Change (other Member)

S. Ashwini

S Ashwini
Registrar I/c

Registrar
Institute for Social and Economic Change
Dr. V.K.R.V. Rao Road,
Nagarabhavi P.O. Bengaluru-560 072
Karnataka (India) www.isec.ac.in

For: Sigma Research and Consulting Pvt. Ltd

Dr. UV Samayajulu
CEO and Executive Director

For: Public Affairs Centre (other Member)

G. Gurucharan
Director

560 105
BANGALORE

T.C. THIMMARAJA
BANGALORE
METROPOLITAN AREA
Reg. No. 8296

SWORN TO BEFORE ME

T.C. THIMMARAJA, B.A.,LL.B.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF INDIA
City Civil Court Complex Premises
BANGALORE - 560 009.

Witness:

1______________________________

2______________________________

3______________________________

T.C. THIMMARAJA
Reg. No. 8296

SWORN TO BEFORE ME

T.C. THIMMARAJA, B.A.,LL.B.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF INDIA
City Civil Court Complex, Premises
BANGALORE - 560 009.

CURRICULUM VITAE

1.	**NAME OF FIRM**	:	Institute for Social and Economic Change		
2.	**NAME OF EXPERT**	:	**Kala Seetharam Sridhar**		
3.	**DATE OF BIRTH**	:		**CITIZENSHIP:**	Indian
4.	**EDUCATION**	:	• Ph.D., Public Policy & Management, John Glenn School of Public Affairs, The Ohio State University, Columbus, Ohio 43210, U.S.A. 1998 • M.S., Urban & Regional Planning, The University of Iowa, Iowa City, Iowa52242, U.S.A. 1993 • M.A., Economics, The University of Mysore, 1989 • B.A., The University of Mysore, Mysore		
5.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	Member, Board of Examiners, Municipal Solid Waste Management Services, Efficient Delivery Mechanism and Household Choice, by Somdutta Banerjee, University of Calcutta, Department of Economics, September 2016. Member, Panel of Dissertation Examiners and External Examiner for Viva Voce, Doctoral dissertation on "Legal aspects of supply of land for urban development – a case study of Gujarat", CEPT University, Ahmedabad, September 2016, March 31, 2017. Member, Comprehensive Examination Board of B.R.Naveen, Ph.D. student, Department of Management Studies, Indian Institute of Science, Bengaluru, July 1, 2016. Review Editor, and Member, Editorial Board, Urban Science, February 2017. Expert Member, Chapters on "Urban Development," and "Housing," Government of Karnataka's Economic Survey, 2012-13, 2013-14. Member, Expert Group Committee, Government of Karnataka, to monitor the quality of Urban Development sector paper for the 12th Five Year Plan Approach Paper, January-July 2012. Nominated by Public Affairs Centre to the IDRC Think Tank Initiative Exchange 2012: Enabling Success, Cape Town, South Africa, June 16-18, 2012; Mysore, March 4-6, 2012. Member, Karnataka JNNURM Community Participation Fund Sanction Committee, September 2010-current Advisor, Public Affairs Foundation, April 2008-March 2009 Past Editor, Newsletter, National Institute of Public Finance and Policy, New Delhi, India Past Editor, Working Paper Series, National Institute of Public Finance and Policy, New Delhi, India Past Member, Federation of Indian Chambers of Commerce and Industry (FICCI) Taskforce on Agriculture Member, Development studies committee, Institute for Social and Economic Change, June 2016-present. Member, Purchase committee, Institute for Social and Economic Change, June 2016-present. Chairperson, Women's Cell, Institute for Social and Economic Change, January 2015-Dec 2016. Chairperson, ISEC Founders' Day Cultural Events Committee,		

<table>
<tr><td></td><td></td><td></td><td>January 2015.
Director's Special Nominee, Sir Ratan Tata Trust Committee, Institute for Social and Economic Change, November 2016-present; January-March 2015.
Member, Research Programmes Committee, Institute for Social and Economic Change, June 2014-present.
Member, Academic Programmes Committee, Institute for Social and Economic Change, June 2014-present.
Member, Library Committee, Institute for Social and Economic Change, June 2014-present.</td></tr>
<tr><td>6.</td><td>COUNTRIES OF WORK EXPERIENCE</td><td>:</td><td>India, USA, Finland</td></tr>
<tr><td>7.</td><td>LANGUAGE & DEGREE OF PROFICIENCY</td><td>:</td><td><table><tr><th>Language</th><th>Speak</th><th>Read</th><th>Write</th></tr><tr><td>English</td><td>Good</td><td>Good</td><td>Good</td></tr><tr><td>Hindi</td><td>Good</td><td>Good</td><td>Good</td></tr><tr><td>Kannada</td><td>Good</td><td>Good</td><td>Good</td></tr></table></td></tr>
<tr><td>8.</td><td>EMPLOYMENT RECORD</td><td>:</td><td></td></tr>
<tr><td></td><td>FROM: June 2014
EMPLOYER
POSITION HELD</td><td></td><td>TO: Till date
Institute for Social and Economic Change, Bangalore
Professor</td></tr>
<tr><td></td><td>FROM: April 2009
EMPLOYER:
POSITION HELD</td><td></td><td>TO: May 2014
Public Affairs Centre
Senior Research Fellow and head, Public Policy Research</td></tr>
<tr><td></td><td>FROM: April 2011
EMPLOYER:
POSITION HELD</td><td></td><td>TO: May 2011
United Nations University, World Institute for Development Economics Research (UNU-WIDER)
Visiting Scholar</td></tr>
<tr><td></td><td>FROM: April 2008
EMPLOYER:
POSITION HELD</td><td></td><td>TO: March 2009
Public Affairs Centre
Ford Public Affairs Fellow</td></tr>
<tr><td></td><td>FROM: Sep 2003
EMPLOYER:
POSITION HELD</td><td></td><td>TO: March 2008
National Institute of Public Finance and Policy
Fellow</td></tr>
<tr><td>10.</td><td colspan="3">WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED</td></tr>
<tr><td></td><td colspan="3">Project Name: Comparative urbanization in India and the People's Republic of China
Year: Oct 2013-2017.
Client: Asian Development Bank and Asian Development Bank Institute
Position: India Expert
Responsibilities</td></tr>
<tr><td></td><td colspan="3">Project Name: Addressing Knowledge and Statistical Gaps in Relation to Poverty Reduction, Inequality, and Inclusive Growth
Year: November 2013-August 2014
Client: Asian Development Bank
Position: India Expert and Country Economist
Responsibilities</td></tr>
<tr><td></td><td colspan="3">Project Name: Knowledge Product on Inclusive Urban Development for South Asia
Year: December 2013-July 2014
Client: Asian Development Bank
Position: Resource person
Responsibilities</td></tr>
<tr><td></td><td colspan="3">Project Name: Urbanization and Development
Year: August 2012-February 2013
Position: Senior advisor, GDN (Global Development Network)</td></tr>
</table>

Responsibilities

Project Name: Green Urbanization in Asia
Year: March-June 2012
Client: Asian Development Bank
Position: India Country Expert
Responsibilities

Project Name: Global Development Awards and Medals Competition (Theme: Urbanization and Development)
Year: February-March 2012
Client: Global Development Network
Position: Reviewer, Global Development Network, 2011
Responsibilities

CURRENT FUNDED RESEARCH PROJECTS

Sridhar, Kala Seetharam and S.Manasi. Fixing optimum fares for Cab Aggregators in Bengaluru, Office of the Commissioner for Transport and Road Safety, Government of Karnataka, May 2017-current.

Sridhar, Kala Seetharam, The story of an Indian metropolis revisited, Azim Premji University Research Grants Foundation, April 2016-current.

Sridhar, Kala Seetharam and S.Manasi, Will Bengaluru become smart or livable? Indian Council for Social Science Research (ICSSR), December 2015-current.

TEACHING EXPERIENCE

COURSES DESIGNED AND TAUGHT

Urbanization Module for Development Studies – Theories and Policies, Part A of Ph.D. program in Urban Studies, Institute for Social and Economic Change, Bangalore, India, 2016-17.

Current debates in urban and regional research, Part B of Ph.D. program in Urban Studies, Institute for Social and Economic Change, Bangalore, India, January-March 2015; 2016.

Basic urban and regional studies, Part A of Ph.D. program in Urban Studies, Institute for Social and Economic Change, Bangalore, India, August-December 2014; 2015.

Business Environment, Post Graduate Program in Management (MBA Program), Indian Institute of Management, Lucknow, India, 2000-01, 2001-02, 2002-03.

Applied Econometrics, Fellow Program in Management (Ph.D. Program), Indian Institute of Management, Lucknow, India, 2001-02, 2002-03.

Teaching Assistant, Micro Economics for Policy Analysis, Graduate Program in Urban & Regional Planning, Grade homework assignments and help students with problem sets, The University of Iowa, Iowa City, USA, August 1991-January 1992.

RECORD OF FUNDED RESEARCH

. Fixing optimum fares for Cab Aggregators in Bengaluru, Office of the Commissioner for Transport and Road Safety, Government of Karnataka, May-August 2017 (Rs.4,99,000).

The story of an Indian metropolis revisited, Azim Premji University Research Grants Foundation, April 2016-current (Rs.19,57,300)

Will Bengaluru become smart or livable? Indian Council for Social Science Research, December 2015-17 (Rs.15,00,000)

Pilot assessment of urban transport governance in Karnataka with the use of the Transport Governance Indicator Assessment Toolkit, World Resources Institute (WRI), September 2015-September 2016 (US$5,830).

Bangalore city surveys-2, Institute for Social and Economic Change, June 2014-current (Rs.2,00,000).

Improving governance and accountability of the Nirmal Bharat Abhiyan by including citizen voices (#OPP1038515), Bill and Melinda Gates Foundation, Public Affairs Centre, July 2013-2016 ($1,792,441).

Evaluation of the Mukhyamantrigala Nagarothana Yojana in Shimoga and Davangere, State Institute for Urban Development, November 2012-March 2013 (`4,50,000).

Invited expert and chapter writer on Solid Waste Management, for Third Global Report on Decentralization and Local Democracy (GOLD III) for the Asia Pacific Region, United Cities and Local Governments, March-September 2012 (US$4,000).

.Contribution of the Urban Poor: A Pilot Study in Chennai, South Asia Network of Economic Research Institutes (SANEI), Thirteenth Regional Research Competition,January-December 2012 (US$10,000).

Contribution of the Urban Poor: A Pilot Study in Bangalore, Ministry of Housing and Urban Poverty Alleviation and Department for International Development (DFID), November 2011-March 2012 (Rs.12,00,000).

Land in Urban Infrastructure Finance: Comparisons across India and China,United Nations University-World Institute for Development Economics Research (UNU-WIDER), Helsinki, Finland, April-May 2011 (€4,000).

Is it Push or Pull? Recent Evidence from Migration in India, South Asia Network of Economic Research Institutes (SANEI)-Global Development Network (GDN), Tenth Regional Research Competition, December 2008-June 2010 (US$10,000).

Investment and Economic Opportunities: Urbanization, Public Service Delivery and Governance in India, Institute of South Asian Studies, National University of Singapore, December 2008-July 2009 (Singapore $4,000).

Land as a Municipal Financing Option: A Pilot Study from India, Thirteenth Finance Commission, Government of India, April-September 2008 (`1,61,000).

Location Choice of Firms in Cities: Evidence from China, India, Brazil and South Africa,United Nations University-World Institute for Development Economics Research (UNU-WIDER), Helsinki, Finland, April-June 2007 (€4,000).

Impact of Regulations on Suburbanization: Evidence from India’s Cities, Institute for Social and Economic Change, Bangalore, India, October 2006-March 2007 (`45,000).

Costs of Urban Infrastructure: Evidence from India’s Cities, South Asia Network of Economic Research Institutes (SANEI), Seventh Regional Research Competition, June 2005-2006 (US$30,000).

Growth Centres in India: Impact on Firm Location and Investment, Seed Money Project Report, Indian Institute of Management, Lucknow, India, 2001-02 (`30,000).

Urban Economic Development in America: Evidence from Enterprise Zones,United States Department of Housing and Urban Development, June 1997-November 1998 (US$15,000).

OTHER RESEARCH EXPERIENCE

June 1997-November 1998: Graduate Fellow, The Ohio State University, Columbus, Ohio, USA, working on dissertation Urban Economic Development in America: Evidence from Enterprise Zones.

July 1996-June 1997: Graduate Research Associate, Departments of Finance and Economics, The Ohio State University, Columbus, Ohio, USA, working with inter-temporal models of residential mobility.

August 1995-July 1996: Graduate Research Associate, School of Public Policy & Management, The Ohio State University, Columbus, Ohio, USA, working with hedonic models of housing.

January-August 1995: Graduate Research Associate, The Center for Human Resource Research (CHRR), The Ohio State University, Columbus, Ohio, USA, working with the National Longitudinal Survey (NLS).

January-July 1994: Research Assistant, Graduate Program in Urban & Regional Planning, The University of Iowa, Iowa City, USA, assistance with book on Industrial Incentives: Competition among American States and Cities (Kalamazoo, Michigan: Upjohn Institute for Employment Research, 1998).

August-December 1993: Graduate Program in Urban & Regional Planning, The University of Iowa, Iowa City, USA, working on Master’s Thesis Tax Costs and Employment Benefits of Enterprise Zones.

July 1992-August 1993: Research Assistant, Public Policy Center, The University of Iowa, Iowa City, USA, working with the environmental impact of agricultural practices.

January 1992-July 1992: Research Assistant, Graduate Program in Urban & Regional Planning, The University of Iowa, Iowa City, USA, working with data pertaining to the Scottish semiconductor industry.

PRESENTATIONS IN NATIONAL/INTERNATIONAL CONFERENCES, WORKSHOPS AND SEMINARS

	Costs and benefits of urbanization: The Indian case, Workshop on Urbanization in Asia: A Comparative Study of the People's Republic of China and India, Asian Development Bank Institute and the University of Moratuwa, Colombo, Sri Lanka, April 5-6, 2017. Discussant of Human capital and urbanization in India, by Sandeep Sarkar, Workshop on Urbanization in Asia: A Comparative Study of the People's Republic of China and India, Asian Development Bank Institute and the University of Moratuwa, Colombo, Sri Lanka, April 5-6, 2017. Economic specialization of India's cities. Innovative Cities India Summit 2017, Traicon, Bengaluru, March 16-17, 2017. Ming Lu and Zhao Chen. Costs and Benefits of Urbanization: The Indian Case and Lessons from China, Conference on India, China and the New World Order: Economic, Social, Political and Cultural Dimensions, Institute for Social and Economic Change, Bengaluru, November 21-22, 2016. Urban observatories: Opportunities for India. Research Councils UK-India Joint Network on Sustainable Cities and Urbanisation in India, Kickoff Workshop, New Delhi, September 26, 2016. The paradox of India's north south divide: Lessons from the southern region, Eleventh International Conference on Public Policy & Management, Indian Institute of Management, Bangalore, August 9, 2016. Migration. MGNREGS and the urban poor: What do they imply for India's youth? National Seminar on Sustainable Development Goals for Revitalizing India- Prospects and Challenges for the Youth, Department of Economics, University Grants Commission and Jyoti Nivas College, Bengaluru, August 9, 2016. Bengaluru's urban form and evolution: Theory and empirical evidence, Seminar on Planning city-regions in India, Regional Studies Association-National Institute of Urban Affairs, New Delhi, June 20, 2016. How to identify specialization? The case of India's cities, Workshop on Urbanization and Infrastructure in Asia, Asian Development Bank Institute and Central University of Finance and Economics, Beijing, China, June 16, 2016. Invited discussant of "Relationship between infrastructure ad population agglomeration in urban India" by Sabyasachi Tripathi, Workshop on Urbanization and Infrastructure in Asia, Asian Development Bank Institute and Central University of Finance and Economics, Beijing, China, June 16, 2016. Urban form and policy: Theory and empirical evidence (Invited special lecture in urban economics), Government Arts College, Bengaluru, April 26, 2016. The Urban Transport Governance Initiative (TGI) Toolkit: The Pilot from Bengaluru, Annual conference on Sustainable Cities and Transport (Connect Karo), World Resources Institute, New Delhi, April 7, 2016. Social infrastructure in Indian cities, regions and their impacts, National Seminar on Dynamics of Social Infrastructure in India - Emerging issues, prospects and challenges, University Grants Commission and Mount Carmel College, Bengaluru, February 24, 2016. Don't we like our cities to be open defecation free? Panel on Participatory approaches to urban sanitation, National Summit on Sustainable Water and Sanitation (NSSWS), CDD society, Ministry of Urban Development (MoUD), Government of India, Ministry of Drinking Water and Sanitation (MoDWS), Government of India, and Nispana Innovative Platforms, Bengaluru, January 8, 2016. State of women in urban India, World Congress on Women (Theme and session: Gender Empowerment), Maharani Lakshmi Ammanni College for Women, Bengaluru, November 18-20, 2015. Urban Land Use Policies: The Case of Indian Cities, Tenth ISAS International Conference on Politics and Economics of Land in South Asia, Institute of South Asian Studies, National University of Singapore, Singapore, October 29-30, 2015. Urban poverty to inclusive prosperity: Evidence from research, Urban Thinkers Campus-India, Research Council of UK and National Institute of Urban Affairs, New Delhi, October 6, 2015. Suburbanization of Bengaluru and other Indian cities: What do we know? Conference on Contemporary Issues and Trends in Urban Transformation, Department of Cultural Studies, Jain University Faculty of Humanities and Social Sciences, Bengaluru, September 12, 2015.

CURRICULUM VITAE

1.	**NAME OF FIRM**	:	Institute for Social and Economic Change		
2.	**NAME OF EXPERT**	:	**Gayithri Karnam**		
3.	**DATE OF BIRTH**	:		**CITIZENSHIP:**	Indian
4.	**EDUCATION**	:	• Ph.D Economics in 1990 - Institute for Social and Economic Change, Bangalore (University of Mysore) • M.A., Economics, Sri Krishnadevaraya University, Anantapur • B.A (Bachelor of Arts), Sri Venkateswara University, Tirupati		
5.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	Member, Gender Taskforce, Government of Karnataka Member; Action Task Force, Results framework, Government of Karnataka Member, Expert Committee to appraise the 12 Plan approach papers Member, Expert Committee to redesign Economic Survey, Government of Karnataka Advisor, India State fiscal management program, Government of Karnataka Member, Executive Council, Shastri Indo Canadian Institute, New Delhi Member, Board of Studies, Post Graduate department of Economics, Christ University Member, Examination Scrutiny Board, Sri Sathya Sai Institute of Higher Learning, Prasanti Nilayam Independent Director, Board of Directors, Hassan Mangalore Rail Company, Bangalore		
6.	**Books/Monographs**		2016, (Edited with K.V.Raju) Financing development: Financing India's development: Issues and challenges, Cambridge University Press Government Subsidies in Karnataka, ISEC Monograph, 2014, Monograph, 34 2008, (Co author), The Expenditure Planning and Management Practitioners Guide, USAID, New Delhi.. http://fiscalwatch.org/Reform_volumes/VolumeII.pdf 2008, (Co author), USAID/INDIA Reform Project Compendium with Practitioner's guide, Vol.1 USAID, New Delh.. http://fiscalwatch.org/Reform_volumes/VolumeI.pdf		
7.	**JOURNALS & EDITED VOLUMES**	:	2016, Integrated Child Development services in India: A Sub-National review (with Jonathan Gangbar, Pavithra Rajan)2016 in R.K.Mishra, K.N.Jehangir, Geeta Potaraju and Sobin George ed Health systems strengthening: Country Experiences, Academic Foundation, New Delhi. 2016, Are the Indian National Highway PPPs More Efficient than Non-PPPs? An Empirical Analysis through Data Envelopment Analysis (with Nagesha Gopalakrishnaiah) Journal of Infrastructure Development, 2016, vol. 8, issue 1, pages 27-35 2016, Financing Social sector development: Issues and Challenges, in K.Gayithri and K.V.Raju ed State, Governance and Financing India's development, Foundation, Cambridge University Press, New Delhi. 2016, Assessing program performance: The Results framework Experience, in K.Gayithri and K.V.Raju ed State, Governance and Financing India's development, Foundation, Cambridge University Press, New Delhi. 2015, Performance analysis of National Highways public private		

			partnerships in India (with Nagesha) Public works management and policy, 2015, vol 20(3) 264-285 2014, Housing Subsidies in K.Gayithri ed, Government Subsidies in Karnataka, ISEC Monograph 34, Institute for Social and Economic Change, Bangalore 2014, Industrial incentives in Karnataka, in K.Gayithri ed, Government Subsidies in Karnataka, ISEC Monograph 34, Institute for Social and Economic Change, Bangalore 2014, Public Expenditure in Karnataka: A sectoral analysis in National Law School of India University ed Budget for inclusive development: A critical analysis of recent budgets in Karnataka, NLSIU, Bangalore, India K.Gayithri (with Savitha) 2013, Performance management systems: The cases of Canada and India, in Hariharan, B and P.P Ajay Kumar ed Convergence and Configurations of Disciplines: Canada and India, Creative Books, New Delhi. 2012, District-Level NRHM Funds Flow and Expenditure: Sub-National Evidence from the State of Karnataka, The Indian Economic Journal, vol 60(2) July- September, 95-118 2012, Government Policy and Performance: A Study of the Indian Engineering Industry, Asian Business and Information management, (with Rajdeep Singha) Vol 3, Issue 2. 2012, Development implications of Karnataka Budget, Mysore Commerce, FKCCI Journal vol XXX11, Issue 4, April, FKCCI, Bangalore 2011, Indian civil servant pension liability projections: An alternative framework (with Ayanendu Sanyal and Erappa) The IUP Journal of Public Finance, vol IX,No 2,May, 7-29. 2011, National Pension Scheme- For whose benefit, (with Ayanendu Sanyal and Erappa) Economic and Political weekly, vol XLVI No 8, February 19, 17-19 2011, Role of Infrastructure in the Industrial development of Karnataka (with Rajdeep Singha) in Rudra P Pradhan ed Strategy of Infrastructure Finance, Macmillan- Advanced Research Series, Delhi 2010, Budget initiatives for better service delivery: Reform initiatives in an Indian state, Journal of Social and Economic Policy, Vol7,No 1 21-28 2009, Fiscal Transfers to Karnataka: Some Issues, in DK Srivatsava, KR Shanmugam and C Bhujanaga Rao (ed) Finance Commission Issues of Southern States, Madras School of Economic, Chennai, India 2009, Central Civil servant payments in India: Issues and Concerns, Pensions, An International Journal (Special Issue: Global Pension Perspectives) vol 14,3, Palgrave Macmillan, UK, 202-16 2008, Better program delivery through budget reforms; A Program Performance Budget Approach, Pre conference volume, International conference on public financial management for improving programme delivery ,Vigyan Bhawan, Government of India, New Delhi. 2008, Health, Nutrition and Child Development Services in India: Issues and concerns relating to public spending in B.Jayaram Bhat ed., Infrastructure Development in India, Kuvempu University, Shankaraghatta. 2008, Public Expenditure in India, Issues and Concerns, The Indian

			Economy Review, January, IIPM Bangalore. 2007, Industrialization in Karnataka: Structure and Achievements, in ICFAI ed. Karnataka Economy, Chennai 2007, “Industry, Trade and Commerce in Karnataka in Buchanan’s Account” (with Rajdeep Singha) Quarterly Journal of the Mythic Society, Vol.XCVIII, Issue No 2, April-June pp 94-109. 2006, “How efficient are Multinational firms in creating linkages? Evidence from the Indian Automobile Industry?”, (with J Venugopal), Nirma University Journal of Business and Management Studies” Vol 1.No 2.October, pp 67-84 Karnataka State Finances 2007, (with Prof Hemlata Rao and Dr.Devendra Babu) Karnataka Development Report, Academic Foundation, New Delhi Government Financing of Social Sector during the reform phase: Some Insights from Southern States, 2005. in G.K Karanth ed Dimensions of Social Development: Status Challenges and Prospects. ISEC Monograph Series 8 ISEC Bangalore. Deprivation: The Social Dimension (With G.S Aurora), 2004 in Poverty and Economic Reforms: The Social Concerns, Academic Foundation with ISEC, New Delhi Fiscal Distress in Karnataka: Some Issues, 2003, Journal of Social and Economic Development, Institute for Social and Economic Change,Vol.5 No.2. Housing Subsidies in Karnataka 2003, in Govinda Rao (ed) Volume and Composition of Budgetary Subsidies in Karnataka, Monograph, ISEC, Bangalore Industrial Incentives in Karnataka 2003, in Govinda Rao (ed) Volume and Composition of Budgetary Subsidies in Karnataka, Monograph, ISEC, Bangalore Industrial Co-Operatives: Problems and Prospects in Abdul Aziz and Mahadeva (ed) 2002 Co-operation at Cross Roads, Chetana Publishers,Mysore,May Infrastructure in the Industrial Development of Karnataka, in Srinivasa Gowda and D.T.Nanje Gowda (ed) Economic Development of Karnataka, Leading Issues 1999, 81 Annual Conference of the Indian Economic Association, Bangalore. "Karnataka Rajya Hana Kasu" in Abdul Aziz (ed) (1997), Karnataka Arthikathe, Kannada University, Hampi. Role of Infrastructure in the Industrial Development of Karnataka: A District Level Analysis, Artha Vijnana, Vol. XXXIX, No. 2. June, 1997 "Employment in the Manufacturing Sector in Karnataka: Reflections on the New Industrial Policy" (with Prof M Prahladachar), The Indian Journal of Labour Economics, April-June 1996. "Employment in the Manufacturing Sector in Karnataka: Reflections on the New Industrial Policy" (with M Prahladachar), The Indian Economic Association Conference Volume, 78th Annual Conference of the Indian Economic Association held at Chandigarh, December 28-30, 1995. "New Economic Policy, Voluntary Organisation and Rural Poor" (with Aurora, G S, Sashikala S and Smriti Srinivas) Economic and Political Weekly, April 2, 1994, Vol.XXIX, No.14. Credit Delivery in Rural Karnataka: A Case Study of Chickmagalur District" Journal of Rural Development, March 1993, Vol.12(3), pp.301-317.

			"A Review of Central Government Expenditure", Artha Vijnana, Vol. XXXIV, No. 3, pp.283-299, Sept. 1992. "Some Researchable Issues in the Economics of Indian Telecommunications" (with Vinod Vyasulu), Journal of Scientific and Industrial Research, August, 1991
8.	**COUNTRIES OF WORK EXPERIENCE**	:	India
9.	**LANGUAGE & DEGREE OF PROFICIENCY**	:	

Language	**Speak**	**Read**	**Write**
English	Good	Good	Good
Hindi	Good	Good	Good
Kannada	Good	Good	Good

10.	**EMPLOYMENT RECORD**	:	
	FROM: 1997 **EMPLOYER** **POSITION HELD:**		**TO: 2004** **Institute For Social And Economic Change** Associate Professor
	FROM: 2004 **EMPLOYER:** **POSITION HELD:**		**TO: 2006** **Bearing Point Global Operations Inc** Advisor
	FROM: 2006 **EMPLOYER:** **POSITION HELD:**		**TO: current** **Institute For Social And Economic Change** Associate Professor
10.	**WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED**		
	Project Name: Karnataka State Fiscal transfers to local bodies(Urban and Rural local bodies): The current status and the state's fiscal capacity **Year**: Ongoing **Client:** State Finance Commission **Position:** Project Director **Responsibilities:** Review finances of Urban and rural local bodies to ascertain current status. Review the Karnataka state finances and assess the fiscal capacity to enhance fiscal transfers to the local bodies		
	Project Name: Bengaluru region finances: A design for restructuring **Year**: 2015 **Client:** BBMP Restructuring Committee, Government of Karnataka **Position:** Project Director **Responsibilities:** Undertaken an assessment of fiscal health of BBMP and suggested corrective measures		
	Project Name: The New Economic and Climatic context and changing migration pattern in India (A study of Delhi and Karnataka) A massive survey of Urban migration undertaken) **Year**: 2009 **Client:** South Asian Network of Economic Institutes (SANEI) **Position:** Principal Researcher (along with Dr Renu Khosla, CURE,New Delhi) **Responsibilities** Survey of about 1000 households in Bangalore and Doddaballapura and a similar number in Delhi was undertaken, analysed and report was prepared		
	Project Name: Industrial Incentives in Karnataka An Evaluation of Capital Investment Subsidy in Karnataka", Department of Industries and Commerce, Government of Karnataka- A massive survey of 3000 industrial units undertaken in Bangalore division **Year**: 2003 **Position:** Project Director **Responsibilities:** Assessed the genuineness of industrial investment subsidy by surveying about 3000 industrial units in Bangalore division and submitted the report to KSIIDC		
	Project Name: Evaluation of State finances-Karnataka **Year**: 2014 **Client:** Government of India, Fourteenth Finance Commission **Position:** Project Director **Responsibilities:** As a project director, I organised collection of necessary data on public revenue and expenditure and submitted a report on Karnataka state finances to the Fourteenth Finance Commission		
	Project Name: Rapid Appraisal of the Results framework document **Year**: 2012		

	Client: Government of Karnataka Bangalore **Position:** Project Director **Responsibilities:** Examined the Results framewok documents of seven departments to appraise for the inadequacies in the RFD documents
	Project Name: District level Funds Flow and Expenditure Analysis under NRHM for the State of Karnataka and Tamilnadu- A PET survey **Year:** 2011 **Client:** Ministry of Health Government of India (National Health Systems Resource Center) , New Delhi **Position:** Project Director **Responsibilities** Funding support under NRHM to two select districts in Karnataka- Gulbarga and Chitradurga and their utilisation patterns were studied in the report submitted to Ministry of Health and Family welfare, GOI
	Project Name: Study of Government Subsidies in Karnataka **Year:** 2011 **Client:** Expenditure Reforms Commission **Position:** Coordinator **Responsibilities:** Evaluated the state government subsidies in Karnataka for their growth and governance issues.
	Project Name: Public Expenditure Review of Government of Karnataka **Year:** 2011 **Client:** Expenditure Reforms Commission **Position:** Project Director **Responsibilities:** Undertaken a temporal review of government expenditure and suggested policy corrective measures to the Expenditure Reforms Commission.
	Project Name: Study on Frame-work for assessing Performance and Outcome monitoring of Schemes/Programmes implemented by Government of Karnataka **Year:** 2011 **Client:** Expenditure Reforms Commission, Government of Karntataka **Position:** Project Director **Responsibilities:** Developed a tool to assess the performance of government programs- a review of best inter practices presented in the report
	Project Name: Mid term appraisal of the Eleventh Five Year Plan **Year:** 2012 **Client:** Ministry of Planning, Government of India **Position:** Project Director **Responsibilities:** Carried out an appraisal of the performance of the flagship programs during the Eleventh Five year plan
	Project Name: State Health Budget and Expenditure Tracking **Year:** 2010 **Client:** Ministry of Health, Government of India (National Health Systems Resource Center) , New Delhi **Position:** Project Director **Responsibilities** Developed suitable indicators to track health expenditure indicators
	Project Name: Designing the 'outcome' budget framework for Government of West Bengal **Year:** 2008 **Client:** DFID **Position:** Consultant (Part time) **Responsibilities** Designed a framework to track outcomes of government spending for Government of West

CURRICULUM VITAE

<table>
<tr><td>1.</td><td>NAME OF FIRM</td><td>:</td><td colspan="3">Infrastructure Development Corporation (Karnataka) Limited</td></tr>
<tr><td>2.</td><td>NAME OF EXPERT</td><td>:</td><td colspan="3">Dr. V. Sathyanarayana</td></tr>
<tr><td>3.</td><td>DATE OF BIRTH</td><td>:</td><td>31/07/1955</td><td>CITIZENSHIP:</td><td>Indian</td></tr>
<tr><td>4.</td><td>EDUCATION</td><td>:</td><td colspan="3">• PhD, National Law School of India University, 2009 <i>(Thesis on “Private Sector Participation in Infrastructure: A Critical Study on the Need for an Overarching Law”)</i>
• Master in Business Laws, National Law School of India University, 2005
• LLB, University of Delhi, 1998
• M.A. (English), University of Mysore, 1991</td></tr>
<tr><td>5.</td><td>MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS</td><td>:</td><td colspan="3">• Member of the Committee for drafting of a Comprehensive Water Law for the State of Rajasthan – appointed by National Law School of India University, Bangalore.
• Member of the Doctoral Committee to supervise a PhD scholar - Institute of Social & Economic Change, Bangalore
• Visiting faculty to National Law School of India University (Infrastructure Contracts)
• Master Trainer for the National PPP Program conducted by IDFC on behalf of KfW & Government of India
• Guest faculty to the Administrative Training Institute, Government of Karnataka, Mysore to impart continuous training to various levels of officers of Government on infrastructure PPPs
• Guest faculty to the State Institute of Urban Development, Government of Karnataka, Mysore to impart continuous training to various levels of municipal utilities and departmental officers of Government in urban PPPs</td></tr>
<tr><td>6.</td><td>OTHER TRAINING</td><td>:</td><td colspan="3">• Seminar on “Emerging Trends in Infrastructure” organized by iDeCK on 4th September 2012 at Bangalore.
• Conference on EPC Contracts, Tax, Legal and Commercial Imperatives organized by Infraline Research & Information Services & Trilegal Associates, New Delhi, April 24-25, 2006
• Workshop on International IT Contracts, Intellectual Property Law, Patents and Copyrights Law by CLA First India Cyber Space Camp at NLSIU on Information & Communication Technology Law October 7-8, 2005
• Workshop on Private Finance Initiative (Infrastructure Financing, Public-Private Partnerships, Contractual Structures, Legal Documentation) – organized by IDFC & Partnerships UK, October 4, 2001, Bangalore
• PPP and PFI workshop (PPP in Roads, PPP and PFI Experiences in UK, Annuity Approach in Road Financing, PPP in Tourism)– organized by KPMG & IDFC, August 26-27, 2003</td></tr>
<tr><td>7.</td><td>COUNTRIES OF WORK EXPERIENCE</td><td>:</td><td colspan="3">India, Sri Lanka, Nigeria</td></tr>
<tr><td>8.</td><td>LANGUAGE & DEGREE OF PROFICIENCY</td><td>:</td><td colspan="3"><table><tr><th>Language</th><th>Speak</th><th>Read</th><th>Write</th></tr><tr><td>English</td><td>Good</td><td>Good</td><td>Good</td></tr><tr><td>Hindi</td><td>Good</td><td>Good</td><td>Good</td></tr><tr><td>Kannada</td><td>Good</td><td>Good</td><td>Good</td></tr></table></td></tr>
<tr><td>9.</td><td colspan="5">EMPLOYMENT RECORD</td></tr>
</table>

	FROM: October 2000		**TO:** Till date
	EMPLOYER:	:	Infrastructure Development Corporation (Karnataka) Ltd., Bangalore.
	POSITION HELD	:	Chief Business Development Officer & Legal Counsel/ Chief Legal Counsel/ Head – Legal and Business Development/ Head-Administration & Government Liaison (Part of Urban Sector Team) Interaction with various clients on PPP projects in infrastructure, policy initiatives & regulatory development, dealt with administrative matters and at municipal level. Proficient in making of laws, development of policies & regulations, advice on institutional structures and development, contract formation, drafting and interpretation. Negotiations between the parties to a PPP contract. Familiar with infrastructure projects in transportation, tourism, industrial & urban sectors. Networking and follow up on various PPP projects handled by iDeCK and developed good relationships. Increased rapport with government departments resulted in more projects to the Company.
			TO: October 2000
	FROM: December 1998	:	Project Monitoring Unit, Finance Department, Government of Karnataka,
	EMPLOYER:		Bangalore.
			Deputy Director
	POSITION HELD	:	Monitoring of infrastructure and other projects developed and implemented by Government of Karnataka with external aided agencies such as World Bank, ADB, JBIC, KfW etc.
	FROM: June 1991		**TO:** December 1998
	EMPLOYER:	:	Ministry of Personnel, Public Grievances & Pensions, Govt. of India, New Delhi.
	POSITION HELD	:	Officer on Special Duty to Union Minister of State for Personnel, Public Grievances & Pensions and Parliamentary Affairs Worked in the office of the Hon'ble Minister dealt with central and state government policies and public grievance redressal issues related to recruitment, training, career development etc. Also assisted the Union Minister in Parliamentary work.
	FROM: September 1979		**TO:** June 1991
	EMPLOYER:	:	Export Inspection Agency – Ministry of Commerce, Govt. of India, New Delhi
	POSITION HELD	:	Secretary Assistance in administration matters related to pre-shipment inspection and quality control of export products from India.
10.	**WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED**		

Project Name : Strategy and Implementation Plan for Urban Drinking Water Policy of the Government of Karnataka
Year: June 2003 to November 2003
Location: Karnataka
Client : The World Bank
Position: Legal and Institutional expert
Main Project Features: The World Bank proposes to launch the water and sanitation sector reform process and implement the Urban Drinking Water Policy of the Government of Karnataka and has sought the assistance of iDeCK for the preparation of a strategy and implementation plan for the same.
Activities Performed:

- Diagnostic Study of water supply and sewerage sector in Karnataka
- Prepare water and sanitation sector investment plan
- Preparation of sector development action plan
- Definition of activities to be taken up under technical assistance
- Preparation and facilitation of two workshops

Project Name : Review of Water and Sewerage Sector in Karnataka
Year: July 2002 to August 2002
Location: Karnataka
Client : Infrastructure Development Department, Government of Karnataka
Position: Legal Expert
Main Project Features: Infrastructure Development Department, Government of Karnataka sought the assistance of iDeCK for reviewing the water supply and sewerage sector in Karnataka
Activities Performed: The status of water supply and sewerage services in Karnataka was reviewed and projects that can be taken up for implementation were suggested.

Project Name: Review of Water and Sewerage Sector in Bangalore City
Year: July 2002 to August 2002
Location: Karnataka
Client: Infrastructure Development Department, Government of Karnataka
Position: Legal Expert
Main Project Features: Infrastructure Development Department, Government of Karnataka sought the assistance of iDeCK for reviewing the water supply and sewerage sector in Bangalore.
Activities Performed: The status of water supply and sewerage services in the city of Bangalore was reviewed and projects that can be taken up for implementation were suggested.

Project Name: Assessment of performance indicators and score card based evaluation of efficiency Urban Local Bodies
Year: October 2002– December 2002
Location: Karnataka, India
Client: Directorate of Municipal Administration (DMA), Government of Karnataka
Main Project Features: DMA, in order to improve the efficiency of the Urban Local Bodies intended to carry out a performance measure of the municipal services such as water supply, municipal waste management, public health services, street lighting, civic amenities, property tax, issue of trade licenses, birth and death certificates and so on. The objectives this study were to assess the adequacy of municipal services with respect to the desired norms, develop a set of performance indicators, create a scorecard template for capturing the overall effectiveness of delivering municipal services and develop a monitoring and feedback system. iDeCK was appointed by DMA to carry out a study to suggest a mechanism for measuring the performance of the aforesaid municipal services and to develop a score card.
Position: Legal expert
Activities Performed:

- Assessment against the objectives, standards and norms and identification of lacunae, if any.
- Stakeholder consultations.
- Setting out an output based service delivery measurement mechanism for each service, wherever feasible and identification of indicators.
- Creating a score card template for capturing the overall effectiveness of delivering the specific municipal services.

Project Name: Strategy and Implementation Plan for Urban Drinking Water Policy of the Government of Karnataka
Year: June 2003 – November 2003
Location: Karnataka
Client: The World Bank
Main Project Features: The World Bank intended to launch the water and sanitation sector reform process and implement the Urban Drinking Water Policy of the Government of Karnataka and sought the assistance of iDeCK for the preparation of a strategy and implementation plan for the same.
Position: Legal Expert
Activities Performed:

- Review of legal and regulatory framework
- Development of policy guidelines
- Preparation of policy framework

Project Name: Governance Options for New City in Raipur (Naya Raipur), Chhattisgarh

Year: August, 2006– December, 2006
Location: Chhattisgarh
Client: Infrastructure Development Finance Corporation/Naya Raipur Development Authority, Government of Chhattisgarh
Main Project Features: Government of Chhattisgarh (GoC) with an objective to decongest its capital city of Raipur decided to develop about 8000 hectares of land at a distance of about 15 kms from Raipur known as 'the Naya Raipur'. Naya Raipur Development Authority (NRDA), a Special Development Area Authority appointed Infrastructure Development Finance Company Ltd (IDFC) for undertaking a study to evaluate options for establishing suitable governance framework for Naya Raipur. IDFC entrusted the task to iDeCK which in association with J. Sagar Associates, a law firm and Prof. Nandimath Omprakash V, Associate Professor of Law, NLSIU prepared and submitted a governance report
Position: Team Leader
Activities Performed:

- Detailed review of the existing legal framework in the State of Chhattisgarh.
- Identification of key statutes that are currently applicable to the State of Chhattisgarh and the Authorities created pursuant to such statutes.
- The various laws relating to urban governance and town planning in the States of Karnataka, Madhya Pradesh Maharashtra, Haryana and Tamil Nadu were analyzed.
- Prepared and submitted a governance report recommending a separate legislation to be introduced to adequately empower NRDA to perform governance functions of Naya Raipur. The Governance Report has recommended a template containing indicative chapterisation of the proposed legislation

Project Name: Draft Legislation for New City in Raipur (Naya Raipur), Chhattisgarh
Year: January, 2007 – June, 2007
Location: Chhattisgarh
Client: Naya Raipur Development Authority, Government of Chhattisgarh
Main Project Features: In follow up of the governance report submitted by IDFC/iDeCK to Naya Raipur Development Authority, NRDA requested iDeCK to draft suitable legislation for Naya Raipur. iDeCK prepared draft legislation in association with Prof. Nandimath Omprakash V, Associate Professor of Law, NLSIU and the same has been submitted to NRDA.
Position: Team Leader
Activities Performed:
Drafting legislation known as Naya Raipur Development Authority Act. The said Act provides provision for establishment of Naya Raipur Development Authority which is a transitional authority empowered with all encompassing powers of planning, development, revenue taxation and land acquisition in order to provide basic amenities / infrastructure in the Naya Raipur

Project Name: Drafting Legislation for the State of Karnataka for the purpose of acquisition of right of user for laying underground utilities
Year: September 2011– Ongoing
Location: Karnataka
Client: Karnataka State Industrial and Infrastructure Development Corporation Limited
Main Project Features: The Government of Karnataka intends to enact a specific legislation for acquisition of Right of User for the purpose of construction and management of underground utilities. The objective of the specific legislation would be to set out the principles, guidelines and procedure with regard to acquisition of RoU and to set out a compensation mechanism.
iDeCK is appointed by KSIIDC to assist them in the preparation of draft legislation for the aforesaid purpose.
Position: Team Leader
Activities Performed:

- Review of Central legislations like the Land acquisition Act, 1894 and the proposed LARR bill, 2011, existing legislations in other states, international legislations and other relevant legislations in the state of Karnataka with regard to acquisition of Right of user
- Meetings with stakeholders like BWSSB, KUWSDB, KUIDFC, KPTCL, BSNL etc
- Prepare the draft Karnataka Underground Pipelines (Acquisition of Right of User in Land) Bill

Project Name: Preparation of a Draft Anti-Littering Law
Year: October 2005– December 2005
Location: Karnataka

Client: Bangalore Mahanagara Palike
Main Project Features: BMP intended to introduce an Anti-Litter Law covering aspects such as control and abetment of throwing of litter viz., cigarette butts, plastic waste, pamphlets, spitting, etc. The law was drafted and submitted to BMP.
Position: Legal Expert
Activities Performed:
Preparation of Draft Law

Project Name: Preparation of Advertisement By-Law
Year: October 2005– December 2005
Location: Karnataka
Client: Bangalore Mahanagara Palike
Main Project Features: BMP intended to amend the Advertising By-Laws by including various provisions after considering technological advancement, types of sign boards, sign boards put in front of households and also on the gates of some households, etc. A draft By-law was prepared and submitted to BMP.
Position: Legal Expert
Activities Performed:
Preparation of Draft Law

Project Name: Preparation of a draft Issue of Hakku Patra (Living Rights) to Slum Dwellers & Redevelopment Of Slums On Public And Private Lands
Year: November, 2011– Work in progress
Location: Karnataka
Client: Karnataka Slum Development Board and Housing Department, Government of Karnataka
Main Project Features: iDeCK has been appointed by KSDB to assist them in preparing the draft Policy for Issue of Hakku Patra to Slum Dwellers & Redevelopment of Slums on Public And Private Lands for the State of Karnataka.
The purpose of this Bill is to provide for a directive document to different stakeholders involved in slum redevelopment such as slum board, urban local bodies, etc. The policy sets out the various scenarios for slum redevelopment, eligibility conditions for entitlements to dwelling space/units, implementation modes, roles of stakeholders and toolkit. The policy provides a framework to facilitate the government machinery to work towards tackling the issues with slums in cities and working towards creating slum-free cities in Karnataka.
Position: Legal Expert
Activities Performed:

- Review of Central and other State Government Schemes and policies for slum rehabilitation and their impact
- Evolving a framework for the policy, including legal, institutional aspects
- Preparation of a Draft Policy
- Incorporating recommendations of other departments viz. Planning and Urban Development into the policy
- Revision and finalization of draft bill based on the feedback from the client

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Project Name: Preparation of PPP Manual for mainstreaming PPPs in India
Year: October 2012 – December 2013
Location: India
Client: Asian Development Bank
Main Project Features: Public Private Partnerships (PPP) are a mainstream strategy for infrastructure creation in India. The Asian Development Bank (ADB) is supporting the Government of India (GOI) with a technical assistance (TA) for mainstreaming PPPs across the country with several technical assistance (TA) programs. In light of the success of the initial efforts under the earlier TAs, the 'next generation' of PPP enabling policies and institutions is being addressed to streamline and further evolve the PPP policy and enabling environment to provide additional mechanisms to generate high-quality transactions. In this regard, ADB is assisting Department of Economic Affair, Government of India in designing key structural interventions to facilitate Public Private Partnerships (PPP) at a national level. One such initiative is preparation of a consolidated ‘PPP Manual’ consolidated PPP manual that forms a standard guide for PPP project development and standardization of contracts. The consortium of iDeCK, IDFC Limited and IIPPL was selected through a competitive bid process for preparing the PPP Manual.
Position: Legal Expert
Activities Performed:

- Compilation of all existing guidance material and toolkits prepared by Government of India, specific state level agencies and multilateral agencies in the sectors of water supply, urban transport, health, education and solid waste management sectors.

- Developing Guidance notes on additional areas.
- Integrating existing and new guidance material into a consolidated PPP Manual
- Report on Principles for up-scaling PPPs through programmatic approach for infrastructure and social sectors
- Standardization of contract principles and preparing a list of key standard clauses for PPP agreements.

Project Name: Preparation of Integrated Energy Policy for Karnataka
Year: May 2011 – September 2011
Location: Karnataka, India
Client: Energy Department, Government of Karnataka, India
Main Project Features: iDeCK was appointed by Energy Department to assist them in preparing an Integrated Energy Policy for the State of Karnataka. The purpose of this Policy was to provide a framework for development of the sector over the next 5 years setting out performance targets for generation, transmission and distribution, specifying project delivery process, promoting private sector investment in the sector and generally to improve the delivery of services to the consumers in the state of Karnataka.
Position: Team Leader
Activities Performed:

- Review of similar specific policies in other states
- Review of institutional and legal framework
- Consultation with various stakeholders like government officers , industrial associations etc. with a view to draft Policy
- Drafting of Integrated Energy Policy for Karnataka
- Revision and finalization of draft Policy based on the feedback collected during the consultation proceedings

CURRICULUM VITAE

1.	**NAME OF FIRM**	:	Institute for Social and Economic Change
2.	**NAME OF EXPERT**	:	**Dr. Manasi. S**
3.	**DATE OF BIRTH**	:	25th September, 1969 **CITIZENSHIP:** Indian
4.	**EDUCATION**	:	• Ph.D Economics, Mysore University, India, June 2002 • Master of Arts, Post Graduate in Economics, Bangalore University, India, April 1991 • Bachelor of Arts, History, Economics, Sociology, Bangalore University, India, April 1989
5.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	• Indian Society for Ecological Economics • Bangalore Water Supply and Sewerage Board, Technical Committee, Bangalore • Water Conflicts Forum, SOPPECOM • Karnataka Evaluation Authority, Government of Karnataka
6.	**OTHER TRAININGS**	:	**Participation in Training Programs** 3rd Run of the Temasek Foundation Water Leadership Programme (TFWLP), 12th to 23rd November 2012 at the Lee Kuan Yew School of Public Policy (LKY School), National University of Sigapore's Bukit Timah Campus in Singapore. **Teaching in Training Programs (Recent)** • Manasi. S, Towards enabling Holistic Health through Local Ecology and Better Partnerships in Semi Arid Tropics of India – Case Study, ISEC-Nordic Course in India (NCI) Course on Approaching the environment in India – Issues and methods in the study of nature-economy-society interface, Bengaluru, July 7, 2014. • Sanitation Challenges in India – An overview, ISEC-Nordic Course in India (NCI) Course on Approaching the environment in India– Issues and methods in the study of nature-economy-society interface, Bengaluru, July 7, 2014. • S. Manasi, Urban Lakes of Bangalore ISEC-Nordic Course in India (NCI) Course on Approaching the environment in India– Issues and methods in the study of nature-economy-society interface, Bengaluru, July 7, 2014. • S. Manasi, Urban Property Ownership Records ISEC-Nordic Course in India (NCI) Course on Approaching the environment in India – Issues and methods in the study of nature-economy-society interface, Bengaluru, July 7, 2014. • Manasi. S, Urban Property Ownership Records – Experiences from Karnataka and Best Practices in Solid Waste Management and Sanitation, ISEC-Nordic Course in India (NCI) Course on Approaching the environment in India – Issues and methods in the study of nature-economy-society interface, Bengaluru, July 7, 2015. • Manasi. S. Initiatives and Best Practices in Solid Waste Management and Waste Water Management in the Training programme on Urban administration and governance, organized by the Environmental Management & Policy Research Institute (EMPRI) and Karnataka Urban

<table>
<tr><td></td><td></td><td></td><td>Infrastructure and Development Finance Corporation (KUIDFC), Bangalore, April 1, 2015.</td></tr>
<tr><td>7.</td><td>COUNTRIES OF WORK EXPERIENCE</td><td>:</td><td>India</td></tr>
<tr><td>8.</td><td>LANGUAGE & DEGREE OF PROFICIENCY</td><td>:</td><td>
<table>
<tr><th>Language</th><th>Speak</th><th>Read</th><th>Write</th></tr>
<tr><td>English</td><td>Good</td><td>Good</td><td>Good</td></tr>
<tr><td>Hindi</td><td>Fair</td><td>Fair</td><td>Fair</td></tr>
<tr><td>Kannada</td><td>Good</td><td>Good</td><td>Good</td></tr>
<tr><td>Telugu</td><td>Good</td><td>No</td><td>No</td></tr>
<tr><td>Tamil</td><td>Fair</td><td>No</td><td>No</td></tr>
</table>
</td></tr>
<tr><td>9.</td><td>EMPLOYMENT RECORD</td><td>:</td><td></td></tr>
<tr><td></td><td>FROM: June 2003
EMPLOYER
POSITION HELD</td><td></td><td>TO: till date
Institute for Social and Economic Change, Bangalore, India
Associate Professor/ Assistant Professor/ Project Director – STRIVER/ Research Officer/ Research Associate</td></tr>
<tr><td></td><td>FROM: June 2001
EMPLOYER:
POSITION HELD</td><td></td><td>TO: May 2003
GREEN Foundation, Bangalore, India
Research Officer</td></tr>
<tr><td></td><td>FROM: August 2000
EMPLOYER:
POSITION HELD</td><td></td><td>TO: March 2001
Centre for Budget and Policy Studies, Bangalore, India
Research Associate</td></tr>
<tr><td>10.</td><td colspan="3">WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED</td></tr>
<tr><td></td><td colspan="3">Project Name: Will Bengaluru become Smart or Livable?
Year: Ongoing
Client: Indian Council for Social Science Research, New Delhi.
Position: Co- Project Investigator
Responsibilities: Writing Proposals, research articles and research reports
Co-ordination - Have been involved in co-ordination, data interpretation and Report writing</td></tr>
<tr><td></td><td colspan="3">Project Name: Pathways to Sanitation: Growing Challenges and Access to Urban Poor – A Study of Bangalore City
Year: 2016
Client: Human Settlements Management Institute, New Delhi
Position: Principal Investigator
Responsibilities: Writing Proposals, research articles and research reports
Co-ordination - Have been involved in project administration, research coordination, fieldwork, writing case studies, and Report writing</td></tr>
<tr><td></td><td colspan="3">Project Name: A pilot of Bangalore City Surveys-2
Year: 2015
Client: Institute for Social and Economic Change, Bangalore
Position: Co- Project Investigator
Responsibilities: Writing Proposals, research articles and research reports
Co-ordination - Have been involved in co-ordination, data interpretation and Report writing</td></tr>
<tr><td></td><td colspan="3">Project Name: Towards Improving Rural Sanitation in Karnataka – Understanding the Performance and Benefits of constructing private toilets under Infosys Foundation Assisted Project – Parishudh Initiative
Year: 2014
Client: Infosys Foundation Assisted Project
Position: Principal Investigator
Responsibilities: Writing Proposals, research articles and research reports
Co-ordination - Have been involved in project administration, research coordination, fieldwork, writing case studies, and Report writing</td></tr>
<tr><td></td><td colspan="3">Project Name: Environmental Governance in India: An empirical study of urban landscape and regional levels
Year: 2015
Client: Institute for Social and Economic Change, Bangalore
Position: Co-Principal Investigator
Responsibilities: Have been involved in project administration, research coordination, fieldwork, writing</td></tr>
</table>

	case studies, and Report writing
	Project Name: Ecology and Culture: Water and Scriptures **Year**: 2015 **Client:** Institute for Social and Economic Change, Bangalore **Position:** Co-Principal Investigator **Responsibilities:** Have been involved in project administration, research coordination, and Report writing
	Project Name: Land Policy and Administration, supported by The World Bank **Year**: 2015 **Client:** World Bank **Position:** Principal Investigator **Responsibilities:** Have been involved in project administration, research coordination, and Report writing
	Project Name Evaluation study on impact of implementation of Western Ghats Development Programme in Karnataka **Year**: 2012 **Client:** Rural Development and Panchayat Raj, Govt. of Karnataka **Position:** Co-Principal Investigator **Responsibilities:** Have been involved in project administration, research coordination, and Report writing
	Project Name: Short-term assignment to work on Climate Change for the World Bank **Year**: 2011 **Client:** World Bank **Position:** Co-Principal Investigator **Responsibilities:** Have been involved in data analysis and Report writing
	Project Name: Towards Improving Participatory Irrigation Management and Performance of Water Users Associations under JICA Assisted Irrigation Projects in India **Year**: March 2010 to July 2010 **Client:** Japan International Cooperation Agency, New Delhi **Position:** Principal Investigator **Responsibilities:** Have been involved in project administration, research coordination, and Report writing
	Project Name: Eco-threats of E-Waste on Urban Ecology – A Case Study of Bangalore City **Year**: February 2009 to June 2009 **Client:** ISEC, Bangalore **Position:** Principal Investigator **Responsibilities:** Project coordination, Field work, and report writing
	Project Name: Subsidies in Water Supply and Sanitation **Year**: December 2009 to May 2011 **Client:** Expenditure Reforms Commission, Government of Karnataka **Position:** Co-Principal Investigator **Responsibilities:** Coordination, Field work and report writing
	Project Name: Strategy and Methodology for Improved IWRM – An Integrated Interdisciplinary Assessment in four twinning River Basins supported by European Commission **Year**: July 2006 to June 2009 **Client:** IWRM **Position:** Co-Principal Investigator **Responsibilities:** Have been involved in project administration, research coordination, and Report writing
	Project Name: Tank System in the Mid-Godavari Basin - Valuation of Ecological, Economic and Social Services supported by World Wild Fund for Nature, Hyderabad **Year**: April 2005 to November 2007 **Client:** World Wild Fund for Nature, Hyderabad **Position:** Research Officer **Responsibilities:** Field work, data analysis, chapter writing
	Project Name: Urban Water Supplies: Emerging Alternatives (Hubli, Dharwad and Belgaum cities of Karnataka) **Year**: August 2005 to June 2007 **Client:** Karnataka Urban Infrastructure and Finance Corporation, GOK.ISEC, Bangalore **Position:** Research Officer **Responsibilities:** Field work, Data analysis, Resarch articles and research reports, Case studies

	Project Name: Alternative Strategies to Rural Water Supply - A comparative study of Karnataka and Gujarat **Year**: May 2003 to September 2004 **Client:** International Water Management Institute, TATA, Srilanka **Position:** Research Associate **Responsibilities:** Writing Proposals, Field work, research articles and research reports
	Project Name: Agro-biodiversity Conservation through establishing Community Seed Bank Network for Sustainable livelihoods in Karnataka **Year**: June 2001 to May 2003 **Client:** Genetic Resources, Energy, Ecology and Nutrition (GREEN) Foundation, Bangalore **Position:** Research Officer **Responsibilities:** Involved in monitoring, co-ordinating and evaluating Field Extension programs, involved in Data Analysis, preparation of case studies and Report writing and preparation of project proposals, annual reports and Newsletters
	Project Name: Integrated Farming systems for Strengthening Farmers Livelihoods **Year**: June 2001 to May 2003 **Client:** Genetic Resources, Energy, Ecology and Nutrition (GREEN) Foundation, Bangalore **Position:** Research Officer **Responsibilities:** Involved in monitoring, co-ordinating and evaluating Field Extension programs, involved in Data Analysis, preparation of case studies and Report writing and preparation of project proposals, annual reports and Newsletters
	Project Name: An International Network for Comparing and Supporting Endogenous Development **Year**: June 2001 to May 2003 **Client:** Genetic Resources, Energy, Ecology and Nutrition (GREEN) Foundation, Bangalore **Position:** Research Officer **Responsibilities:** Involved in monitoring, co-ordinating and evaluating Field Extension programs, involved in Data Analysis, preparation of case studies and Report writing and preparation of project proposals, annual reports and Newsletters
	Project Name: Natural Resource Management and Panchayatiraj Institutions **Year**: August 2000 to March 2001 **Client:** Center of Budget and Policy Studies (CBPS), Bangalore **Position:** Research Associate **Responsibilities:** Involved in Extensive field work, Data Analysis and Report Writing

CURRICULUM VITAE

1.	**NAME OF FIRM**	:	Infrastructure Development Corporation (Karnataka) Limited
2.	**NAME OF EXPERT**	:	**Sushma Nirmal**
3.	**DATE OF BIRTH**	:	December 1, 1974 **CITIZENSHIP:** Indian
4.	**EDUCATION**	:	Master of Environmental Planning, School of Planning and Architecture, New Delhi, 2000 Bachelor of Architecture, Rashtriya Vidyalaya College of Engineering, Bangalore, 1997
5.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	Council of Architecture
6.	**OTHER TRAINING**	:	Nil
7.	**COUNTRIES OF WORK EXPERIENCE**	:	India with insights for capacity development in countries including Bangladesh and Sri Lanka
8.	**LANGUAGE & DEGREE OF PROFICIENCY**	:	
9.	**EMPLOYMENT RECORD**	:	

Language	**Speak**	**Read**	**Write**
English	Good	Good	Good
Hindi	Good	Good	Good
Kannada	Good	Good	Good

FROM: November 2004 **TO:** Till date
EMPLOYER: **Infrastructure Development Corporation (Karnataka) Ltd.**
POSITION HELD **Senior Vice President / Senior Associate / Associate**

Responsible for project development, implementation, bid process management and report documentation for various projects. Work covers areas such as:

- Project Development and Advisory
- Planning
- Social and Environmental Studies
- Project Structuring
- Preparation of Detailed Project Reports
- Preparation of Bid Documents
- Bid Process Management

FROM: May 2000 **TO:** October 2004
EMPLOYER: **Bangalore Agenda Task Force**
POSITION HELD **Project Co-ordinator**

The main area of focus was Urban Spaces. Work involved improving and upgrading the quality of Urban Spaces, addressing aspects such as sustainability, capacity building, systems and process reforms and infrastructure provision

- Rejuvenation of Heritage Park
- Redevelopment of Police Stations
- Freedom Park- Urban Design Project
- Nirmala Bangalore- Urban Sanitation Programme
- Bus Shelter and Street Furniture Programme.

FROM: October 1997 **TO:** July 1998
EMPLOYER: **V.K. Giridhar Architects**
POSITION HELD **Architect**

Work Involved Design Development, Preparation of Working Drawings, Preparation of Tender Drawings, Site Supervision

10. WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED

Project Name: Development of City Development Strategy & Investment Plan for Belgaum City
Year: March 2010- December 2011

Location: Belgaum

Client: Belgaum City Corporation, Belgaum

Main Project Features: Belgaum City Corporation was desirous of preparing a city development strategy plan in the lines of JNNURM scheme. In this regard, it appointed iDeCK to assess the infrastructure requirement in the city, estimate investments, assess strength of the municipal finances and conduct stakeholder consultation. The plan so prepared was presented to the Karnataka State Assembly seeking for additional funds for improvement of urban infrastructure services in the city.

Position: Team Leader & Policy Expert

Activities Performed:

- Preparation of City Development Strategy Plan through organizing strategy meetings with Municipal Corporation and other government agencies
- Integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets,
- Preparation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda
- Recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision.

Project Name: Revision of CDP for Bruhat Bangalore Mahanagara Palike (BBMP)

Year: March 2007- December 2009

Location: Karnataka

Client: Karnataka Urban Infrastructure Development & Finance Company Ltd.

Main Project Features: Owing to the constitution of the Bruhat Bangalore Mahanagara Palike (Greater Bangalore metropolitan limits), there was a need for revision of the City Development Plan prepared for erstwhile Bangalore Mahanagara Palike prepared under the JNNURM scheme. The assignment involved assessing the urban infrastructure need in the additional surrounding 100 villages that were added to the erstwhile BMP, estimating investments, conducting stakeholder meetings, assessing the strength of BBMP to sustain such development proposed and prepare a strategy plan for the city.

Position: Research & Analysis Expert

Activities Performed:

- Preparation of City Development Strategy Plan through organizing strategy meetings with Municipal Corporation and other government agencies
- Integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets,
- Preparation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda
- Recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision.

Project Name: Preparation of CDP for Mysore

Year: November 2005 – April 2006

Location: Mysore, Karnataka

Client: Mysore City Corporation

Main Project Features: Preparation of City Development Strategy for Mysore City.

Position: Urban Sector Expert

Activities Performed: Was involved in preparation of City Development Strategy Plan for Mysore city through stakeholder meetings with various government agencies, elected representatives and citizen groups, integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets, formulation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda and recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision statement.

Project Name: Preparation of City Infrastructure Investment Plan for Mandya City – Formulation of Development Strategy

Year: December 2013- March 2014

Location: Karnataka

Client: Mandya City Municipal Council

Main Project Features: Mandya City Municipal Council (MCMC) in order to develop the city's urban infrastructure and help it cope up with the future growth patterns had identified several projects in various sectors including roads, urban transport, water & sanitation, solid waste management, housing, tourism & heritage, health, education and others for promoting the city as a key node in the development map of Karnataka through industrial and infrastructure development. In order to develop a holistic City Infrastructure Investment Plan & Vision Document for the city, iDeCK was appointed by MCMC for undertaking the necessary activities including a detailed analysis of existing situation, developing a long term vision for the city and identification of critical projects to achieve the targeted vision.

Position: Team Leader & Policy Expert

Activities Performed:

- Review the secondary data and the reports available and analyze the existing situation comprising demographic, economic, financial, infrastructure, physical, environmental and institutional aspects
- Conducting a SWOT analysis and develop service indicators
- Integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets
- Preparation of vision statement in consultation with the stakeholders, preparation of investment plans for identified sectors
- Prepare an indicative list of projects that could be undertaken in the city, based on discussions with various government departments. Carry out a broad prioritization of such projects in consultation with the stakeholders

Project Name: Investment Plan for Financing Urban Infrastructure Projects in select towns of Karnataka based on Dr. D.M. Nanjundappa Committee Report

Year: June 2008 - September 2008

Location: North Karnataka

Client: Karnataka Urban Infrastructure Development & Finance Company Ltd

Main Project Features: The Government of Karnataka constituted a Committee headed by its Chairman Dr. D.M. Nanjundappa, former Deputy Chairman, State Planning Board to study regional imbalances in development among North Karnataka districts in the state and to advise GoK on remedial measures to redress the regional imbalances. IDeCK assisted KUIDFC in the preparation of action plan for utilization of funds for projects proposed by the Committee.

Position: Research & Analysis Expert

Activities Performed:

- Collect information from KUWSDB on estimated project cost by them for water supply and sewerage projects for the identified ULBs in North Karnataka
- Collect information on various schemes viz., Karnataka Municipal Reform Project, North Karnataka Urban Sector Improvement Project, Urban Infrastructure Development Scheme for Small and Medium Towns etc.

  Discussions with concerned agency officials, preparation of the estimate of the financial requirement for undertaking projects in the identified ULBs in North Karnataka such as Bijapur, Dharwad, Uttara Kannada, Belgaum, Gulbarga, Raichur and Bellary districts. Preparation of phasing investment plan over a period of 8 years

Project Name: Preparation of CDP for Bangalore

Year: March 2006 – September 2006

Location: Bangalore, Karnataka

Client: Karnataka Urban Infrastructure Development & Finance Corporation

Main Project Features: Preparation of City Development Strategy for Bangalore City

Position: Urban Sector Expert

Activities Performed: Was involved in preparation of City Development Strategy Plan for Bangalore city through stakeholder meetings with various government agencies, elected representatives and citizen groups, integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets, formulation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda and recommendation of

	suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision statement.
	Project Name: Structuring Options for Slum Rehabilitation Project at Chandigarh **Year:** September 2005- January 2006 **Location:** Chandigarh **Client:** Chandigarh Housing Board **Main Project Features:** CHB, with the objective of improving the living conditions of an estimated 22,000 slum dwelling families, initiated a project to relocate them to new housing units in primarily two parts in the city – Maloya and Dhanas and intended to develop and analyze the framework and restructuring options for rehabilitation of slums in the city. iDeCK was appointed for carrying out the financial feasibility assessment and structuring of the project. **Position:** Sector Expert **Activities Performed:** • Socio economic survey • Review of Housing Finance Market in India • Assessment of Demand and Design and Construction Requirements • Development of Operational Framework and Implementation Framework
	Project Name: Preparation of Planning Guidelines for Slum Free City Plan of Action **Year:** December 2010 – May 2011 **Location:** India **Client:** GHK Consulting Limited/DFID **Main Project Features:** GHK Consulting Limited (hereinafter referred to as "GKH"), London is the Project Management Consultant for Support to National Policies for Urban Poverty Reduction Programme, a project funded by UK Department for International Development (DFID). Under this initiative, DFID is supporting the Ministry of Housing and Urban Poverty Alleviation (MoHUPA), Government of India (GoI) achieve the objectives of 'Rajiv Awas Yojana' (RAY). This scheme envisages a 'Slum Free City' for the urban poor and slum dwellers by focusing on a mulit-pronged approach. MoHUPA has formulated a set of Guidelines for Slum Free City Planning under RAY. Appointed by GHK for preparing the Planning Guidelines for Slum Free City Plan of Action. **Position**: Urban Specialist **Activities Performed:** As Urban Specialist, carried out the following activities of the assignment: • Preparation of a strategy for prevention of slums • Assessment of sources of financing and • Preparation of Investment and Financing Strategy • Assessment of various development options • Preparation of Institutional framework.
	Project Name: Preparation of Integrated Municipal Solid Waste Management Strategy for Mysore **Year:** November 2006 – July 2010 **Location:** Karnataka **Client:** Mysore City Corporation, Mysore **Main Project Features:** Mysore city is one of heritage cities selected under JNNURM scheme for urban infrastructure development. In this regard MCC intendes to utilize the funds provided under the scheme for effective management of municipal solid waste. iDeCK is assisting MCC by providing assistance through the entire development cycle of the project (starting from preparation of DPR to selection of private operator/developer) **Position:** Bid Documentation Expert **Activities Performed:** As Bid Documentation Expert, Sushma carried out the following activities in the assignment: • Identification of site for a landfill and appropriate technology • Preparation of detailed project report • Carrying out Social & Environmental Impact Studies • Estimation of project costs and viability • Assistance in obtaining regulatory clearances (AAI, KSPCB) • Preparation of tender documents including request for qualification, request for proposal, draft concession agreement and project information memorandum

- Bidding Process management
- Assisting MCC in obtaining approval from JNNURM
- Negotiation assistance till signing of agreement with private developer structures

Project Name: Management of Municipal Solid Waste in Bengaluru
Year: December, 2014-Ongoing
Location: Bangalore
Client: Karnataka Urban Infrastructure Development & Finance Corporation

Main Project Features: In the light of current MSW crisis of Bengaluru and the directions of the Karnataka High Court and Lok Adalat in several court cases, Karnataka Government planned to review and revise the master plan and evolve a strategy which is forward-looking, that takes cognizance of the changes that have taken place in the sector. In order to improve the efficiency of the collection and transportation of MSW in the city, Karnataka Urban Infrastructure Development & Finance Corporation (KUIDFC) requested iDecK to revisit the normative standards and carry out the estimation of infrastructure required for 113 wards (out of 198 wards) for which the tenders are currently expired. Also the consultant is assisting the city corporation in preparing the bid documents for these wards.
Position: Planning Expert
Activities Performed:

- Assessment of Baseline Data
- Benchmarking Study: Review of Normative Standards related to
  - Equipment for handling MSW
  - Vehicles used for transportation
  - Deployment of manpower
  - Undertaking other related services
- Preparation of Bid Documents: RFP document and Draft Service Contract

Project Name: Consulting Services for Sanitation Action Plan and Technology Demonstration(s) for 30 Pourashavas in Bangladesh
Year: January 2015-Ongoing
Location: NA
Client: Bremen Overseas Research and Development Association Ltd. (BORDA)
Main Project Features: The scope of work of the project entailed the following tasks:

- Review and Analysis of existing sanitation situation across the sanitation value chain and cross-cutting themes, existing institutional and governance framework for provision of sanitation services
- Assessment (surveys) of Demand for Sanitation Solutions across the Sanitation Value Chain and cross-cutting themes, Analysis of Demand Supply Gap, strategy Preparation for Sanitation Solutions across the Value Chain and Cross-Cutting themes
- Sanitation Action & Investment Plan

Position: Senior Sanitation Specialist
Activities Performed:

  - Review the data and project interventions for one pourashava
  - Overall inputs for policy, sustainability, institutional, financing, etc.

Project Name: Revitalization of City Core in Petta Area of Bangalore
Year: February, 2010-July, 2010
Location: Bangalore
Client: Infrastructure Development Department

Main Project Features: Bengaluru Petta is the largest informal economy of Bangalore (1305 square kilometres). The Petta area is structured in the contemporary style of deep networks of crowded streets richly represented the multi-cultural identity, social history, and economic geography of the times and it needs to be revitalized. IDD had undertaken the study with the assistance of iDeCK with an objective of preservation of the cultures, traditions and trading practices that have been in use for centuries now. Also, to study how to decongest the area with good planning and adding high end infrastructure by keeping the future and long term requirements of the city in mind.
Position: Urban Planner/ PPP Expert

	Activities Performed: • Study of existing infrastructure, study of legal framework for the heritage area • Process of rejuvenation, identification of environmental and social issues • Suggest possible structures for rejuvenation, structuring the project • Risk assessment and mitigation matrix
	Project Name: Development of Lake Conservation Projects, Karnataka **Year:** February, 2010- July, 2010 **Location:** Bangalore **Client:** Infrastructure Development Department **Main Project Features:** Infrastructure Development Department (IDD), Government of Karnataka realizes that Lakes being major sources of accessible fresh water require well planned, sustainable and scientific efforts to prevent their degradation. It as an imperative to restore and conserve lakes and IDD intended to explore the possibility to work in close partnership with the private sector in protection, conservation and sustainable management of lakes. With this background, feasibility study had been undertaken by iDeCK for IDD to analyze the various scenarios to take up the conservation under the PPP model. **Position:** Team Leader **Activities Performed:** • Assessment of trends in the Sector • Study of Impact of urbanization on lakes • Identifying process for prioritization of lakes to be taken up for conservation • Identifying projects to be taken up on pilot basis • Study of legal framework • Carrying out market assessment • Estimating project financials and forming a viable project • Structure a framework for implementation of the project on PPP • Risk assessment and mitigation matrix

CURRICULUM VITAE

1.	**NAME OF FIRM**	:	Infrastructure Development Corporation Karnataka		
2.	**NAME OF EXPERT**	:	**Harshana Bharatrao Ghanwat**		
3.	**DATE OF BIRTH**	:	17th April, 1978	**CITIZENSHIP:**	Indian
4.	**EDUCATION**	:	- **Post-Graduation Degree in Housing Planning** in 2002-2004 from Centre of Environmental Planning & Technology (CEPT), Ahmedabad - **Bachelor of Architecture** 1995- 2000 from Bharti Vidyapeeth's College of Architecture, Pune		
5.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	Nil		
6.	**OTHER TRAINING**	:	Nil		
7.	**COUNTRIES OF WORK EXPERIENCE**	:	India		
8.	**LANGUAGE & DEGREE OF PROFICIENCY**	:			

Language	**Speak**	**Read**	**Write**
English	Good	Good	Good
Hindi	Good	Good	Good
Marathi	Good	Good	Good
Gujarati	Good	Good	Good
Kannada	Fair	-	-

9.	**EMPLOYMENT RECORD**	:	
	FROM: August 2015 **EMPLOYER** **POSITION HELD**		**TO:** Till date Infrastructure Development Corporation (Karnataka) Limited, Bangalore, Associate Vice President (Urban Division)
	FROM: September 2013 **EMPLOYER:** **POSITION HELD**		**TO:** July 2015 Project Consultant on individual projects
	FROM: September 2007 **EMPLOYER:** **POSITION HELD**		**TO:** September 2013 Feedback Infrastructure services Pvt. Ltd. Bangalore Senior Urban Planner
	FROM: Mar 2006 **EMPLOYER:** **POSITION HELD**		**TO:** Aug 2007 Wilbur Smith Associates Private Limited, Bangalore Urban Planner
	FROM: August 2004 **EMPLOYER** **POSITION HELD**		**TO:** Feb 2006 Centre for Research and Development Unit, CEPT Ahmedabad Urban Planner
	FROM: Aug 2001 **EMPLOYER:** **POSITION HELD**		**TO:** Feb 2002 Environmental Planning Collaborative (EPC), Ahmedabad Architect
	FROM: 2000 **EMPLOYER:** **POSITION HELD**		**TO:** 2001 Manayan, Ahmedabad Architect
	FROM: 1998 **EMPLOYER:** **POSITION HELD**		**TO:** 1999 Earth Consortium Trainee
10.	**WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED**		
	Name of assignment or project: Roadmap for supporting the competitiveness and development of cities in the Bangalore Metropolitan Region **Year:** 2014 **Location:** Bangalore **Client:** ADB **Main project features:** The ADB has initiated an applied research project to understand how local		

governments can improve their governance systems to enhance city competitiveness. The main objective of this exercise is to better understand how collaborative governance drives competitiveness in South Asian cities. The complexity and interconnectedness of the urban environment makes it increasingly evident that collaborating across sectors, institutions (both horizontally and vertically) and administrative boundaries are essential for the competitiveness of cities and city regions. In this context, the Bangalore Metropolitan Region (BMR) covering an area of the 8000 sq. kms has been taken up for the same in India.

Positions held: Research Associate

Activities performed:

- Collecting and compiling base line data from secondary sources
- Helping the national consultant in formulating panels, facilitating workshops/panel discussions
- Assisting in compiling the various indices for the BMR with one to one consultation with the various administrative and planning departments in BMR
- Data Analysis and preparation of Road Map for BMR region
- Assisting in formulation of Reports – Inception, Workshop report, Draft Final and Final Reports

Name of assignment or project: Traffic Studies and Policies for 30 cities in India

Year: 2006 -07

Location: All over India

Client: Ministry of Urban Development (MoUD)

Main project features: It is the study commissioned by MoUD at national level for developing traffic and transportation policy and strategies for million plus population cities in the country. It involved population projections, employment projections and traffic demand projections to achieve an appropriate traffic model for urban areas in all 30 cities in India were to be studied.

Positions held: Project Associate

Activities performed:

- Coordinating site visits & data collection in Agra, Kanpur, Panaji, Pune, Bhopal and Nagpur
- Preparation of ward wise proposed land use maps for the cities and area calculations
- Preparation of report on final urban population projections and employment projections

Name of assignment or project: Urban Poverty Reduction Strategy for Bangalore city

Year: 2007-08

Location: Bangalore

Client: National Institute for Urban Affairs (NIUA)

Main project features: The project aims at formulation of sub-sectoral strategies aimed at leveraging resources to address the needs of the poor; promoting participation of the urban poor in the Urban Poverty Reduction Strategy; promoting pro-poor institutional reforms.

Positions held: Project Associate

Activities performed:

- Coordination of data collection from various government offices and related agencies,
- Preparation of sample questionnaires and coordinating with the survey team for proper organized data collections from the slum surveys done,
- Site visits on slum locations for ground verifications and overview of the existing situations,
- Preparation of Inception report and Interim report with detail analysis and inferences
- Preparation of Base map for slum locations located under BBMP, CMC and TMC

Name of assignment or project: Water and Sanitation Information System (WASIS)

Year: 2009-10

Location: Karnataka

Client: Karnataka Urban Infrastructure Development Corporation (KUIDFC)

Main project features: Under KUWASIP the component of Technical Assistance (TA) studies for water and sanitation sector reforms at the State and ULB levels (214 nos.), one of the projects is the creation of a Water and Sanitation Information System (WASIS) and Benchmarking of Service Provision. The main objective of this project is to provide information for UWSS sector reform & setting appropriate sector reform targets and institutionalizing a benchmarking system within the UWSS utilities/ ULBs which will help them to compare their performance and identify their own priorities for service improvements. It includes

- Development & institutionalization of a state, ULB and scheme level water and sanitation information system.
- A web-enabled software which enables the capture of macro (ULB-level) and micro (Scheme) level data regarding Water Supply and Sanitation
- Generation of output reports based on certain parameters and performance indicators

Positions held: Project Associate
Activities performed:

- Coordination of the various tasks related to the project planning and management
- Coordinating with the client at various levels – site visits, collection of data, preparation of reports
- Coordination of team on various tasks like collection of data from ULBs, data verification/validation, preparation of core indicator reports for the ULBs.
- Preparation of Reports/ presentation
- Coordination with the Software consultants for the development of WASIS programme

Project Name: Preparation of Smart City Proposal for Madurai and Salem City Corporation under Smart City Mission of MoUD – Round 1
Year: September 2015 – December 2015
Location: Madurai and Salem
Client: Madurai Corporation and Salem Corporation
Main Project Features: Preparation of SCP in Round 1 for Madurai and Salem cities
Position: Team Leader cum Urban Management specialist
Activities Performed: Was involved in preparation of SCP through stakeholder meetings with various government agencies, elected representatives and citizen groups, integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets, formulation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda and recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision statement

Project Name: Preparation of Smart City Proposal for Shivamogga, Tumkuru and Hubbali Dharwad City Corporations under Smart City Mission of MoUD.- Round 2
Year: May 2016 – June 2016
Location: Shivamogga, Tumkuru & Hubbali Dharwad, Karnataka
Client: Shivamogga Corporation, Tumkuru Corporation & Hubbali Dharwad Corporation
Main Project Features: Preparation of SCPs in Round 2 for Shivamogga, Tumkuru & Hubbali Dharwad
Position: Team Leader cum Urban Management specialist
Activities Performed: Was involved in preparation of SCP through stakeholder meetings with various government agencies, elected representatives and citizen groups, integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets, formulation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda and recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision statement.

Project Name: Preparation of Proposal for Assisting Tiruvananthapuram City to Participate in the Smart Cities Challenge
Year: Dec 2016 – Mar 2017
Location: Tiruvananthapuram, Kerala
Client: Tiruvananthapuram City Corporation
Main Project Features: KSUDP, the nodal agency for Kerala state carried out the selection process on behalf of the 8 shortlisted cities and iDeCK was appointed by the Thiruvananthapuram City Corporation for assisting it in the preparation of the SCP
Position: Team Leader cum Urban Management specialist
Activities Performed: Was involved in preparation of SCP through stakeholder meetings with various government agencies, elected representatives and citizen groups, integration of perspective plans of various stakeholders, identification of infrastructure gaps, assessment of existing condition of assets, formulation of vision statement, preparation of investment plans for identified sectors, preparation of reforms agenda and recommendation of suitable institutional mechanisms to carry out investment plans and sustaining measures for achieving the vision statement.

Name of assignment or project: Revised City Development Plan for Panaji city
Year: 2014-15
Location: Panaji
Client: CRISIL
Main project features: MoUD has identified 30 cities across India under the CBUD project to facilitate the support. The CDP has to adhere to the latest revised toolkit prepared by the MoUD for CDP preparation published on its website in Dec 2009 or later.
Positions held: Project Consultant
Activities performed:

- Coordinating with the client at various levels – site visits, collection of data, preparation of reports
- Site visits to the towns to assess the ground realities within the town w.r.t the infrastructure services and

collection of data.

- Preparation of Inception report, Interim Report and Draft Final report for the Panaji city– (Urban planning & Infrastructure) as per the Revised toolkit of MOUD
- Coordinating the work within the team and ensure that the reports cover all the comments and the requirements as per TOR.
- Preparation of presentations for the various client meetings held.
- Stakeholder consultations and workshops

Name of assignment or project: Infrastructure Development & Investment Plan for 38 towns in Karnataka
Year: 2007-10
Location: Karnataka
Client: Karnataka Urban Infrastructure Development Corporation (KUIDFC)
Main project features: The study involves preparation of City Development Plans (CDPs) for the 38 ULBs in Karnataka for 2033. It involves assessing the present state of infrastructure facilities and the related investment required for next 25 years. The borrowing capacity of the ULBs will be assessed based on their collection performance over the past years. The prioritization of the infrastructure needs of the town for next five and ten years will be identified and the funds as per borrowing capacity will be allocated accordingly.
Positions held: Project Manager
Activities performed:

- Coordination of the various tasks related to the project planning and management – preparation of making work plans, schedule of the tasks to be performed as per the milestones.
- Coordinating with the client at various levels – site visits, collection of data, preparation of reports
- Site visits to the towns to assess the ground realities within the town w.r.t the infrastructure servi collection of data.
- Preparation of Inception report, Interim Reports and Draft Final reports for the 38 towns along wi members – (Urban planning & Infrastructure)
- Coordinating the work within the team and ensure that the reports cover all the comments and the requi as per TOR.
- Preparation of presentations for the various client meetings held.
- Stakeholder consultations and workshops

Name of assignment or project: Revised City Development Plan for Madurai city
Year: 2013-15
Location: Madurai
Client: Feedback Infra Private Limited
Positions held: Project Consultant
Activities performed:
It involves preparation of City Development Report for Madurai which includes preparation of various stages of reports with detail analysis, stakeholder consultations, presentations and client meetings.

Name of assignment or project: Revised City Development Plan for Vijayawada Corporation
Year: 2007- 2013
Location: Vijayawada
Client: Vijayawada Municipal Corporation
Main project features: The CDP revision will reflect the vision statement of "A beautiful eco – friendly river city for all, providing high quality of civic services." This assignment has the 3 major objectives:

1. First, to validate and update the Vijayawada vision statement and urban information base necessary for CDP development through a participatory process.
2. Second, to revise the plan through participatory consultations with key government and non-government sectors.
3. Finally, to prepare a revised CDP that identifies and prioritizes activities and investments, identified in keeping with the vision of the Vijayawada Municipal Corporation, that respond to short term, medium term and long term scenarios and time frames..

Positions held: Project Manager
Activities performed:

- Coordinating with the client at various levels – site visits, collection of data, preparation of reports
- Site visits to the towns to assess the ground realities within the town w.r.t the infrastructure services and collection of data.
- Preparation of Inception report, Interim Report and Draft Final report for the Panaji city– (Urban planning & Infrastructure) as per the Revised toolkit of MOUD

	• Coordinating the work within the team and ensure that the reports cover all the comments and the requirements as per TOR. • Preparation of presentations for the various client meetings held. • Stakeholder consultations and workshops
	Name of assignment or project: Vision Statement for Bulandshahr, Khurja, Sikandarabad and Jahangirabad **Year:** 2004-06 **Location:** Bulandshahr **Client:** Bulandshahr Khurja Development Authority (BKDA) **Main project features:** The preparation of Vision Statement for Bulandshahr, Khurja, Sikandarabad, Jahangirabad was one of the efforts towards mobilizing resources in surrounding regions of the national capital – Delhi. These centres are to provide higher order services to the scattered population around there for the removal of regional disparities and to provide employment opportunities for the migrant populations. **Positions held:** Planner **Activities performed:** Literature review, preparing questionnaire for the field trips, Conduction group discussion with the government officials, Conducting surveys, Data collection, analysis, report writing
	Project Name: Tourism Master Plan for 26 districts in Karnataka **Year**: 2010-13 **Location**: Karnataka **Client:** Department of Tourism, GoK **Main Project Features**: An overall development plan would be proposed for the district focusing on maximizing economic benefits and at the same time minimizing the environmental, socio-cultural impacts of tourism development. The strategy plan would also include recommendations on destination and circuit development - prioritization of projects, indicating the various tourism activities that could be developed in the destinations/ circuits identified infrastructure provision / improvement, strategies and action plan. **Position:** Project Coordinator and Associate **Activities Performed**: • Coordination of the various tasks related to the project planning and management • Coordinating with the client at various levels – site visits, collection of data, preparation of reports • Coordination of team on various tasks like collection of data from various agencies and site visits • Preparation of reports/ presentations with analysis • Stakeholder Consultations at district levels Client management and presentations
	Project Name: Interim Master Plan for Magadi Local Planning Area **Year**: 2006-07 **Location**: Karnataka **Client:** Bangalore Metropolitan Region Development Authority (BMRDA) **Main Project Features**: The main objective of the Interim Master Plan for Magadi LPA was to facilitate the decongestion of the Bangalore city which is facing a problem of over consumption of resources and infrastructure facilities as well as making the region self-sufficient in economy as well as infrastructural facilities. **Position:** Project Associate **Activities Performed**: • Preparation of the project proposal and the detail work plan and methodology • Coordination with various government departments and the client for collection of data and required information • Organizing site visits to the study area and holding discussions with various stakeholders in various departments • Preparation of Inception, Interim and the Final Interim Master Plan Reports with detail situation analysis, issues and the final development proposal • Preparation of detail proposal for land use zoning plan with major transportation network • Coordination with the GIS mapping team and preparing various study related thematic maps, Base map of the LPA region and Final IMP Plan with proposed land use zoning • Preparation of presentations and presenting it to the client

1.	**PROPOSED POSITION**	:	**Infrastructure Specialist**
2.	**NAME OF FIRM**	:	Infrastructure Development Corporation (Karnataka) Limited
3.	**NAME OF EXPERT**	:	**Murthyunjaya. S.M**
4.	**DATE OF BIRTH**	:	15th May 1965 **CITIZENSHIP:** Indian
6.	**EDUCATION**	:	• Master of Technology in Environmental - Visvesvaraya Technological University Belgaum (Y-2010) • Post Graduate Diploma in Water Resources Development & Management – Annamalai University. (Y-2007) • Bachelor of Engineering in Civil Engineering - Gulbarga University(Y-1998)
7.	**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**	:	• Member, Institution of Engineers, India. • Member, Indian Water Works Association, India
8.	**OTHER TRAINING**	:	• Rural Water Supply Sanitation Schemes conducted by JSS Consultants at Belgaum • Preparation of detailed scheme report and Construction Management & Quality Control of Materials. Training conducted by TOR STEEL RESEARCH FOUNDATION, Bangalore.
9.	**COUNTRIES OF WORK EXPERIENCE**	:	India
10.	**LANGUAGE & DEGREE OF PROFICIENCY**	:	

Language	**Speak**	**Read**	**Write**
English	Excellent	Excellent	Excellent
Kannada	Excellent	Excellent	Excellent
Hindi	Excellent	-	-
Telugu	Excellent	Excellent	-

11.	**EMPLOYMENT RECORD**	:	
	FROM: Dec 2016 **EMPLOYER:** **POSITION HELD**		**TO: till date** **Infrastructure Development Corporation (Karnataka) Limited** Technical Expert
	FROM: Nov 2012 **EMPLOYER:** **POSITION HELD**		**TO: Dec 2016** **CDM Smith Associates Pvt. Ltd.** Lead Consultant
	FROM: Jan 2006 **EMPLOYER:** **POSITION HELD**		**TO: Oct 2012** **Fichtner Consulting Engineers (I) Private Limited** Project Manager/ Senior Project Civil Engineer
	FROM: Jul 2003 **EMPLOYER:** **POSITION HELD**		**TO: Dec 2005** **STUP Consultants Private Ltd.,** Team Leader
	FROM: Jul 2002 **EMPLOYER:** **POSITION HELD**		**TO: Jun 2003** **Karnataka Rural Water and Sanitation Agency, B'lore** Consultant for WS & Sanitation Project
	FROM: Sep 2000 **EMPLOYER:** **POSITION HELD**		**TO: Jun 2002** **SIP Prefab Systems Private Limited Bangalore** Zonal Project Manager
	FROM: Mar 1998 **EMPLOYER:** **POSITION HELD**		**TO: Aug 2000** **ICT Private Limited, Bangalore** Public Health Engineer

	FROM: Dec 1996 **EMPLOYER:** **POSITION HELD**		**TO: Jan 1998** **Skyline Constructions Limited, Bangalore** Senior Site Engineer
	FROM: Aug 1993 **EMPLOYER:** **POSITION HELD**		**TO: Nov 1996** **Ashok Houde, Class I Contractor, Gulbarga** Senior Site Engineer
	FROM: Sep 1992 **EMPLOYER:** **POSITION HELD**		**TO: May 1993** **Karnataka Land Army Corporation Gulbarga** Task Force Commander
	FROM: Jul 1990 **EMPLOYER:** **POSITION HELD**		**TO: Aug 1992** **M/s Rani Construction Private Limited** Senior Surveyor/ Senior Engineer
	FROM: Jun 1989 **EMPLOYER:** **POSITION HELD**		**TO: Jun 1990** **Irrigation Department, Bellary** Apprentice Trainee
13	**WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED**		
	Name of assignment or project: Project Management Consultancy for Implementation of Smart City Project of Davanagere City **Year:** Dec 2016 - Ongoing **Location:** Davangagere, Karnataka **Client:** Davanagere Smart City Ltd **Main project features:** It is proposed to avail the services of a Project Management Consultant (PMC) to assist the SPV in preparation of Detailed Project Reports (Civil, Electrical, Mechanical & IT) with necessary survey & investigations, designs, estimation, tenders, procurement assistance and implementation monitoring and management of sub-projects. The sub-projects identified are broadly classified as Area-based development and Pan-city initiatives. **Positions held:** Project coordinator **Activities performed:** Client Management, Team Management, Project Management, Design and implementation		
	Name of assignment or project: Design and Construction Supervision Consultancy for Implementation of Water Supply and Under Ground Drainage in Package-2 (5 ULBs) Kampli, Tekkalkote, Kottur, Kamplapuram and Molkalmur **Year:** Dec 2013 –2016 **Location: India** **Client: Karnataka Urban Infrastructure Development and Finance Corporation** **Positions held:** *Design Engineer-WS* **Main project features:** prepared the project for providing Water supply and Under-ground drainage for 16 ULBs, in the state of Karnataka. The project aims to enhance the capacity of the ULBs and ensure improved maintenance of existing assets. The project will be implemented over a period of three years from 2013 to 2016 **Responsibilities:** • Site visits, Interaction with the local bodies regarding the works to be taken up in the IWRM projects. • Existing system study, Geotechnical, Topographical and Hydro-geological Investigations. • Preparation of Preliminary Design report for Under Ground Drainage systems with different options and 24x7 water supply system. • Designing the UGD systems & water distribution using the soft wares. Discussion with the Clients regarding Preliminary Design report and finalization. Estimation for the UGD & water supply components. Over all supervisions of works of Preparation of Detailed project Report.		
	Name of assignment or project: IWRM - Preparation of Detailed Project Report **Location: Karnataka** **Client: Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC** **Year: Apr 2013 –Dec 2013** **Positions held:** *Team Leader* **Main project features:** preparing Detailed Project reports for tranche 1 investment under		

	KIUWMIP for the three towns Ranebennur, Davangere and Byadgi **Responsibilities:** • Site visits, Interaction with the local bodies regarding the works to be taken up in the IWRM projects . • Existing system study, Geotechnical, Topographical and Hydro-geological Investigations. • Preparation of Preliminary Design report for Under Ground Drainage systems with different options and 24x7 water supply systems. • Designing the UGD systems & water distribution using the soft wares. Discussion with the Clients regarding Preliminary Design report and finalization. Estimation for the UGD & water supply components. • Over all supervisions of works of Preparation of Detailed project Report.
3	**Name of assignment or project: Technical Auditing for providing Integrated Management Information System, Study, Design, Analysis, Rehabilitation and Transforming the existing intermittent water supply distribution system to continuous pressurized 24x7 distribution network, including operation and maintenance for EAST & WEST Distribution Operating Zone in Mysore City – Under Remodelling of Water Supply Distribution Network in Mysore City under JNNURM.** **Year:** Jan 2006 – Oct 2012 **Positions held:** *Project Manager/ Senior Project Civil Engineer* **Responsibilities:** Project Management with overall in charge of Priority Investment works which includes erecting 1200 HP DWT & 1000 HP centrifugal Pumps, 1118 & 914 MS pipe laying, construction of water treatment plant & 24//7 water supply project Services which is one its first kind in Karnataka involved in planning, execution with new technology of HDPE lines, pressure control, water meter test bench etc with focus on Quality Control and Assurance framework, including tendering process. Documentation and Reporting works, involvement in calling of sub tenders. Supervision, Review and prepare Reports on progress of Implementation of Capital works. Undertake periodic Reviews of various records and emulate improvement / remedial measures and procedures where necessary. Checking the pressure monitoring unit regularly regarding maintenance of pressure a through the Demo zone etc. Involvement in Operation & Management of the scheme after completion performance targets. **Implementation of Billing & Collection software system: -** Regular reviewing & monitoring of Billing & Collection activities like checking of reading of customers, checking of the bills according to the tariff, checking the issuing of bills in prescribed time, monitoring of meters history in the software for stolen, damaged & condensed. Ensuring the proper implementation of Billing & Collection system every month. **Implementation of Customer Care centre software system: -** Regular reviewing & monitoring of smooth functioning of customer care centre by checking proper compliances to complaints, proper entry of complaints received, proper allocation of works to assistants, checking the no pressure & no water cases on priority basis & compliances of these complaints in time & over all monitoring of complaints & its compliances.
4	**Name of assignment or project: CBUD-Developing Strategy for Reduction of NRW in 6 Selected Cities,** **Year: Sep 2013 –Ongoing** **Location: India** **Client: Ministry of Urban Development, Govt. of India** **Positions held:** *Deputy Team Leader* **Main project features:** Developing Strategy for Reduction of NRW in 6 selected cities. The cities selected are Sholapur (Maharashtra), Chindwaara (Madhya Pradesh), Purl (Orissa), Haridwar (Utharakhand), Kurukshetra (Haryana) and Varanasi (UP). The consultant has to develop a water balance for each city, prepare city specific strategy for reduction of NRW and prepare plans for low/medium/high cost interventions with relative merits on immediate/intermediate and ultimate

	target years. Detailed Project Reports and Bid Documents for implementing various components of the strategy also needs to be formulated **Responsibilities:** Interaction with the Commissioner and Engineering Staff, and stake holders PPT for Kick-off work shop. Assessing the existing Water Supply infrastructures, performance of the systems, flow measurements, Water Balance preparation for calculation of NRW
5	**Name of assignment or project: Transaction Advisor for Septage Management in 14 districts of Kerala** **Year: Nov 2013 –Ongoing** **Location: Kerala, India** **Client: Kerala Sustainable Urban Development Project** **Positions held:** *Senior Staff* **Main project features:** Transaction Advisory for the Septage Management Project which is to be implemented in three phases- Phase 1: Construction of Septage Treatment Plant in Ernakulam, Phase 2: Construction of Septage Treatment Plant in Alappuzha and Palakkad and Phase 3: Construction of Septage Treatment Plants in all other districts in Kerala **Responsibilities:** Site visits, discussion with clients, assessing the present situation sewerage generation Preparation of estimate for the Septage Treatment Plant
6	**Name of assignment or project: Preparation of DPRs and project Management for selected villages in Gadag District under JAL Nirmal with the assistance of World Bank.** **Year: Jul 2003 – Dec 2005** **Positions held:** *Team Leader* **Responsibilities:** • Preparation of estimates, evaluation of bids, Designing, Execution of Works, Material quality Control, Final Bills. • Exercise control over the process on behalf of ZP-DSU and ZPED. • Preparation of reports for further study by ZP-DSU and ZPED. • To monitor progress in physical achievement Vs the scheme cycle. • Monitoring of quality of construction and material are tested as desired. • To undertake any work incidental or otherwise to complete project objectives and for support to GPs in project information. • Ensure all responsibilities of SA are carried out. • Project was assisted by The World Bank.

CVs OF KEY MEMBERS OF SIGMA TEAM

1. Name: **Dr ULIMIRI V SOMAYAJULU**

2. Present designation: Founder CEO and Executive Director

3. Nationality: Indian

4. Area of specialisation

Developmental Research & Planning, Operations research, Social Marketing (condom, oral pill, ORS), Demographic studies, Programme development and Evaluation, Population, Health & Family Welfare, Nutrition, Immunisation, Reproductive and Child Health, New born care, maternal health, ageing, STIs, HIV / AIDS, Diarrhoea Management, Gender, Adult literacy, Primary Education, Rural and Urban Development, Micro Finance/SHGs, Disaster management, Micro health insurance, Micro pensions, CSR, Communication, Highways/Infrastructure/Transport etc

5. Key qualifications

Close to two and half decades of Experience in handling wide variety of social / developmental and demographic research in almost all the Indian states. Life Member of Indian Association for the Study of Population (IASP), Indian Association of Social Sciences and Health (IASSH), Indian Society for Medical Statistics, Indian Academy of Social Sciences, Indian Society for the Study of Reproduction & Fertility, Indian Sociological Society, Indian Society for Labour Economics, Nutrition Society of India, Social Security Association of India, Indian Red Cross Society, East West Center, Honolulu and PERN. Member of IUSSP, International Society for Urban Health (ISUH). Founder member of APA, President of IASP, Vice President of IASSH. Was Executive Board Member of ISUH, Member of Expert Group on HRG Estimation for NACP -III Planning, Member of Working Group on NUHM, and Member, Advisory Board- Byrraju Foundation

Author of 9 edited books and 114 papers in CSR, Demography, Gender, Development, Research Ethics, Health, Family Welfare and HIV / AIDS, published in National Journals, edited books and presented at National and International Conferences / Seminars. Participated in the 34th Summer Seminar of the East West Center, Honolulu, Hawaii, USA during May 29-June 28, 2003. Participated in the APN Training workshop on ‘Advanced Demographic Techniques’ held at Chulalongkorn University, Bangkok, Thailand, during September-October, 2004. Participated in the Short Term Course on Population Ageing and Its Implications, held at International Institute on Ageing, INIA, Malta and UN during November 2005

Participated and presented papers at the XXV IUSSP International Conference at Tours, France during July 18-23, 2005, 5th African Population Conference at Arusha, Tanzania during Dec 10-14, 2007, XXVI IUSSP Conference at Marrakech, Morocco during Sept 27-Oct 2, 2009, 5th Asia Pacific Conference on Reproductive and Sexual Health and Rights at Beijing, China during October 18-20, 2009, 7th Asia Pacific Conference on Reproductive and Sexual Health and Rights at Manila during 2014, 8th Asia Pacific Conference on Reproductive and Sexual Health and Rights in Myanmar during 2016, International Urban Health Conferences held in Barzil, Bangladesh.

Was invited to speak on Corporate Social Responsibility in India at the Asia Law Society Seminar at Michigan University (March 20, 2010)

Is a visiting faculty at the TERI, TERI University, New Delhi, TISS, Mumbai, Government Ayurvedic College, Hyderabad; Loyola Academy, Secunderabad; Siddhanti College, Secunderabad; Nagarjuna University (Dept of Statistics), Guntur, Lady Irwin College, New Delhi, Jawaharlal Nehru University, New Delhi, Management Development Institute, Gurgaon and IGNOU.

Has personally conducted and supervised studies for Abt Associates, Action Aid Adam Smith Institute, AED, Boston University, British Council Division, CARE, CEDPA, CIDA, Clinton Foundation, CRS, DFID (ODA), FHI 360, Gates Foundation, Pathfinder, PSI, PSS, Population Council, NRI (UK), SIDA, Johns Hopkins University, J-PAL, Harvard School, HIV Alliance, International Planned Parenthood Federation, ICRW, IPAS, UNAIDS UNFPA, UNICEF, UNESCO, USAID, WHP, World Bank, World Vision, et al

… and, for the Ministry of Health & Family Welfare, Family Planning Association of India, Dept of Women & Child Devp (ICDS), Dept of Rural Devp, State Governments of Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, Haryana, Rajasthan, IFMR, ICHAP, AzimPremji Foundation, Helpage India, Byrraju Foundation, APSRTC, NDDB, NCAER, Hindusthan Latex, Ed Cil, Naandi Foundation, Family Planning Association of India, Karnataka State Highway Improvement Project, Tamil Nadu Road Sector Project, NARI/NIE/ICMR, Avert Society

Coordinated several important assignments including the National Family Health Survey - 2 and 3 in the North Eastern States, DLHS 2, 3 and 4 , IBBA, HIV BSS., Mid Term Evaluation of the World Bank Assisted ICDS Project, OR Study for World Bank ICDS, HIV Mapping studies, TB Baseline survey / Communication Strategy Development Study, Rapid Assessment Study in Prisons and User Satisfaction Surveys .

Visited 26 countries including Australia, New Zealand. UK and USA

Board of Studies Member, Dept of Statistics, Andhra University, Visakhapatnam

6. Education

- MBA, Specialisation in Human Resources from Indira Gandhi National Open University (IGNOU)
- PG Diploma in Management and Diploma in Management, from IGNOU
- PG Diploma in Human Resource Management, from IGNOU
- MA Sociology from Annamalai University
- Ph D from the International Institute for Population Sciences, Bombay
- M Phil from the International Institute for Population Sciences
- M Sc Statistics, from Andhra University - Specialisation in Demography, SQC & Advanced Operations Research

7. Experience : Over 26 years in social research with premier organisations:

Year	Organisation	Position held
1987 - 1990	IIPS	Research Fellow
1990 - 1992	ORG	Research Executive
1992 - 1995	TNS India (MODE)	Senior Research Executive
1995 - 1997	TNS India (MODE)	Research Controller
1997 - 1999	TNS India (MODE)	Senior Research Controller
1999 - 2002	TNS India (MODE)	Deputy Research Director
2002 - 2004	TNS India (MODE)	Research Director
2005 - 2006	TNS India (MODE)	Senior Research Director
2006 - 2008	TNS India	Vice President & Head, Social Research
2008 onwards	Sigma Research and Consulting	CEO and Executive Director

8. Languages : Can fluently speak, read and write English, Telugu, and Hindi

1. Name: **Dr K V R Subrahmanyam**

2. Present designation: Director

3. Nationality: Indian

4. Area of specialisation

   Population Policies and programmes, Reproductive and Child Health, Fertility and Family Planning

5. Key qualifications

   TCDC Consultant for the FAO project on *Best Practices in Micro-Finance Management* At Zambia during January-April, 2000, Socio-Economic, Demographic and Health Surveys at Agro-Economic Research Centre and Population Research Centre, Andhra University. Proficiency in drafting of Project Reports, Carried out DLHS-1, 2 and 3 in Andhra Pradesh and Andaman & Nicobar Islands Monitored DLHS-4 in Andhra Pradesh, Field Supervision of NFHS-1 in Andhra Pradesh, Carried out Demographic and Health Survey for Bhabha Atomic Research Centre (BARC), Expertise in developing Proposals, Tools, Design and methodology for Demographic and Health Surveys, Talent in Training the Field Investigators, Expertise in Field Operations and Quality Checks, Skill in analysis of data and report Writing

   Published 4 research papers in Population related areas, Presented about 20 research papers in various conferences and work-shops

   Book - Population and Reproductive Health – Perspectives and Issues" Edited by U. V. Somayajulu, K. K. Singh, K V R Subrahmanyam and Arvind pandey. Published by Hindustan Publishing Corporation (India), New Delhi in 2011.

   Written Lesson on Access to Basic Health for One Year Post Graduate Diploma in Sustainable Rural Development, University of Hyderabad- National Institute of Rural Development (NIRD), Hyderabad.

   Resource Person for in-service training programmes Conducted by the Indian Institute of Health and Family Welfare, Hyderabad to the Statistical Personnel in the areas of population concepts, Population estimates, Monitoring and Evaluation and Health Management Information System (HMIS)

   Member of the Expert Group of Bhabha Atomic Research Centre (BARC) for developing protocols to carryout Demographic and Health Surveys

   Life Member of Indian Association for the Study of Population (IASP), Indian Association of Social Sciences and Health (IASSH), Andhra Pradesh Economic Association. Was Joint Secretary of IASP (2013-15) and currently, Vice President of IASP,

6. Education

   M.A. (Applied Economics) from Andhra University
   Master of Population Sciences (MPS) from IIPS
   Ph. D from Andhra University

7. Experience :33 years of Experience in conducting Socio-Economic, Demographic and Health Surveys

Year	Organisation	Position held
1980-85	Agro Economic Research Centre (AERC), Andhra UNIV	Field Officer
1997-2005	Population Research Centre RCH, DLHS	Research Officer
1985-2014	Population Research Centre	Research Investigator
2014 – 2016	Sigma Research and Consulting	Research Director
2017 – Onwards	Sigma Research and Consulting	Director

8. Languages : Can fluently speak, read and write English, Telugu, and Hindi

1. Name : **Rahul PANDEY**

2. Present Designation: Sr Field Executive

3. Nationality: Indian

4. Areas of specialisation:

   Social research studies. Field Audits, Customer Satisfaction Surveys, Behavioral Surveys and Monitoring and Evaluation Studies, Analysis, coding.

5. Key Qualifications

   Extensive knowledge of a wide variety of field techniques. Different In-depth studies, Opinion Polls, Retailer survey, Group Discussion, Central location studies and Ad Evaluation and customer satisfaction studies, Telephonic survey etc. In Social Research conducted BSS, UHRC study,DLHS-3,and DLHS 4, Child Immunization coverage evaluation study, Mapping study, Child labour study, OR study on ICDS, Chaha endline survey, Sports baseline survey, AHS 23 District in UP, BBC,NRS, IRS, Ujjwal base line Study Bihar, DMPA Mystery client, UP & Bihar, Car Clinic delhi, Mid day meal Akshya Patra Foundation, SMO Study Bihar and Jharkhand, BCM BL Study, GATS 2 etc

6. Education – B.A

7. Experience

   Over 17 years in Social and Market Research with premier organisations:

Year	Organisation	Position held
1998 – 2000	IMRB	Supervisor
2000 – 2005	TNS- MODE	Supervisor
2006 – 2008	GFK-MODE	Jr. field Executive
2009– 2010	GFK-MODE	Field Executive
2011 – 2012	GFK-MODE	Sr Field Executive
2013 – 2013	ICRW	Field Monitoring Consultant
2013 Onwards	Sigma Research and Consulting	Sr Field Executive

8. Languages

   Can fluently speak, read and write English and Hindi

1. Name : **Santosh KUMAR**

2. Present Designation: Sr Field Executive

3. Nationality: Indian

4. Areas of specialisation:

Field Audits, Large Quantitative Surveys, Qualitative Survey, Customer Satisfaction Surveys, Behavioral Surveillance Surveys and Monitoring and Evaluation Studies, CLT, Corporate Studies, CATI, Etc.

5. Key Qualifications

Has been responsible for execution of fieldwork in North zone and has extensive knowledge of various field techniques and systems, planning & recruitment of human resources, overall management and monitoring of field work.
Project Planning including budget and manpower estimation.
Coordinating and monitoring the team members, activities on a daily basis.
Periodic briefing and meeting with all the team members to encourage team development and to provide solution to existing problems, if any

STM, Product Test, Census/mapping studies, Opinion Polls, Retailer survey, Central location studies and Ad Evaluation and customer satisfaction studies, Telephonic survey etc.

In Social Research - Previously handled AHS in 7 Districts of Western UP, DLHS-3 in UP, MCH, Family Planning study, Child Health and Nutrition study, Education, Mapping study (PSACS), Baseline Survey, RCH, Immunization, Rural Development Studies, Child Behaviour and Education studies, Mystery client studies, SMA BL, SMA EL etc.

6. Education

MBA

7. Experience

Over 10 years in Social and Market Research with premier organisations:

Year	Organisation	Position held
2004 – 2005	IMRB Lucknow	Freelancer
2005 - 2006	Metric Consultancy Pune	Junior Research Officer
2007 – 2009	GFK Mode	Freelancer
2009 – 2010	GFK Mode	Trainee Field Executive
2010 - 2011	GFK Mode	Field Executive
2011 – 2013	Sigma Research and Consulting	Field Executive
2014 Onwards	Sigma Research and Consulting	Sr Field Executive

In Social Research - Responsible for all research (Field) work in Uttar Pradesh, Rajasthan, and Uttarakhand

8 Languages

Can fluently speak, read and write English and Hindi

1. Name : **Yogesh Jijabarao PATIL**

2. Present Designation: Field Manager

3. Nationality: Indian

4. Areas of specialization
Field Audits, Large Quantitative and Qualitative Studies, Customer Satisfaction Surveys, Behavioural Surveys and Monitoring and Evaluation Studies.

5. Key Qualifications

Handled different types of studies.

Qualitative Research

Focus Group Discussions (Full, Mini, and Extended Groups), Depth Interviews (Single, Paired, Triads,) Observation Studies (Home or Shop or Workplace)

Quantitative Research

Observation Studies, Census. Product Tests, Profiling Study, Creation of Database, Mystery shopping / Audits, Auto Clinics (2 wheelers, 4 wheelers), Study on FMCG products, Tracking Studies, Customer Satisfaction studies / Employees Satisfaction Studies, Corporate Image Studies (among HR and CEOs of the company) , Pharma Studies, GCS Study, Health Care study.

Social Research

Handled different type of the projects in rural and urban areas including the RTI panel study on water and child health, STI patients interview. Worked as District coordinator for **IBBA** (Interrelated Behavioral and Biological Assessment). Other projects coordinated include Chaha endline, PSI track endline study, Sports baseline survey, Boston University study in institutional assessment, elder abuse study, ageing study for ISEC/UNFPA**, DLHS 4, CNNS, GATS 2** etc

6. Education

Psychology Graduate, Post Graduate in Sociology

7. Experience
Over 10 years in Market and Social Research with premier organisations:

Year	Organisation	Position held
2004 – 2005	Indica Research	(Data Entry Operator)
2005 – 2007	TNS INDIA Pvt Ltd	Freelancer
2007 – 2010	GFK Mode	Field Executive
2010 – 2011	Sigma Research and Consulting	Sr. Field Executive
2011 – 2013	Sigma Research and Consulting	Jr Field Manager
2014 Onwards	Sigma Research and Consulting	Field Manager

8 Languages : Can fluently speak, read and write English and Hindi and Marathi

1. Name : **V. Vijay KUMAR**

2. Present Designation: Field Manager

3. Nationality: Indian

4. Areas of specialisation:

   Rural studies, Studies on HIV/AIDs, Field Audits, Customer Satisfaction Surveys, Behavioral Surveys and Monitoring and Evaluation Studies.

5. Key Qualifications:

   Has been responsible for execution of fieldwork in South zone. Has extensive knowledge of a wide variety of field techniques, planning.

   Different In-depth studies, Opinion Polls, Retailer survey, Group Discussion, Central location studies, Ad Evaluation and customer satisfaction studies, Telephonic survey etc.

   Was involved in studies such as BSS 1,2 and 3, NER survey, Mapping study, Child Immunisation coverage study, BTS 1 and 2, mapping study, CHAHA endline, PSI Track endline survey, Weather forecast study, APMAR study for PSI, CNNS , RBI CCS etc

6. Education

   M.Com, Osmania University, Hyderabad
   Diploma in Marketing Management, IMM, Delhi.
   MA (Sociology)
   Pursuing MBA from Madurai Kamaraj University

7. Experience

   Over20years in Social and Market Research with premier organisations:

Year	Organisation	Position held
1994 – 1999	Mode Research	Freelancer
1999 – 2000	Administrative Staff College	Field Officer
2001 – 2006	TNS India	Field Executive
2006 – 2008	TNS India	Sr. Field Executive
2008 – 2010	Sigma Research and Consulting	Senior Field Executive
2010 – 2013	Sigma Research and Consulting	Jr Field Manager
2014 Onwards	Sigma Research and Consulting	Field Manager

8. Languages

   Can fluently speak, read and write English, Hindi and Telugu

1. Name : **Partha CHOWDHURY**

2. Present Designation: Jr Field Manager

3. Nationality: Indian

4. Areas of specialisation:

Rural studies, Studies on HIV/AIDs (Do not have experience for pure HIV/AIDs Study but in **R C H project** one small part of the q're is related with this subject), Field Audits, Customer Satisfaction Surveys, Behavioral Surveys and Monitoring and Evaluation Studies.

5. Key Qualifications:

Has been responsible for execution of fieldwork in South zone (Only for 3/4 Industrial study and one semi corporate study). Has extensive knowledge of a wide variety of field techniques, planning.

Different In-depth studies, Opinion Polls, Retailer survey, Group Discussion, Central location studies, Ad Evaluation and customer satisfaction studies, Telephonic survey RBI CCS, etc.

6. Education

B. Sc, Ranchi University, Patna

7. Experience

Over 23years in Social and Market Research with premier organisations:

Year	Organisation	Position held
1991 – 1992	Admar Services, Delhi	Freelancer (3 months) then as Supervisor
1992 – 1995	M A R G, Delhi	Freelance Supervisor
1996 - 2000	ORG –MARG, Kolkata	Freelance Supervisor and as State Coordinator
2000 – 2006	Partha Chowdhury Associates, Kolkata	Owner (Agency)
2006 – 2008	OxizenSoftech Pvt. Ltd. Kolkata	Field Executive
2008 – 2009	Hansa Research Group, Kolkata	Field Executive
2009 - 2012	Search and Research, Kolkata	C E O
2012 - 2013	Market Insight Consultant, Delhi	Manager Field Operations
2014 onwards	Sigma Research and Consulting	Jr Field Manager

8. Languages

Can fluently speak, read and write English, Hindi and Bengali

1. Name : **Akshaya Kumar PARIDA**

2. Present designation: Sr. Field Executive

3. Nationality: Indian

4. Area of specialisation:

   Undertaking research studies on Population, Health, HIV/AIDS, TB, MNCH, &Education Questionnaire Testing, Translation, modification and sequence setting. Provided training to the Researchers, supervisors, translators and coders. Supervise mock call session, pre-testing and refreshment Sessions. Prepare monthly field implementation plan including budget. Field management, team supervision, monitoring and documentation such as data cleaning, coding, developing coding book, Done all logistical administrative work related to research work. Prepare data structure in SPSS format Provided support during data entry in SPSS format SPSS analyses as per tabulation plan.

5. Key qualifications

   Extensive knowledge of a wide variety of field techniques. Planning, management and execution of project specific recruitments, training of field staff to achieve excellence for best output in projects in terms of Quality, timeline and Cost.

   In Social Research - Involved in many important and large studies

   Also conducted studies for University of North Carolina, USA, Johns Hopkins University, London School of Hygiene and Tropical Medicine et al

   In addition, has Experience in qualitative data collection FGDs, In depth interviews, Case studies etc., processing, and data analysis in SPSS.

   In Market Research – Conducted Brand Development Survey,National Readership Surveys, Indian Readership Survey ,General Consumer Survey, Ad Evaluation Studies, Customer Satisfaction Surveys, Brand Tracks and Retailer survey, Awareness & Usage survey etc.

   Organized National /State level Seminars such as “Orissa Environment Congress 2011” supported by Center for Environment and Development(CED),Kerala and forest & environment department,Govt. of Odishaon behalf of PRC, “Population & Public Health- IASP 2010” Organized by Indian Association For Study of Population(IASP) . Details Mapping and Need Assessment, National Leprosy Eradication Programme, Dissemination of the Findings of NFHS-2.

   Attended State/District level Workshop/Trainings on Output Tracking, National Leprosy Eradication Programme, Care & Support, Reproductive and Child health (RCH) , Trafficking of Women, Resettlement and rehabilitation of sex workers ,Mapping of populations with high risk behavior ,Mapping of populations Vulnerable to HIV/AIDS and STIs ,Trafficking of Women & Children, Output Tracking Recall , Output Tracking Attitude Training, Output Tracking Behaviour Training, Behaviour Changes Impact Survey (BCIS -3), Project Next Child (PNC)., Ujjwal Baseline survey etc

6. Education

M.A in Sociology& History
MBA from National Institute of Management

7. Experience:

Over 19 years in Social and Marketing research with premier organisations:

Year	Organisation	Position held
1996- 2001	AIMS Research (Asia Information Marketing & Social Research) Pvt. Ltd	Supervisor
2001-2002	Health and Development Initiatives (HDI)	Field Officer
2002-2007	Population Services International (PSI) , Kolkata	Field Research Officer
2007-2008	State Institute of Health & Family Welfare (SIH&FW) ,	Research Officer
2007-2008	MaRS (Monitoring & Research Systems) Pvt. Ltd	Research Officer
2008-2009	Y.G. Consultants & Services (P) Ltd	Research Associate
2009–2009	Population Research Centre(PRC)	Supervisor
2009–2010	White Ribbon Alliance (WRA)	Co-coordinator
2010- 2010	New Concept Information Systems (P) Ltd	Co-coordinator
2011 - 2012	Cdar (Center For Development Action Research) a unit of HDF	Sr. Programme Associate
2011 - 2012	InSkill Ventures Pvt. Ltd	Data Analyst
2012-onwards	Sigma Research and Consulting	Sr Field Executive

8. Languages : Can fluently speak, read and write English, Hindi, Odiya and Bengali

1. Name : **S V S R K BHARADWAJ**

2. Present designation: Sr Manager - Operations

3. Nationality: Indian

4. Area of specialisation:

Data management of Large scale studies and development of data entry programs in CSPro, data preparation and analysis in SPSS and STATA

5. Key qualifications

- Nearly 9 years of data analysis and processing experience.
- Involved in data processing and analysis of many major projects like Chahaendline for Alliance, Anganwadi hygiene practices study for UNICEF, Economy Mapping studies for M&M, HIV BSS in Manipur for UNAIDS, Gender GAP Asset study for IIM, Bangalore etc...
- Involved and monitored the data processing of NFHS-3.
- Involved in monitoring of data processing and developed Fact sheet for DLHS-3
- Developed data entry programs in CSPro for panel study carried out for RTI International and also involved in field training, data management and data processing.
- Involved in field training, data processing, analysis and report writing of various rounds of BSS in Andhra Pradesh and Maharashtra. Also was trained and carried out analysis in RD Stat.
- Involved in data processing and training of IBBA. Also involved in RDS training and documentation.
- Also involved in data processing of large scale household studies.

6. Education

M A Mathematics

7. Experience

Over 13 years in data processing in social and market research with premier organisations:

Year	Organisation	Position held
2002 - 2003	DM&HO, Srikakulam	Computer operator UHC Project
2003 - 2007	TNS India	Assistant Data Analyst
2007 – 2008	TNS India	Data Analyst
2008 – 2010	Sigma Research and Consulting	Senior Data Analyst
2010 - 2011	Sigma Research and Consulting	DP Executive
2011 -2012	Sigma Research and Consulting	Senior DP Executive
2012 – 2016	Sigma Research and Consulting	DP Manager
2016 Onwards	Sigma Research and Consulting	Sr Manager - Operations

8. Languages

Can fluently speak, read and write English, Telugu, and Hindi

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for

Assessment of Liveability in Selected Cities held on

2nd June, 2017

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017 in the chamber of Economic Advisor-II (Room No.665-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Mr. Sajessh Kumar N., Director (Smart Cities)-Member
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Mr. Raja Dawn, PMU (CBUD), Member
- Mr Nilesh Rajayadhaksha, PMU (CBUD), Member

(Sh. Shiv Pal Singh, Director (AMRUT) was on leave)

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017.. **The list of EOIs received is at Annexure 1.**

After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No	Lead Firm	Consortium Partner	Primary Eligibility	Technical Score (max. 100)
1	M/s CRISIL Risk and Infrastructure Solutions Limited	Hansa Research Group	Lead partner registered as Company, hence eligible	100

2	Deloitte Touche Tohmatsu India LLP		Lead partner registered as LLP, hence eligible	100
3	Infrastructure Development Corporation (Karnataka) Limited (iDecK)	Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd.	Lead partner registered as Company, hence eligible	90

The abstract sheet of marks obtained by each firm is as per Annexure 2 and evaluation sheets are at Annexure 3.

As mentioned in para above and since the cost of project is estimated more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank. The recommendations of procurement committee may be forwarded to the World Bank for prior review as per World Bank procurement guidelines.

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

Annexure 3 - Abstract of Marks

Sl. No	Lead Firm	Consortium Partner
1	Caritas Eco Systems Private Limited	
2	Institute for Financial Management and Research (IFMR)	Core Carbon X SolutionS PVT LTD
3	Cr (INR)EATIVE CIRCLE, INDIA	MIR Projects and Consultants Pvt. Ltd. Enviro Techno Consult Private Limited
4	M/s CRISIL Risk and Infrastructure Solutions Limited	Hansa Research Group
5	Deloitte Touche Tohmatsu India LLP	Insight Development Group, Stesalit Systems, Kadence International
6	ICRA Management Consulting Services Limited	Sutra Consulting Private Lim
7	Infrastructure Development Corporation (Karnataka) Limited (iDecK)	Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd.
8	IRG Systems South Asia Pvt. Ltd.	
9	Karvy Data Management Services Limited	
10	KITCO Ltd.	
11	Quality Council of India (QCI)	KPMG
12	Maharashtra Social Housing and Action League (MASHAL)	ABHINYAS CONSULTANCY SERVICES LLP
13	Mott MacDonald Pvt. Ltd.	
14	Oxford Policy Management	

15	pManifold Business Solutions Pvt. Ltd.	
16	SYCOM PROJECTS CONSULTANTS PVT. LTD	
17	URBAN MANAGEMENT CONSULTING PVT. LTD.	

Primary Eligibility	**Technical Score (max. 100)**
Lead partner registered as Company, hence eligible	37
Lead partner registered as Society, hence **not eligible**	0
Lead partner registered as Company, hence eligible	60
Lead partner registered as Company, hence eligible	100
Lead partner registered as LLP, hence eligible	100
Lead partner registered as Company, hence eligible	55
Lead partner registered as Company, hence eligible	90
Lead partner registered as Company, hence eligible	60
Lead partner registered as Company, hence eligible	42
Lead partner registered as Company, hence eligible	50
Lead partner registered as Society, hence **not eligible**	0
Details of incorporation of Lead partner not available, hence **not eligible**	0
Lead partner registered as Company, hence eligible	60
Lead partner registered as Company, hence eligible	48

Lead partner registered as Company, hence eligible	25
Lead partner registered as Company, hence eligible	30
Lead partner registered as Company, hence eligible	23

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for

Assessment of Liveability in Selected Cities held on

7th June, 2017

2nd meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for assignment of "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 7th June, 2017 in the chamber of Economic Advisor-II (Room No.655-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Sh. Sajeesh Kumar N., Director (Smart Cities)-Member
- Sh. Shiv Pal Singh, Director (AMRUT)
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Sh. Raja Dawn, PMU (CBUD), Member
- Sh. Nilesh Rajayadhaksha, PMU (CBUD), Member

The minutes of the procurement committee meeting held on 2nd June, 2017 have been shared with the World Bank on 2nd June 2017 itself. Only three firms could qualify as against six required under the procurement guidelines of World Bank. The procurement also needed prior review by the World Bank being above US$ One million.

The World Bank vide email dated 7th June, 2017 has observed as under:

"We observe that only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms."

In view of observations of the World Bank, the procurement committee recommends to re-invite the bids by giving due publicity. Programme division may also consider revising the eligibility criteria to have better competition as advised by the World Bank.

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sh. Shiv Pal Singh)
Director(AMRUT)

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA’s response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;
   d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
   e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
   f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:

   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**

5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all

those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a

position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

   a. General Experience of the Firm: **Number of years' experience**
   b. Financial Strength of the Firm
   c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
   d. Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
   e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**

   f. Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**
   .

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**

S.No.	Parameter	Maximum Marks
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12	**20**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria[1]**	**Number and Name of Cities**
1	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only[2])(Lead firm)**	
2	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12.**. (Substantially Completed only) (Consortium partner 3)………..**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197

32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803

69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348

106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Evaluation EOIs of Liveability Index

3 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Fri, Jun 2, 2017 at 7:04 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Utpal Deka <utpal.deka@gmail.com>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Rakesh Gujral <rgujral@ipeglobal.com>, nrajadhyaksha@ipeglobal.com

Dear Madam,

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017.

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017. **The applications as received are attached**

After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No	Lead Firm	Consortium Partner	Primary Eligibility	Technical Score (max. 100)
1	M/s CRISIL Risk and Infrastructure Solutions Limited	Hansa Research Group	Lead partner registered as Company, hence eligible	100
2	Deloitte Touche		Lead partner	100

	Tohmatsu India LLP		registered as LLP, hence eligible	
3	Infrastructure Development Corporation (Karnataka) Limited (iDecK)	Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd.	Lead partner registered as Company, hence eligible	90

The abstract sheet of marks obtained by each firm is as per Annexure 2 and evaluation sheets are at Annexure 3 (comprises of individual work sheets for each applicant).

As mentioned in para above and since the cost of project is estimated to be more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank.

The recommendation of the Procurement Committee of Ministry of Urban Development (minutes of the meeting) is forwarded to the World Bank for prior review as per World Bank procurement guidelines.

Bids_REOI_Liveability.rar

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Regards,

G Vijay Kumar

Under Secretary the Government of India,
Ministry of Urban Development,
Smart Cities Division, Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

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2 attachments

MoM EOI Liveability.pdf
651K

Evaluation Sheet 31 May 2017 (1).xlsx
58K

Vijay Kumar <g.vijaykumar.moud@gmail.com> Tue, Jun 6, 2017 at 2:57 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Utpal Deka <utpal.deka@gmail.com>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Rakesh Gujral <rgujral@ipeglobal.com>, nrajadhyaksha@ipeglobal.com, Swayamsiddha Mohanty <smohanty1@worldbank.org>

Dear Madam,

Please refer to my mail dated 2nd June 2017 on CBUD Project for shortlisting the Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites".

Your response is till awaited.

Please send the response of the World Bank at the earliest.

[Quoted text hidden]

Vasudha Thawakar <vsarda@worldbank.org> Wed, Jun 7, 2017 at 10:55 AM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, Raja Dawn <Raja@meghrajindia.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>, Rakesh Gujral <rgujral@ipeglobal.com>, "nrajadhyaksha@ipeglobal.com" <nrajadhyaksha@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>

Dear Mr Kumar,

Thank you for your email dated June 2 regarding the livability index.

We observe that only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms.

Best ,
Vasudha Thawakar
TTL
World Bank

[Quoted text hidden]

<MoM EOI Liveability.pdf>

<Evaluation Sheet 31 May 2017 (1).xlsx>

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	8-May-2017
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	NIUA’s response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**By 3:00 p.m on 22-May-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;
   d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
   e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
   f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:

   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**

3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Shortlisting Process;

d. “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. “**Restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ______________________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.**. (Substantially Completed only) (Consortium partner 3)………..**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643

108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

Ministry of Urban Development

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

13th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by Ministry of Urban Development (MOUD), , is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the MOUD to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by MOUD in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for MOUD to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

MOUD makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The MOUD may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 116 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the Ministry of Urban Development(MOUD), a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with MOUD.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to MOUD.
e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to MOUD.

g) Submit Draft Assessment reports to the cities and MOUD separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the MOUD after including agreed recommendations of the MOUD,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by MOUD to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". MOUD reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) MOUD proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) MOUD proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with MOUD does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The MOUD will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

MOUD would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	13-June-2017
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	MOUD's response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**By 3:00 p.m on 04-July-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email: sajeesh.kr@gov.in and g.vijaykumar.moud@gmail.com Telephone No.011-2306 3217.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) MOUD shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;
  d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
  e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
  f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by MOUD or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by MOUD blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with MOUD.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with MOUD.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with MOUD.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from MOUD.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that MOUD shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from MOUD.

c) MOUD shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, MOUD reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) MOUD reserves the right to reject any Application if:

  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by MOUD, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, MOUD may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, MOUD may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request MOUD online through mail at **Email: sajeesh.kr@gov.in** and g.vijaykumar.moud@gmail.com Telephone No.011-2306 3217.

The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. MOUD would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**

2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) MOUD may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The MOUD evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) MOUD reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) MOUD reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. MOUD will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, MOUD shall notify the list of Applicants who have been shortlisted.

b) MOUD shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) MOUD reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by MOUD in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, MOUD, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by MOUD, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, MOUD may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) MOUD requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of MOUD, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, MOUD shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The MOUD reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**

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b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, MOUD shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of MOUD under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the MOUD to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by MOUD during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of MOUD in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the MOUD with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Not Applicable.

5.2 Not Applicable.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 MOUD, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to MOUD by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases MOUD, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by MOUD or submitted by an Applicant shall remain or become, as the case may be, the property of MOUD. MOUD will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 MOUD reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director SC (III),
Ministry of Urban Development,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 90 (Ninety Days) days from ……….. (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to MOUD, representing us in all matters before MOUD, and generally dealing with MOUD in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ______________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas Ministry of Urban Development, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with MOUD, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MOUD.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2017

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	Turn Over (in Crores)
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, MOUD reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____________________________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

---

1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. MOUD may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 3)………..**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. MOUD may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12 **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS MOUD, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

Ministry of Urban Development

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

15th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by Ministry of Urban Development (MOUD), , is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the MOUD to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by MOUD in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for MOUD to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

MOUD makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The MOUD may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 116 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the Ministry of Urban Development(MOUD), a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with MOUD.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to MOUD.
e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to MOUD.

g) Submit Draft Assessment reports to the cities and MOUD separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the MOUD after including agreed recommendations of the MOUD,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by MOUD to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". MOUD reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) MOUD proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) MOUD proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with MOUD does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The MOUD will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

MOUD would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	15-June-2017
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	MOUD's response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**By 3:00 p.m on 29-June-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to **Email:** **sajeesh.kr@gov.in** and **g.vijaykumar.moud@gmail.com** Telephone No.011-2306 3217.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) MOUD shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;
   d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
   e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
   f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by MOUD or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by MOUD blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with MOUD.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with MOUD.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with MOUD.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from MOUD. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that MOUD shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from MOUD.

c) MOUD shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, MOUD reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) MOUD reserves the right to reject any Application if:
  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by MOUD, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, MOUD may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, MOUD may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request MOUD online through mail at **Email: sajeesh.kr@gov.in** and **g.vijaykumar.moud@gmail.com** Telephone No.011-2306 3217.

The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. MOUD would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**

2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) MOUD may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The MOUD evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) MOUD reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) MOUD reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. MOUD will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, MOUD shall notify the list of Applicants who have been shortlisted.

b) MOUD shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) MOUD reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by MOUD in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, MOUD, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by MOUD, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, MOUD may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) MOUD requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of MOUD, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, MOUD shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The MOUD reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, MOUD shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of MOUD under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the MOUD to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by MOUD during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of MOUD in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the MOUD with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Not Applicable.

5.2 Not Applicable.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 MOUD, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to MOUD by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases MOUD, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by MOUD or submitted by an Applicant shall remain or become, as the case may be, the property of MOUD. MOUD will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 MOUD reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director SC (III), CBUD Project,
Ministry of Urban Development,
Room No. 202C, Nirman Bhavan,
New Delhi-11001.

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 90 (Ninety Days) days from ……….. (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to MOUD, representing us in all matters before MOUD, and generally dealing with MOUD in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ______________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas Ministry of Urban Development, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with MOUD, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MOUD.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2017

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		
3.		
4.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, MOUD reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ______________________________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. MOUD may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5.

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies..

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria[1]**	**Number and Name of Cities**
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only[2])(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only) (Consortium partner 3)………..**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. MOUD may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12 **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS MOUD, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

सत्यमेव जयते

MINISTRY OF URBAN DEVELOPMENT

GOVERNMENT OF INDIA

Expression of Interest
For
Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

Detailed Evaluation report

5th July 2017

Summary of Shortlist of Bidders for Assessment of Liveability Index of 116 cities of India

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	Ipsos Public Affairs	Athena Infonomics	The Economics Intelligence Unit			100
2	Delloite Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		100
3	Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					88
4	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	84
5	PricewaterhouseCoopers					81
6	Jones Lang LaSalle					80
7	KITCO Ltd.					70
8	Mott MacDonald					69
9	Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			67
10	Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		66
11	Sutra Consultants	Hijli INSPIRATION				64
12	Chrome Data Analytics & Media Pvt Ltd					62
13	Frost & Sullivan					60
14	Larsen & Toubro					55

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
15	Voyants Solution Pvt. Ltd.					46
16	Caritas Ecosystem					42
17	Quality Council of India	KPMG				0
18	C-Voter	Perfect Solutions				0
19	ICLEI South Asia					0
20	Institute for Financial Management and Research	Core CarbonX Sols Pvt. Ltd	Administrative Staff College of India	Nathan Economic Consulting India Pvt. Ltd		0
21	MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

DETAILED EVALUATION SHEETS

1. IPSOS PUBLIC AFFAIRS – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores-10 Marks => 20 crores 15 Marks	187.84	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	3306	25
	Consortium Partner 1 (Athena Infonomics)			20	20
	Consortium Partner 2 (EIU)			400	25
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1 (Athena Infonomics)			15	30
	Consortium Partner 2 (EIU)			5	10
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	45	225
	Consortium Partner 1 (Athena Infonomics)			10	50
	Consortium Partner 2 (EIU)			3	15
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	10	40
	Consortium Partner 1 (Athena Infonomics)			1	4
	Consortium Partner 2 (EIU)			6	20
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	17	20
Grand Total		**100**			**100**

2. Deloitte Touche Tohmatsu LLP – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	61	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	52	25
	Consortium Partner 1 (IDCG)			18	20
	Consortium Partner 2 (Stesalit)			70	25
	Consortium Partner 3 (Kadence)			55	25
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	2	4
	Consortium Partner 1 (IDCG)			1	2
	Consortium Partner 2 (Stesalit)			0	0
	Consortium Partner 3 (Kadence)			4	8
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	5
	Consortium Partner 1 (IDCG)			2	10
	Consortium Partner 2 (Stesalit)			1	5
	Consortium Partner 3 (Kadence)			3	15
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	6	24
	Consortium Partner 1 (IDCG)			0	0
	Consortium Partner 2 (Stesalit)			0	0
	Consortium Partner 3 (Kadence)			1	4
	Consortium Partner 4			0	0
			Total	7	20
Grand Total		**100**			**100**

3. Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International) – Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	79	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	614	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	32	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	14	28
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		**10**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	6	30
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	2	8
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	8
Grand Total		**100**			**88**

4. Infrastructure Development Corporation (Karnataka) Ltd (iDecK) – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	29.41	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	20	20
	Consortium Partner 1 (ISEC)			32	25
	Consortium Partner 2 (PAC)			20	20
	Consortium Partner 3 (Sigma)			15	20
	Consortium Partner 4 (Nielson)			1500	25
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1 (ISEC)			4	8
	Consortium Partner 2 (PAC)			4	8
	Consortium Partner 3 (Sigma)			0	0
	Consortium Partner 4 (Nielson)			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1 (ISEC)			8	40
	Consortium Partner 2 (PAC)			4	20
	Consortium Partner 3 (Sigma)			6	30
	Consortium Partner 4 (Nielson)			10	50
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	1	4
	Consortium Partner 1 (ISEC)			0	0
	Consortium Partner 2 (PAC)			0	0
	Consortium Partner 3 (Sigma)			0	0
	Consortium Partner 4 (Nielson)			0	0
			Total	1	4
Grand Total		**100**			**84**

5. PricewaterhouseCoopers Pvt. Ltd. - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	33	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1600	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	646	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	4	8
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		8

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	3	15
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	2	8
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	2	8
Grand Total		**100**			**81**

6. Jones Lang LaSalle - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1979.50	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	65	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	2	10
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	8	32
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	8	20
Grand Total		**100**			**80**

7. KITCO Ltd. - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	42.31	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	25	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	5	20
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**70**

8. Mott MacDonald - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	47	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores-10 Marks => 20 crores 15 Marks	193.6	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	37	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	5	10
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	5
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	1	4
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	1	4
Grand Total		**100**			**69**

9. Creative Circle India – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	11.48	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	15	20
	Consortium Partner 1 (Mir Projects)			25	25
	Consortium Partner 2 (Enviro Techno Consultants)			12	20
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	3	6
	Consortium Partner 1 (Mir Projects)			0	0
	Consortium Partner 2 (Enviro Techno Consultants)			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		6

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1 (Mir Projects)			0	0
	Consortium Partner 2 (Enviro Techno Consultants)			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	4	16
	Consortium Partner 1 (Mir Projects)			0	0
	Consortium Partner 2 (Enviro Techno Consultants)			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	16
Grand Total		**100**			**67**

10. Oxford Policy Management – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	8	8
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	7.2	5
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	45	25
	Consortium Partner 1 (TERI)			105	25
	Consortium Partner 2 (Avalon)			50	25
	Consortium Partner 3 (pManifold)			16	20
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	2	4
	Consortium Partner 1 (TERI)			0	0
	Consortium Partner 2 (Avalon)			0	0
	Consortium Partner 3 (pManifold)			0	0
	Consortium Partner 4			0	0
			Total		4

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	4	20
	Consortium Partner 1 (TERI)			0	0
	Consortium Partner 2 (Avalon)			0	0
	Consortium Partner 3 (pManifold)			0	0
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	1	4
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	1	4
Grand Total		**100**			**66**

11. Sutra Consultants – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	11	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	75	25
	Consortium Partner 1			11	20
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	4	8
	Consortium Partner 1			2	4
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			1	5
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	1	4
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	1	4
Grand Total		**100**			**64**

12. Chrome Data Analytics & Media Pvt Ltd - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	6	6
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	5	5
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	950	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	3	6
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		6

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	6	30
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**62**

13. Frost & Sullivan - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	18	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	105	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	50	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	6	12
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		**0**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**60**

14. Larsen & Toubro - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	19	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	44	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	37	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	5
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**55**

15. Voyants Solution Pvt. Ltd. - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	0	0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	61.78	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	21	25
	Voyants Solutions			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	1	2
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		2

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	1	4
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	1	4
Grand Total		**100**			**46**

16. Caritas Ecosystem - Sole Applicant

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	7	7
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	40	25
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	10	20
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**42**

17. Quality Council of India – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks		0
	Consortium Partner 1				0
	Consortium Partner 2				0
	Consortium Partner 3				0
	Consortium Partner 4				0
			Total		0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks		0
	Consortium Partner 1				0
	Consortium Partner 2				0
	Consortium Partner 3				0
	Consortium Partner 4				0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks		0
	Consortium Partner 1				0
	Consortium Partner 2				0
	Consortium Partner 3				0
	Consortium Partner 4				0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks		0
	Consortium Partner 1				0
	Consortium Partner 2				0
	Consortium Partner 3				0
	Consortium Partner 4				0
			Total	0	0
Grand Total		**100**			**0**

18. C-Voter – Lead Member

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	3	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	5	10
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		10
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Grand Total		**100**			**20**

19. ICLEI South Asia - Sole Applicant

ICLEI is registered as a Trust hence not eligible and evaluation was not carried out

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	0	0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Total		**100**			**0**

20. Institute for Financial Management and Research – Lead Member

IFMR is registered as a Society hence not eligible and evaluation was not carried out

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	0	0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores-10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Total		**100**			**0**

21. MASHAL – Lead Member

MASHAL is registered as a Society hence not eligible and evaluation not carried out

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	0	0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks 10 -20 persons : 20 marks > 20 persons - 25 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	2 Marks for each project with a maximum of 10 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total		0

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3				0
	Consortium Partner 4			0	0
			Total		0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	4 Marks for each project with a maximum of 20 marks	0	0
	Consortium Partner 1			0	0
	Consortium Partner 2			0	0
	Consortium Partner 3			0	0
	Consortium Partner 4			0	0
			Total	0	0
Total		**100**			**0**

Minutes of the Meeting of Procurement Committee for shortlisting of applications in response to REOI for **“Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project”**

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of “**Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**” was held under the chairmanship of Dr. Kumar V. Pratap, Economic Advisor-I~~I~~, MoUD on 05th July 2017 in the Room No. 232C, Nirman Bhawan, New Delhi.

The following were present in the meeting:

1. Dr. Kumar V. Pratap, Economic Advisor, MoUD
2. Shri Shiv Pal Singh, Director(AMRUT), MoUD.
3. Shri Sajeesh Kumar N, Director (SC-III), MoUD
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoUD.
5. Shri G. Vijay Kumar, Under Secretary (SC-III), MoUD
6. Shri Utpal Deka, Team Leader, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, CBUD
8. Shri Raja Dawn, Procurement Specialist, CBUD

2. As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under:

[illegible]	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) published on 15th June 2017 on www.eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017. As per the World Bank guidelines, the RFP has to be issued 6 highest scoring/shortlisted firms.

4. In this regard, a meeting of the procurement committee was held on 05th July 2017 to discuss these proposals. Based on the criteria given in REOI and introduced in para 2 above, the evaluation of 21 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project on the above mentioned date. The detailed Evaluation Sheet is attached as **Annexure.**

5. The Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP). The list of shortlisted firms along with their applications, and the evaluation sheet for all 21 participating firms may be sent to World Bank for their concurrence/review.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Public Affairs**	Athena Infonomics	The Economics Intelligence Unit			**100**
2	**Delloite Touche Tohmatsu India LLP**	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		**100**
3	**Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)**					**88**
4	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	**84**
5	**PricewaterhouseCoopers**					**81**
6	**Jones Lang LaSalle**					**80**

Nilesh Rajadhyaksha
Capacity Building Expert, CBUD

Raja Dawn
Procurement Specialist
CBUD

Utpal Deka
Team Leader
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

Evaluation of Bidders for Assessment of Liveability Index of 116 cities of India

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	Ipsos Public Affairs	Athena Infonomics	The Economics Intelligence Unit			100
2	Delloite Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		100
3	Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					88
4	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	84
5	PricewaterhouseCoopers					81
6	Jones Lang LaSalle					80
7	KITCO Ltd.					70
8	Mott MacDonald					69
9	Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			67
10	Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		66
11	Sutra Consultants	Hijli INSPIRATION				64
12	Chrome Data Analytics & Media Pvt Ltd					62
13	Frost & Sullivan					60
14	Larsen & Toubro					55
15	Voyants Solution Pvt. Ltd.					46
16	Caritas Ecosystem					42
17	Quality Council of India					0
18	C-Voter					0
19	ICLEI South Asia					0
20	Institute for Financial Management and Research	Core CarbonX Sols Pvt. Ltd	Administrative Staff College of India	Nathan Economic Consulting India Pvt. Ltd		0
21	MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

Gmail Vijay Kumar <g.vijaykumar.moud@gmail.com>

REOI for the assignment of “Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project”

4 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Jul 10, 2017 at 12:27 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Utpal Deka <utpal.deka@gmail.com>, Rakesh Gujral <rgujral@ipeglobal.com>, sajeesh.kr@gov.in

Dear Madam,

This is regarding the "Assessment Liveability in Selected Cities", which an activity of Procurement Plan under CBUD project. Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI), which was concurred by the World Bank and IFD, MoUD, published on 15th June 2017 on www. eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017.

2. **The Ministry has recommended the shortlisting of the following 6 consulting firms**, which have secured more than 75 marks, **for issuance of Request for Proposal (RFP)**, after evaluation of 21 applications. The detailed Evaluation Sheet is attached as **Annexure.**

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Public Affairs**	Athena Infonomics	The Economics			**100**

			Intelligence Unit			
2	**Delloite Touche Tohmatsu India LLP**	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		**100**
3	**Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)**					**88**
4	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	**84**
5	**PricewaterhouseCoopers**					**81**
6	**Jones Lang LaSalle**					**80**

3. Since the cost of project is estimated to be more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank. **The recommendation of the Ministry (minutes of the meeting, detailed evaluation of Applications and REOI) is forwarded to the World Bank for prior review as per World Bank procurement guidelines.**

4. You are requested to send the views/comments of World Bank at the earliest.

--

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Housing and Urban Affairs (formerly known as Ministry of Urban Development),
Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217
M. 9582576758

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3 attachments

REOI_Liveability Published date 15th June 2017.pdf
1134K

Evaluation of New REOI Report.pdf
892K

Minutes of the Procurement Committee on Liveability REOI.pdf
312K

Vasudha Thawakar <vsarda@worldbank.org> Wed, Jul 12, 2017 at 10:13 AM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, Rakesh Gujral <rgujral@ipeglobal.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>

Dear Mr Kumar,

Bank had advised use of STEP for all stages of procurement because the publication of REoI on UNDB can be done only through STEP system. From the EOI evaluation report, it is not clear whether the REoI was published on UNDB or not. This is a mandatory requirement. The shortlisting process also does not provide information on how the requirement of Consultancy Guidelines para 2.6, given below, is addressed :

“Short lists shall comprise six firms with a wide geographic spread, with (i) no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement;31 and (ii) and at least one firm from a developing country, unless no qualified firms from developing countries could be identified. When any of the above requirements cannot be met on the basis of received EOIs, the Borrower may directly solicit interest from qualified firms based on its own knowledge, or request Bank assistance in accordance with paragraph 1.17.”

Regards
Vasudha Thawakar

On 10-Jul-2017, at 12:29 PM, Vijay Kumar <g.vijaykumar.moud@gmail.com> wrote:

> Dear Madam,
> This is regarding the "Assessment Liveability in Selected Cities", which an activity of Procurement Plan under CBUD project. Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI), which was concurred by the World Bank and IFD, MoUD, published on 15th June 2017 on www. eprocure.gov.in<http://eprocure.gov.in> with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in<http://www.moud.gov.in/> and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in<http://www.eprocure.gov.in/> only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017.
> [Quoted text hidden]
>
> <REOI_Liveability Published date 15th June 2017.pdf>

<Evaluation of New REOI Report.pdf>

<Minutes of the Procurement Committee on Liveability REOI.pdf>

Vijay Kumar <g.vijaykumar.moud@gmail.com> Thu, Jul 20, 2017 at 2:15 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, sajeesh.kr@gov.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

As you are aware that 'Liveability Standards in Cities' is a unique effort initiated by the MoUD under World Bank funding CBUD funded project for assessing the standards of living in Indian cities. This is the first attempt by any country to systematically identify, track and improve upon critical parameters that define urban quality of life and is likely to create competitive environment amongst cities to improve. The Ministry proposes to conduct an 'Annual Assessment of Liveability Standards in Cities' – an ambitious national project that will involve yearly survey and compilation of a large number of datasets across the various indicators, analysis of such datasets, development of indexes and ranking of cities.

The EOI for this assignment was uploaded on e-procurement website of the Ministry on 9th May, 2017, on the STEP (reference number IN-MoUD-14653-CS-QCBS) and was also published in the Newspapers. The last date of receipt of EOI was 30th May. In response to the REOI, 17 EOIs were received.

As per World Bank procurement guidelines a panel of 6 firms needs to be prepared, but in this case after evaluation only 3 firms were found to be qualified. Since the procurement requires pre review of the Bank, matter was taken up with the Bank. It was decided in consultation with the Bank that in view of the poor response, the REOI may be re- called and the condition relating to "accreditation of the firms with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute may be re considered".

Accordingly, the REOI was revised and the above condition was removed. The revised REOI was again issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan. However, due to some technical problems the EOI could not be uploaded on the STEP.

This time good response was received and total 21 EOIs were received. A number of national and internationals firms of repute in the field relevant to the assignment

submitted bids. The procurement committee evaluated the REOIs and shortlisted 6 consulting firms who qualified as per eligibility criteria. Since the present case falls under prior review category, shortlisted firms along with relevant documents was forwarded to the Bank for their approval.

However, the Bank has pointed out that the re-called EOI has not been uploaded on the “STEP” and the same is a mandatory requirement. The Bank also referred to the Consultancy Guidelines para 2.6, which prescribes:

“Short lists shall comprise six firms with a wide geographic spread, with (i) no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement;31 and (ii) and at least one firm from a developing country, unless no qualified firms from developing countries could be identified. When any of the above requirements cannot be met on the basis of received EOIs, the Borrower may directly solicit interest from qualified firms based on its own knowledge, or request Bank assistance in accordance with paragraph 1.17.”

It is also pertinent here to point out that Ministry has followed e-procurement system and its e-procurement website is accessible globally. The response was, therefore, very good. A number of international and national firms/consortiums with wide geographical spread and having good reputation in the field relevant to the assignment have applied. The short listed firms also confirm to the requirement of para 2.6 of the consultancy guidelines referred to above.

In view of the above, the Ministry requests Bank to relax the conditions of uploading on the STEP for the following reasons:

- Uploading will be repetitive.
- Wide publicity has been given to the REOI. Ministry has followed e-procurement system and its e-procurement website is accessible globally.
- Response received meets the criteria laid down in para 2.6 of consultancy guidelines.
- This assignment is, of utmost importance to the Ministry and has already been delayed considerably due to re-bidding on account of poor response received in the 1st call. Recalling REOI will further delay the assignment by another 3 months.

Ministry will, however, enter the contract in the STEP retroactively to meet the requirement. In view of the above facts, it is requested that the shortlisting of consulting firms as recommended may be approved by the Bank at the earliest.

Regards,

G Vijay Kumar

Under Secretary the Government of India,
Ministry of Housing and Urban Affairs (formerly known as Ministry of Urban Development),
Smart Cities Division, Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

[Quoted text hidden]

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Smart City
MISSION TRANSFORM-NATION
Ministry of Urban Development, Government of India

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Jul 24, 2017 at 4:45 PM
To: Vasudha Thawakar <vsarda@worldbank.org>

[Quoted text hidden]

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs

(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Ministry of Urban Development, Government of India
Smart City
MISSION TRANSFORM-NATION

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3 attachments

REOI_Liveability Published date 15th June 2017.pdf
1134K

Evaluation of New REOI Report.pdf
892K

Minutes of the Procurement Committee on Liveability REOI.pdf
312K

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Review Request for Procurement Plan Submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project

5 messages

STEP Admin <noreply@worldbankgroup.org> Tue, May 9, 2017 at 4:27 PM
Reply-To: noreply@worldbankgroup.org
To: "vsarda@worldbank.org" <vsarda@worldbank.org>
Cc: "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "asrivastava2@worldbank.org" <asrivastava2@worldbank.org>, "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "abharat@worldbank.org" <abharat@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

G. Vijay Kumar - PMU CBUD Ministry of Urban Development has submitted the Procurement Plan for India - P099979 - Capacity Building for Urban Development Project to the Bank for Review

Dear Madam/Sir,

Request for approval of the proposal.

Regards,

Ministry of Urban Development, New Delhi

STEP System Users - Click here

Bank Users - Click here

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2 attachments

REOI-Liveability IndexWB.docx
24K

REOILiveability V2.docx
166K

Vijay Kumar <g.vijaykumar.moud@gmail.com> Tue, Aug 1, 2017 at 12:02 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, sajeesh.kr@gov.in, Rakesh Gujral <rgujral@ipeglobal.com>, Ketan Kumar Vora <kkvora@ipeglobal.com>, Nilesh Rajadhyaksha <nrajadhyaksha@ipeglobal.com>

Dear Madam,

This is regarding REOI dated 9th May 2017 of Liveability Index (first one) submitted to World Bank for approval thorough STEP on 9th May 2017. The snapshot generated from STEP is also attached for your consideration and needful.

[Quoted text hidden]
--

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Smart City
MISSION TRANSFORM-NATION
Ministry of Housing and Urban Affairs, Government of India

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3 attachments

REOI-Liveability IndexWB.docx
24K

REOILiveability V2.docx
166K

Screen Shot.docx
219K

Vijay Kumar <g.vijaykumar.moud@gmail.com> Wed, Aug 2, 2017 at 12:02 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, sajeesh.kr@gov.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

Please find enclosed an attachment (screenshot) of REOI uploaded on the STEP on 9th May 2017. You may kindly see the REOI documents attachements which are autogenerated on 9th May 2017 for consideration and needful.
[Quoted text hidden]

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4 attachments

REOI-Liveability IndexWB.docx
24K

REOILiveability V2.docx
166K

Screen Shot.docx
219K

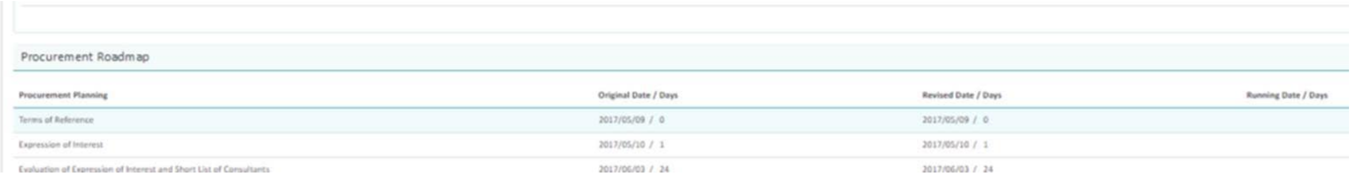
Liveability REOI 9th May 2017.docx
192K

Vasudha Thawakar <vsarda@worldbank.org>
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Ketan Kumar Vora <kkvora@ipeglobal.com>, "rgujral@ipeglobal.com" <rgujral@ipeglobal.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.i
<smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>

Dear Mr. Kumar:

I have taken a cropped images of the snapshot share by you, below. As you can see, in the Roadmap below, there's a light blue colour bar on Terms of Reference and the Actual Dates cc

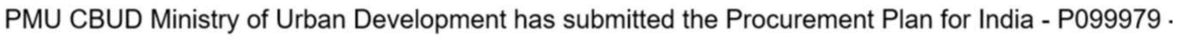
In STEP system, the light blue colour bar moves from one stage to another down the Roadmap, as & when each stage gets implemented and the actual date of that stage gets generatec
Since other than approval of procurement plan, nothing has been done in STEP, the bar is still at TOR and the **actual date is blank.**



Procurement Roadmap

Procurement Planning	Original Date / Days	Revised Date / Days	Running Date / Days
Terms of Reference	2017/05/09 / 0	2017/05/09 / 0	
Expression of Interest	2017/05/10 / 1	2017/05/10 / 1	
Evaluation of Expression of Interest and Short List of Consultants	2017/06/03 / 24	2017/06/03 / 24	

In the 9th May email, referred below, the top line itself is very clear that procurement plan was submitted and not TOR/REoI.



PMU CBUD Ministry of Urban Development has submitted the Procurement Plan for India - P099979 ·

We can once more give training to the procurement person of MoUD/PMU on STEP so that such situations/errors can be avoided.

Warm Regards,

Vasudha Thawakar

From: "Vijay Kumar" <g.vijaykumar.moud@gmail.com>
To: "Vasudha Thawakar" <vsarda@worldbank.org>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>, "Rakesh Gujral" <rgujral@ipeglobal.c

[Quoted text hidden]

[Quoted text hidden]

Vasudha Thawakar <vsarda@worldbank.org> Fri, Aug 4, 2017 at 1:07 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Ketan Kumar Vora <kkvora@ipeglobal.com>, "rgujral@ipeglobal.com" <rgujral@ipeglobal.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>

Dear Mr. Kumar:

As noted below, no EOI related to the livability index has been issued in STEP for the CBUD project by MOUD.

For the livability index package to be undertaken under CBUD, we request you process the bid via STEP starting with REOI.

Thanks and Regards,

Vasudha Thawakar

Senior Urban Development Specialist and TTL-CBUD

World Bank

From: Vasudha Thawakar
Sent: Friday, August 04, 2017 12:33 PM
To: 'Vijay Kumar' <g.vijaykumar.moud@gmail.com>
Cc: Ketan Kumar Vora <kkvora@ipeglobal.com>; rgujral@ipeglobal.com; sajeesh.kr@gov.in; Swayamsiddha Mohanty <smohanty1@worldbank.org>; Payal Malik Madan <pmmadan@worldbank.org>; Jyoti Sriram <jsriram@worldbank.org>
Subject: FW: Review Request for Procurement Plan Submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project

[Quoted text hidden]

Shortlisting of applications in response to REOI for "Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"

The REOI for 'Selection of Consultant for Assessment of Liveability in 116 cities" was re-issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan.

A total of 21 EOIs were received in response. These were evaluated by the Procurement Committee of CBUD and 6 firms were shortlisted as per the prescribed eligibility criteria. Since the present case falls under prior review category, the list of shortlisted firms along with relevant documents was forwarded to the World Bank for their approval.

In response, the World Bank has noted that the REOI was not uploaded on the "STEP" platform of the Bank and that the same is a mandatory requirement. It is clarified that though REOI was uploaded on the STEP and it was included in the procurement plan but due to certain technical issues it could not be uploaded on the UNDP procurement portal. Every effort had been made to ensure wide circulation and international participation (the e-procurement website is itself a global website). However, given the mandatory nature of the procedure, the World Bank has advised that the REOI be issued afresh, so that compliance with all procedural modalities required at the Bank's end may be met.

It is therefore, recommended that the REOI may be considered for fresh issuance on the same terms and conditions as before, giving the minimum period of 14 days as required under the World Bank guidelines.

Nilesh Rajadhyaksha
Capacity Building
Expert, CBUD

Rakesh Gujral
Finance Management Specialist
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

Government of India
Ministry of Housing and Urban Affairs

Capacity Building for Urban Development

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

8th September, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by Ministry of Housing and Urban Affairs (MOHUA) formerly known as Ministry of Urban Development (MoUD), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the MoHUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by MOHUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for MOHUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

MoHUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The MoHUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 116 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the Ministry of Housing and Urban Affairs (MoHUA), a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with MoHUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to MoHUA.
e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to MOHUA.

g) Submit Draft Assessment reports to the cities and MoHUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the MoHUA after including agreed recommendations of the MoHUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by MoHUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". MoHUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) MoHUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) MoHUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with MoHUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The MoHUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

MoHUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	**Date of Issue of REOI**	**08th -Septemebr-2017**
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	MoHUA's response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**by 3:00 p.m on 03rd-October-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to **Email: g.vijaykumar@nic.in** and **g.vijaykumar.moud@gmail.com** Telephone No.011-2306 3217.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) MoHUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five (5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;
   d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
   e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
   f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by MoHUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by MoHUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with MoHUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with MoHUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with MoHUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from MoHUA. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that MoHUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from MoHUA.

c) MoHUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, MoHUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) MoHUA reserves the right to reject any Application if:

   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by MoHUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, MoHUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, MoHUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request MoHUA online through mail at **Email: g.vijaykumar@nic.in** and **g.vijaykumar.moud@gmail.com** Telephone No.011-2306 3217.

The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. MoHUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) MoHUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The MoHUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) MoHUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) MoHUA reserves the right to reject any or all the Applications, if:

a. At any time, a material misrepresentation is made or discovered; or
b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. MoHUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, MoHUA shall notify the list of Applicants who have been shortlisted.

b) MoHUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) MoHUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by MoHUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, MoHUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by MoHUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, MoHUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) MoHUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of MoHUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, MoHUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The MoHUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, MoHUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of MoHUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the MoHUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by MoHUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of MoHUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the MoHUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Not Applicable.

5.2 Not Applicable.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 MoHUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to MoHUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases MoHUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by MoHUA or submitted by an Applicant shall remain or become, as the case may be, the property of MoHUA. MoHUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 MoHUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
The Under Secretary (CBUD)
Office of the Project Director, CBUD Project,
Ministry of Housing and Urban Affairs,
Room No. 202C, Nirman Bhavan,
New Delhi-11001.

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 90 (Ninety Days) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to MoHUA, representing us in all matters before MoHUA, and generally dealing with MoHUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ______________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas Ministry of Housing and Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with MoHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2017

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		
3.		
4.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, MoHUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place	Designation
	Tel No.
	Mobile No.
	E Mail ID
	Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. MoHUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5.

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**..**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria[1]**	**Number and Name of Cities**
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only[2])(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only) (Consortium partner 3)………..**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. MoHUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12 **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part

and

_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS MoHUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

K-14012/101(11)/2017-SCM-III (V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
(CBUD Division)

Nirman Bhawan, New Delhi
Dated the 21st September, 2017

To

The Pay & Accounts Officer (Sectt.),
Ministry of Housing and Urban Affairs,
New Delhi-110011

Subject:- Release of Rs.2,06,870/- to DAVP, Ministry of Information and Broadcasting for the **Publication of Request for Expression Interest (REOI)– reg.**

Sir,

I am directed to convey the sanction of competent authority for release of **Rs.2,06,870/- (Rupees Two lakh Six Thousand Eight Hundred and Seventy only)** to **Directorate of Advertising & Visual Publicity (DAVP), New Delhi towards** the **Publication of Request for Expression Interest (REOI) for " Selection of Consulting Firms for providing consulting services for the Assessment of Liveability in 116 cities".**

2. The letter of Authority (LOA) may be issued in favour of Pr. Accounts Officer, M/o I&B, DAVP, 5th Floor, Shashtri Bhawan, Dr. Rajendra Prasad Road, New Delhi – 110001.

3. The sanction will be regulated in accordance with the provisions of GFR, 2017.

4. The expenditure is debitable to Major Head 2217 – Urban Development (Plan); 05-Other UD Schemes (Sub-Major Head); 191-Assistance to Municipal Corporations (Minor Head); 15 –Mission for 100 Smart Cities; 01- Establishment of 100 Smart Cities.; 26- Advertising & Publicity under Demand No. 97 for the year 2017-18 of the Ministry of Housing and Urban Affairs.

5. This issues with the approval of JS&FA (Integrated Finance Division) Computer No. 3136811 vide their Note dated 21/09/2017 at 2:27 PM.

Yours faithfully,

21/9/2017

(G. Vijay Kumar)
Under Secretary to the Government of India
Tel. 23063217

जि. विजय कुमार/G. VIJAY KUMAR

Copy to:-

1. Pr. Accounts Officer, M/o I&B, DAVP, 5th Floor, Shashtri Bhawan, Dr. Rajendra Prasad Road, New Delhi – 110003
2. Campaign Officer, Campaign Wing-I, Directorate of Advertisement & Visual Publiciy, Ministry of Information & Broadcasting, Room No. 289, 2nd Floor, Soochna Bhawan, CGO Complex, Lodhi Road, New Delhi – 110003.
3. Accounts Officer, DAVP, Room No. 942, 9th Floor, Soochna Bhawan, CGO Complex, New Delhi – 110003.
4. S.O, Admn. II Section, Ministry of Housing and Urban Affairs, New Delhi.
5. The Under Secretary (Smart Cities), Ministry of Housing and Urban Affairs, New Delhi.
6. Internal Finance Division, Ministry of Housing and Urban Affairs, New Delhi.
7. Sanction folder.

21/9/2017

(G.Vijay Kumar)
Under Secretary to the Government of India

जि. विजय कुमार/G. VIJAY KUMAR

Sanction Details

Controller:	030-URBAN DEVELOPMENT AND URBAN POVERTY ALLEVIATION	Sanction Status:	Approved
Sanction Number:	K-14012/101(11)/2017-SCM-III(V)/CBUD	Sanction Date:	22/09/2017
Sanction Type:	IntraGovernmentalAuthorization	Sanction Amount:	206870
IFD Number:	3136811	IFD Date:	21/09/2017
Plan Scheme:	9478-MISSION FOR DEVELOPMENT OF 100 SMART CITIES	PAO:	043884-PAO(Sectt.), Ministry of Urban Development, New Delhi
DDO:	243894-SO-Cash M/o UD	Remarks:	ok
Created By:	g_vijayk	Created On:	22/09/2017 03:37:24 PM
Modified By:	g_vijayk	Modified On:	22/09/2017 03:38:14 PM

File Uploaded: davp revise.pdf

Account Details:

Grant	Department (For UT Grants Only)	Function Head	Object Head	Category	Amount	External PAO	Available Budget
097 - Ministry of Urban Development		2217051911501 - ESTABLISHMENT FOR 100 SMART CITIES	26 - ADVERTISING AND PUBLICITY	5 - VOTED	206870		5000000

Authorization Details:

Authorization Number:		Authorization Date:	

Authorized Controller: INFORMATION and BROADCASTING

CBUD Division has forwarded a proposal for the payment of Rs. 2,06,870/- to DAVP for publishing of Request for Expression of Interest (REoI) for shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities in two National Dailies (Hindi and English) for wide publicity.

2. It is mentioned that a request was made to DAVP for publishing a above REoI for the above mentioned procurement to be published in National Dailies. In this regard, DAVP has furnished an estimation of Rs. 2,06,870/- for this purpose (copy attached) and informed that release order of the advertisement shall be issued only upon receipt of letter of acceptance / sanction letter from the Ministry. it is also mentioned that REoI has been already issued on 8th September 2017 and the same has been uploaded on the website of the Ministry www. moud.gov.in, procurement portal www.eprocurement.gov.in and the World Bank's STEP and UNDB site.

3. Further, it is mentioned that there is no fund is available under the advertising head of CBUD. Since this procurement is related with Smart City Mission, expenditure of Rs. 2,06,870/- will be incurred from the advertising head of Smart Cities Mission where sufficient fund is available.

4. Project Director CBUD/Mission Director (Smart Cities) has approved the proposal vide p-22/N.

5. In view of above, Finance Division may

have No Objection for payment of Rs. 2,06,870/- to DAVP for publishing the REOI mentioned at para 1 above subject to approval of Competent Authority and compliance of Mission Guidelines in this regard.

Submitted please.

19/09/2017 5:31 PM

RAJEEV KUMAR
(US(IFD-I))

Expenditure of Rs. 206,870/- for publication of EoI may be incurred from advertising budget of SCM where funds are available as informed by the Division.

20/09/2017 10:33 AM

Yashodhara Vijayan
(DS(FINANCE))

21/09/2017 2:27 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

21/09/2017 2:38 PM

Yashodhara Vijayan
(DS(FINANCE))

21/09/2017 4:15 PM

CHECK LIST FOR APPROVAL

USER : **CO2** **DATE** **9/15/2017**

ESTIMATE NO : 201700452

RO NO : REF. & DATE : K-14012/101(11)/2017-SCM-III(V)/CBUD - 9/8/2017 12:00:00 AM

KEY NO : CONT.PERSON : G VIJAY KUMAR ENGLISH 22.00 X 12.00

AD TYPE : CL.DISPLAY DESIG. : UNDER SECRETARY HINDI 22.00 X 12.00

B.W/COL : B & W ADDRESS : CAPACITY BUILDING FOR URBAN OTHERS 22.00 X 12.00

CATEGORY : TENDER DEVELOPMENT CBUD DIVISION ENGLISH PAGES 0.00

ROOM NO - 202 C WING HINDI PAGES 0.00

NIRMAN BHAWAN OTHER PAGES 0.00

NEW DELHI - 110108

S. NO.	**CODE**	**NAME**	**CITY**	**LAN**	**PERIOD**	**CIRC**	**INS DATE**	**LAST DATE**	**INST**	**INS**	**COST**
BIG											
1	100025	THE HINDUSTAN TIMES	DELHI	ENGLISH	DAILY(M)	941020	22/09/2017	22/09/2017	B2	1	84072.00
2	127628	AMAR UJALA	DELHI	HINDI	DAILY(M)	204000	22/09/2017	22/09/2017	B3	1	18225.00
3	120192	PUNJAB KESARI	DELHI	HINDI	DAILY(M)	350363	22/09/2017	22/09/2017	B3	1	31302.00
4	100294	THE TIMES OF INDIA	MUMBAI	ENGLISH	DAILY(M)	820108	22/09/2017	22/09/2017	B2	1	73271.00

PAPER TYPE	**NO**	**AMOUNT**	**%AGE**
BIG	4	206870.00	100.000000
MEDIUM	0	0.00	0.000000
SMALL	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

LANGUAGE	**NO**	**AMOUNT**	**%AGE**
ENGLISH	2	157343.00	76.060000
HINDI	2	49527.00	23.940000
OTHERS	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

Export To Excel **Export To Word**

GOVERNEMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
REQUEST FOR EXPRESSION OF INTEREST (REOI)
CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT

The Government of India has received financing from the International Development Association (IDA) (Credit No. 4997-IN) toward the cost of the Capacity Building for Urban Development Project (CBUD), and intends to apply part of the proceeds for consulting services.

Ministry of Urban Development now invites eligible consultancy firms to apply for the **Request for Expression of Interest (REOI) for "Selection of Consulting Firm for Providing consulting services of Assessment of Liveability in 116 cities".** The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites www.moud.gov.in and www.eprocure.gov.in. The application shall be uploaded/submitted on the web portal www.eprocure.gov.in duly digitally signed.

Interested firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

[illegible]	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Financial Strength of the Firm	15
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

Consulting firm may associate with other firm(s) in the form of a consortium and joint venture to enhance their qualifications. A Consulting firm will be selected on QCBS method set out in the Consultant Guidelines.

An applicant requiring any clarification on the REOI Document may request MoHUA through Email: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com. **Expression of Interest must be submitted on line by 15:00 hrs of 03rd October, 2017.** No physical submission of applications shall be accepted.

Mr. G Vijay Kumar
Under Secretary (CBUD), O/o Project Director (CBUD),
Ministry of Housing and Urban Affairs,
Government of India, Room No 202-C, Nirman Bhawan,
Maulana Azad Road, New Delhi 110001.
Tel: 011-23063217

राष्ट्रीय समुद्र प्रौद्योगिकी संस्थान
NATIONAL INSTITUTE OF OCEAN TECHNOLOGY
(पृथ्वी विज्ञान मंत्रालय, भारत सरकार)
(Ministry of Earth Sciences, Government of India)
एनआईओटी परिसर, वेलच्चेरी-तांमबरम मेन रोड, पल्लिकरणै, चेन्नै-600 100. भारत
NIOT Campus, Velachery - Tambaram Main Road, Pallikaranai, Chennai - 600 100. INDIA
Phone: 91 - 44 - 6678 3330 / 3326 / 3322 , e-mail : hvt@niot.res.in

TENDER NOTICE NO. 003/HVT/17-18

E-TENDER - NIOT invites electronic bids for the following items

TENDER TITLE - Setting up of low temperature thermal desalination plants with components of process equipment, Submarine HDPE pipeline and Marine structures in the following six islands of Union Territory of Lakshadweep.

1009	KADAMAT Island
1010	CHETLAT Island
1011	KILTAN Island
1012	AMINI Island
1013	KALPENI Island
1014	ANDROTH Island

For further details visit our website **www.niot.res.in** and tender documents + tender conditions + specification EMD + modifications/tender due date extensions can be freely downloaded from www.eprocure.gov.in/eprocure/app . Due Date & Time for submission of Tenders, Tender Opening Date and Time are indicated in the respective tender.

Director

CSIR-central building research institute
(Council of Scientific & Industrial Research)
Roorkee - 247 667 (Website:www.cbri.res.in)

CORRIGENDUM TO ADVERTISEMENT No. CSIR-CBRI-02/2017

Last Date for receipt of the applications has been extended upto : 23.10.2017

With reference to Advt. No. CSIR-CBRI-02/2017 published in the Hindustan Times issue of 30th August. 2017, the Essential Educational qualification and experience for the posts of "Scientist" (Post Code - 1, 2, 3, 4 and 7) may kindly be read as "M.E./M.tech./M.Arch. or equivalent recognised Post Graduate degree in Civil Engg./Mechanical Engg.\Electronics and Instrumentation Engg./Electrical Engg. Architecture and Planning" Late Date for receipt of the applications has been extended upto 23.10.2017.

Further, Post Code - 8 for Sr. Scientist may also be treated as cancelled due to Technical reasons.

Essential Educational qualification and experience for Post Code- 5, 6 and 9 will remain unchanged. Desirable experience, job specification and all other terms and conditions will remain the same as mentioned in the Advertisement No. CSIR-CBRI-02/2017. For details please visit our website www.cbri.res.in.

ADMINISTRATIVE OFFICER

CSIR - INDIAN INSTITUTE OF PETROLEUM
(Council of Scientific & Industrial Research)
P.O.: I.I.P., Mohkampur, Haridwar Road, Dehradun-248005 (UA) INDIA
Ph.0135-2525762 & 2525945, Fax. 0135-2660072, 2660202-203 Website: www.iip.res.in

EOI for the following civil works from registered contractors of appropriate class.

Sl No.	Name of Work	Estimated Cost (Rs. In Lakhs)
1.	Rain water harvesting of TECH block to be connected to T-5	10.00
2.	Sewage treatment for colony	25.00
3.	Water proofing treatment of overhead tank at T-5	10.00
4.	Low intensity booster by mobile service provider like airtel, bsnl, idea, vodafone, jio etc.	

Date of submission of proposal: 06.10.2017
Parties can visit the site in any working days at 09.00 to 5.30 pm
The interested firms must see the detailed EOI on IIP website www.iip.res.in or on IIP notice boards.

Head ESD

BUREAU OF ENERGY EFFICIENCY
(A Statutory body under Ministry of Power, Government of India)
4th Floor, Sewa Bhawan, R. K. Puram, Sector - 1
New Delhi - 110066
Website: www.beeindia.gov.in, Ph: 26179699
Fax: 011-26178352

CORRIGENDUM

This is in regards to advertisement about Tender Bid Reference: **BEE/02/51/NIT-Vehicles/2017-Admn** published in the Times of India, Hindustan Times and Navbharat Times on 2nd September, 2017 inviting Sealed Tenders for providing 07 (seven) number of vehicles on hire basis for the use of Bureau of Energy Efficiency.

The last date of submission of Tenders has been extended from **22nd September, 2017 to 9th October, 2017**. The Agencies who have already submitted the Bid would be considered. However, they may also apply again, if they wish to.

Rest of the contents of the advertisement remains the same.

davp 34106/11/0064/1718 **Secretary**

WESTERN RAILWAY
LEASING OF VPs ON MAIL/EXPRESS TRAINS
(Tender Notice No. 2/2017-2018)

(1) The CCM, Western Railway, Station Building, 2nd Floor, Churchgate, Mumbai-400020 invites sealed tenders from registered lease holders, for leasing Parcel Van (VP) of 23 tonnes on round trip basis for a period of 5 years. **(2)** Prescribed tender documents containing details of trains, terms and conditions etc. can be obtained from the above office on working days from 10.00 hrs. to 17.30 hrs. on payment of ₹ 2,000/- in Person and ₹ 2,100/- by Post by obtaining money receipt from any station on Western Railway for the purpose. The Railway Administration is not responsible for Postal delay. **(3)** The tender documents can be downloaded from **'www.wr.indianrailways.gov.in'** and can be submitted along with a DD of ₹ 2,000/- from a nationalized or scheduled bank in favour of Chief Cashier, Western Railway, Churchgate, Mumbai-400020. **(4)** The tender documents together with required EMD ₹ 4,00,000/- and Guarantee amount ₹ 10,00,000/- should be submitted at office of CCM, Western Railway, Station Building, 2nd Floor, Churchgate, Mumbai-400020.

Details of VP of Train Nos. 19023/19024, 12955/12956 & 22911/22912 are as under:-

Train No.	Name of Train	From –To- From	Frequency of train	Reserve Price Per Round Trip Per Day (in ₹)
19023/19024	Firozpur Janata Express	BCT-FZR-BCT	Daily	1,49,526
12955/12956	Jaipur Superfast Express	BCT-JP-BCT	Daily	1,62,329
22911/22912	Shipra Express	INDB-HWH-INDB	Tri-weekly	2,22,163

Tenderers are expected to read the terms & conditions in detail before submitting the offer. **Note:- (i)** Development charges @ 2% + Goods & service tax @ 5% extra (revised from time to time) Contact: ACM (FM) – 022-676-23094, CRI (FM) - 022- 676-22591.

	Date	Time
Last date of issuing tender forms in Person	27.10.2017	13.00 hrs
Last date of issuing tender forms by Post	18.10.2017	17.30 hrs
Closing date and Time	27.10.2017	15.00 hrs
Tender Opening date and time	27.10.2017	15.30 hrs
Errors & Omissions Excepted (E & OE)		

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DIVISION OF PLANT PATHOLOGY
ICAR-INDIAN AGRICULTURAL RESEARCH INSTITITUE
NEW DELHI-110012
Tel No. 011-25843474 Fax: 011-25840772
Website: http//www.iari.res.in Email ddo19.iari@iari.res.in

No.:-41-96/16-17/PP/1503 Date: 20.09.2017

ONLINE OPEN TENDER NOTICE

Online Open Tender are hereby invited by this Institute for purchase of Farm & Field Equipments.

The detailed terms & conditions can be obtained from IARI website tender link **www.iari.res.in** and **www.eprocure.gov.in**

Important Dates

A) Name of items/equipments:

1. Total Carbon Analyzer

i)	Last date for submission of tender	Upto 18.10.2017 at 13.00 hours.
ii)	Opening of tender bid (Technical)	19.10.2017 at 15.00 hrs.

2. Turbo Seeder

i)	Last date for submission of tender	Upto 16.10.2017 at 13.00 hours.
ii)	Opening of tender bid (Technical)	16.10.2017 at 15.30 hrs.

B) Leaf Area Meter

i)	Last date for submission of tender	Upto16.10.2017 at 13.00 hours.
ii)	Opening of tender bid (Technical)	17.10.2017 at 15.00 hrs.

Asstt. Admn. Officer

THE GUJARAT CANCER & RESEARCH INSTITUTE
(M.P. SHAH CANCER HOSPITAL)
N.C.H.CAMPUS, ASARWA, AHMEDABAD - 380 016
Phone: 079-2268 8211 **Fax:**079-2268 5490

CORRIGENDUM TO OUR TENDER NOTICE PUBLISHED FOR PROCUREMENT OF VARIOUS EQUIPMENTS

All the prospective bidders are advised to visit **www.nprocure.com** and our website **www.gcriindia.org** for amendment details on tender ID as listed below :-

1. Tender ID No.275136 - Automated Reader for Incubator of biological Indicator
2. Tender ID No.275107 - 2 to 6° Blood bank Refrigerator
3. Tender ID No.275180 - Electro Hydraulic Surgical Operation Table

No.INF/ABD/1150/2017-18 **INCHARGE DIRECTOR**

NORTH CENTRAL RAILWAY, ALLAHABAD
E-Tendering Notice

Sr. DEE/TRD/Agra for & on behalf of the President of India invites "Open Tender" through on-line only (e-Tendering) for the following work:-

Tender No.	Name of Work	Approx. Cost (₹)	Earnest Money (₹)
AGC/ TRDT 201705	Annual maintenance contract of the PSI assets of Mathura-Alwar section of Agra Division for a period of Twenty Four months	9433158/-	188670/-

Completion Period: Twenty Four months **1.** For full details and submission of the bid please see the Indian Railway website **www.ireps.gov.in. 2.** Tender can only be submitted through web portal **www.ireps.gov.in** up to **15:00** Hrs. on date **23.10.2017**. **833/17(K)**

North central railway @ CPRONCR

NORTHERN RAILWAY
E-TENDER NOTICE

S.No.: 1; **Tender No.:** OT-28/17-18; **Name of work:** Signalling work in c/w Provision of IBS b/w SRE-PKY section over UMB Division. **Date & Time of Opening:** 25.10.2017 At 15.00 hrs. **Approx. Cost Rs.:** 10912085/-; **Earnest Money Rs.:** 204570/-; **Completion period:** Nine Months; **Cost of tender form Rs.:** 5000/-; **S.No.:** 2; **Tender No.:** OT-29/17-18; **Name of work:** Signalling work in c/w TTR 123 Sets (FS+CMS+SWCS) 1 in 8.5 of the existing 15 sets of 52 kg/ST & 108 of 90R/STT/outs with fan shape T/outs of 52 kg rail on PSC sleeprs, 5 sets scissor x/over (2 set 1 in 12 & 3 set 1 in 8.5) and 1 set D/xing without slip of the existing 90R/wooden with 52 kg rail PSC sleepers under different SSE/P.way of this Division. **Date & Time of Opening:** 25.10.2017 At 15.00 hrs. **Approx. Cost Rs.:** 13010021/-; **Earnest Money Rs.:** 215060/-; **Completion period:** Nine Months; **Cost of tender form Rs.:** 5000/-; **S.No.:** 3; **Tender No.:** OT-30/17-18; **Name of work:** Signalling work in c/w construction of LHS in lieu of L-xing No. C-129, 130, 132, 133, 134, 137, 138, 139, 140, 140AC, 141, 143, 150, 157, 158, 159, 160, 162, 163, 164-B, 165 on UMB-LDH section over UMB Division. **Date & Time of Opening:** 25.10.2017 At 15.00 hrs. **Approx. Cost Rs.:** 10302847/-; **Earnest Money Rs.:** 201520/-; **Completion period:** Nine Months; **Cost of tender form Rs.:** 5000/-; **S.No.:** 4; **Tender No.:** OT-31/17-18; **Name of work:** Signalling work in c/w Provision of LHS in lieu of L-xing No. C-2 (BTIC-KZW), C-4 (BTIC-KZW), C-24 (GDB-MOT), C-57 (ABS-PJK), C-77 (HMK-FTH), C-85 (FTH-SGNR) on BTI-SGNR section. **Date & Time of Opening:** 25.10.2017 At 15.00 hrs. **Approx. Cost Rs.:** 3200669/-; **Earnest Money Rs.:** 64020/-; **Completion period:** Six Months; **Cost of tender form Rs.:** 3000/-; **1.** Open tenders through E-tendering are invited by Sr. Divisional Signal & Telecom. Engineer / N. Railway, DRM Office, Rail Vihar, Ambala Cantt from the willing contractors for above noted work up to 15 HRS on due date shown against the work and will be opened soon thereafter. Tenderer(s) are required to upload scanned copies of all related eligibility documents including PAN/TAN/TIN as per conditions. **2.** Please refer to the Website www.ireps.gov.in for detailed notice and tender documents. **3.** Tenderer should have class-III Digital Signature Certificate and registered themselves on website stated above to participate in E-Tendering and they are requested to read all the instructions contained in the tender notice and tender documents carefully before submitting their offer so as to comply with all the requisite provision/special conditions. **No.: SW-Sig/UMB/NIT-10/ 2017-18 Dated: 19.09.2017.** **2896/17**

SERVING CUSTOMERS WITH A SMILE

HIMACHAL PRADESH STATE CIVIL SUPPLIES CORPORATION LIMITED
[A State Government Undertaking]
Block No. 16 & 17, SDA Commercial Complex,
Kasumpti, Shimla-9 (Himachal Pradesh) (INDIA)
Ph.: 0177-2621583 Email: mdhpscsc@himapurti.com

E-TENDER NOTICE

Himachal Pradesh State Civil Supplies Corporation Limited Shimla invites Global E-Tenders for the procurement of **7 PULSES (Dal Channa, Urd Sabut, Moong Sabut, Malka, Rajmah, Kabuli Channa and Black Masar), EDIBLE OILS (Mustard Oil and Soya Refined Oil) for three month and IODIZED SALT for three/six months supply**. The last date of submission of on-line tenders, samples (only for Edible Oils & Iodized Salt), earnest money deposit, tender document fee, processing fee and date of opening of tenders shall be as under :-

S. No.	Name of Item	Last date of submission of on-line tenders	Date of opening of tenders
1	Pulses	**16.10.2017** up to 5.00 PM	**17.10.2017** at 11.00 AM
2	Iodized Salt	**24.10.2017** up to 5.00 PM	**25.10.2017** at 11.00 AM
3	Edible Oils	**25.10.2017** up to 5.00 PM	**26.10.2017** at 11.00 AM

All the above three items will have individual tender document with different ID's and will be processed separately. The detailed tender document for each item and other instructions can be downloaded or viewed on-line from the portal **https://hptenders.gov.in**.

MANAGING DIRECTOR

CSIR-CENTRAL INSTITUTE OF MINING & FUEL RESEARCH
(Council of Scientific & Industrial Research)
P.O : FRI, Dist - Dhanbad (828108)

NOTICE INVITING TENDER

File: QP/GE/1/Civil/NGP/P-50/2017-18/1 & QP/GE/1/Civil/NGP/Shed/P-50/2017-18
Dated: 22/09/2017

Tender is invited for the work for CIMFR, Digwadih Campus:-

Sl. No.	Name of work	Estimated cost in Lac (Rs.)	E.M.D in Rs.	Cost of tender paper	Time of completion
1.	Fabrication & errection of top cover shed along with side sheeting & Construction of New shed (58'x20') at CSIR-CIMFR, Nagpur	Rs. 12,22,715/-	Rs. 24,454/-	Rs. 500.00	4 (Four) months

Time schedule for tenders:-
Period of downloading of tender documents: 23/09/2017 to 29/09/2017
Last date for Receiving / submission of tender : 03/10/2017 up to 4.00 PM
Date and time of opening of tender documents: 03/10/2017 up to 4.30 PM
Venue of opening of tender documents: CSIR-CIMFR, Digwadih Campus (Jharkhand)
For details please visit our web site: www.cimfr.nic.in

Administrative Officer

Government of India
Ministry of Communications
Department of Telecommunications
Office of Administrator, USO Fund
20, Ashoka Road, Sanchar Bhawan, New Delhi-110001

No. 30-164/2014 Dated: 14.09.2017

EMPANELMENT NOTICE

Applications are invited for the empanelment of Technical Consultants with Universal Service Obligation Fund (USOF), an attached office of Department of Telecommunications as per the RFE (Requesting for Expression of Interest for Empanelment) document uploaded on **usof.gov.in** & published on **https://www.eprocure.gov.in/epublish/app**

Proposal shall be submitted along with EMD of Rs. 50,000/- in the form of demand draft/fixed deposit receipt (valid for a period of one year) of Nationalized/Scheduled bank drawn in favour of PAO (HQ), DoT payable at New Delhi. EMD may also be given in the form of Bank Guarantee. The proposal shall not include any financial information.

RFE document would be available for downloading from **25.09.2017**. Proposal for empanelment along with the necessary forms & documents are to be sent to us in sealed cover so as to reach us at the following address on or before **27.10.2017 (2.30 PM)**

This advertisement does not constitute, and will not be deemed to constitute, any commitment on the part of USOF.

All the amendments related information regarding this RFE process will be published on our website only, so prospective applicants are hereby advised to visit the same on the regular basis.

Assistant Director General (Technical)
For and on behalf of the Administrator, USOF
Room No. 1408, 20 Ashoka Road,
Sanchar Bhawan, New Delhi-01
davp 06201/11/0022/1718 **011-23372168**

TENDER NOTICE
GOVERNMENT OF GOA
ELECTRICITY DEPARTMENT
OFFICE OF THE CHIEF ELECTRICAL ENGINEER

Tender No:10(17-18)/CSC-& Tender No: 13(17-18)/CSC- shall be available on following websites from 25/09/2017. www.etender.goa.gov.in & www.tenderwizard.com/goa
For queries e-mail to: csc14ged@gmail.com
Date:-22/09/2017
Place: Panaji, Goa
Addl. Chief Engineer-II/
I/c of Contract Service Cell
DI/Advt/803/2017

WESTERN RAILWAY
VARIOUS CONSTRUCTION WORKS

E-Tender Notice No.: IND/UFGC/ Dy.CE/C/II/03 Dt. 19-09-2017. TWO PACKET SYSTEM. Deputy Chief Engineer (Construction)II, Western Railway, Indore invites e-tender for following work: **Name of the work:** Earthwork in bank/cutting for formation (including side drains & trolley refuges) for new BG chord line and on/ adjoining the existing MG line formation including level crossings, yards, bridge approaches, platforms etc., construction of bridges/ RUBs/ Limited height subways as per Rly. Approved drawings by extension/ strengthening/ rebuilding/ dismantling of existing bridges/ LCs, addition/ alteration/ modification of various structures viz station buildings, covering sheds, platforms, FOBs, passenger amenities, construction of service buildings/S&T structures, staff quarters, gate lodges at LCs including other Misc. works at stations and Supplying and stacking of 50 mm machine crushed stone ballast along the cess between Fatehabad Chandravatiganj (including yard and new BG chord line) (KM: 0.00) and Ujjain (including yard) station (KM: 22.96) in connection with Ratlam-Mhow-Khandwa Gauge Conversion project of Western Railway. **Approximate cost of work:** ₹ 41,00,52,630.45. **EMD:** ₹ 22,00,270/-. **Date and Submission of bid and opening: Submission** – 31-10-2017 up to 15.00 Hrs. **Date and time of opening of Technical Bid:** 31-10-2017 at 15.30 Hrs. **Website particulars Notice Board location where complete details of tender can be seen & address of the office: www.ireps.gov.in**

Like us on: facebook.com/WesternRly 08

PRESS NOTICE
PUBLIC WORKS DEPARTMENT
Notice Inviting e-Tender
(SHORT NOTICE)

The Executive Engineer PWD Division (C&ND) Road (Old M-413) (GNCTD), Bhairon road, T-Junction Ring Road, Near Pragati Power Station, New Delhi-02 invites on behalf of President of India, invites online Percentage Rate tenders from approved and eligible contractors of appropriate category of CPWD, and those of appropriate list of M.E.S. BSNL and other state Govt. Departement dealing with buildings and roads and other experinced contractors who satisfy the criteria of execution of similar work (Similar work means Building and Road Civil work) i.e. 3 no. works each of value not less than 40% of estimated cost put to tender or 2 no. works each of value not less than 60% of estimated cost put to tender or 1 no. work of value not less than 80% of the estimated cost put to tender since the last 7 years. of the following work through e-procurement solution:-

1. NIT No. 84/EE/C&ND-ROAD/PWD/2017-18, Tender ID 2017_PWD_ 137279_1
Name of Work :- A/R and M/O PWD Roads under Sub Division-3 of Division C &ND Roads during 2017-18. SH:- Providing Barricades on Bahadur Shah Zafer Marg For Security arrangement on 30/09/2017 for Dussehra celebration., Estimated Cost:- Rs. 10,94,303/-,EMD:- Rs. 21,886/-, Time Allowed :- 5 Days, The Last date to fill/upload the tender through e-tendering is dt. 26-09-2017 upto 03:00 P.M.

The tenders forms and other details can be obtained from the website **https://govtprocurement. delhi.gov.in**

CENTRAL PUBLIC WORKS DEPARTMENT
NOTICE INVITING e-TENDERS

Executive Engineer (E.), Lucknow Central Electrical Division, C.P.W.D., 3rd Floor, Kendriya Bhawan, Aliganj, Lucknow, invites on behalf of President of India, percentage rate online e-tenders from approved and eligible registered/Annually Pre-qualified contractors in Fire Fighting, AFAS and Wet Riser System/composite category for **Sr. No. 1** and from manufacturer/ Authorised agencies of Voltas make Central Air Conditioning Plant for **Sr. No. 2** of CPWD for the following works:–**S.No. 1, NIT No.123/LCED/17-18**, Name of work: **MOEI and Fans, R.M.O. Pumps, Sub Station Equipment, AFAS, Fire fighting system, DG Set and, Lift in Census Office at Aliganj, Lucknow. (Year 2017-18). (SH:Running maintenance and operation of AFAS and Wet Riser System),** Estimated Cost: ₹ **6,55,116/-**, Earnest Money: ₹ **13,102/-**, Period of Completion: **12 Months. S.No. 2, NIT No.124/LCED/17-18**, Name of work: **R.M.O. of 2 Nos. 320 KVA & 1 No. 62.5 KVA DG set, AC Plant, 2 Nos. OTIS Lift, 2 Nos. UT Lift & Fire Fighting Equipment installed in G.S.I. Office Bldg. at Aliganj, Lucknow. (SH: Comprehensive maintenance & Operation of 2x60 TR Central A.C. Plant & 3x8.5 TR ductable Split A.C. Units),** Estimated Cost: ₹ **6,13,424/-**, Earnest Money: ₹ **12,268/-**, Period of Completion: **12 Months.** Last time & date of submission of bid through e-tendering **03.10.2017** upto **3.00 P.M.,** Date of opening of e-tender **03.10.2017** at **3.30 P.M.** The bid forms and other details can be obtained from the Website **www.tenderwizard.com/cpwd** or **www.cpwd.gov.in**. The press notice is also available on **www.eprocure.gov.in**.

CENTRAL PUBLIC WORKS DEPARTMENT
Notice Inviting e-Tender

The Executive Engineer (E), Electrical Division-III, CPWD, I.P. Bhawan, New Delhi - 110002 Ph. 23378113 invites on behalf of President of India, Online item rate e-tender, from specialized firms/ contractor of repute in two bid systems, for the works: Providing and replacement of 30 Nos. CCTV Cameras at outer periphery and existing 40 Nos. CCTV Cameras inside (IP Based) at Patiala House Court, New Delhi. NIT No: - 38/EE(E)/ED-III/2017-18, Estimated Cost: Rs. 75,49,976/-, Earnest Money: Rs. 1,51,000/-, Period of completion: 03 Months. Last date and time of submission of online tender in two bids: 29-09-2017 up to 03.00 PM. The bid forms and other details can be obtained from the website **www.tenderwizard.com/CPWD** or **www.cpwd.gov.in.** The Press Notice is also available on **www.eprocure.gov.in.**

BHAKRA BEAS MANAGEMENT BOARD
(National Hydrology Project)
E-Tender Notice

NIT No. 2/BBMB/NHP/RTDSS O&M Dated 19.9.17 for Online Tender for Operation & Maintenance of RTDSS (Real Time Decision Support System) Centre at Chandigarh for a period of 1 year

Last Date & Time of request for issue of tender documents	18.10. 2017 at 17:00 Hrs
Document Download End Date & Time :	27.10. 2017 at 11:00 Hrs
Last Date & Time of Online Bid Submission	27.10. 2017 at 11:30 Hrs
Date & Time of Online Bid Opening:	27.10.2017 at 15:00 Hrs onwards

For detailed terms and conditions please visit BBMB website **www.bbmb.gov.in, www.bbmbeproc.abcprocure.com**
Director/NHP, H. No. 67 & 70, BBMB Colony, SLDC Complex, Industrial Area Phase-1, Chandigarh. Mobile No. 094639-56340 (dirhp2bbmb@yahoo.com /dirhp2@bbmb.nic.in). Mobile No. 075890-73758 (Addl. S.E./NHP)
12-PR-NHP-4 For your Better Tomorrow Save Energy Today

No. NEC/IPR/493/Diary2018

North Eastern Council
Ministry of Development of North Eastern Region
Government of India

Tender Notice for Designing and Printing of NEC Diary 2018

Sealed tenders are invited from printers with ISO 9001: 2015 Certificate for designing and printing of NEC Diary 2018. The tender documents are uploaded in the NEC website **www.necouncil.gov.in**. Tender Form may be filled up and sent along with Earnest Money and Tender Fee as mentioned in the documents. The job is required to be done by printing presses as per the specifications, terms & conditions mentioned in the tender documents. Interested printers may submit the tender in sealed covers with all the relevant documents to the **Director, Information & PR, North Eastern Council Secretariat, Nongrim Hills, Shillong - 793003 by 3.00 PM on 09.10.2017. The Technical Bids will be opened at 3.30 PM** on the same day and Financial Bids of the bidders selected in the process will be opened thereafter. The successful bidder will be selected on Cost-cum-Quality basis.

davp 11104/11/0024/1718

U. P. POWER CORPORATION LIMITED
Shakti Bhawan 14 Ashok Marg, Lucknow
(A Govt. of UP Undertaking)

CORRIGENDUM

Corrigendum to "Public Notice" issued on 7th & 8th September, 2017 in compliance to UPERC admittance Order dated 04.09.2017 is being published as below:

1. TOD Tariff for LMV-6 & HV-2 categories

Hourse of the Day	Discount /Penalty
22:00 Hrs - 06:00 Hrs	(-) 7.5%
06:00 Hrs - 17:00 Hrs	-
17:00 Hrs - 22:00 Hrs	(+) 15%

Read as

Summer Months (April to September)

Hourse of the Day	Total No. of Hours	Discount /Penalty
05:00 Hrs - 11:00 Hrs	6 Hrs	(-) 15%
11:00 Hrs - 17:00 Hrs	6 Hrs	-
17:00 Hrs - 23:00 Hrs	6 Hrs	(+) 15%
23:00 Hrs - 05:00 Hrs	6 Hrs	-

Winter Months (October to March)

Hourse of the Day	Total No. of Hours	Discount /Penalty
05:00 Hrs - 11:00 Hrs	6 Hrs	-
11:00 Hrs - 17:00 Hrs	6 Hrs	-
17:00 Hrs - 23:00 Hrs	6 Hrs	(+) 15%
23:00 Hrs - 05:00 Hrs	6 Hrs	(-) 15%

2. Regulatory Surcharge

"To recover the un-covered gap, regulatory surcharge would be levied extra as approved by the Hon'ble Commission in its MYT/Tariff Order" **shall be read as** "UPPCL/DisComs would submit their proposal of Regulatory Surcharge and the Applicability of Regulatory Surcharge would be as per the approval of the Commission".

Chairman
(MVVNL, PVVNL, DVVNL, PuVVNL, KESCO)

R.No.: 257, Dt.: 21.09.2017

Save electricity in the interest of Nation

GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
REQUEST FOR EXPRESSION OF INTEREST (REOI)
CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT

The Government of India has received financing from the International Development Association (IDA) (Credit No. 4997-IN) toward the cost of the Capacity Building for Urban Development Project (CBUD), and intends to apply part of the proceeds for consulting services.

Ministry of Urban Development now invites eligible consultancy firms to apply for the **Request for Expression of Interest (REOI)** for **"Selection of Consulting Firm for Providing consulting services of Assessment of Liveability in 116 cities"**. The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites **www.moud.gov.in** and **www.eprocure.gov.in**. The application shall be uploaded/submitted on the web portal **www.eprocure.gov.in** duly digitally signed.

Interested firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:-

Sr. No.	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Financial Strength of the Firm	15
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4.	Experience of the Firm in implementing assignments related to market research and surveys for Central/State governments/ departments, para-statals, ULBs and multilateral agencies	10
5.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/State governments/ departments, para-statals, ULBs and multilateral agencies.	20
6.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

Consulting firm may associate with other firm(s) in the form of a consortium and joint venture to enhance their qualifications. A Consulting firm will be selected on QCBS method set out in the Consultant Guidelines.

An applicant requiring any clarification on the REOI Document may request MoHUA through Email: **g.vijaykumar@nic.in** and **g.vijaykumar.moud@gmail.com**. **Expression of Interest must be submitted on line by 1500 hrs of 03rd October, 2017**. No physical submission of applications shall be accepted.

Mr. G Vijay Kumar
Under Secretary (CBUD), O/o Project Director (CBUD)
Ministry of Housing and Urban Affairs
Government of India, Room No. 202-C, Nirman Bhawan
Maulana Azad Road, New Delhi-110001
Tel: 011-23063217

davp 44101/11/0006/1718

भारत सरकार

आवास एवं शहरी मामले मंत्रालय

अभिरुचि की अभिव्यक्ति हेतु निवेदन (आरईओआई) शहरी विकास हेतु क्षमता निर्माण (सीबीयूडी) प्रोजेक्ट

भारत सरकार को शहरी विकास प्रोजेक्ट हेतु क्षमता निर्माण (सीबीयूडी) की लागत हेतु अंतराष्ट्रीय विकास संघ (आईडीए) (क्रेडिट सं. 4997-आईएन) से वित्त प्राप्त हुआ है एवं वह परामर्श सेवाओं हेतु प्रक्रिया के भाग हेतु आवेदन करना चाहता है।

शहरी विकास मंत्रालय अब ''116 शहरों में रहने की योग्यता के निर्धारण की परामर्श सेवाओं के प्रावधान हेतु कंसलटिंग फर्म का चयन'' हेतु अभिरुचि की अभिव्यक्ति हेतु निवेदन के लिए योग्य कंसलटेंसी फर्मों को आमंत्रित करता है। इसी विषय पर एमओयूडी द्वारा जारी आरईओआई दिनांक 15 जून 2017 एवं एनआईयूए द्वारा आमंत्रित आरईओआई दिनांक 9 मई 2017 को रद्द कर दिया गया है।

दस्तावेज को वेबसाइट www.moud.gov.in एवं www.eprocure.gov.in. से डाउनलोड किया जा सकता है। आवेदन, विधिवत डिजिटली हस्ताक्षरित वेब पॉर्टल www.eprocure.gov.in. पर अपलोड/जमा कराया जाएगा।

इच्छुक फर्में यह प्रदर्शित करते हुए सूचना उपलब्ध करवाएंगी की उनके पास सेवाएं निष्पादित करने हेतु आवश्यक योग्यताएं एवं संबद्ध अनुभव है। आवेदन, तीन संबंधित क्षेत्रों के प्रत्येक हेतु निम्न मानकों के आधार पर मूल्यांकित किया जाएगा।

क्र सं.	मानक	अधिकतम अंक
1	फर्म का सामान्य फर्म	10
2	फर्म की वित्तीय दुरुस्तता	15
3	स्टाफ जिनके पास समरूप कार्यों को करने का अनुभव है एवं कार्य से संबंधित कार्य निष्पादित किया है।	25
4	केन्द्रीय/राज्य सरकारों/विभागों, पेरा-स्टेटल्स, यूएलबीएस एवं मल्टीलैटरल एजेंसियों हेतु मार्केट रिसर्च एवं सर्वेक्षण से संबंधित कार्य करने का फर्म का अनुभव	10
5	केन्द्रीय/राज्य सरकारों/विभागों, पैरा स्टैटल्स, यूएलबीएस एवं मल्टीलेटरल एजेंसियों हेतु सैक्शन 2.12 के परिशिष्ट-1 में वर्णित अनुसार शहरी क्षेत्रों में फील्ड सर्वेक्षण एवं मार्केट रिसर्च से संबंधित कार्यों को करने में फर्म विशिष्ट अनुभव।	20
6	सैक्शन 2.12 के परिशिष्ट-1 में निर्दिष्ट क्षेत्रों से संबंधित राष्ट्रीय/अंतरराष्ट्रीय रिपोर्ट को तैयार करना, सूचकांक के विकास से संबंधित कार्यों को करने में आवेदक का अनुभव	20
	कुल	100

(नोट :- मुल्यांकन मानदंड 4,5 एवं 6 में निर्दिष्ट प्रोजेक्ट परस्पर अनन्य है एवं यह मूल्यांकन के उद्देश्य हेतु एक से अधिक श्रेणी में नहीं गिने जाएंगे।

कंसलटिंग फर्म, अपनी योग्यता में वृद्धि करने हेतु एक संघ एवं संयुक्त उद्यम के रूप में अन्य फर्मों के साथ संबद्ध हो सकते हैं। एक कंसलटिंग फर्म को कंसलटेंट अनुदेशों में दी गई क्यूसीबीएस विधि पर चयन किया जाएगा।

एक आवेदक जिसे आरईओआई दस्तावेज पर स्पष्टीकरण चाहिए वे ई-मेल g.vijaykumar@nic.in एवं g.vijaykumarmoud@gmail.com. द्वारा एमओएचयूए को निवेदन कर सकते हैं। अभिरुचि की अभिव्यक्ति 3 अक्तूबर 2017 को 15.00 बजे तक जमा कराई जाएगी। दस्ती रूप में जमा कराया गया कोई भी आवेदन स्वीकार नहीं किया जाएगा।

श्री जी विजय कुमार
अवर सचिव (सीबीयूडी), कार्यालय प्रोजेक्ट निदेशक (सीबीयूडी)
आवास एवं शहरी मामले मंत्रालय
भारत सरकार, कमरा नं. 202-सी, निर्माण भवन
मौलाना आजाद रोड, नई दिल्ली-110001
दूरभाष : 011-23063217

DAVP 44101/11/0006/1718

भारत सरकार
आवास एवं शहरी मामले के मंत्रालय
अभिरुचि की अभिव्यक्ति हेतु आग्रह (आरईओआई) शहरी विकास (सीबीयूडी) प्रोजेक्ट हेतु क्षमता निर्माण

भारत सरकार ने शहरी विकास प्रोजेक्ट (सीबीयूडी), के लिए क्षमता निर्माण के लागत के तौर पर अंतर्राष्ट्रीय विकास संघ (आईडीए) (क्रेडिट नं. 4997-IN) से वित्तीय सहायता प्राप्त किये हैं तथा कंसल्टैंट सेवाओं के लिए प्रोसीड्स के भाग लागू करने के इच्छुक हैं। अब शहरी विकास मंत्रालय, 116 नगरों में जीवन स्तर (लाइवएबिलिटी), के मूल्यांकन के परामर्शी सेवाएं उपलब्ध कराने हेतु कंसल्टिंग फर्म के चयन हेतु अभिरुचि की अभिव्यक्ति (आरईओआई) के लिए आग्रह हेतु पात्र कंसल्टैंसी फर्मों से आवेदन आमंत्रित करता है। इस विषय पर एनआईयूए द्वारा आमंत्रित आरईओआई दिनांक 9 मई 2017 तथा एमओयूडी द्वारा जारी आरईओआई दिनांक 15 जून 2017 को निरस्त कर दी गई है।

दस्तावेज को वेबसाइट www.moud.gov.in तथा www.eprocure.gov.in से डाउनलोड कर सकते हैं। आवेदन विधिवत डिजेटली साइंड वेब पोर्टल www.eprocure.gov.in पर अपलोडेड/जमा की जाएगी। इच्छुक फर्मों को इस आशय का प्रदर्शन जानकारी उपलब्ध कराना चाहिए कि वे सेवा निष्पादन हेतु संबंधित अनुभव एवं वांछित योग्यता रखते हैं। प्रत्येक तीन संबंधित क्षेत्रों हेतु निम्नलिखित मापदंड के आधार पर आवेदन मूल्यांकित किया जाएगा।

क्र.स.	पैरामीटर	अधिकतम अंक
1.	फर्म का सामान्य अनुभव	10
2.	फर्म की वित्तीय प्रबलता	15
3.	कर्मचारियों को सौदे से संबंधित समान कार्यों को पूरा करने का अनुभव है	25
4.	केन्द्र/राज्य सरकार/विभागों के लिए मार्केट रिसर्च और सर्वेक्षण से संबंधित कार्य को लागू करने में फर्म का अनुभव पैरा स्टेट, यूएल नीज एवं बहुपक्षीय एजेंसियां	10
5.	केन्द्र/राज्य सरकार/विभाग पैरा स्टेट्स यूएल नीज के लिए अनुलग्नक 1 से खंड 2.12 में वर्णित शहरी क्षेत्रों में कार्य संबंधित टीपी मार्केट रिसर्च और फील्ड सर्वे को लागू करने में कार्य के विशिष्ट अनुभव	20
6.	संलग्नकों के विकास से संबंधित कार्यों को लागू करने में आवेदक का अनुभव अनुबंध 1 से 2.12 में वर्णित क्षेत्रों से संबंधित राष्ट्रीय/अंतर्राष्ट्रीय रिपोर्ट तैयार करना	20
	कुल	**100**

(नोट :- मूल्यांकन मानदंडों में उल्लिखित परियोजनाओं में 4, 5 एवं 6 परस्पर अनन्य और मूल्यांकन के प्रयोजन के लिए एक से अधिक श्रेणियों में गिना नहीं जाएगा।)

परामर्श फर्म अन्य फर्मों के साथ एक सहयोगी और संयुक्त उद्यम के रूप में उनकी योग्यता बढ़ाने के लिए सहयोगी हो सकता है। एक सलाहकार फर्म को सलाहकार दिशा-निर्देशों में निर्धारित क्यूसीबीएस विधि पर चुना जाएगा।

एक आवेदक को आरईओआई दस्तावेज पर किसी स्पष्टीकरण की आवश्यकता होती है। ई-मेल के माध्यम से एमओएचयूए का अनुरोध कर सकते हैं। g.vijaykumar@nic.in एवं g.vijaykumar.moud@gmail.com कर अभिरुचि की अभिव्यक्ति को 03 अक्तूबर, 2017 को 15.00 बजे तक अवश्य जमा करा दिया जाना चाहिए। भौतिक रूप से जमा किए आवेदनों को स्वीकार नहीं किया जाएगा।

श्री जी विजय कुमार
अवर सचिव (सीबीयूडी), कार्यालय परियोजना निदेशक (सीबीयूडी),
आवास एवं शहरी मामले मंत्रालय
भारत सरकार, कमरा नं. 202-सी, निर्माण भवन
मौलाना आजाद रोड, नई दिल्ली-110001
दूरभाष : 011-23063217

davp 44101/11/0006/1718

Shortlist of Bidders for Assessment of Liveability Index of 116 cities of India

Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
Ipsos Research Pvt. Ltd.	Athena Infonomics India Pvt. Ltd.	The Economist Group Limited			100
PricewaterhouseCoopers					85
Jones Lang LaSalle Property Consultants India Pvt. Ltd.					80
Delloite Touche Tohmatsu India LLP	Insight Development Consultants Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild (ORG) India Private Limited	75
Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Consortium Partner 4 - Nielsen	75
CRISIL Risk and Infrastructure Solutions Limited, INDIA					75
IBI Consultancy India Private Limited					70
Ecorys Nederland BV	Ecorys India Pvt. Ltd.	BRIEF Private Limited			65
Urban Management Consulting Pvt. Ltd.	International City Manager's Association (ICMA)	Urban Management Centre			65
Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		63
Ernst & Young LLP, India (EY)	Sambodhi Research & Communications Pvt. Ltd.				60
ICRA Management Consulting Services Limited					60
AMS Consulting (P) Limited	Academy of Management Studies				55
Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					50
Centre for Good Governance					50
Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			50
Delhi Integrated Multi-Modal Transit System Ltd	Crux Cosultants Pvt. Ltd.				50
Voyants Solutions Private Limited, India					50
Mehta and Associates					45
Research & Development Initiatives Pvt Ltd*					45
Terracon Ecotech Pvt. Ltd.	M/s Sustainancy Consultants Pvt. Ltd.(Formerly M/s Sustainacy)	Konnect Resources LLP (Formerly M/s Krish Enterprises)			44
					35
Design Point Consult Pvt. Ltd					32
Caritas Eco System Private Limited	Maxwell Stamp KSA				
Environmental Technical services Pvt. Ltd.					10
All India Institute of Local Self Government					0
CRP Risk Management	Infrastructure Management and Advisory Services Pvt Ltd				0
ICLEI South Asia					0
MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

AIILSG **Society Not Qualified**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year		0
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		100			0

AMS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	15	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.75	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	90	
			Total for consortium	90	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	4	
			Total for consortium	4	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			55

Caritas

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	7	7
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.8	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	30	
			Total for consortium	30	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			32

Centre for Good Governance -**Society Not Qualified**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

Creative Circle

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	11.5	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	52	
			Total for consortium	52	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

CRISIL Risk and Infrastructure Solutions Limited - Public Limited Company

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	30	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	68.59	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	400	
			Total for consortium	400	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			75

CRP - Inconsistent documentation - Incorporation cenrtificate not given, financial statements do not match date of registration

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

DIMMTS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	145.88	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	178	
			Total for consortium	178	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			50

Deloitte

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	915.9	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	220	
			Total for consortium	220	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			75

OPM

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	8	8
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	7.2	5
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	216	
			Total for consortium	216	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			**63**

Mehta&Ass

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	23	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	15.4	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	75	
			Total for consortium	75	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			45

MASHAL - Society not qualified

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

JLL

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	20	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1700	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	65	
			Total for consortium	65	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**80**

IPSOS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	167	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	726	
			Total for consortium	726	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	7	
			Total for consortium	7	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	7	
			Total for consortium	7	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	6	
			Total for consortium	6	20
Total		**100**			100

IDECK

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	17	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	19.6	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	1587	
			Total for consortium	1587	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			**75**

ICRA

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	30	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	18	
			Total for consortium	18	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			60

ICLEI - Society Not Qualified

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

IBI

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	17.8	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	50	
			Total for consortium	50	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			70

Hindustan Thompson (No work orders submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	79	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	615	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	32	
			Total for consortium	32	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

E&Y (Work orders for only 2 eligible projects submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2202	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	10000	
			Total for consortium	10000	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			60

ETS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.6	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**10**

Ecorys

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	16	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	276	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	53	
			Total for consortium	53	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			65

Designpoint

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.14	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	23	
			Total for consortium	23	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			35

R&D Ini

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year	18	10
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	3.27	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	6	
			Total for consortium	6	10
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		100			45

PWC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	34	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1577	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	646	
			Total for consortium	646	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	5	
			Total for consortium	5	20
Total		**100**			**85**

Terracon

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	9	9
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.63	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	19	
			Total for consortium	19	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			44

UMC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1.13	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	25	
			Total for consortium	25	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**65**

Voyants

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	84.16	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	26	
			Total for consortium	26	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		100			50

Minutes of the Meeting of Procurement Committee for "Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project" held on 24-25 October 2017

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of "**Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**" was held under the chairmanship of Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA consecutively on 24-25 October 2017 in Room No. 232C, Nirman Bhawan, N. Delhi.

The following were present in the meeting:

1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA.
2. Shri Sajeesh Kumar N, Director (Smart Cities), MoHUA
3. Shri Yogendra Singh Awana, Deputy Secretary (UPA-II & CBUD), MoHUA.
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoHUA.
5. Shri G. Vijay Kumar, Under Secretary (CBUD), MoHUA
6. Shri Rakesh Gujral, Financial Management Specialist, PMU, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, PMU, CBUD.
8. Ms. Vasavi Narla, Urban Management Specialist, PMU, CBUD.

2. As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under:

S.No	Parameter	Maximum Marks
1	General Experience of the Firm	10
2	Financial Strength of the Firm	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. It was noted by the Committee that applications were invited from the eligible consulting firms through REOI published on 8th September 2017 on www.eprocure.gov.in with the last date of 03rd October 2017. As per the World Bank's requirements, the REOI was also published in STEP, World Bank and subsequently published on UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS. Besides, The REOI was published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017.

4. For evaluating proposals, following detailed examination criteria was adopted.

Sl No	Parameter	Maximum Marks	Details
1.	General Experience of the Firm (Number of years)	**10**	1 Mark for Each Year
2.	Financial Strength of the Firm (Turnover)	**15**	<5 crore- 0 Marks, <=10 crore - 5 Marks >10 crore-<20 crore- 10 Marks => 20 crore 15 Marks
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons: 20 marks > 20 persons - 25 marks
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/	**10**	5 Marks for each project with a maximum of 10 marks

Imran

	departments, para-statals, ULBs and multilateral agencies		
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks
Total		**100**	

5. Accordingly, the 28 applications were evaluated by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project in its meeting held on 24-25 October 2017. The detailed Evaluation Sheet is attached as **Annexure.**

6. On the basis of above evaluation, the Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP), as per procedure.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle Property Consultants India Private Limited**	-	-	-	-	**80**

Imran

Majesh

4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

Nilesh Rajadhyaksha
Capacity Building
Expert, PMU,CBUD

Vasavi Narla
Urban Management
Specialist, PMU,CBUD

Rakesh Gujral
Financial Management
Specialist, PMU,CBUD

G. Vijay Kumar
Under Secretary
CBUD, MoHUA

Ms. Yashodara Vijayan
Deputy Secretary
IFD, MoHUA

Y. S. Awana
Deputy Secretary (CBUD)
MoHUA

Sajeesh Kumar N
Director (Smart Cities)
MoHUA

Sudhir Kumar Tewari
Economic Adviser (Coord)
MoHUA

STANDARD FORM OF CONTRACT

Section 8

Consultant’s Services

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

[Credit #: 4997-IN

Contract No. CBUD/SD/17
between

Ministry of Housing and Urban Affairs (MoHUA), Government of India, New Delhi
____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ______________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, **Ministry of Housing and Urban Affairs (MOHUA)**(hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) The client MoHUA has received a credit from the *International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions	1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings: (a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated July 2016. (b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time. (c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank. (e) "CBUD" Means Capacity Building for Urban Development (f) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant. (g) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract. (h) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices). (i) "Day" means a working day unless indicated otherwise. (j) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11. (k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

	(l) “Foreign Currency” means any currency other than the currency of the Client’s country. (m) “GCC” means these General Conditions of Contract. (n) “Government” means the government of India. (o) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (p) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal. (q) “Local Currency” means the currency of the Client’s country. (r) “MoHUA” means Ministry of Housing and Urban Affairs. (s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract. (t) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them. (u) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written. (v) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto. (w) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract. (x) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.
2. Relationship between the Parties	2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf

	hereunder.
3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must

	include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not

	foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
b. **No Breach of Contract**	17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
c. **Measures to be Taken**	17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. 17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

	(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. 17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.
18. Suspension	18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.
19. Termination	19.1. This Contract may be terminated by either Party as per provisions set up below:
a. By the Client	19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days’ written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days’ written notice in case of the event referred to in (e); and at least five (5) calendar days’ written notice in case of the event referred to in (f): (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to

	Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. 19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.
b. By the Consultant	19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause. (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue. (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days. (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1. (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.
c. Cessation of Rights and Obligations	19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and

	obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.
d. Cessation of Services	19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.
e. Payment upon Termination	19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: (a) payment for Services satisfactorily performed prior to the effective date of termination; and (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General	
a. Standard of Performance	20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties. 20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any

	discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
b. Consultant and Affiliates Not to Engage in Certain Activities	21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.
c. Prohibition of Conflicting Activities	21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
d. Strict Duty to Disclose Conflicting Activities	21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
22. Confidentiality	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.
23. Liability of the Consultant	23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.
24. Insurance to be Taken out by the Consultant	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in

	Clause GCC 13.
25. Accounting, Inspection and Auditing	25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs. 25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant’s attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank’s prevailing sanctions procedures.)
26. Reporting Obligations	26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.
27. Proprietary Rights of the Client in Reports and Records	27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client. 27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client’s prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.
28. Equipment, Vehicles and	28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the

Materials	Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value. 28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts	29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**
30. Replacement of Key Experts	30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.
31. Removal of Experts or Sub-consultants	31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

	31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions	32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.
33. Access to Project Site	33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client

	will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.
34. Change in the Applicable Law Related to Taxes and Duties	34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1
35. Services, Facilities and Property of the Client	35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**
36. Counterpart Personnel	36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**. 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
37. Payment Obligation	37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price	38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**. 38.2 Any change to the Contract price specified in Clause 38.1 can

	be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.
39. Taxes and Duties	39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**. 39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.
40. Currency of Payment	40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.
41. Mode of Billing and Payment	41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**. 41.2.1 *Advance payment:* No advance payment would be made to the consultant. 41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon

	promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**. 41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.
42. Interest on Delayed Payments	42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith	43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement	44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.
45. Dispute Resolution	45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** the *land*
4.1	**The language is : English**.
6.1 and 6.2	**The addresses are:** Client: Ministry of Housing and Urban Affairs, New Delhi __________ Attention : __________ Facsimile : __________ E-mail (where permitted):__________ Consultant : __________ __________ Attention : __________ Facsimile : __________ E-mail (where permitted) :__________
8.1	*NA*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*__________ **For the Consultant:** *[name, title]*__________
11.1	**The effectiveness conditions are the following**: Signing of the contract.
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days[insert date]**.

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 20 weeks .
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3 :** Yes

23.1	**No additional provisions.**
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability insurance, with a minimum coverage of** equivalent of the contract amount; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage as per Motor Vehicle Act 1988; (c) Third Party liability insurance, with a minimum coverage of one million; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.2	**The Consultant shall not use these** ***.documents, database and software*** **for purposes unrelated to this Contract without the prior written approval of the Client**.
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates**

	provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	**The Client warrants that "the Client shall reimburse the Consultant indirect taxes i.e. GST imposed, under the applicable law in the Client's country, on the Consultant.**
41.2	**The payment schedule:** **For the local currency ; [Insert the Amount]** 1. Payment of remuneration will be as follows ➢ Inception Report : Twenty percent (20 %) will be paid on acceptance/ approval of the inception report. ➢ Draft City Assessment Report : Fifty percent (50 %) will be paid on acceptance/ approval of Draft Final Report. ➢ Final City Assessment Report : Thirty percent (30 %) will be paid on acceptance/ approval of Draft Final Report. **Note: The Consulting firm will submit the invoice in the name of Project Director, CBUD Project, Ministry of Housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi- 110011 to the client. The client, after reviewing the invoice of the Consultant, shall recommend the payment along with the letter of acceptance/ approval of the deliverable and any other information desired by the Project Director, CBUD to the Ministry of Housing and Urban Affairs (MoHUA) for making the payment.**
41.2.1	***Not Applicable***
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to

	arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Council of Arbitrators, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi (b) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

	4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in New Delhi; (b) the *English* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

……

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant’s Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client’s Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - LIST OF CITIES

REQUEST FOR PROPOSAL

Client: Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI)

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development (CBUD)**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India

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Issued on:
14th November 2017

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PART I

Section 1. Letter of Invitation

CreditNo.4997-IN

14/ 11 / 2017

S.No.	Firm	Contact details
1	Ipsos Public Affairs	tripti.sharma@ipsos.com
2	PricewaterhouseCoopers	subhash.patil@in.pwc.com
3	Jones Lang LaSalle	simon.thomas@ap.jll.com
4	Delloite Touche Tohmatsu India LLP	anmallick@deloitte.com
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	ideckinfo@idfc.com
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	mohit.ganeriwala@crisil.com

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Housing and Urban Affairs* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. More details on the Services are provided in the Terms of Reference (Section 7).

3. This Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Firm	Country of Incorporation
1	Ipsos Public Affairs	India
2	PricewaterhouseCoopers	India
3	Jones Lang LaSalle	India
4	Delloite Touche Tohmatsu India LLP	India
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	India
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	India

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under Quality and Cost Based Selection method (QCBS) (Lump Sum) and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:
   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms
   Section 5 – Eligible Countries
   Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
   Section 7 - Terms of Reference
   Section 8 - Standard Forms of Contract (Time Based)

7. Please inform us by 20th November 2017 in writing by E-mail : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com :

   (a) that you have received the Letter of Invitation; and
   (b) whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

8. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,

Under Secretary to the Government of India on behalf of Project Director, CBUD.

Nirman Bhavan, New Delhi-11001. (Ph. 01123063217)

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the *financing*[1] agreement with the Bank.

(f) "CBUD" means Capacity Building for Urban Development

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoHUA" means Ministry of Housing and Urban Affairs

(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant.

(u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP.

(v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP.

(w) "Services" means the work to be performed by the Consultant pursuant to the Contract.

(x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract.

(y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction	7.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 7.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 7.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense. 7.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	7.5 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 7.6 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 7.6.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-

	consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	7.7 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors

	appointed by the Bank.
6. Eligibility	7.8 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 7.9 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 7.10 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	7.10.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	7.10.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and: (a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower’s country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient

	to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process

	at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	7.11 The Proposal shall comprise the documents and forms listed in the Data Sheet. 7.12 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). 7.13 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	7.14 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12. Proposal Validity	7.15 **The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. 7.16 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. 7.17 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period	7.18 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. 7.19 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. 7.20 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	7.21 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. 7.22 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	7.23 The Consultant shall not subcontract the whole of the Services.
13. Clarification and Amendment of RFP	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all

	amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply

	with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client’s country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal. 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member’s authorized representative. 17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the

	person signing the Proposal. 17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail. 17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**." 17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**." 17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf

	of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC. 19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to

QBS	negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals

	in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the Data Sheet. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the Data Sheet shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant’s representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant’s authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts’ availability may result in the rejection of the Consultant’s Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client’s inputs, the special conditions of the Contract, and finalizing the “Description of Services” part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant’s tax liability in the Client’s country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated. 28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts’ remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the

	Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29 Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30 Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. *Data Sheet*

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Housing and Urban development (MoHUA),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines**: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference: **Time: 3.00PM on 23rd November 2017** Address: **At Room No 120 G** **Nirman Bhawan, Maulana Azad Road, New Delhi 110011** Telephone: 011-23063217 E. mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA
4.1	*NA*

6.3.1	**A list of debarred firms and individuals is available at the Bank's external website**: www.worldbank.org/debarr
31 B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by 20th November 2017
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
33 C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals online through** https://eprocure.gov.in/cppp/ **on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders.**
17.4	**The Consultant must submit:** (a) **Technical Proposal:** one (b) **Financial Proposal:** one
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:7th December 2017** **Time: 3.00PM** *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is:** https://eprocure.gov.in/cppp/
19.1	**An online option of the opening of the Technical Proposals is offered:** Yes

<table>
<tr><td></td><td>The opening shall take place at:
<i>Online as</i> “same as the Proposal submission address” <i>as per the procedures:</i>
Street Address: Maulana Azad Road
Floor, Room number: Room No.202 C, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>The time should be immediately after the time for the submission deadline stated in 17.7</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals
NA</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:
<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
<tr><td>(a)</td><td><i>Technical approach and Methodology</i></td><td>30</td></tr>
<tr><td>(b)</td><td><i>Work Plan</i></td><td>10</td></tr>
<tr><td>(c)</td><td><i>Organisation and staffing</i></td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (ii) –50 points
<i>{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}</i></td><td>50</td></tr>
</table>
</td></tr>
</table>

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which “Sf” is the financial score, “Fm” is the lowest price, and “F” the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	34 D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

35 FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank’s policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer’s country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company’s name or JV’s name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

36 FORM TECH-2

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

---

[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

37 FORM TECH-3

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

38 FORM TECH-4

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

39 FORM TECH-5

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

40 FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		

																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. “Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

▬ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A "Financial Negotiations - Breakdown of Remuneration Rates" in the case of QBS method
FIN-4	Reimbursable expenses

41 FORM FIN-1

FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Housing and Urban Affairs (MoHUA) Govt. of India in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/City in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________ Name and Title of Signatory: ____ In the capacity of: ____ Address: _ E-mail:
____

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

42 Form FIN-2 Summary of Costs

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[2] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. Such as Service				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

---

[2] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

43 Form FIN-3 Breakdown of Remuneration

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract’s ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ______________________________

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	

					▨	▨	▨	
	Non-Key Experts							
N-1			[*Home*]		▨	▨	▨	
N-2			[*Field*]					
					▨	▨	▨	
				Total Costs				

44 Form FIN-4 Breakdown of Reimbursable Expenses

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses______________________

N°	**Type of Reimbursable Expenses**	**Unit**	**Unit Cost**	**Quantity**	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
	{e.g., Per diem allowances**}	{Day}						
	{e.g., International flights}	{Ticket}						
	(e.g., Domestic travels)	{Trip}						
	{e.g., In/out airport /Rly Station/Bus Stand transportation}	{Trip}						
	Local Travel	Month						
	{e.g., Communication costs (telephone, internet etc.}	Month						
	{ e.g., reproduction of reports}	month						
	{e.g., Office running cost including stationery, office maintenance, office equipment etc.)	month						

	....							
Total Costs								

Legend*:*

"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

[7] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7: Terms of Reference

7.1 Background

(i) The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

(ii) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

(iii) A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

(iv) A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

(v) Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

(vi) The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:
    a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;
    b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;
    c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:
    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
    c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

    b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;

c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format as mutually agreed

   b. All raw data and data sheets;

   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their
responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	**Time line**	**Documents**	**Deliverables and Contents**
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed.b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 Team Composition and Qualification Requirement for key Experts

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 TA management and counterpart staff

The assignment will be contracted by the MoHUA for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;

b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8: Conditions of Contract and Contract Forms

Attached separately

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788

Sl. No.	Name of State	Name of City	Population
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756

Sl. No.	Name of State	Name of City	Population
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karimnagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

SUMMARY DESCRIPTION

STANDARD REQUEST FOR PROPOSALS (for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India)

PART I – SELECTION PROCEDURES AND REQUIREMENTS

Section 1: Letter of Invitation (LOI)

This Section is a template of a letter from the Client addressed to a shortlisted consulting firm inviting it to submit a proposal for a consulting assignment. The LOI includes a list of all shortlisted firms to whom similar letters of invitation are sent, and a reference to the selection method and applicable guidelines or policies of the financing institution that govern the selection and award process.

Section 2: Instructions to Consultants and Data Sheet

This Section consists of two parts: "Instructions to Consultants" and "Data Sheet". "Instructions to Consultants" contains provisions that are to be used without modifications. "Data Sheet" contains information specific to each selection and corresponds to the clauses in "Instructions to Consultants" that call for selection-specific information to be added. This Section provides information to help shortlisted consultants prepare their proposals. Information is also provided on the submission, opening and evaluation of proposals, contract negotiation and award of contract. Information in the Data Sheet indicates whether a Full Technical Proposal (FTP) or a Simplified Technical Proposal (STP) shall be used.

Section 3: Technical Proposal – Standard Forms

This Section includes the forms for FTP and STP that are to be completed by the shortlisted consultants and submitted in accordance with the requirements of Section 2.

Section 4: Financial Proposal – Standard Forms

This Section includes the financial forms that are to be completed by the shortlisted consultants, including the consultant's costing of its technical proposal, which are to be submitted in accordance with the requirements of Section 2.

Section 5: Eligible Countries

This Section contains information regarding eligible countries.

Section 6: Bank's Policy – Corrupt and Fraudulent Practices

This Section provides shortlisted consultants with the reference to the Bank’s policy in regard to corrupt and fraudulent practices applicable to the selection process. This Section is also incorporated in the standard forms of contract (Section 8) as Attachment 1.

Section 7: Terms of Reference (TORs)

This Section describes the scope of services, objectives, goals, specific tasks required to implement the assignment, and relevant background information; provides details on the required qualifications of the key experts; and lists the expected deliverables. This Section shall not be used to over-write provisions in Section 2.

PART II – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section 8: Standard Forms of Contract

This Section includes two types of standard contract forms for large or complex assignments: a Time-Based Contract and a Lump-Sum Contract. Each type includes General Conditions of Contract (“GCC”) that shall not be modified, and Special Conditions of Contract (“SCC”). The SCC include clauses specific to each contract to supplement the General Conditions.

Each standard form of contract incorporates “Bank’s Policy – Corrupt and Fraudulent Practices” (Section 6 of Part I) in a form of Attachment 1.

SELECTION OF CONSULTANTS

REQUEST FOR PROPOSALS

Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India

Client: Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI)

Country: India

Project: Capacity Building for Urban Development (CBUD)

Issued on: 27th November, 2017

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PART I

Section 1. Letter of Invitation

RFP No. E3136811 **Credit No**.- 4997-IN India and 27th November 2017

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has receive financing from the International Development Association (IDA)*]* (the “Bank”) in the form of a “credit” (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. The *[*Client/ Recipient*]* intends to apply the funds to eligible payments under the

contract for which this Request for Proposals is issued.] Payments by the Bank will be made only at the request of the Ministry of Housing and Urban Affairs, GOI and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan agreement. The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the *[*Borrower/Client/Recipient*]* shall derive any rights from the loan agreement or have any claims to the proceeds of the loan.

2. The Client now invites proposals to provide the following consulting services (hereinafter called “Services”): *Assessment of Liveability Indices for 116 cities in India*. More details on the Services are provided in the Terms of Reference (Section 7).

3. This electronic Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under *QCBS* procedures and in a Full Technical Proposal (FTP) format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:
    Section 1 - Letter of Invitation
    Section 2 - Instructions to Consultants and Data Sheet
    Section 3 - Technical Proposal (FTP) - Standard Forms
    Section 4 - Financial Proposal - Standard Forms
    Section 5 – Eligible Countries
    Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
    Section 7 - Terms of Reference
    Section 8 - Standard Forms of Contract (Lump-Sum)

7. The RFP is available online at https://eprocure.gov.in/cppp/ for the short-listed consultants only. The short-listed consultants are required to register on this website at no cost and prior to the submission of proposals. Consultant is also required to have a Digital Signature (DSC) from one of the Government of India authorized Certifying Authorities in order to submit a proposal on line at the web address indicated above. The list of the authorized Certifying Authorities can be found https://eprocure.gov.in/eprocure/app;jsessionid=F5C7CAFAAD521D191038BF8A4FD03B4F.eprocgep1?page=HelpForContractors&service=page

8. Please inform us by 8th December, *2017 by 3.00 pm* by E-mail on : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com
    (a) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

9. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi. (Ph. 23063217)
on behalf of Project Director, CBUD, MoHUA, Nirman Bhavan, New Delhi.

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the loan agreement with the Bank.

(f) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(h) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(i) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(j) "Day" means a calendar day.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(l) “Government” means the government of the Client’s country.

(m) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(n) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(o) “ITC” (this Section 2 of the e-RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(p) “LOI” (this Section 1 of the e-RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(r) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(s) “RFP” means the Request for Proposals to be prepared by the Client for the electronic selection of Consultants, based on the SRFP.

(t) “SRFP” means the trial version of Standard Request for Proposals for the use in electronic procurement issued by the Bank, which must be used by the Client as the basis for the preparation of the RFP.

(u) “Services” means the work to be performed by the Consultant pursuant to the Contract.

(v) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while

remaining responsible to the Client during the performance of the Contract.

(w) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction

2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**.

2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant.

2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.

3. Conflict of Interest

3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work.

3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank.

3.2.1 Without limitation on the generality of the foregoing, and unless stated otherwise in the **Data Sheet**, the Consultant shall not be hired under the circumstances set forth below:

a. Conflicting activities

(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.

b. Conflicting assignments

(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.

c. Conflicting relationships

(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.

4. Unfair Competitive Advantage

4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this e-RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.

5. Corrupt and Fraudulent Practices

5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.

6. Eligibility

6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects.

6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines.

6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:

a. Sanctions

6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.

b. Prohibitions

6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

c. Restrictions for Government-owned Enterprises

6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii)

operate under commercial law, and (iii) that they are not dependent agencies of the Client

To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.

d. Restrictions for public employees

6.3.4 Government officials and civil servants of the Borrower’s country are not eligible to be included as Experts in the Consultant’s Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower’s country, and they

(i) are on leave of absence without pay, or have resigned or retired;

(ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring

> (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower’s country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant’s Proposal.; and

(iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7. General Considerations

7.1 In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.

8. Cost of Preparation of Proposal

8.1 The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.

9. Language

9.1 The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.

10. Documents Comprising the Proposal

10.1 The Proposal shall comprise the documents and forms listed in the **Data Sheet**.

10.2 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country’s laws against fraud and corruption (including bribery).

10.3 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).

11. Only One Proposal

11.1 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant’s staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity

12.1 **The Data Sheet** indicates the period during which the Consultant’s Proposal must remain valid after the Proposal submission deadline.

12.2 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

12.3 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period

12.4 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, by notifying all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. Mode of notifications is specified in the **Data Sheet.**

12.5 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts.

12.6 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

b. Substitution of Key Experts at Validity Extension

12.7 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert.

12.8 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.

c. Sub-Contracting

12.9 The Consultant shall not subcontract the whole of the Services.

13. Clarification and Amendment of RFP

13.1 The Consultant may request an online clarification of any part of the RFP during the period and in accordance with the procedure indicated in the **Data Sheet** before the Proposals' submission deadline. The Client will respond online by uploading

the response on the portal (including an explanation of the query but without identifying its source) for information of all shortlisted Consultants. Should the Client deem it necessary to amend the e-RFP as a result of a clarification, it shall do so following the procedure described below:

13.1.1 At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment online in accordance with procedure described in Data Sheet The amendment shall be binding on all shortlisted Consultants.

13.1.2 If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals.

13.2 The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline, online, in accordance with the procedure described in the **Data Sheet**. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

14. Preparation of Proposals – Specific Considerations

14.1 While preparing the Proposal, the Consultant must give particular attention to the following:

14.1.1 If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member.

14.1.2 The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same.

14.1.3 If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts,

failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**.

14.1.4 For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.

15. Technical Proposal Format and Content

15.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.

15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive.

15.2 Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.

16. Financial Proposal

16.1 The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.

a. Price Adjustment

16.2 For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.

b. Taxes

16.3 The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.

c. Currency of Proposal

16.4 The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.

d. Currency of Payment

16.5 Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission of Proposals

17.1 The Consultant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done electronically through the website and in accordance with the procedures specified in the **Data Sheet.** Proposals submitted by any other means will be rejected.

17.2 An authorized representative of the Consultant shall digitally sign the submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Technical Proposal.

17.2.1 In the case of a Joint Venture, submission letters shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member’s authorized representative. The submission letters and the power of attorney shall then be scanned and uploaded together with the Technical Proposal.

17.3 Consultants should be aware that the electronic procurement system does not allow for any interlineations, erasures, or overwriting. Any modifications or revisions to the Proposal shall be done in accordance with Clause ITC 13.2.

17.4 The Proposal or its modifications must be uploaded on the portal no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline.

17.5 Once the Proposal is uploaded on the portal, the system will generate a unique identification number with the stamped submission time. The unique identification number with the time stamp represents an acknowledgement of the Proposal submission. Any other system’s functionality requirements are specified in the **Data Sheet**.

18. Confidentiality

18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award

recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures.

18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.

19. Online Opening of Technical Proposals

19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals online immediately after the Proposals' submission deadline and following the procedure described in the Data Sheet. The folder with the Financial Proposal shall remain unopened, encrypted and shall be securely stored on the portal.

19.2 At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the Data Sheet.

20. Proposals Evaluation

20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable .

20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

21. Evaluation of Technical Proposals

21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.

22. Financial Proposals for QBS

22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract.

22.2 16.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.

23. Online Opening of Financial Proposals (for QCBS, FBS, and LCS methods)

23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score by sending a notification through the means indicated in the **Data Sheet**. The notification shall also include information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion. Financial Proposals of those Consultants whose Technical Proposals did not meet the minimum qualifying score shall not be opened. In such case, a notification to that effect will be sent to the Consultant. The Client shall simultaneously notify those Consultants that have achieved the minimum overall technical score and inform them of the date, time and, if indicated in the **Data Sheet**, location for online opening of the Financial Proposals. The Consultant's attendance at the opening of the Financial Proposals (online, or in person, if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. If the Data Sheet provides an option of attending in person, the opening date should allow the Consultants sufficient time to make arrangements for attending the opening.

23.2 The Financial Proposals shall be opened online by the Client's evaluation committee as described in the Data Sheet. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud first and recorded online simultaneously. The Financial Proposals shall be then opened, the total prices read

aloud and recorded online simultaneously. The records of the opening shall remain on the portal for the information of the Consultants who submitted Proposals and the Bank, unless the **Data Sheet** provides for other means of sending notifications and the results of the financial opening.

24. Correction of Errors

24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

24.2 If a Time-Based contract form is included in the e-RFP, the e-procurement system automatically calculates the amount in words from the amount in figures and automatically calculates the total amount In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client’s evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost. The evaluation committee will also adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal.

b. Lump-Sum Contracts

24.3 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.

25. Taxes

The Client’s evaluation of the Consultant’s Financial Proposal shall exclude taxes and duties in the Client’s country in accordance with the instructions in the **Data Sheet**.

26. Conversion to Single Currency

26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.

27. Combined Quality and Cost Evaluation

a. Quality- and Cost-Based Selection (QCBS)

27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.

b. Fixed-Budget Selection (FBS)

27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected.

27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection

27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations

28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.

28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.

a. Availability of Key Experts

28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant.

28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.

b. Technical negotiations

28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.

c. Financial negotiations

28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract.

28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank.

The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.

29. Conclusion of Negotiations

29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative.

29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.

30. Award of Contract

30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; promptly notify the other shortlisted Consultants and publish the award as per the instructions in the **Data Sheet.**

30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

A. General	
ITC Clause Reference	
1 (c)	Law of Republic of India
2.1	**Name of the Client:** Ministry of Housing and Urban Affairs (MoHUA), Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
2.3	**A pre-proposal conference will be held**: Yes Date of pre-proposal conference: **12th December, 2017** Time:15.00 (3.00 PM) Address: 202-C, Nirman Bhawan, Maulana Azad Road, New Delhi. Telephone: 011-23063217 E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com Contact person/conference coordinator *: G.Vijay Kumar, Under Secretary* ______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals:** NA ____
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
B. Preparation of Proposals	

9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language.** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 OR **For SIMPLIFIED TECHNICAL PROPOSAL (STP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-4 (4) TECH-5 (5) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes

11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *and 90 days* calendar days after the proposal submission deadline (i.e., until**: 27th March, 2018)**
12.4	Validity of proposal will be intimated by e-mail to g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** **All requests for clarifications shall be made online through** mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by **8th December 2017, 3.00 pm.** **Clarifications sent through any other medium shall not be accepted.**
13.2	The process for submitting modifications to the Proposal is as per e- procurement manual available at https://eprocure.gov.in/cppp/
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s): No** **or** **(b) other shortlisted Consultants: No**
14.1.2	**Estimated input of Key Experts' time-input: approx.. 22person-months.**
14.1.3	*"Not applicable"*.
14.1.4 and 27.2	**Not Applicable**

15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of items to be included in reimbursable expenses:* *(1) a per diem allowance, including hotel, for experts for every day of absence from the home office for the purposes of the Services;* *(2) cost of travel by the most appropriate means of transport and the most direct practicable route;* *(3) cost of office accommodation, including overheads and back-stop support;* *(4) communications costs;* *(5) cost of reports production (including printing) and delivering to the Client;*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	***GST and other indirect and local taxes as applicable from time to time.***
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants shall submit their Proposals electronically by downloading them on the portal** https://eprocure.gov.in/cppp/. ***The electronic submission procedures is available at*** ***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
17.4	**The Proposals must be submitted online no later than:** **Date: 27th December, 2017**

	Time: 15.00 Local Time (3.00 PM)
17.5	As per https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page
19.1	An online opening of the Technical Proposals will be conducted as defined in https://eprocure.gov.in *Consultants have an option to attend the opening of the Technical Proposals in person. The opening shall take place* at*:* Street Address: : Maulana Azad Road Floor, room number: Room No.202 C, Nirman Bhawan City New Delhi 110001 Country: India Date: **28th December, 2017**. Time: *15.00 Local Time (3.00 PM)*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals :** NA
21.1	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10

	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}* — **50** (iii) **Key Experts' qualifications and competence for the Assignment** — **40**
23.1	a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.
23.2	**The Financial Proposals shall be opened online as** *defined in ITB 23.2* **The procedure for notifying the Consultants on the results of the Financial opening shall be** *as in ITB 23.2*

	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) : 60%

Total points for the three criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1 a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.

23.2 **The Financial Proposals shall be opened online as** *defined in ITB 23.2*

The procedure for notifying the Consultants on the results of the Financial opening shall be *as in ITB 23.2*

25.1	For the purpose of the evaluation, the Client will exclude: (a) all local identifiable indirect taxes such GST, or similar taxes levied on the contract's invoices; and (b) all additional local indirect tax on the remuneration of services rendered by non-resident experts in the Client's country. If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is:** Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T =** 0.80, and **P =** 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations:** **Date**: **10th January 2018** **Address:** 202C, Nirman Bhawan, Maulana Azad Road, New Delhi.
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done**

	as following: www. moud.gov.in The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services:** **Date**:**15th January, 2018**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
“√ “ If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
“√” If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant’s Organization and Experience.	
√		TECH-2A	A. Consultant’s Organization	
√		TECH-2B	B. Consultant’s Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: *[Name and address of Client]*

Dear Sirs:

We, the undersigned, offer to provide the consulting services for *[Insert title of assignment]* in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *[Select appropriate wording depending on the selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope" *or, if only a Technical Proposal is invited* "We hereby are submitting our Proposal, which includes this Technical Proposal only in a sealed envelope.*"].*

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) *[Note to Client: Only if required in ITC10.2 (Data Sheet 10.2), include the following:* In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.*]*

(f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY)

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1. List only previous similar assignments successfully completed in the last *[.....]* years.

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL)

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4 (FOR FULL TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the TORs in here.}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-4 (FOR SIMPLIFIED TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Form TECH-4: a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR and on counterpart staff and facilities)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

FORM TECH-5 (FOR FTP AND STP)

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6 (FOR FTP AND STP)

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

---

[1] For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.

[2] Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

3 "Home" means work in the office in the expert's country of residence. "Field" work means work carried out in the Client's country or any other country outside the expert's country of residence.

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Expert's contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Representative of the Consultant (the same who signs the Proposal) Signature Date

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A "Financial Negotiations - Breakdown of Remuneration Rates" in the case of QBS method
FIN-4	Remboursable expanses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ______________________________________

In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g., VAT or sales tax}				
(ii) {e.g., income tax on non-resident experts}				
(iii) {insert type of tax}				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract’s ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ______________________________

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
____	**Key Experts**	________	________	________	________	________	________	________
K-1	____________		[*Home*]	________				▨
____			[*Field*]	________	▨	▨	▨	
K-2	____________			________				▨
____				________	▨	▨	▨	
____				________	▨	▨	▨	
____	____________			________				▨
____				________	▨	▨	▨	
____				________	▨	▨	▨	
____	**Non-Key Experts**	________	________		________			
N-1	____________	________	[*Home*]	________	▨	▨	▨	
N-2			[*Field*]	________	▨	▨	▨	
____	____________			________	▨	▨	▨	
____				________	▨	▨	▨	
____				________	▨	▨	▨	
	Total Costs							

Appendix A. Financial Negotiations - Breakdown of Remuneration Rates

1. **Review of Remuneration Rates**

1.1. The remuneration rates are made up of salary or a base fee, social costs, overheads, profit, and any premium or allowance that may be paid for assignments away from headquarters or a home office. An attached Sample Form can be used to provide a breakdown of rates.

1.2. If the RFP requests submission of a technical proposal only, the Sample Form is used by the selected Consultant to prepare for the negotiations of the Contract. If the RFP requests submission of the financial proposal, the Sample Form shall be completed and attached to the Financial Form-3. Agreed (at the negotiations) breakdown sheets shall form part of the negotiated Contract and included in its Appendix D or C.

1.3. At the negotiations the firm shall be prepared to disclose its audited financial statements for the last three years, to substantiate its rates, and accept that its proposed rates and other financial matters are subject to scrutiny. The Client is charged with the custody of government funds and is expected to exercise prudence in the expenditure of these funds.

1.4. Rate details are discussed below:

(i) Salary is the gross regular cash salary or fee paid to the individual in the firm's home office. It shall not contain any premium for work away from headquarters or bonus (except where these are included by law or government regulations).

(ii) Bonuses are normally paid out of profits. To avoid double counting, any bonuses shall not normally be included in the "Salary" and should be shown separately. Where the Consultant's accounting system is such that the percentages of social costs and overheads are based on total revenue, including bonuses, those percentages shall be adjusted downward accordingly. Where national policy requires that 13 months' pay be given for 12 months' work, the profit element need not be adjusted downward. Any discussions on bonuses shall be supported by audited documentation, which shall be treated as confidential.

(iii) Social Charges are the costs of non-monetary benefits and may include, inter alia, social security (including pension, medical, and life insurance costs) and the cost of a paid sick and/or annual leave. In this regard, a paid leave during public holidays or an annual leave taken during an assignment if no Expert's replacement has been provided is not considered social charges.

(iv) Cost of Leave. The principles of calculating the cost of total days leave per annum as a percentage of basic salary is normally calculated as follows:

$$\text{Leave cost as percentage of salary} = \frac{\text{total days leave x 100}}{[365 - w - ph - v - s]}$$

Where w = weekends, ph = public holidays, v = vacation, and s = sick leave.

Please note that leave can be considered as a social cost only if the Client is not charged for the leave taken.

(v) Overheads are the Consultant's business costs that are not directly related to the execution of the assignment and shall not be reimbursed as separate items under the Contract. Typical items are home office costs (non-billable time, time of senior Consultant's staff monitoring the project, rent of headquarters' office, support staff, research, staff training, marketing, etc.), the cost of Consultant's personnel not currently employed on revenue-earning projects, taxes on business activities, and business promotion costs. During negotiations, audited financial statements, certified as correct by an independent auditor and supporting the last three years' overheads, shall be available for discussion, together with detailed lists of items making up the overheads and the percentage by which each relates to basic salary. The Client does not accept an add-on margin for social charges, overhead expenses, etc. for Experts who are not permanent employees of the Consultant. In such case, the Consultant shall be entitled only to administrative costs and a fee on the monthly payments charged for sub-contracted Experts.

(vi) Profit is normally based on the sum of the Salary, Social costs, and Overheads. If any bonuses paid on a regular basis are listed, a corresponding reduction shall be made in the profit amount. Profit shall not be allowed on travel or any other reimbursable expenses.

(vii) Away from Home Office Allowance or Premium or Subsistence Allowances. Some Consultants pay allowances to Experts working away from headquarters or outside of the home office. Such allowances are calculated as a percentage of salary (or a fee) and shall not draw overheads or profit. Sometimes, by law, such allowances may draw social costs. In this case, the amount of this social cost shall still be shown under social costs, with the net allowance shown separately.

UNDP standard rates for the particular country may be used as reference to determine subsistence allowances.

Sample Form

Consultant: Country:
Assignment: Date:

Consultant’s Representations Regarding Costs and Charges

We hereby confirm that:

(a) the basic fees indicated in the attached table are taken from the firm’s payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant’s Experts;

(b) attached are true copies of the latest pay slips of the Experts listed;

(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;

(d) the factors listed in the attached table for social charges and overhead are based on the firm’s average cost experiences for the latest three years as represented by the firm’s financial statements; and

(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

____
[Name of Consultant]

______________________________ ____________________
Signature of Authorized Representative Date

Name: ______________________________

Title: ______________________________

Consultant's Representations Regarding Costs and Charges
(Model Form I)

(Expressed in {insert name of currency*})

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour	Proposed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Client's Country									

{* If more than one currency is used, use additional table(s), one for each currency}

1. Expressed as percentage of 1
2. Expressed as percentage of 4

FORM FIN-4 BREAKDOWN OF REIMBURSABLE EXPENSES

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses___________________________

N°	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
___	{e.g., Per diem allowances**}	{Day}		___				
___	{e.g., International flights}	{Ticket}		___				
___	{e.g., In/out airport transportation}	{Trip}						
	{e.g., Communication costs between Insert place and Insert place}				___			
	{ e.g., reproduction of reports}				___			
	{e.g., Office rent}				___			
	....				___			
	{Training of the Client's personnel – if required in TOR}				___			
Total Costs								

Legend*:*
"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): ________________ [list country/countries following approval by the Bank to apply the restriction *or* state “none”]

Under the ITC 6.3.2 (b): ________________ [list country/countries *or* indicate “none”]

Section 6. Bank Policy – Corrupt and Fraudulent Practices

(this Section 6 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

 (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

 (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

 (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

---

[1] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

---

[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources,

preferred timelines, key nodal officers etc.;

b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:

a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;

c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

a. Database of aggregate data in the format as mutually agreed

   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,
xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;
xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;
xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;
xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

Sl. No.	Name of State	Name of City	Population
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886

Sl. No.	Name of State	Name of City	Population
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429

Sl. No.	Name of State	Name of City	Population
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

PART II

Section 8. Conditions of Contract and Contract Forms

1. Part II includes two types of standard Contract forms for Consulting Services (a Time-Based Contract and a Lump-Sum Contract) that are based on the contract forms included in the harmonized Standard Request for Proposals (Master Document for Selection of Consultants prepared by participating Multilateral Development Banks (MDBs).

2. **Time-Based Contract**. This type of contract is appropriate when it is difficult to define or fix the scope and the duration of the services, either because they are related to activities carried out by others for which the completion period may vary, or because the input of the consultants required for attaining the objectives of the assignment is difficult to assess. In time-based contracts the Consultant provides services on a timed basis according to quality specifications, and Consultant’s remuneration is determined on the basis of the time actually spent by the Consultant in carrying out the Services and is based on (i) agreed upon unit rates for the Consultant’s experts multiplied by the actual time spent by the experts in executing the assignment, and (ii) reimbursable expenses using actual expenses and/or agreed unit prices. This type of contract requires the Client to closely supervise the Consultant and to be involved in the daily execution of the assignment.

3. **Lump-Sum Contract.** This type of contract is used mainly for assignments in which the scope and the duration of the Services and the required output of the Consultant are clearly defined. Payments are linked to outputs (deliverables) such as reports, drawings, bill of quantities, bidding documents, or software programs. Lump-sum contracts are easier to administer because they operate on the principle of a fixed price for a fixed scope, and payments are due on clearly specified outputs and milestones. Nevertheless, quality control of the Consultant’s outputs by the Client is paramount.

4. The templates are designed for use in assignments with consulting firms and shall not be used for contracting of individual experts. These standard Contract forms are to be used for complex and/or large value assignments, and/or for contracts above US$300,000 equivalent or more unless otherwise approved by the Bank.

STANDARD FORM OF CONTRACT

Consultant's Services

Lump-Sum

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including Attachment 1, shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name ______________________________

[Loan/Credit/Grant] **No.**______________________

Contract No. ______________________________

between

____

[Name of the Client]

and

____

[Name of the Consultant]

Dated: ________________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the [*insert as relevant, International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

    (a) The General Conditions of Contract (including Attachment 1 “Bank Policy – Corrupt and Fraudulent Practices);
    (b) The Special Conditions of Contract;
    (c) Appendices:

    Appendix A: Terms of Reference
    Appendix B: Key Experts
    Appendix C: Breakdown of Contract Price
    Appendix D: Form of Advance Payments Guarantee

    In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

    (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
    (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[7];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[8];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[9];

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[7] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[8] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[9] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[10];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[11], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[12] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[10] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[11] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[12] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** Client : Ministry of Housing and Urban Affairs (MoHUA) Attention : ____________________ Facsimile : ____________________ E-mail (where permitted):____________________ Consultant : ____________________ ____________________ Attention : ____________________ Facsimile : ____________________ E-mail (where permitted) :____________________
8.1	*[If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ____________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*____________________ **For the Consultant:** *[name, title]*____________________
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days**

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 20 Weeks
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is: _____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.** **The amount of such taxes is _____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency (Rs.____________)** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD),Project, Ministry of housing and Urban Affairs, Nirman hawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint,

	upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of:

	(a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements and list of deliverables against which the payments to the Consultant will be made; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks or actions that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 of the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……………………………………………………………………………………………

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> "The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or

inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant’s Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client’s Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature Date

Name and Title:

APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 41.2.1 and SCC 41.2.1]

Bank Guarantee for Advance Payment

______________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

---

[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____
[signature(s)]

Note: *All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.*

---

[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

K- 14012/101(11)/2017–SCM-III (V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
(CBUD Division)
****

Nirman Bhavan, New Delhi,
Dated 3rd January 2018

MEETING NOTICE

Subject: Meeting of Procurement / Evaluation Committee of CBUD project.

The undersigned is directed to say that a meeting of the Procurement / Evaluation Committee, Capacity Building for Urban Development (CBUD) project is scheduled to be held under the **Chairmanship of Shri Sudhir Kumar Tewari, Economic Advisor (Coord, MoHUA)** at **4:00 PM today i.e. on 3rd January 2018** in his chamber **(Room No. 232-C, Nirman Bhawan, New Delhi)** for the evaluation of applications of Request on Proposal (RFP) **on providing consulting services for the Assessment of Liveability in 116 cities.**

2. Kindly make it convenient to attend the aforesaid meeting.

3/1/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Tel No.-23063217

To

3/1/18
1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA.
2. Shri Shailendra Vikram Singh, Director (IFD), MoHUA. 3/1/18
3. Shri Shiv Pal Singh, Director (AMRUT), MoHUA. 3/1/18
4. Shri Sajeesh Kumar N., Director (Smart Cities), MoHUA. 3/1/18
5. Shri Y. S. Awana, Deputy Secretary (NULM & CBUD), MoHUA. 3/1/18
6. PMU Team, CBUD, MoHUA.

3/1/2018

Copy for information to: PS to Joint Secretary (DAY-NULM & CBUD), MoHUA

Roshni
3/1

o/c

K- 14012/101(11)/2017–SCM-III (V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
(CBUD Division)
****

Nirman Bhavan, New Delhi,
Dated 5th January 2018

MEETING NOTICE

Subject: Meeting of Procurement / Evaluation Committee of CBUD project.

In continuation of this office letter of even number dated 3rd January 2018 on the subject mentioned above, the undersigned is directed to say that a meeting of the Procurement / Evaluation Committee, Capacity Building for Urban Development (CBUD) project is scheduled to be held under the **Chairmanship of Shri Sudhir Kumar Tewari, Economic Advisor (Coord, MoHUA)** at **4:30 PM today i.e. on 5th January 2018** in his chamber **(Room No. 232-C, Nirman Bhawan, New Delhi)** for the evaluation of applications of Request on Proposal (RFP) **on providing consulting services for the Assessment of Liveability in 116 cities.**

2. Kindly make it convenient to attend the aforesaid meeting.

5/1/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Tel No.-23063217

To

1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA. 5/1/18
2. Shri Shailendra Vikram Singh, Director (IFD), MoHUA. 5/1/18
3. Shri Shiv Pal Singh, Director (AMRUT), MoHUA.
4. Shri Sajeesh Kumar N., Director (Smart Cities), MoHUA. 5/1
5. Shri Y. S. Awana, Deputy Secretary (NULM & CBUD), MoHUA. 5/1/18
6. PMU Team, CBUD, MoHUA. 5/1/2018

Copy for information to: PS to Joint Secretary (DAY-NULM & CBUD), MoHUA

8/01/18

O/c

Selection of Bidders for Assessment of Liveability Index of 116 Citiesof India

Final Summary Sheet of Technical Evaluation

				Name of Bidder					
				Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6
				IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
			Max.Marks	Obtained Marks					
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	6	2	2	10	10
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**							
	a.	**Approach & Methodology**							
		Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
		Initiation Activites	5	4.8	3.0	3.0	3.0	3.5	2.0
		Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
			30	**28.3**	**17.0**	**13.0**	**15.0**	**20.0**	**15.5**
	b.	**Work Plan**	**10**	**9.5**	**7.0**	**5.0**	**7.0**	**7.0**	**6.0**
	c.	**Organisation & Staffing**	**10**	**9.3**	**8.0**	**5.0**	**5.0**	**8.0**	**6.0**
C	Criteria 3	**KEY EXPERTS ***							
		Positions							
		Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
		Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
		Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
		Statistician	8	8	7.0	3.0	7.3	5.7	7.3
			40	**36.6**	**28.0**	**17.0**	**31.5**	**32.6**	**24.6**
		Grand Total (Criteria 1+Criteria2+Criteria3)	**100**	**93.7** ✓	**66.0** ✓	**42.0** ✓	**60.5**	**77.6** ✓	**62.1** ✓

*Detail evaluation sheet of each key expert is enclosed saperately

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

5/1/18
Sajeesh Kumar N
(Member 3)

Evaluation of Technical Proposal of IPSOS
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	4.2	4.8	4.7	4.3	4.5	4.8	4.2	**4.5**
		Initiation Activites	5	4.6	4.9	4.5	4.7	4.9	4.9	4.9	**4.8**
		Data Collection field surveys and analysis	20	19.0	19.5	18.0	19.5	19.0	19.0	19.0	**19.0**
			30	**27.8**	**29.2**	**27.2**	**28.5**	**28.4**	**28.7**	**28.1**	**28.3**
	b.	**Work Plan**	**10**	**9.0**	**10.0**	**9.5**	**10.0**	**9.0**	**9.5**	**9.5**	**9.5**
	c.	**Organisation & Staffing***	**10**	**9.5**	**9.0**	**9.5**	**9.5**	**9.5**	**9.0**	**9.0**	**9.3**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	14.6	14.6	14.6	14.6	14.6	14.6	14.6	**14.6**
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	**6.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	8	8	8	8	8	8	8	**8.0**
			40	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**92.9** ✓	**94.8** ✓	**92.8** ✓	**94.6**	**93.5** ✓	**93.8** ✓	**93.2** ✓	**93.7** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S. AWANA)

(SK Kiran)

5/01/18
Sajeesh Kumar N
(Member: 3)

Evaluation of Technical Proposal of -PWC
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	6	6	6	6	6	6	6	**6**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	2.5	3.0	2.5	2.5	**3.0**
		Initiation Activites	5	2.5	3.0	4.0	3.0	3.5	2.5	2.5	**3.0**
		Data Collection field surveys and analysis	20	10.0	12.0	10.0	12.0	10.0	12.0	11.0	**11.0**
			30	**15.5**	**19.0**	**17.5**	**17.5**	**16.5**	**17.0**	**16.0**	**17.0**
	b.	**Work Plan**	**10**	7.0	7.5	6.0	6.5	8.0	6.5	7.5	**7.0**
	c.	**Organisation & Staffing***	**10**	9.0	7.0	8.0	7.0	9.0	9.0	7.0	**8.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	8.6	8.6	8.6	8.6	8.6	8.6	8.6	**8.6**
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	**6.8**
		Market Research Specialist	8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	**5.6**
		Statistician	8	7	7	7	7	7	7	7	**7.0**
			40	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28.0**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**65.5**	**67.5**	**65.5**	**65**	**67.5**	**66.5**	**64.5**	**66.0**

Member1 Member2 Member3 Member4 Member5 Member6 Member7

5/01/18
Sajesh Kumar N
(Member: 3)

05.01.18
C.S. AWANA

Evaluation of Technical Proposal of - JLL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	2	2	2	2	2	2	2	**2**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.0	2.0	2.0	2.0	2.0	1.5	**2.0**
		Initiation Activites	5	2.0	3.0	3.0	3.5	2.5	3.5	3.5	**3.0**
		Data Collection field surveys and analysis	20	5.0	10.0	5.0	10.0	10.0	8.0	8.0	**8.0**
			30	**9.5**	**15.0**	**10.0**	**15.5**	**14.5**	**13.5**	**13.0**	**13.0**
	b.	**Work Plan**	**10**	**6.0**	**6.0**	**4.0**	**5.0**	**4.0**	**4.0**	**6.0**	**5.0**
	c.	**Organisation & Staffing***	**10**	**4.0**	**6.0**	**6.0**	**6.0**	**5.0**	**4.0**	**4.0**	**5.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5.4	5.4	5.4	5.4	5.4	5.4	5.4	**5.4**
		Urban Management Specialist/Planning Expert	8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	**1.6**
		Market Research Specialist	8	7	7	7	7	7	7	7	**7.0**
		Statistician	8	3	3	3	3	3	3	3	**3.0**
			40	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17.0**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**38.5** ✓	**46** ✓	**39** ✓	**45.5** ✓	**42.5** ✓	**40.5** ✓	**42** ✓	**42.0** ✓

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Imran
05.01.18
(Y.S. AWANA)

Sajesh 5/01/18

Sajeesh kumar.N
(Member.3)

Evaluation of Technical Proposal of - CRISIL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	2	2	2	2	2	2	2	**2**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.5	3.0	4.0	3.0	2.5	3.5	**3.0**
		Initiation Activites	5	3.0	2.5	3.5	3.5	3.0	2.5	3.0	**3.0**
		Data Collection field surveys and analysis	20	10.0	10.0	8.0	10.0	7.0	9.0	9.0	**9.0**
			30	**15.5**	**15.0**	**14.5**	**17.5**	**13.0**	**14.0**	**15.5**	**15.0**
	b.	**Work Plan**	**10**	**8.0**	**6.0**	**7.0**	**5.0**	**8.0**	**8.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**4.0**	**5.0**	**6.0**	**5.0**	**6.0**	**4.0**	**5.0**	**5.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	10.2	10.2	10.2	10.2	10.2	10.2	10.2	**10.2**
		Urban Management Specialist/Planning Expert	8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	**6.4**
		Market Research Specialist	8	7.6	7.6	7.6	7.6	7.6	7.6	7.6	**7.6**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**61**	**59.5** ✓	**61** ✓	**61**	**60.5**	**59.5**	**61**	**60.5**

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Jomary
05.01.18
(Y.S.AWANA)

Sajeesh
5/01/18

Sajeesh kumar.N
(Member 3)

Evaluation of Technical Proposal of - Deloitte
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : Deloitte

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	4.5	3.5	3.0	3.0	**3.5**
		Initiation Activites	5	4.0	3.0	3.0	4.5	3.5	3.0	3.5	**3.5**
		Data Collection field surveys and analysis	20	10.0	13.0	14.0	14.0	10.0	15.0	15.0	**13.0**
			30	**17.0**	**20.0**	**20.5**	**23.0**	**17.0**	**21.0**	**21.5**	**20.0**
	b.	**Work Plan**	**10**	**8.0**	**8.0**	**6.0**	**7.0**	**6.0**	**7.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**8.0**	**9.0**	**8.0**	**8.0**	**7.0**	**9.0**	**7.0**	**8.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	13.9	13.9	13.9	13.9	13.9	13.9	13.9	**13.9**
		Urban Management Specialist/Planning Expert	8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	**5.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	**5.7**
			40	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**75.6** ✓	**79.6** ✓	**77.1**	**80.6** ✓	**72.6** ✓	**79.6** ✓	**78.1**	**77.6** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.07.18
(Y.S.AWANA)

5/07/18
Sajush kumar.NI
(Member 3).

Evaluation of Technical Proposal of - IDECK ✓
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : IDECK ✓

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.0	3.0	3.5	4.0	4.0	**3.5**
		Initiation Activites	5	2.0	2.0	2.0	2.0	1.5	2.0	2.5	**2.0**
		Data Collection field surveys and analysis	20	10.0	9.0	12.0	9.0	12.0	10.0	8.0	**10.0**
			30	**15.0**	**15.0**	**17.0**	**14.0**	**17.0**	**16.0**	**14.5**	**15.5**
	b.	**Work Plan**	**10**	**6.0**	**5.0**	**5.0**	**7.0**	**7.0**	**6.0**	**6.0**	**6.0**
	c.	**Organisation & Staffing***	**10**	**7.0**	**7.0**	**5.0**	**5.0**	**6.0**	**7.0**	**5.0**	**6.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5	5	5	5	5	5	5	**5.0**
		Urban Management Specialist/Planning Expert	8	6	6	6	6	6	6	6	**6.0**
		Market Research Specialist	8	6.3	6.3	6.3	6.3	6.3	6.3	6.3	**6.3**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**62.6** ✓	**61.6** ✓	**61.6** ✓	**60.6** ✓	**64.6** ✓	**63.6** ✓	**60.1** ✓	**62.1** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

5/01/18
Sajesh Kumar.N
(Member 3)

Minutes of the Meeting of Procurement Committee for evaluation of technical proposals for Assessment of Liveability Indices for 116 cities in India

The meetings of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for evaluation of technical proposals of firms for **Assessment of Liveability Indices for 116 cities in India** was held on 3rd January and 5th January, 2018 in the chamber of Economic Advisor, (room No. 232-C), Nirman Bhawan, New Delhi for the evaluation of the technical proposals.

The following were present:

- Mr. Sudhir Kumar Tiwari, Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD
- Mr. Sajeesh Kumar N., Director (SC)
- Mr Shiv Pal Singh, Director (AMRUT) only on 3rd January, 2018.
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM)
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Mr Amit Gupta, PMU, CBUD

The Final RFP with shortlist was forwarded to World Bank on 30th October, 2017 whose 'No Objection' was received on 24th November, 2017. The RFP was issued to shortlisted consultants on 27th November, 2017. A pre proposal meeting was held on 12th December, 2017 and minutes were issued on 14th December, 2018. No addendum was issued. The last date and time of submission of the proposal was 15.00 hours on 27th December, 2017. Till last date and time, following proposals were received from following shortlisted consultants:

1	Ipsos Public Affairs	• Athena Infonomics India Pvt Ltd. • The Economic Group Limited
2	PricewaterhouseCoopers	
3	Jones Lang LaSalle	
4	Delloite Touche Tohmatsu India LLP	• Insight Development Group Pvt Ltd • Stesalit Systems Limited • Kadence International Pvt Ltd • Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	• Institute for Social and Economic Change (ISEC) • Public Affairs Centre (PAC) • Sigma Research & Consulting Pvt. Ltd • Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	

The technical proposals received till deadline were opened by the Procurement Committee on 28th December, 2017. The Financial Proposals were securely stored. It was noted that as per clause 5.2 of RFP, "*The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet*". The evaluation criteria indicated at Data sheet of RFP is as follows:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**
Position		**Total**
Team leader		16
Urban Management Specialist/ Planning Expert		8
Market Research Specialist		8
Statistician		8
Total		**40**

The Committee evaluated the Technical Proposals on the basis of firm's responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and rating system as specified in the RFP. The Summary based on average score for shortlisted firms, which submitted the proposal, is at **Annexure 1**. The evaluation sheet of individual committee members is at **Annexure 2**.

As per the evaluation, the technical scores of each firm are as follows:

			Name of Bidder					
			Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6
			IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
		Max.Marks	Obtained Marks					
Criteria 1	SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT	10	10	6	2	2	10	10
Criteria 2	ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR							
a.	**Approach & Methodology**							
	Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
	Initiation Activites	5	4.8	3.0	3.0	3.0	3.5	2.0
	Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
		30	**28.3**	**17.0**	**13.0**	**15.0**	**20.0**	**15.5**
b.	**Work Plan**	**10**	**9.5**	**7.0**	**5.0**	**7.0**	**7.0**	**6.0**
c.	**Organisation & Staffing**	**10**	**9.3**	**8.0**	**5.0**	**5.0**	**8.0**	**6.0**
Criteria 3	**KEY EXPERTS ***							
	Positions							
	Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
	Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
	Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
	Statistician	8	8	7.0	3.0	7.3	5.7	7.3
		40	**36.6**	**28.0**	**17.0**	**31.5**	**32.6**	**24.6**
	Grand Total (Criteria 1+Criteria2+Criteria3)	**100**	**93.7**	**66.0**	**42.0**	**60.5**	**77.6**	**62.1**

As per RFP, minimum technical score required to qualify and eligible for opening of financial proposals is 75 out of maximum of 100 points. As such financial proposal of following firms is recommended to be opened:

1. M/s IPSOS Public Affairs in consortia with Athena Infonomics India Pvt Ltd. and The Economic Group Limited
2. Delloite Touche Tohmatsu India LLP in consortia with Insight Development Group,Pvt Ltd, Stesalit Systems Limited, Kadence International Pvt Ltd, Operations Research Guild (ORG) India Private Limited

Vasavi

Ms. Vasavi Narla,
PMU (CBUD)
(member 6)

Mr. Amit Gupta,
PMU, CBUD
(member 7)

Rakesh Gujral,
PMU,CBUD
(member 5)

Mr. Yogendra Singh Awana,
Dy, Secretary(NULM)
(member 1)

Mr. Sajeesh Kumar N
Director (SC)
(member 3)

Mr. Shailendra Vikram Singh
Director (IFD)
(member 4)

Mr. Sudhir Kumar Tiwari,
Economic Advisor
(member 2)

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Evaluation of Technical Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

---

STEP Admin <noreply@worldbankgroup.org> Fri, Jan 12, 2018 at 8:54 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Technical Evaluation Report for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the Technical Evaluation Report for the above-mentioned consulting services, submitted to the Bank on 2018/01/09. Based on the information provided, including that sent by email on January 13, 2018 (as per format) the Bank has no objection to the outcome of the evaluation as follows:

Name of Consultant/Firm	Country	Points
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	77.60
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India	
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India	66.00
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India	60.50
JONES LANG LASALLE PROPERTY CONSULTANTS	India	42.00
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India	62.10
NIELSON(INDIA) PRIVATE LIMITED	India	
PUBLIC AFFAIR CENTRE (PAC)	India	
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India	

SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India	
IPSOS RESEARCH PRIVATE LIMITED ATENA INFONOMICS INDIA PRIVATE LIMTED THE ECONOMIST GROUP LIMITED	India India United Kingdom	93.70

Please inform those consultants that have received the minimum passing technical score of the date when financial proposals will be opened. Please ensure you leave sufficient time (at least 7 days) for those firms to make necessary arrangement to attend should they wish. The opening of financial proposals should be made in public.

Please also inform those consultants that failed to achieve the minimum passing technical score of their scores and that their financial proposals will be returned to them unopened after signature of the contract.

We note that there is a significant gap between the two technically qualified firms which is mainly on Approach and methodology scoring. Both qualified firms have issues with reliability of secondary data and for Deloitte even the primary survey is very restricted. This weaknesses could be resolved at the negotiation without any cost implications or quality of deliverables. Subject to this, the evaluation is cleared.

We look forward to receiving the Combined Technical and Financial Evaluation a draft initialed negotiated contract for our review and no objection in due course.

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

K- 14012/101(11)/2017–SCM-III (V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
(CBUD Division)

****

Nirman Bhavan, New Delhi,
Dated 15th January 2018

MEETING NOTICE

Subject: Meeting of Procurement / Evaluation Committee of CBUD project.

The undersigned is directed to say that a meeting of the Procurement / Evaluation Committee, Capacity Building for Urban Development (CBUD) project is scheduled to be held under the **Chairmanship of Shri Sudhir Kumar Tewari,Economic Advisor (Coord, MoHUA)** at **4:00 PM today i.e. on 15thJanuary, 2018** in his chamber **(Room No. 232-C, NirmanBhawan, New Delhi)** for opening of financial bids of the consulting firms for **the Assessment of Liveability in 116 cities.**

2. Kindly make it convenient to attend the aforesaid meeting.

15/1/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Tel No.-23063217

To

1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA.
2. Shri ShailendraVikram Singh, Director (IFD), MoHUA.
3. Shri Shiv Pal Singh, Director (AMRUT), MoHUA.
4. Shri Sajeesh Kumar N., Director (Smart Cities), MoHUA.
5. Shri Y. S. Awana, Deputy Secretary (NULM & CBUD), MoHUA.
6. PMU Team, CBUD, MoHUA.
7. M/s Deloitte Touche Tohmatsu India Private Limited
8. M/s Ipsos Research Private Limited

Copy for information to: PS to Joint Secretary (DAY-NULM & CBUD), MoHUA

Vijay Kumar <g.vijaykumar.moud@gmail.com>

Request for Proposal (RfP) for "Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India"

4 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Jan 15, 2018 at 12:14 PM
To: Parijat Chakraborty <Parijat.Chakraborty@ipsos.com>

Dear Parijat Chakraborty,

Greetings from Ministry of Housing and Urban Affairs..

This has a reference to the Request for Proposal (RfP) for "**Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India**" submitted by you.

The evaluation of your application alongwith other five applications have been completed and the World Bank have given their no objection to the evaluation.

As per clause 21.1 of Data sheet of Request for Proposal (RfP), the minimum technical score (St) required to pass is 75 (seventy five) points.

The Technical Score of your Consulting firm is as follows:

IPSOS RESEARCH PRIVATE LIMITED	India	93.70
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	

You or any authorized representative of your consulting firm is requested to be present at 4.00 pm on 15th January 2018 (Monday) in Room No. 232C, Nirman Bhavan, New Delhi for opening of the Financial Bids.

You are requested to acknowledge the e-mail and the give your conformity.

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
CBUD Division
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Smart City

SMART CITIES MISSION
Ministry of Housing and Urban Affairs, Government of India

Parijat Chakraborty <Parijat.Chakraborty@ipsos.com> Mon, Jan 15, 2018 at 12:32 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>

Thanks sir. I confirm attending the meeting today to open the financial bid.

Thanks and regards,

15/01/2018
03:58 pm.

Parijat Chakraborty| *Executive Director - Ipsos Public Affairs and Loyalty*

[illegible]

[illegible] Floor, Vipul Square
[illegible] Sushant Lok, Part-1
[illegible] – 122016, Haryana.
[illegible] 0124 4692400
[illegible] 91 0124 4692515

Government eProcurement System

Welcome : sajeesh.kr@gov.in
Last login : 28-Dec-2017 03:15 PM

Server Time
15-Jan-2018 02:42:10

Home Logout

eProcurement System Government of India

BID OPENING

Master Management
- Org Hierarchy Master

User Management
- My Organization Hierarchy
- My Accounts

Tender Management
- Create Tender / Tender List
- Publish Tender
- Published Tenders
- Seek Clarification
- Pre-bid Meeting
- Downloaded Tenders
- Bids Submitted Tenders
- Tender Status
- Archived Tenders
- Archived Clarification

Corrigendum
- Create Corrigendum
- Publish Corrigendum
- Published Corrigendum

Bid Opening
- Tenders to be Opened

Bid Evaluation
- Technical Evaluation
- Financial Evaluation
- Short fall Documents
- AOC/Empanelment
- Short Fall Documents History

Auction Management
- Tender cum Auction
- Publish Auction
- Published Auction
- Create Auction Corrigendum
- Publish Auction Corrigendum
- Published Auction Corrigendum
- Freeze Auction
- View Live Auction
- View Auction History

Bid Management
- Bid History

Survey Management
- FeedBack

Bid Opening ✦ Bid Openers

Tender Reference Number : K-14012/101(11)/2017- SCM-III(V)
Tender ID : 2017_MoUD_267064_1
Tender Title : Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Bid Opening Date & Time : 15-Jan-2018 04:00 PM
Bid Opener Type : 2 Of 4 (Minimum 2 bid openers should decrypt)

Back

S.No	Packet Name	Bid Id	Bidder Name	Decrypt Status
1	Finance	930372	Ipsos Research Pvt Ltd	
2	Finance	930377	Deloitte Touche Tohmatsu India L	

Proceed

(Ipsos)
Parijath chakrabarti

Meghna Aggarwal
(Deloitte)
Umang.

15/1/2018

Version:1.09.06 20-Dec-2017 (c) 2008 Tenders NIC, All rights reserved.

Deloitte

Deloitte Touche Tohmatsu India LLP
7th Floor, Building 10, Tower B,
DLF Cyber City Complex, DLF City Phase-II
Gurgaon - 122002, Haryana, India
Tel.: +91 (124) 679 2000
Fax : +91 (124) 6792012

15 January 2018

To

Under Secretary (CBUD Division),
Ministry of Housing and Urban Affairs,
Room No 232 C,
Nirman Bhawan,
Maulana Azad Road, New Delhi - 110108
Tel: +91 11 23063217
E mail: g.vijaykumar.moud@gmail.com

Sub: Authorization for attending the financial bid opening for "Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India"

Dear Sir,

This is to inform you that Mr. Shadab Zaheer and Meghna Aggarwal are hereby authorized to attend the financial bid opening of the above captioned subject as representatives of Deloitte Touche Tohmatsu India LLP on 15 January 2018.

Yours Sincerely,

On behalf of Deloitte Touche Tohmatsu India LLP

Anindya Mallick

Authorized Signatory
Anindya Mallick, Partner (Consulting)
Deloitte Touche Tohmatsu India LLP
Mobile: +91 9831175247
Email: anmallick@deloitte.com

Meghna Aggarwal

TENDER REF. NO.: K14012/101 (11)/2017-SCM-III (V)

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Financial Proposal

Umang 17/01

15/01/2018

Parijat Chakraborty - IPSOS

Meghna Aggarwal (Deloitte)

Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos Public Affairs
A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1,
Gurgaon – 122016, Haryana,

And

ATHENA INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited
#15, Arcot Street, T Nagar, Chennai 600017, Tamil Nadu. India

The Economist Intelligence Unit

The Economist Group Limited
(Sub-Consultant)

15/01

15/1/2018

Umang

Meghna Aggarwal

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15/01

16/1/2018

Umang.

Meghna Aggarwal

FIN 1:
Financial Proposal Submission Form

Umang

Meghna Aggarwal

Fin-1: Financial Proposal Submission Form

{New Delhi, 26th December 2017}

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for **INR 10,94,28,200 (INR Ten Crores Ninety-Four Lakhs Twenty-Eight Thousand and Two Hundred Only)**, excluding of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is INR 1,96,97,076 (INR One Crore Ninety-Six Lakhs Ninety-Seven Thousand & Seventy-Six Only) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution
We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Authorized Signature {In full and initials}: Parijat Chakraborty
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist
In the capacity of: Authorised signatory for the consortia
Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

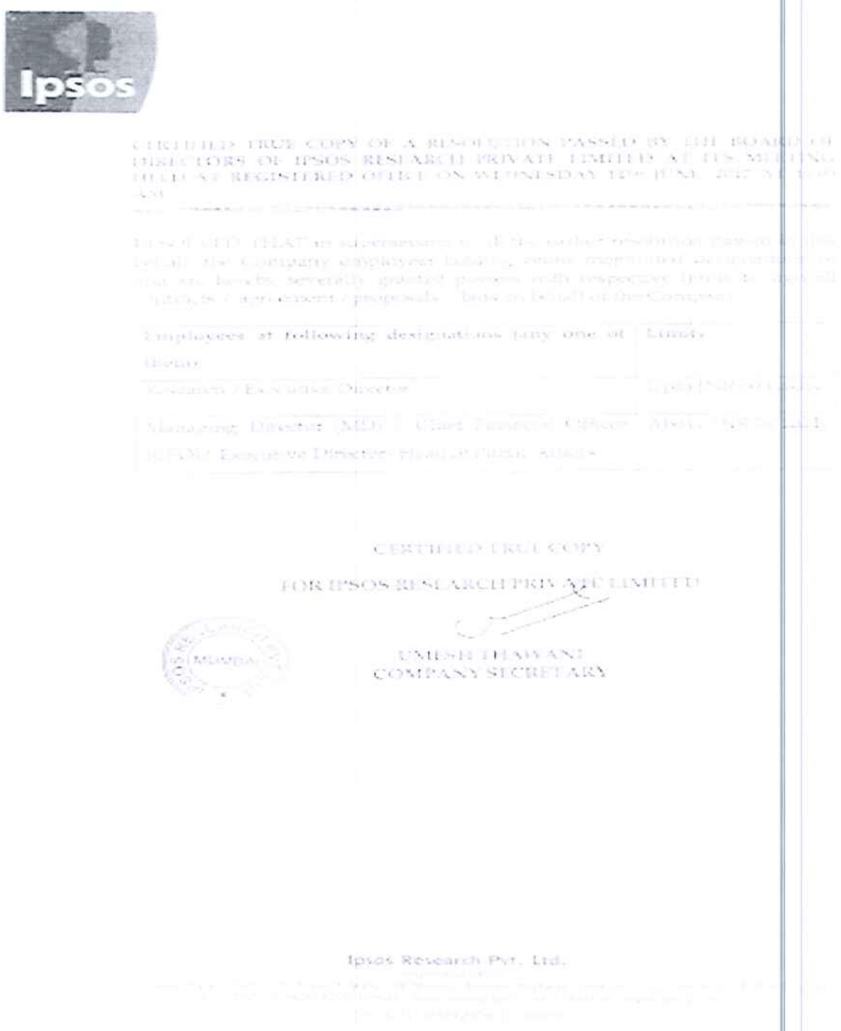
15/01

Umang - Meghna Aggarwal

Ipsos Authorisation

Power of Attorney

The proposal has been signed by Executive Director – head of public affairs authorized by board resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY 12th JUNE 2017 AT [illegible] AM

RESOLVED THAT in supersession of all the earlier resolution passed in this behalf, the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreements / proposals [illegible] on behalf of the Company.

Employees at following designations (any one of them)	Limits
Country / Executive Director	Upto INR [illegible]
Managing Director (MD) / Chief Financial Officer (CFO)/ Executive Director- Head of Public Affairs	Above INR [illegible]

CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

UMESH THAWANI
COMPANY SECRETARY

MUMBAI

Ipsos Research Pvt. Ltd.

Umang.

Meghna Aggarwal

Consortia's Partners - Authorisation- Athena Infonomics India Pvt. Ltd.

भारतीय गैर न्यायिक
एक सौ रुपये
Rs. 100
ONE HUNDRED RUPEES
रु. 100
भारत INDIA
INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

ARM 030644

Athena Infonomics India Pvt Ltd
Chennai 17

2016

Power of Attorney

Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project").

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project

Umang

Meghna Aggarwal

NOW THIS POWER OF ATTORNEY WITNESS THAT:

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

Umang

Meghna Aggarwal

FORM FIN 2:

Summary of Costs

Shakti Umang Meghna Aggarwal

Fin-2 – Summary of Costs

Item		Cost (INR)
Cost of the Financial Proposal		
(1) Remuneration		**7,20,33,500**
(2) Reimbursable		**3,73,94,700**
Total Cost of the Financial Proposal		**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded		
(i) GST		1,96,97,076
Total Estimate for Indirect Local Tax:		1,96,97,076

Imran

Umang.

13/01/2018

Meghna Aggarwal
(Deloitte)

FORM FIN 3:
Breakdown of Remuneration

Umang

Meghna Aggarwal

Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

Meghna Aggarwal

N-15	Tripti Sharma	Project Coordinator	Field	1122000	0.5	561000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	682000	4	2728000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	550000	10	5500000
Data Collection			Home	154000	30	4620000
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

Meghna Aggarwal

Sample Form

Consultant: Ipsos Research Pvt. Ltd. In Joint Venture with Athena Infonomics India Pvt. Ltd, and The Economist Intelligence Unit as the Sub-consultant
Country: India

Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Date: 27th December 2017

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:
(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;
(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;
(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and
(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

Ipsos Research Pvt. Ltd.
[Name of Consultant]

Signature of Authorized Representative Date

Name: Parijat Chakraborty

Title: Executive Director and Head of Public Affairs

Meghna Aggarwal

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

Meghna Aggarwal

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FORM FIN 4:
Breakdown of Reimbursable Expenses

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Meghna Aggarwal

Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

Umang. Meghna Aggarwal

	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
		State Level Workshops			
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
		National Level Workshop			
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
		City Level Meetings			
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**

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Meghna Aggarwal

	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

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Meghna Aggarwal

STATEMENT OF UNDERTAKING

We confirm to observe, in competing for and executing a contract, the Client country's (India) laws against fraud and corruption (including bribery).

Authorized Signature {in full and initials}: Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

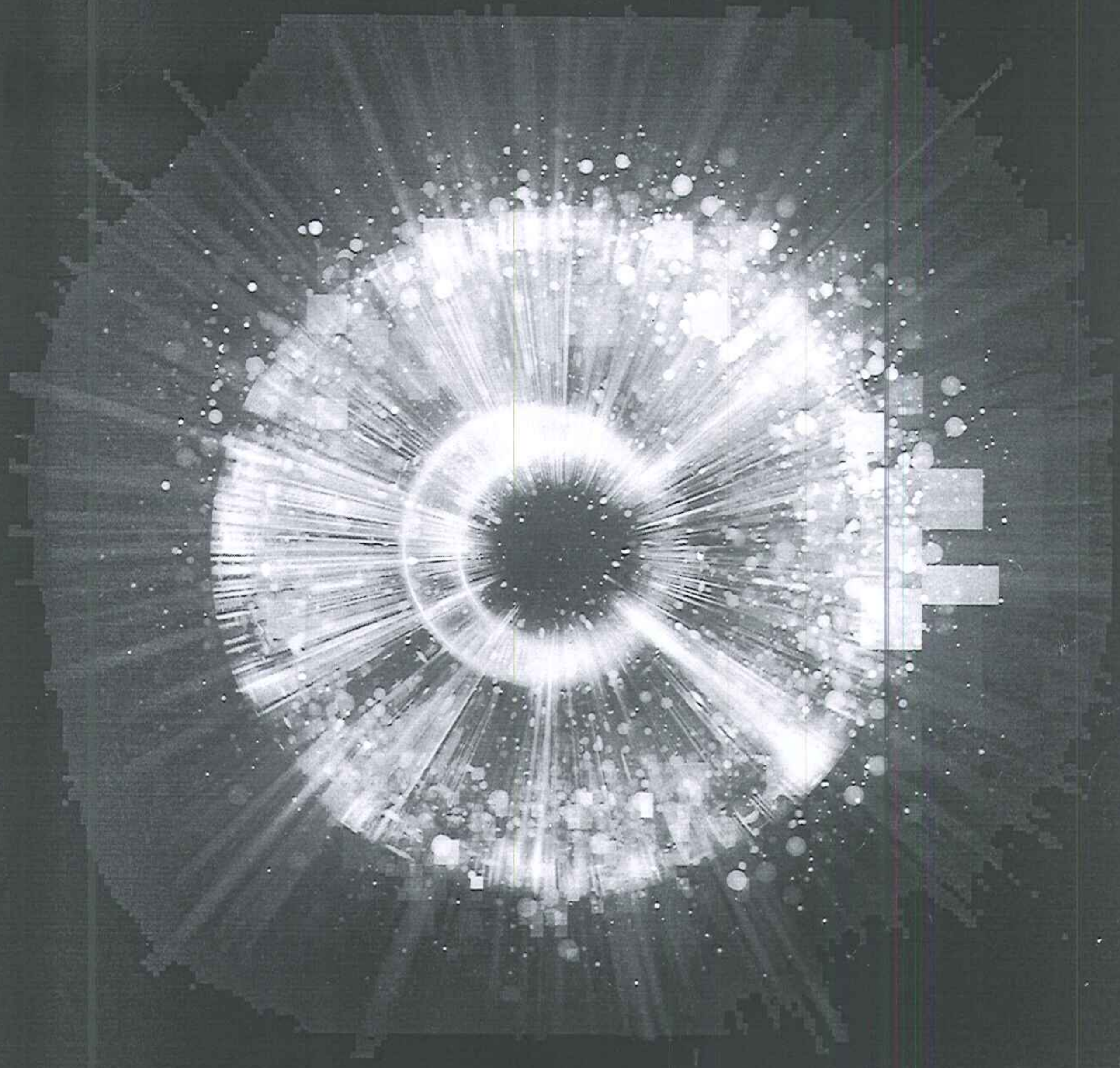
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

Umang

Meghna Aggarwal

Deloitte.



Assessment of Liveability Indices for 116 cities in India
Ministry of Housing and Urban Affairs (MoHUA)

RFP No. E3136811

Part 2: Financial proposal
Private and confidential
December 2017

15.01.18
Umang
15/01/2018
Meghna Aggarwal
(Deloitte)

Introduction

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FORM FIN-4: Breakdown of Reimbursable expenses 5

Umang

Meghna Aggarwal

Form FIN-1: Financial Proposal Submission form

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Meghna Aggarwal
(Deloitte)

Anindya Mallick

Deloitte

Deloitte Touche Tohmatsu India LLP
7th Floor, Building 10, Tower B
DLF Cyber City Complex
DLF City, Phase II
Gurgaon-122002
Haryana
India
Tel.: +91 (124) 6792000
Fax: +91 (124) 6792012

Gurgaon, 27th December 2017

To: G, Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi.
Phone numer: +91 (11) 2306 3217

Dear Sirs:

We, the undersigned, offer to provide the consulting services for "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India", in accordance with your Request for Proposal dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for the amount of Rupees Thirteen Crores Forty Lakhs Five Hundred and Forty Nine (INR 13,40,00,549), excluding all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is Rupees Two Crores Forty One Lakhs Twenty Thousand and Ninety Nine (INR 2,41,20,099) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Anindya Mallick

Authorized Signature {In full and initials}:

Name and Title of Signatory: **Anindya Mallick, Partner, Deloitte Touche Tohmatsu India LLP (DTTI LLP)**

In the capacity of Authorized Signatory

Address: DLF Cyber City Complex,
Tower B, DLF City Phase II,
7th Floor, Building 10,
Gurgaon (New Delhi) 122 002

E-mail: anmallick@deloitte.com

15.01.18

Rajesh

Umang

Meghna Aggarwal (Deloitte)

FORM FIN-2: Summary of costs

FORM FIN-2: Summary of Costs	
Item	**Cost (INR)**
Cost of the Financial Proposal	
Including:	
(1) Remuneration	5,68,05,293
(2) Reimbursables	7,71,95,256
Total Cost of the Financial Proposal:	**13,40,00,549**
Indirect Local Tax Estimates- to be discussed and finalized at the negotiation if the Contract is awarded	
GST (@18%)	2,41,20,099
Total Estimate for Indirect Local Tax	2,41,20,099

15·01·18

Anindya Mallick

Umang

Meghna Aggarwal

FORM FIN-3: Breakdown of Remuneration

FORM FIN-3: Breakdown of Remuneration

A. Remuneration

No.	Name	Position (as in TECH-6)	Location (C)	Person-month Remuneration Rate	Time Input in Person/ Month (from Tech-6)	Total Remuneration (INR)
	Key Experts					
K-1	Ravi Anand	Team Leader	[Home]	577500	2.5	14,43,750
			[Field}	577500	2.5	14,43,750
K-2	Shubham Gupta	Urban Management Specialist/ Planning Expert	[Home]	697394	2.5	17,43,486
			[Field}	697394	2.5	17,43,486
K-3	Sunil Pillai	Market Research Specialist	[Home]	462000	2.5	11,55,000
			[Field}	462000	2.5	11,55,000
K-4	Dr. Ramachandran	Statistician	[Home]	462000	2.5	11,55,000
			[Field}	462000	2.5	11,55,000
	Non- Key Experts					
N-1 - N-10	Zonal Team Leader (10 number)	Zonal Team Leader (10 number)	[Home]			0
			[Field}	519211	30	1,55,76,334
N-11 - N-20	Zonal Project Manager (10 number)	Zonal Project Manager (10 number)	[Home]			0
			[Field}	348790	30	1,04,63,687
N-21 - N-30	Zonal Field Support Senior (10 number)	Zonal Field Support Senior (10 number)	[Home]			0
			[Field}	295000	30	88,50,000
N-31 - N-40	Zonal Field Support Junior (10 number)	Zonal Field Support Junior (10 number)	[Home]			0
			[Field}	210000	30	63,00,000
N 41	IT/ Analytics Team Leader	IT/ Analytics Team Leader	[Home]	519211	3.62	18,79,544
			[Field}	519211	1	5,19,211
N 42	IT/ Analytics Senior Consultant	IT/ Analytics Senior Consultant	[Home]	268023	3.62	9,70,243
			[Field}	268023	1	2,68,023
N 43	IT/ Analytics Consultant	IT/ Analytics Consultant	[Home]	212939	3.62	7,70,839
			[Field}	212939	1	2,12,939
					TOTAL	**5,68,05,293**

15.01.18

Anindya Mallick

15/01

15/01/2018

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Meghna Aggarwal

FORM FIN-4: Breakdown of Reimbursable expenses

FORM FIN-4: Breakdown of Reimbursable Expenses

B. Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Amount in INR
1	Survey of the Cities	{per City}	4,35,000	116	5,04,60,000
2	Development of IT Portal	{lumpsum}			83,53,256
3	National, State, City Workshops/ Interactions/ Engagements/ Discussions	{lumpsum}			69,00,000
4	Airfare	{Trip}	12,000	400	48,00,000
5	Train fare	{Trip}	3,000	150	4,50,000
6	Per diem allowances	{per day}	2,500	2400	60,00,000
7	Reproduction of Reports	{per Reports}	1000	232	2,32,000
				Total Cost	**7,71,95,256**

15.01.18

Anindya Mallick

15/01

15/01/2018

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Meghna Aggarwal

Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see www.deloitte.com/about for a more detailed description of DTTL and its member firms.

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Deloitte Touche Tohmatsu India Private Limited (U74140MH1995PTC093339), a private company limited by shares, was converted into Deloitte Touche Tohmatsu India LLP, a limited liability partnership (LLP Identification No. AAE-8458),with effect from October 1, 2015.

15/11

Meghna Aggarwal

Umang

Minutes of the Meeting of Procurement Committee for opening of Financial Bids and final evaluation of bids for Assessment of Liveability Indices for 116 cities in India

The meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for opening of financial proposals and final combined technical and financial evaluation for the assignment of **Assessment of Liveability Indices for 116 cities in India** was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi. The technical evaluation by the procurement committee has been reviewed and approved by the World Bank as communicated vide email dated 12th January, 2018.

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD

The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	**93.70**
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	**77.60**
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Vasavi

Umang

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes)

Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS								
The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-								
T=0.80, and P=0.20								
Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ´ P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score.							
	Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)							
S(t) = Technical Scores of the bidder								
S(f) = Financial Score of the bidder								

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

Vasavi
(Vasavi Narla)
PMU (CBUD)

Umang
(Umang H Raina,)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Minutes of the Meeting of Procurement Committee for opening of Financial Bids and final evaluation of bids for Assessment of Liveability Indices for 116 cities in India

The meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for opening of financial proposals and final combined technical and financial evaluation for the assignment of **Assessment of Liveability Indices for 116 cities in India** was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi. The technical evaluation by the procurement committee has been reviewed and approved by the World Bank as communicated vide email dated 12th January, 2018.

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
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- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD

The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	93.70
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	77.60
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Umang

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

- **Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes)**
- **Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)**

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS

The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-

T=0.80, and P=0.20

Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ´ P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score. **Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)**							

S(t) = Technical Scores of the bidder

S(f) = Financial Score of the bidder

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

(Vasavi Narla)
PMU (CBUD)

(Umang H Raina,)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Gmail

Vijay Kumar <g.vijaykumar.moud@gmail.com>

Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

2 messages

STEP Admin <noreply@worldbankgroup.org> Tue, Jan 16, 2018 at 5:08 PM
Reply-To: noreply@worldbankgroup.org
To: "vsarda@worldbank.org" <vsarda@worldbank.org>
Cc: "pmmadan@worldbank.org" <pmmadan@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

G. Vijay Kumar - PMU CBUD Ministry of Urban Development has submitted Opening of Financial Proposals/Minutes for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS to the Bank for notification. Review is not required.

Dear Madam,

Please find attached herewith the minutes of meeting for opening of financial proposals and Form Fin 2 from two technically qualified bidders for your approval.

Best Regards..

G. Vijay Kumar

STEP System Users - Click here

Bank Users - Click here

Vasudha Thawakar <vsarda@worldbank.org> Wed, Jan 17, 2018 at 11:53 AM
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>

Cc: Payal Malik Madan <pmmadan@worldbank.org>, Radha Narayan <rnarayan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>, Debabrata Chakraborti <debu.chakraborti@gmail.com>, Jyoti Sriram <jsriram@worldbank.org>, "rgujral@ipeglobal.com" <rgujral@ipeglobal.com>, Ketan Kumar Vora <kkvora@ipeglobal.com>

Dear Mr. Kumar,

Please proceed with the negotiations and submit us the draft negotiated contract (DNC) for review. We shall review the DNC along with the financial proposal.

Thanks and Best,

Vasudha Thawakar

Senior Urban Development Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: STEP Admin [mailto:noreply@worldbankgroup.org]
Sent: Tuesday, January 16, 2018 5:09 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: Payal Malik Madan <pmmadan@worldbank.org>; Radha Narayan <rnarayan@worldbank.org>; g.vijaykumar.moud@gmail.com; Swayamsiddha Mohanty <smohanty1@worldbank.org>; pankaj.sinha88@nic.in
Subject: Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

[Quoted text hidden]

सत्यमेव जयते

No. K-14012/101(25)/2017-CBUD
Government of India
Ministry of Housing and Urban Affairs
CBUD Division

*****

Nirman Bhavan, New Delhi
Dated: **19th January 2018**

To
Shri. Parijat Chakraborty,
Executive Director and Head of Public Affairs,
M/s IPSOS Research Private Limited, 801, 8th Floor, Vipul Square, B-Block,
Sushant Lok, Part-1, Gurgaon-122016, Haryana.

Subject: Selection of M/s IPSOS Research Private Limited (lead) in consortium with M/s Athena Infonomics Private Limited and M/s The Economist Group Limited for assignment of Liveability Indices for 116 Cities in India- Issue of Letter of Intent Reg.

Sir,

This has a reference to your responses for the Request for Expression of Interest (REOI) issued by the Ministry on 8th September 2017 and the Request for Proposal (RFP) issued by the Ministry on 27th November 2017 regarding "**Selection of Consulting firm for the assignment of Liveability Indices for 116 Cities in India**" under Capacity Building for Urban Development project. On the basis of combined Technical and Financial evaluation of the bids, in consultation with the World Bank, this Ministry issues a **Letter of Intent (LoI)** to the consortium led by M/s IPSOS Research Private Limited to carry out the project activities mentioned in the RFP document. The total cost of the Financial Proposal is Rs. 10,94,28,200 (without applicable taxes).

2. You are requested to contact the concerned CBUD officials of the Ministry to complete the formalities on the project and further signing of the contract immediately.

3. You are also requested to send your acceptance to this Letter of Intent.

(Sanjay Kumar)
Joint Secretary to Government of India

No. K-14012/101(25)/2017-CBUD
Government of India
Ministry of Housing and Urban Affairs
CBUD Division

*****

Nirman Bhavan, New Delhi
Dated: **19th January 2018**

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Executive Director and Head of Public Affairs,
M/s IPSOS Research Private Limited, 801, 8th Floor, Vipul Square, B-Block,
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(Sanjay Kumar)
Joint Secretary to Government of India

Requirement of Funds:

Liveability Index Assessment - Estimated Budget

1	**Agency Costs**			
A	**National level team costs**			
a	**Human Resource for 7 months (Jul 2017 - Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.50	7	31.50
2	Survey and Sampling Specialist	3.00	7	21.00
3	Data Analytics and Indexing Specialist	3.00	7	21.00
4	Urban Transport Specialist	3.00	7	21.00
5	Environment Specialist	3.00	7	21.00
6	GIS Specialist	3.00	7	21.00
7	Data Entry Operators (4 nos.)	0.50	28	14.00
	Human Resource Costs		**Sub Total**	**150.50**
b	**Travel & related costs**	**Rate**	**Units**	**Amount (Lakh)**
	Team Lead+5 members airfare to 9 regional nodes once	0.15	54	8.10
	Accommodation for above for 2 days per trip	0.05	108	5.40
	Local Travel costs for 2 days each trip	0.03	54	1.62
	Miscellaneous and out of pocket expenses		lumpsum	0.50
	Travel & related costs		**Sub Total**	**15.62**
c	**Other Costs (reimbursible)**	**Rate**	**Units**	**Amount (Lakh)**
	Hardware & basic software requirements	1.5	10	15.00
	Workshops (9 at regional nodes and 3 at National level)	as per CCBP	12	42.00
	Report Editing & Printing (200 copies)	0.05	200	10.00
	Other Costs		**Sub Total**	**67.00**
	TOTAL National Team Costs for one year assessment (a+b+c)			**233.12**
B	**Assessment Costs for Cities aggregated at Regional level**			
a	**Remuneration**	**Rate/PM**	**No. of Months**	**Amount**
	Assessment Teams for Cities at Regional level	6.00	6	36.00
	Hardware & basic software requirements	1.50	6	9.00
			Sub Total	**45.00**
b	**Assessment costs (assuming avg. 13 cities per region)**	**Rate**	**Unit**	**Amount**
1	Travel airfare by 4 members to cities in region	0.15	52	7.80
2	Lodging Boarding for 2 days on shared basis in region	0.05	52	2.60
4	Local Travel per day	0.03	52	1.56

6	Survey & Lab Test Costs (assuming 15 indicators needing same)	0.50	195	97.50
7	Documentation & Misc. communciation costs		lumpsum	2.00
	Total Cost per region		**Sub Total**	**111.46**
	TOTAL Cost of City Assessment per region (a+b)			**156.46**
	Total Cost for City Level Assessment for 9 regions (covering all 116 cities)			**1408.14**
	Total Agency Cost (National + City assessment Teams) for 116 cities (A+B)			**1641.26**
2	**Monitoring & Project Management Team at NIUA**			
A	**Human Resource for 9 months (May 2017 Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.00	9	36.00
2	Urban Specialist (cross-sectoral)	2.50	9	22.50
3	Data Analytics, Statistics and Indexing Specialist	2.50	9	22.50
4	IT Prof/Software Engineer	2.50	9	22.50
5	Administrative Officer/Office Manager	1.50	9	13.50
	Total Human Resource Costs		**Sub Total**	**117.00**
B	**Other Costs (reimbursible)**			
1	Server & Software Licenses (incl. GIS)		lumpsum	20.00
2	Standard methodology & software development		lumpsum	100.00
3	Training on Software for National & Assessment Teams		lumpsum	130.00
4	Miscellaneous running costs of PMU team at NIUA	1.00	9	9.00
	Total Other Costs		**Sub Total**	**259.00**
	TOTAL Costs of Monitoring & Project Management Team at NIUA			**376.00**
	Total Cost of Assessment (Agency + NIUA) (1+2 above)			**2017.26**

Payment Schedule:

For NIUA:

30% advance

30% at the end of 3rd month,

30% at the end of 6th month,

10% at the end of the 9 months and releasing of the index

The payments will be based on Utilization certificates

For Agency: As per the terms set in the Terms of Reference (TOR) of the Request for Proposal

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. _______________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and M/s The Economist Group Limited.

Dated: ________________________

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ……..……….. day of the month of *January,2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar,
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** ***Mr. G.Vijay Kumar*** ***Under Secretary to the Government of India,*** ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
12.1	**Termination of Contract for Failure to Become Effective:**

	The time period shall be One Month
13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining

	nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of

	the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;
vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;
vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);
viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
    a. Database of aggregate data in the format as mutually agreed
    b. All raw data and data sheets;
    c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor’s Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor’s Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master’s Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master’s Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

Note: During Negotiation the above mentioned list of the cities is mutually agreed.

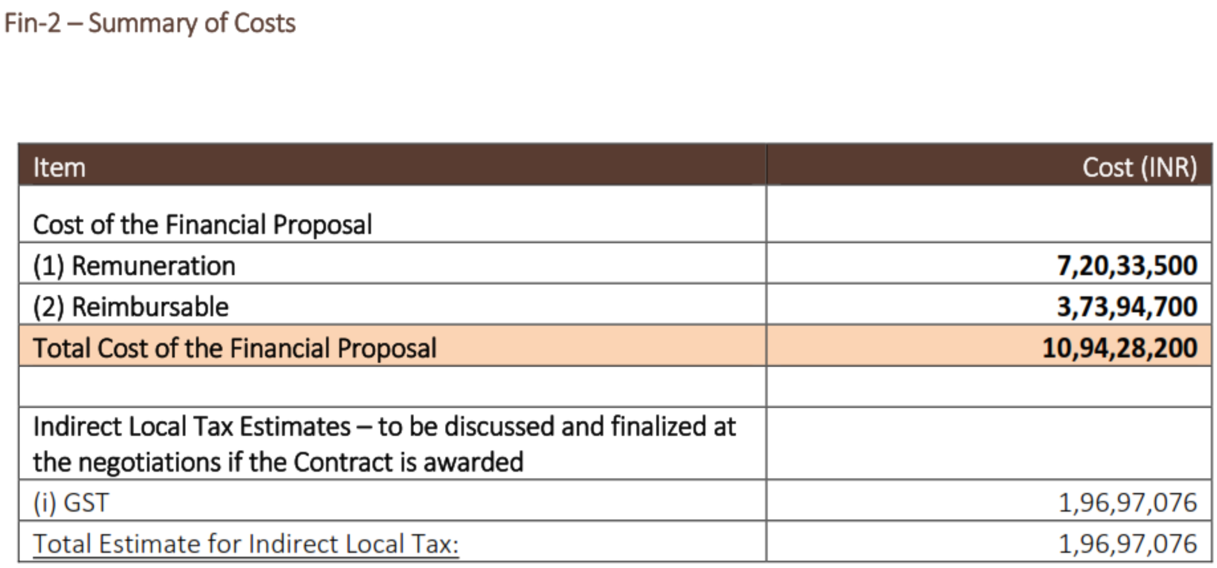
APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

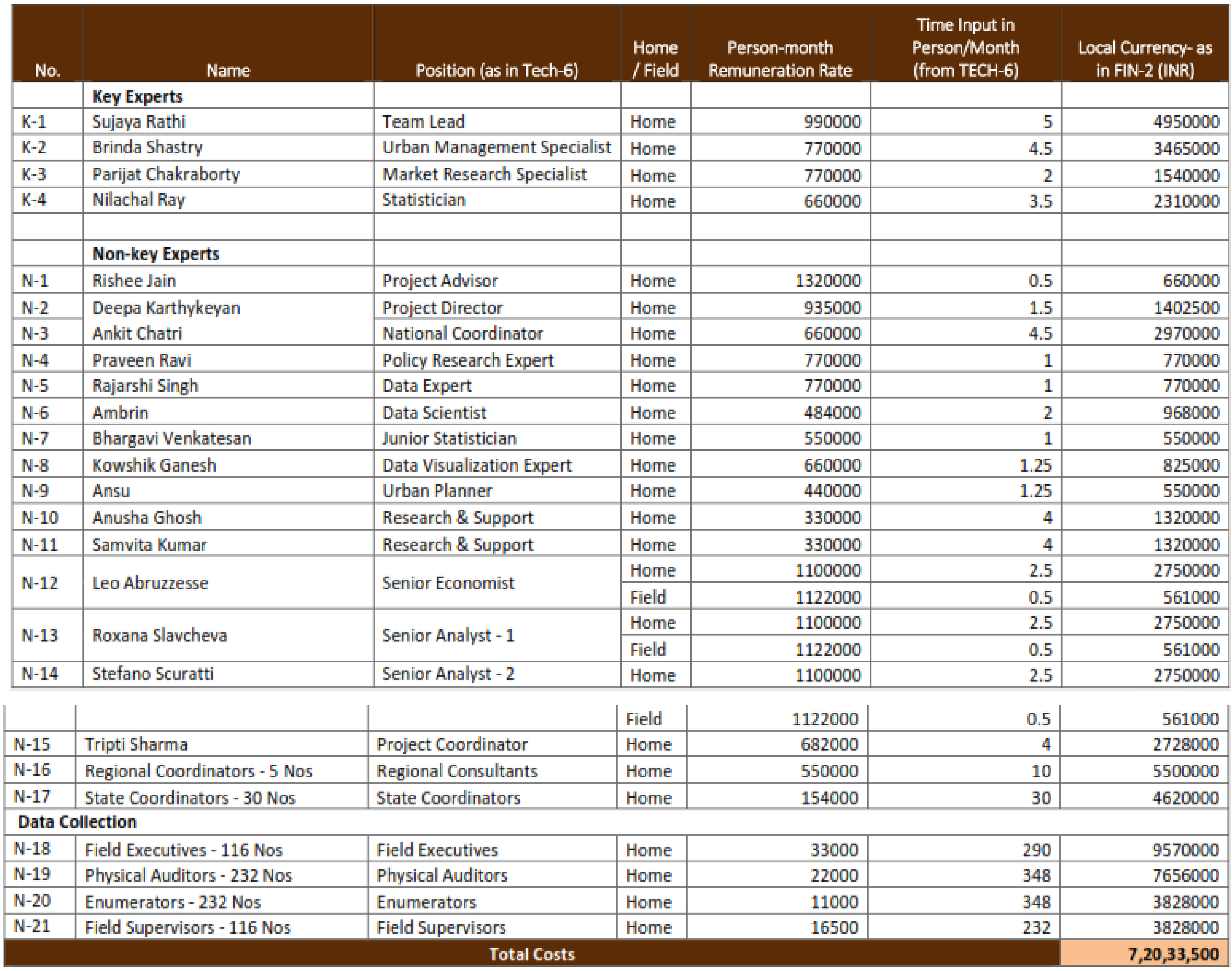
[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]



Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

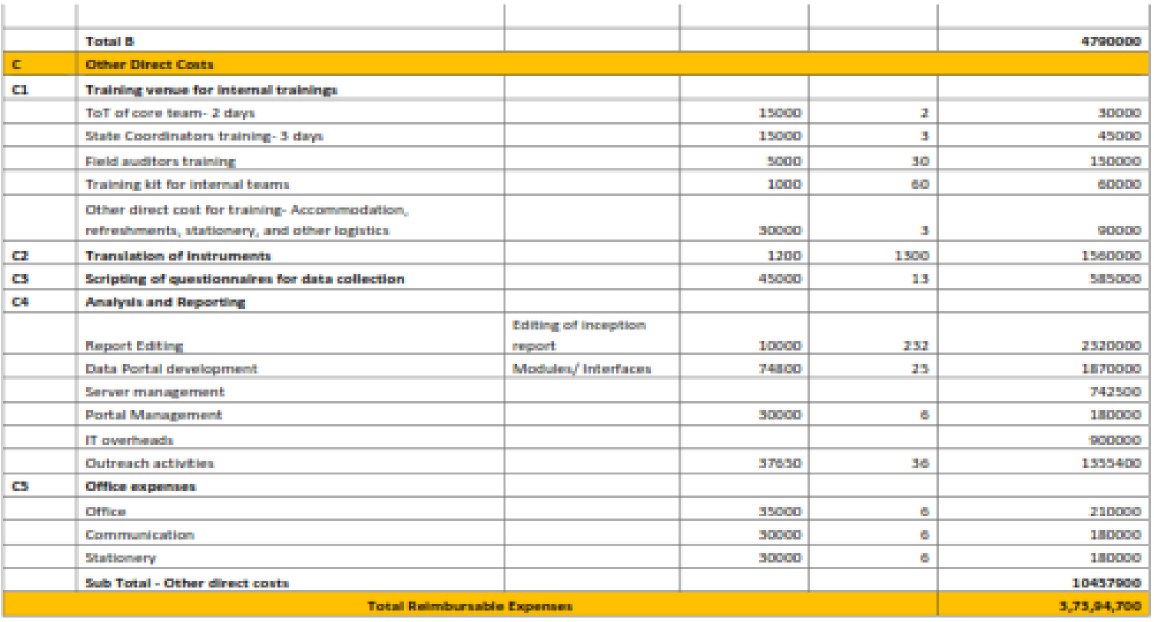
Fin-3 – Breakdown of Remuneration



No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzese	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-15	Tripti Sharma	Project Coordinator	Home	682000	4	2728000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	550000	10	5500000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**
	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
	State Level Workshops				
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
	National Level Workshop				
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
	City Level Meetings				
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**



	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
Total Reimbursable Expenses					**3,73,94,700**

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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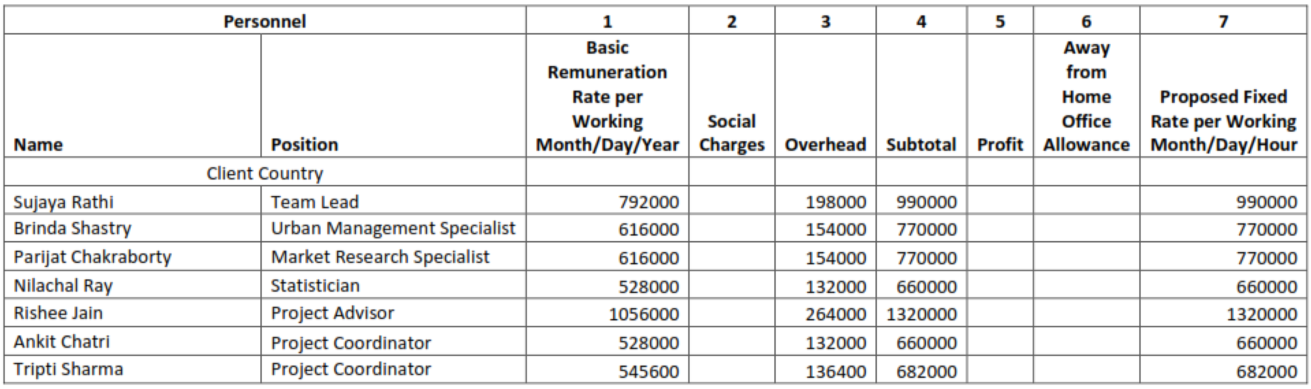
* If more than one currency, add a table

Signature Date

Name and Title:

Model Form - Consultant's Representations Regarding Costs and Charges



Personnel		1	2	3	4	5	6	7
Name	**Position**	**Basic Remuneration Rate per Working Month/Day/Year**	**Social Charges**	**Overhead**	**Subtotal**	**Profit**	**Away from Home Office Allowance**	**Proposed Fixed Rate per Working Month/Day/Hour**
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

Credit- No-4997-IN

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. 1554254

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and The Economist Group Limited.

Dated: 21st February 2018

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary

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जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary

IPSOS RESEARCH PVT. LTD.
DELHI
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IPSOS RESEARCH
DELHI

No. K-14012/101(25)/2017-CBUD
Government of India
Ministry of Housing and Urban Affairs
CBUD Division
*****

Nirman Bhavan, New Delhi
Dated: 19th January 2018

To
Shri. Parijat Chakraborty,
Executive Director and Head of Public Affairs,
M/s IPSOS Research Private Limited, 801, 8th Floor, Vipul Square, B-Block,
Sushant Lok, Part-1, Gurgaon-122016, Haryana.

Subject: Selection of M/s IPSOS Research Private Limited (lead) in consortium with M/s Athena Infonomics Private Limited and M/s The Economist Group Limited for assignment of Liveability Indices for 116 Cities in India- Issue of Letter of Intent Reg.

Sir,

This has a reference to your responses for the Request for Expression of Interest (REOI) issued by the Ministry on 8th September 2017 and the Request for Proposal (RFP) issued by the Ministry on 27th November 2017 regarding **"Selection of Consulting firm for the assignment of Liveability Indices for 116 Cities in India"** under Capacity Building for Urban Development project. On the basis of combined Technical and Financial evaluation of the bids, in consultation with the World Bank, this Ministry issues a **Letter of Intent (LoI)** to the consortium led by M/s IPSOS Research Private Limited to carry out the project activities mentioned in the RFP document. The total cost of the Financial Proposal is Rs. 10,94,28,200 (without applicable taxes).

2. You are requested to contact the concerned CBUD officials of the Ministry to complete the formalities on the project and further signing of the contract immediately.

3. You are also requested to send your acceptance to this Letter of Intent.

(Sanjay Kumar)
Joint Secretary to Government of India

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

IPSOS RESEARCH
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D:............

To

Mr. Vijay Kumar
Under Secretary
Ministry of Housing Affairs
Nirman Bhavan
New Delhi

Subject: Selection of M/s Ipsos Research Pvt. Ltd. (lead) in consortium with M/S Athena Infonmics India Pvt. Ltd. And M/s The Economist Group Ltd. For assignment of Liveability Indices for 116 cities in India- Issue of Letter of Intent Reg.

Ref: MoUHA's letter No K-14012/101 (25)/2017-CBUD dated 19th January 2018

Dear Sir,

Thank you for your letter dated 19th January 2018. We confirm our acceptance to the Letter of Intent and look forward to working with the Ministry on this project.

Further, with regard to discussion with officers of MoHUA , we confirm availability of all Key Experts included in our application/submission for the RFP on the above mentioned captioned subject. We confirm that the Key Experts are available to work on the project from 8th February 2018.

Name	Position
Sujaya Rathi	Team Leader
Brinda Sastry	Urban Management Specialist
Parijat Chakraborty	Market Research Specialist
Nilachal Ray	Statistican

Thank you.

Yours sincerely

Parijat Chakraborty

Executive Director and Head of Public Affairs

Ipsos Research Pvt/Ltd.

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

Ipsos Research Pvt. Ltd.
Registered Office :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
Tel. : +91 22 6620 0000 | Email : ipsos.india@ipsos.com | Website : www.ipsos.com
CIN : U74130MH2004PTC146904

Subject: Assessment of Liveability Indices- Confirming Availability for assignment starting 8th February 2018

I, the undersigned, confirm that I am available to undertake the assignment from 8th February 2018.

Thank you.

Yours sincerely

Sujaya Rathi

Sujaya Rathi

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing [illegible]
भारत सरकार

Subject: Assessment of Liveability Indices- Confirming Availability for assignment starting 8th February 2018

I, the undersigned, confirm that I am available to undertake the assignment from 8th February 2018.

Thank you.

Yours sincerely

Brinda Sastry

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार

Subject: Assessment of Liveability Indices- Confirming Availability for assignment starting 8th February 2018

I, the undersigned, confirm that I am available to undertake the assignment from 8th February 2018.

Thank you.

Yours sincerely

Nilachal Ray

Nilachal Ray

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार

Subject: Assessment of Liveability Indices- Confirming Availability for assignment starting 8th February 2018

I, the undersigned, confirm that I am available to undertake the assignment from 8th February 2018.

Thank you.

Yours sincerely

Parijat Chakraborty

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

सत्यमेव जयते

Certificate No.	: IN-DL87546173721194Q
Certificate Issued Date	: 13-Feb-2018 10:56 AM
Account Reference	: IMPACC (IV)/ dl857003/ DELHI/ DL-DLH
Unique Doc. Reference	: SUBIN-DLDL85700378377133449466Q
Purchased by	: IPSOS RESEARCH PVT LTD
Description of Document	: Article 5 General Agreement
Property Description	: Not Applicable
Consideration Price (Rs.)	: 0 (Zero)
First Party	: IPSOS RESEARCH PVT LTD
Second Party	: MINISTRY OF HOUSING AND URBAN AFFAIRS GOVT OF IND
Stamp Duty Paid By	: IPSOS RESEARCH PVT LTD
Stamp Duty Amount(Rs.)	: 100 (One Hundred only)

Please write or type below this line

Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made on the 21st day of the month of *February, 2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium with M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

G. VIJAY KUMAR

DELHI

Statutory Alert:

1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

WHEREAS

(a) The Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:
      Appendix A: Terms of Reference
      Appendix B: Key Experts
      Appendix C: Breakdown of Contract Price

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
   (a) The Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) The Client shall make payments to the Consultant in accordance with the provisions of the Contract.

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

G. VIJAY KUMAR

Mr. G.Vijay Kumar
Under Secretary,
Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty.
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead).

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

G. VIJAY KUMAR
Under Secretary
DELHI

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

G. VIJAY KUMAR
Under Secretary

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC**.

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SCC have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the SCC, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

G. VIJAY KUMAR
Under Secretary

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be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

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necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

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(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

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inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. **Cessation of Services**

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. **Payment upon Termination**

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. **Standard of Performance**

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

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approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

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b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC**, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

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25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

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Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

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31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

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responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A**) at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC**. The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

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pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A.**

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

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Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

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II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

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(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

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III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention: Mr. G.Vijay Kumar** Under Secretary,Ministry of Housing and Urban Affairs **Facsimili:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty,** Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** *Mr. G.Vijay Kumar* *Under Secretary,* ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty,** Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
11.1	No additional provisions
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**

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13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert. Date of commencement of service is **8th Feb2018**
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks (i.e.from 8/2/2018 to 28/6/2018)**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

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23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client.**
32.1 (a) through (e)	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* **exclusive of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**
39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.**

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41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is: Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each

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appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi*

(c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.

Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.

2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996.

3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of:

(a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or

(b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or

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	(c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

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APPENDIX-A

Terms of Reference

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IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

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5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the '**Assignment**') across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

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  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
  b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
  c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
  a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
  b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
  c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;
vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;
vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);
viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

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ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format as mutually agreed
  b. All raw data and data sheets;
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

डॉ. विजय कुमार/Dr. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India

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7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

* Timelines for subsequent years will be as decided by MoHUA

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7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

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7.7 *Core Team (CV to be evaluated)*

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

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7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

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Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

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Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

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Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

G. VIJAY KUMAR
Under Secretary

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

……

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

IPSOS RESEARCH PVT
DELHI

FORM TECH 1:

Technical Submission Proposal Form

TECH-1: TECHNICAL PROPOSAL SUBMISSION FORM

New Delhi, 26th December 2017

To:

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

We, the undersigned, offer to provide the consulting services for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Proposal.

We are submitting our Proposal a joint venture with: Ipsos Public Affairs with legal address at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India as lead member and Athena Infonomics India Private limited with legal address at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, India as Associate Member. We have attached a copy of our letter of intent to form a joint venture signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

And

We are submitting our Proposal with the following firms as Sub-consultants: The Economist Group Limited having its registered office at 20 Cabot Square, London, E14 4QW, United Kingdom

We hereby declare that:

a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.
b) Our Proposal shall be valid and remain binding upon us for 90 days (the period of time specified in the Data Sheet, Clause 12.1).
c) We have no conflict of interest in accordance with ITC 3.
d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.
e) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.]
f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

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DELHI

those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than 15th January (the date indicated in Clause 30.2 of the Data Sheet).

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature (In full and initials): Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

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Letter of Intent to form a Joint Venture

Ipsos

ATHENA
INFONOMICS

20th December 2017

To,

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.

Dear Sir,

Sub: Letter of intent for submission of a proposal as joint venture for the opportunity titled "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India"

We, Ipsos Research Private Ltd. having its registered office at 1701, 17th Floor, Lotus Corporate Park, Off Western Express Highway, Goregaon East, Mumbai and Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, hereby declare the intention to jointly bid for the subject Project in accordance with the terms and conditions of the RFP Document with Ipsos Research Private Ltd. as the Lead Member.

We further confirm that each party shall be jointly and severally liable for the joint venture and its objective. This Letter of Intent (LOI) is executed and issued as of the date of this letter and sets forth the mutual intent and limited agreement of the undersigned.

Sincerely,

For Ipsos Research Private Limited

Parijat Chakraborty,
Executive Director

For Athena Infonomics India Private Limited

Vijay Bhalaki, Director and Co-Founder

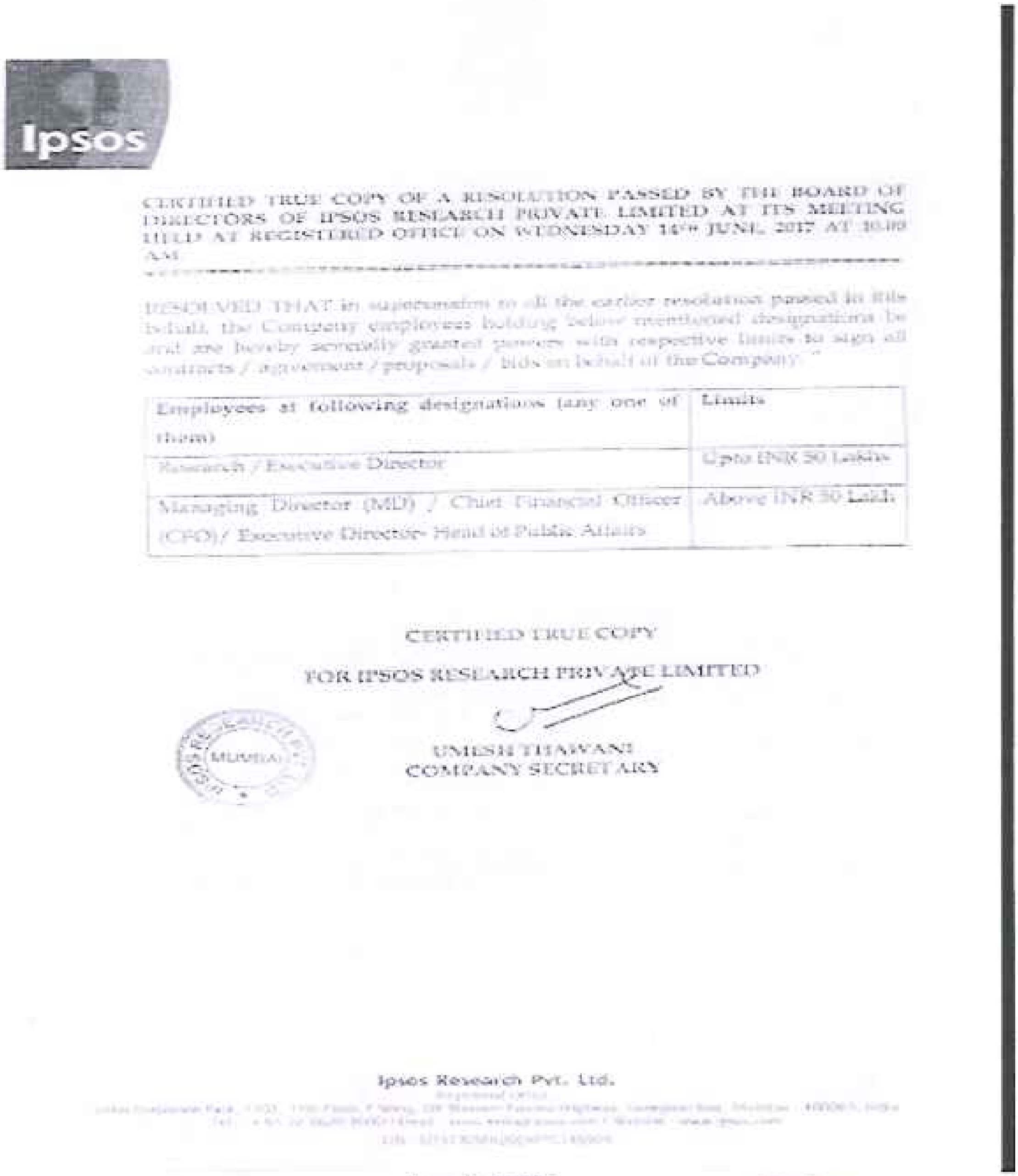
जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

Power of Attorney to sign the Proposal

Ipsos authorisation

Power of Attorney

The proposal has been signed by Executive Director – Head of Public Affairs authorized by Board Resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY 14TH JUNE, 2017 AT 10.00 AM

RESOLVED THAT in supersession to all the earlier resolution passed in this behalf, the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreement / proposals / bids on behalf of the Company."

Employees at following designations (any one of them)	Limits
Research / Executive Director	Upto INR 50 Lakhs
Managing Director (MD) / Chief Financial Officer (CFO) / Executive Director- Head of Public Affairs	Above INR 50 Lakh

CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

MUMBAI

UMESH THAWANI
COMPANY SECRETARY

Ipsos Research Pvt. Ltd.
Registered Office

KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

DELHI

JV partner Athena Infonomics POA authorising IPSOS Public Affairs as Authorised Signatory – First Page

भारतीय गैर न्यायिक
एक सौ रुपये
Rs. 100
रु. 100
ONE HUNDRED RUPEES
भारत INDIA
INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

10080
02/06/17

Athena Infonomics India Pvt Ltd
Chennai 17

2016

Power of Attorney

Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project").

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project.

DELHI

VIJAY KUMAR
Under Secretary

JV partner Athena Infonomics POA authorising Ipsos Public Affairs as Authorised Signatory – Last Page

NOW THIS POWER OF ATTORNEY WITNESS THAT:

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED
M. MANOKARAN, B.A., B.L.,
ADVOCATE & NOTARY
COMMISSIONER OF OATHS
[illegible] NEW LAW CHAMBERS, IV FLOOR,
HIGH COURT, CHENNAI-600 104.

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

IPSOS RESEARCH PVT. LTD.
DELHI

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

FORM TECH 2:
Consultant's Organisation and Experience

TECH-2: CONSULTANT'S ORGANIZATION AND EXPERIENCE

A - Consultant's Organisation

About the Joint Venture and Sub Consultant

Ipsos India's Public Affairs team, together with Athena Infonomics India Private Limited, and Sub Consultant The Economist Intelligence Unit Limited are pleased to submit their request for proposal for providing consulting services for Assessment of Liveability Indices for 116 cities in India by the Ministry of Housing and Urban Affairs. As a consortium, we possess a comprehensive understanding of national and global learnings from liveability studies. Collectively, we have carried out over 10,000+ studies in urban areas on a range of subjects, including: Infrastructure and Public Services (showcasing a blend of global and national perspectives on Urban Development and Governance), Data Analytics, Indices creation, Monitoring and Evaluation and undertaking large scale quantitative and qualitative surveys. The consortium possesses vast knowledge and experience of using a wide range of data collection and analysis, both primary and secondary data. Our data collection methods range from PAPI (Pen and Paper Interview), CATI (Computer Assisted Telephonic Interview), CAPI (Computer Assisted Personal Interview), rapid ethnographies, mobile based surveys, stakeholder consultations, third party audits of infrastructure, participatory assessment methods, and workshops:

- **Ipsos (Lead Member):** Ipsos has a long-held reputation of carrying out surveys that capture citizen perceptions. It has a pan India presence (22 offices in strategic locations), accompanying infrastructure (2800+ tablets for digital data collection), human resource (3500 investigators familiar with language, geography, and experienced in data collection), and the technical and managerial capability (presence of a strong analytics team of 30+ staff, 300+ researchers) in India to deliver this assessment according to global standards. Their technical expertise includes research design, probability sampling procedures, survey instrument, design survey management, qualitative methodologies and using technological innovations to ensure timeliness, efficiency and quality of the data collected.

- **Athena Infonomics (Associate Member):** Athena Infonomics employs rigorous quantitative and qualitative assessments applying state-of-the-art tools and methodologies from social science and statistics to answer urban governance challenges. Its portfolio of tools and methods include: qualitative comparative assessment, cost benefit and cost effectiveness analysis, experimental methods, participatory impact assessments, systems assessment tools, social impact measurement tools, spatial data analysis, Computer Assisted Personal Interviewing (CAPI), online and offline survey implementation among others.

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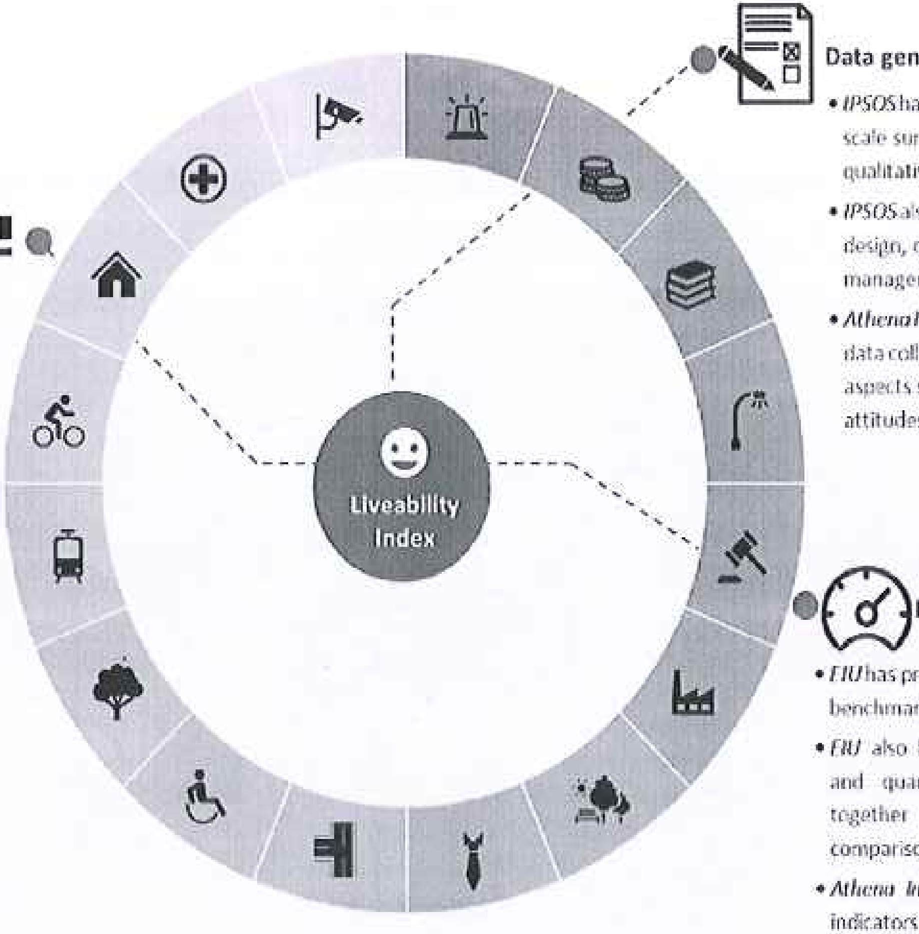
Under Secretary
Ministry of Housing and Urban Affairs

- **The Economist Intelligence Unit (Sub Consultant):** The Economist Intelligence Unit possesses technical expertise in economic, political and social demographic forecasting, bespoke modelling and scenario analysis, country and city forecasting and location benchmarking.

The key strengths of our submission as partners are summarised in the table below.

Knowledge of Thematic area	Ipsos	AIIPL	EIU
Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	▨	▨	▨
Large scale projects for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	▨	▨	▨
Experience in implementing urban studies in the areas of water, health, education, transportation etc.	▨	▨	▨
Data Interoperability & Policy Convergence		▨	▨
Experience of Applicant in development of indices, preparation of national/international reports		▨	▨
Strong Market Research Infrastructure & Resource Network	▨		
Digital data collection- use of tablets and mini laptops	▨	▨	
In house team of statisticians and analysis managers and executives	▨	▨	▨
Quality Assurance processes	▨	▨	▨
Global Outreach	▨		▨
Strategic Branding			▨

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary



Data generation

- *IPSOS* has vast experience undertaking large scale surveys (both quantitative and qualitative) across multiple sectors
- *IPSOS* also has expertise in advanced survey design, data collection and data management
- *Athena Infonomics* also specializes in large data collection including behavioural aspects such as satisfaction, perception attitudes etc.

Indicator development

- *EIU* has proprietary methodologies for benchmarking and indexing
- *EIU* also has strong expertise in qualitative and quantitative data, and weighting it together to conduct multi-dimensional comparisons
- *Athena Infonomics* specializes in developing indicators using a minimalistic data approach

Data analysis and Management

- *Athena Infonomics* has the technical expertise in quantitative and qualitative data analysis, data management
- *Athena Infonomics* also bring in the capacity to deliver integrated services all through a project value chain, including data collection, information analysis, capacity building and evaluation
- *IPSOS* specialises in CAPI, CATI, Rapid ethnographies, mobile based surveys, etc.

Dissemination through Media

- EIU has developed dissemination platform called "The Hub" @ Economist
- Engage with international and national media

VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

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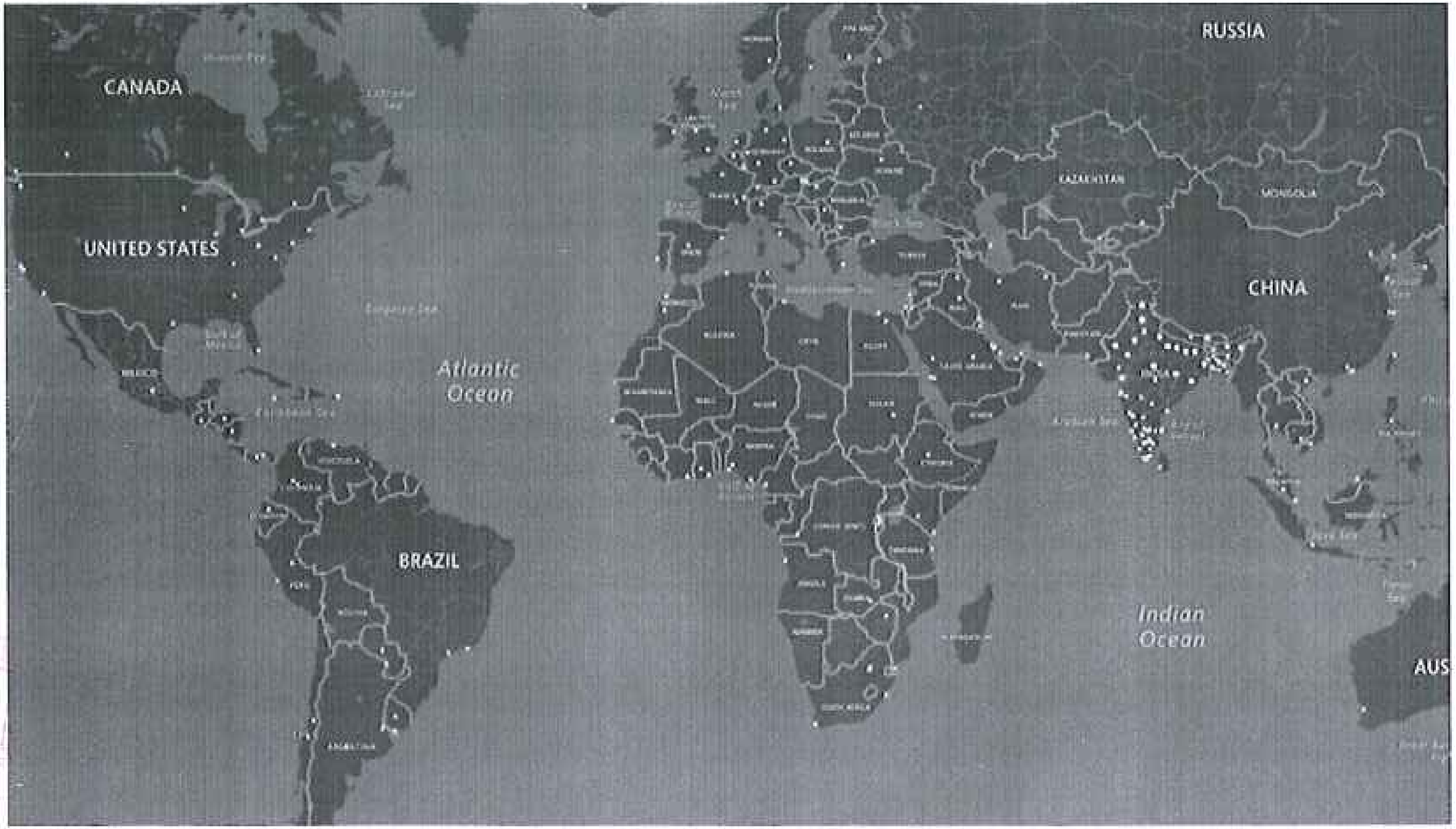
The global footprint of the consortium (Joint Venture and Sub Consultant) is presented below:


CANADA
UNITED STATES
Atlantic
Ocean
BRAZIL
RUSSIA
KAZAKHSTAN
MONGOLIA
CHINA
Indian
Ocean
AUS

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

Ipsos Research Private Limited – Lead Member

Ipsos is the third largest survey-based market research company in the world. Ipsos Public Affairs is a specialized unit (WSBL) of Ipsos and focuses exclusively on social and development research. Ipsos is also rated as the second most innovative market research company per the GRIT Report 2017.

Ipsos Public Affairs teams around the world conduct research on public policy issues and on the attitudes and behaviors of citizens and consumers. Ipsos Public Affairs in India is organized around the two major disciplines: Social and Developmental Research and Corporate Reputation. As part of their social research and evaluation specialization, they have undertaken more than 300+ research studies in India, including quantitative, qualitative, and participatory research over 17 + years of their operations in India. Generating new hypotheses and exploring landscapes with a relevant lens is key to any exploratory exercise and program's success. Thus, with its strong and experienced team, Ipsos Public Affairs India have delivered high quality outputs to its clients in various domains. These outputs not only validated the true situation on ground but helped client build and test various hypothesis which they were unaware of at the designing stage. Ipsos Public Affairs India's technical expertise in Baseline, Midline and End Line Studies, Participatory Rural Research, Mind Mapping, In–Depth Interviews, ethnographies, Exploratory and Formative Research, Communication Designing and Evaluation studies etc. have been use in different contexts to bring out actionable insights. Thematic areas of its experience include Public Health, Water, Sanitation & Hygiene (WASH), Education, Gender etc.

Ipsos Public Affairs India has extensive experience of working with the central and state ministries, government departments and national and international non-governmental organizations in the social and international development sector.

Ipsos Public Affairs India provides clients with information that helps them understand how they can build efficient and effective policies, programs, communications strategies, and marketing initiatives. In India, Ipsos Public Affairs has worked on a range of social policy issues that includes public health, WASH, education, gender, governance, micro finance, using quantitative survey methods, qualitative and participative approaches, and mixed methods. Ipsos is an ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISO 20252:2012[1]

We have invested significantly in digital data collection mode and have transitioned from pen and paper mode to CAPI. Over 90% of our data collection is CAPI (Computer Aided Telephonic Interviews). The

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[1] Please refer Annexure 1.

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India

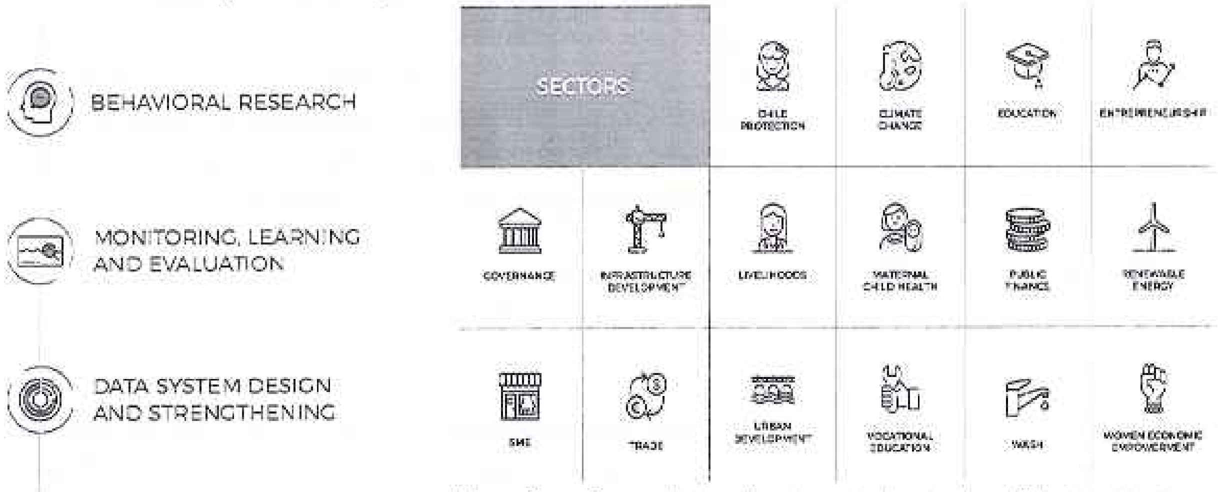
DELHI

GPS and voice recording facility supplemented with an independent Quality Assurance team which optimises the quality assurance checks on every survey.

Athena Infonomics India Private Limited – Associate Member

Athena Infonomics is a research and consultancy firm with a strong focus on bringing an analytical approach to solving development and inclusive growth issues. Athena lies at the intersection of the public and private sector, seeking to catalyse multi-stakeholder approaches for solving some of the most challenging problems of developing nations.

Athena distinguishes itself through an unflinching dedication to leveraging cutting-edge research methods and tools for modelling phenomenon and deriving solutions. Conceptual depth, analytical rigor and holistic multidisciplinary approaches characterize its solutions. Proactively engaging across the expansive and complex stakeholder's platforms of Public, Corporate and Community in delivering solutions for robust policies, strengthening institutions, enhancing market linkages, optimizing stakeholder capacity and fostering innovative partnerships

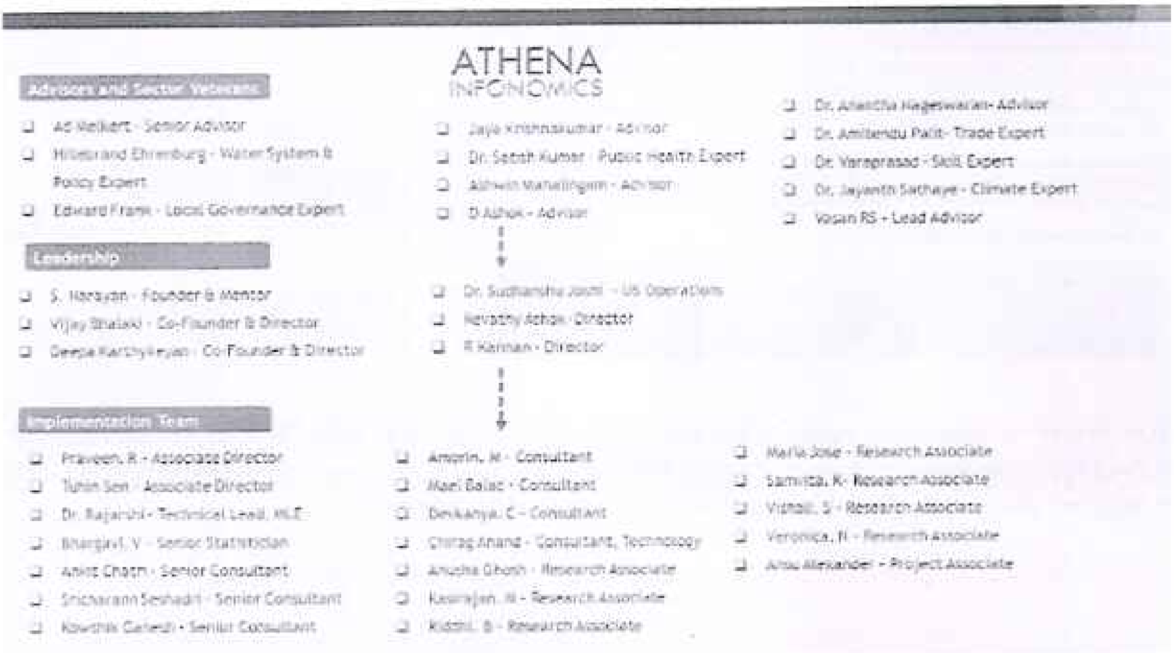

BEHAVIORAL RESEARCH
MONITORING, LEARNING AND EVALUATION
DATA SYSTEM DESIGN AND STRENGTHENING
SECTORS
CHILD PROTECTION
CLIMATE CHANGE
EDUCATION
ENTREPRENEURSHIP
GOVERNANCE
INFRASTRUCTURE DEVELOPMENT
LIVELIHOODS
MATERNAL CHILD HEALTH
PUBLIC FINANCE
RENEWABLE ENERGY
SME
TRADE
URBAN DEVELOPMENT
VOCATIONAL EDUCATION
WASH
WOMEN ECONOMIC EMPOWERMENT

Urban Experience: Athena's strength lies in its ability to use a combination of analytical tools and sustainable approaches to unlock patterns from data assets to drive improvements in urban design and sustainable delivery of services. Athena's expertise is in developing inter-disciplinary analytical tools and solution pathways for multi-dimensional challenges, across stakeholder groups, towards providing sustainable and implementable solutions. Its approach is designed to enable planners and administrators to quickly comprehend what needs to be done to advance urban and sustainable design and service quality for their citizens.

IPSOS RESEARCH PVT. LTD.
DELHI

Dr. S. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

Athena's Organisational structure is represented Senior Advisors and Sector Veterans, followed by its Leadership and supported by a research and solution driven Implementation team.


ATHENA
INFONOMICS

Advisors and Sector Veterans

- ❑ Ad Melkert - Senior Advisor
- ❑ Hillebrand Ehrenburg - Water System & Policy Expert
- ❑ Edward Frank - Local Governance Expert
- ❑ Jaya Krishnakumar - Advisor
- ❑ Dr. Satish Kumar - Public Health Expert
- ❑ Ashwin Mahalingam - Advisor
- ❑ D Ashok - Advisor
- ❑ Dr. Ananthа Nageswaran- Advisor
- ❑ Dr. Amitendu Palit- Trade Expert
- ❑ Dr. Varaprasad - Skill Expert
- ❑ Dr. Jayanth Sathaye - Climate Expert
- ❑ Vasan RS - Lead Advisor

Leadership

- ❑ S. Narayan - Founder & Mentor
- ❑ Vijay Bhalaki - Co-Founder & Director
- ❑ Deepa Karthykeyan - Co-Founder & Director
- ❑ Dr. Sudhamshu Joshi - US Operations
- ❑ Revathy Ashok - Director
- ❑ R Kannan - Director

Implementation Team

- ❑ Praveen. R - Associate Director
- ❑ Tuhin Sen - Associate Director
- ❑ Dr. Rajarshi - Technical Lead, MLE
- ❑ Bhargavi. V - Senior Statistician
- ❑ Ankit Chatri - Senior Consultant
- ❑ Sricharann Seshadri - Senior Consultant
- ❑ Kowshik Ganesh - Senior Consultant
- ❑ Amorin. M - Consultant
- ❑ Mael Balac - Consultant
- ❑ Devkanya. C - Consultant
- ❑ Chirag Anand - Consultant, Technology
- ❑ Anusha Ghosh - Research Associate
- ❑ Kavirajan. M - Research Associate
- ❑ Kiddu. B - Research Associate
- ❑ Maria Jose - Research Associate
- ❑ Samvita. K- Research Associate
- ❑ Vishali. S - Research Associate
- ❑ Veronica. N - Research Associate
- ❑ Anu Alexander - Project Associate

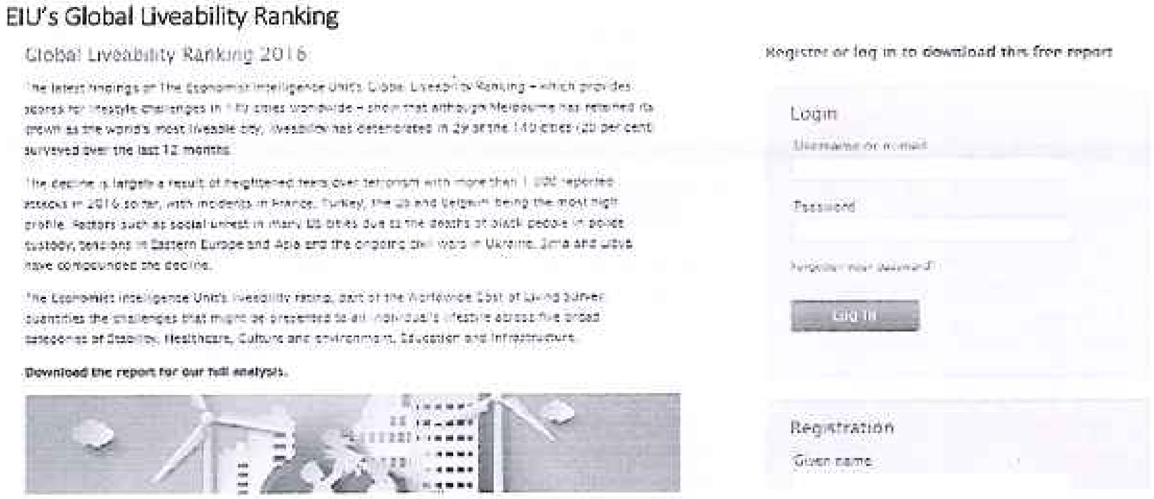
The Economist Group Limited – Sub Consultant

The Economist Group is the leading source of analysis on international business and world affairs. They deliver information through a range of formats, from newspapers and magazines to conferences and electronic services.

What ties Economist together is the objectivity of their opinion, the originality of their insight and their advocacy of economic and political freedom around the world.

The Economist Intelligence Unit (EIU) is the research and analysis division of The Economist Group and the world leader in global business intelligence. Its extensive international reach and unfettered independence make it the most trusted and valuable resource for international business throughout the world. To meet the changing needs of today's organisation, the Economist Intelligence Unit is uniquely able to deliver its analysis online or in print, via webcast or face-to-face, through subscription services or custom research. EIU has pioneered the design and development of the Worldwide Cost of Living Index and the Global Liveability Index. A snap shot of the EIU Global Liveability index is presented below:

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
IPSOS RESEARCH
DELHI



EIU's Global Liveability Ranking

Global Liveability Ranking 2016

The latest findings of The Economist Intelligence Unit's Global Liveability Ranking – which provides scores for lifestyle challenges in 140 cities worldwide – show that although Melbourne has retained its crown as the world's most liveable city, liveability has deteriorated in 24 of the 140 cities (20 per cent) surveyed over the last 12 months.

The decline is largely a result of heightened fears over terrorism with more than 1,000 reported attacks in 2016 so far, with incidents in France, Turkey, the US and Belgium being the most high profile. Factors such as social unrest in many US cities due to the deaths of black people in police custody, tensions in Eastern Europe and Asia and the ongoing civil wars in Ukraine, Syria and Libya have compounded the decline.

The Economist Intelligence Unit's liveability rating, part of the Worldwide Cost of Living survey, quantifies the challenges that might be presented to an individual's lifestyle across five broad categories of Stability, Healthcare, Culture and environment, Education and Infrastructure.

Download the report for our full analysis.

EIU's research capabilities range from economics to gender, and from finance to energy and technology. They conduct research through interviews, regulatory analysis, quantitative modelling and forecasting, and display the results via interactive data visualisation tools.

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जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

B - Consultant's Experience

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
Ipsos Market Research				
February 2016 - December 2016 (Wave 1)	Assignment name: Implementation of the EIB Group survey of investment and investment finance (Wave 1) Brief description of main deliverables: The EIB Group survey on investment and investment finance is an EIB Group initiative with the purpose of collecting data on the corporate investment environment in the countries of the EU-28 by means of an annual representative and a scientifically sound survey with the senior management of non-financial corporates in the EU. Output: Ipsos has delivered the first wave of the 3-year longitudinal survey. As part of the contract, Ipsos delivered a mixed-mode data collection design in that 12 300 NFCs undergo a 15-minute telephone (CATI) interview on their general investment attitudes and behaviour, and if they plan to undertake investment activities in the coming year they are invited to participate in an online follow-up survey. If the company consents, they are emailed a link to a 10-minute discrete choice online survey where they are asked to	Name of Client: The European Investment Bank Country of Assignment: 28 European Union Countries	12.29,997USD / 12,29,997USD	Lead and Sole Member

G. VIJAY KUMAR
Under Secretary
Ministry of Housing and Urban Affairs

	choose between eight pairs of hypothetical finance offers.			
March 2012 - December 2013	Assignment name: District Level Household and Facility Survey (DLHS)-IV in Tamil Nadu and Puducherry Brief description of main deliverables: Over 5,75,000 HHs were listed by a team of 300 mappers and listers and this list that formed the sampling frame. Following this we recruited a team of 450 field Investigators with profile of post graduates and paramedic to conduct the main survey including the Clinical and Anthropometric measurements. We have covered 950 urban local bodies across all districts of Tamil Nadu. All data was collected using mini laptops and data uploaded during fieldwork. Output: Ipsos delivered this survey in 36 districts of Tamil Nadu and Puducherry. The survey covered a sample size of 49500 HHs across 1965 Primary Sampling Units (PSUs)- rural and urban (950). Covered a total of 1400+ health facilities- district hospital, taluk and non-taluk hospitals, CHC, PHCs, and SHCs were also surveyed to ascertain service delivery, infrastructure, documentation, and other aspects of reporting	Name of Client: Ministry of Health & Family Welfare (MoHFW) and International Institute for Population Sciences (IIPS) Country of Assignment: India	6,44,280 USD/ 6,44,280 USD	Lead and Sole Member
March 2009	Assignment name: Conducting Survey work for GATS (Global Adult Tobacco Survey) in Manipur and Nagaland	Name of Client: IIPS on behalf of Ministry of	40,769 USD/ 40,769 USD	Lead and Sole Member

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- December 2009	Brief description of main deliverables: Summary of key tasks delivered by us included drawing village lay out maps, sampling, recruitment and training of field team, canvassing of schedules in 2 states using iPAQs, uploading data periodically and providing data for fact sheets. Output: Conducted a quantitative household survey done in state of Manipur and Nagaland. In each state 30 urban and 30 rural clusters were selected, A Post listing of all HHs that provided the sampling frame, total 3000 households were selected where interviews were completed. In each HHs adult members were surveyed. It was the first time, IIPS has introduced digital data collection and IPAQ were used for data collection	Health & Family Welfare Country of Assignment: India		
May 2014 - Mar 2015	Assignment name: Endline survey on quality of care, Patient Satisfaction Survey and utilisation of services in secondary hospitals of Tamil Nadu Brief description of main deliverables: Overall design of the endline surveys, developing of data collection tools, recruitment and training of qualified staff for data collection, data collection at hospital, analysis and submission of an analytical report Output: Conducted in all districts of Tamil Nadu, except Chennai. In each district of the state, 1 district head quarter hospital, 2 taluk Hospitals and 1 Non-Taluk hospital were covered, designed as a quantitative study that	Name of Client: Tamil Nadu Health Systems Project (TNHSP) Country of Assignment: India	30,923 USD/ 30,923 USD	Lead and Sole Member

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	included structured interviews with the patients (in patients and out patients) at the facility as well as with the health functionaries, Interviewed a total of 4500 patients and community members.			
	Assignment name: Investment Region Assessment Brief description of main deliverables: Conducted an in-depth analysis of industries which should be a part of a 200 sq.km smart city, Assessed regional and location strengths and constraints and analyze the investment climate with respect to existing resources and industry sectors. Output: Industry index was prepared to arrive at the top industries for the investment region, From the analysis of key strengths of the investment region, existing and future high growth industries, discussions with domestic and multinational companies and benchmarking with global hubs following focus industry mix was suggested for the investment region.	Name of Client: Delhi Mumbai Industrial Corridor in collaboration with Halcrow Country of Assignment: India	3,09,230 USD/ 3,09,230 USD	Lead and Sole Member
December 2011 - November 2012	Assignment name: EU-wide survey on women's well-being and safety in Europe Brief description of main deliverables: Carried out the first EU-wide survey on women's well-being and safety in Europe - involving interviews with 42,000 women. The FRA survey filled the gap by interviewing 40,000	Name of Client: European Union Agency for Fundamental Rights (FRA)	26,39,230 USD/ 26,39,230 USD	Lead and Sole Member

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	women across the 27 EU Member States. Output: The results of the project were presented in 2013, through a range of various products and channels, to inform FRA stakeholders and the general public about the outcomes of the full-scale survey in the EU27 and Croatia.	Country of Assignment: EU28 countries		
January 2014 August 2014	Assignment name: EU-MIDIS II Brief description of main deliverables: Collected comparable data in all 28 EU Member States to support the EU in protecting the fundamental rights of people with an immigrant or ethnic minority background, including Roma. It also aimed to populate core indicators for measuring progress in the implementation of the EU Framework for National Roma Integration Strategies as well as selected indicators on immigrant integration. The survey covered topics such as experiences of discrimination in different areas of life (labour market, education, housing, health and other services), criminal victimisation (including hate crime), social inclusion and societal participation Output: Ipsos coordinated and delivered this survey covering a sample 25515 interviews that were completed in 28 counties among target groups that	Name of Client: European Union Agency for Fundamental Rights Country of Assignment: EU 28 countries	32,12,459 USD/ 32,12,459 USD	Lead and Sole Member

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	included Immigrants from North Africa and their descendants (North African), Immigrants from Asia and their descendants (Asian), Immigrants from South Asia and their descendants (South Asian), Immigrants from Turkey and their descendants (Turkish), Sub-Saharans and persons of African descent (Sub-Saharan African), Recent Immigrants, Roma, and Russian minorities.			
September 2009 - November 2009	Assignment name: Citizen satisfaction survey - municipal development - South West Serbia Brief description of main deliverables: Ipsos Strategic Marketing conducted F2F survey, on a representative sample of citizens of 8 municipalities in South West Serbia (N= 1770 in total). Specific tasks of Ipsos included conceptualisation of the analysis framework, too development, recruitment and training of team, data collection, analysis and report submission. Output: The specific purpose of the project is to develop capacities of local stakeholders and local governments so that municipalities in South West Serbia, individually and jointly, plan and take strategic action to achieve the sustainable economic and social development of the region and to fulfil their obligations to citizens.	Name of Client: UNDP Country of Assignment: Serbia	11,630 USD/ 11,630 USD	Lead and Sole Member

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April 2013 - June 2014	Assignment name: Implementation of an employer survey on skills needs in Europe Brief description of main deliverables: Surveyed on skills needs which will help to better understand the labour market and contribute towards the further development of vocational education and training policies across Europe. The Phase 1 of the study involved an extensive testing and piloting. Output: Using a random probability sampling technique which helped to access a representative sample of employers in local establishments across the whole economy.	Name of Client: CEDEFOP Country of Assignment: EU28	2,98,496 USD/ 2,98,496 USD	Lead and Sole Member
1/09/2015 1/05/2016	Assignment name: Urban Citizen Dialogue Brief description of main deliverables: Ipsos MORI carried out three face-to-face day-long public dialogue workshops which focused on possible future outcomes of six urban systems (energy, food, health, transport, waste and water) to understand citizen preferences. Output: All participants were then invited to a central reconvened summit where we brought together all six systems into integrated future scenarios. Experts in futures, urban integration or the specific systems actively participated in these events. Before and after the summit, we ran an online community including all	Name of Client: Innovate UK Country of Assignment: UK	13,26,89USD/ 13,26,89USD	Lead and Sole Member

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	workshop participants, and 350 members of the public. The community activities covered system outcomes, integrated scenarios, technologies, and their future hopes for the UK's cities.			
June 2016 December 2016	Assignment name: Community Attitudes to Melbourne's Suburbs Brief description of main deliverables: Undertook a research project into Community Attitudes to Suburbs across Melbourne with the aim of furthering understanding of the pressures facing citizens and families within specific suburban areas. Output: Computer Assisted Telephone Interviewing (CATI) was used to administer the survey to n=1,000 Melburnians across 12 clusters of similar, and similarly located suburbs. A dual frame approach of Random Digit Dialling (RDD) landline and mobile phones was used (50% RDD; 50% mobile) Of the n=1,000 Melburnians who completed the survey, 68% were open to being re-contacted. Ipsos re-contacted 40 of these Melburnians (a mixture of young and older Victorians, parents and single people, those from high and low growth suburbs) to engage in bottom-up stories about what it was like to live in their suburb. These stories – populated throughout the report – often directly reference the	Name of Client: State Department of Environment, Land, Water and Planning Country of Assignment: Australia	77,084 USD/ 77,084 USD	Lead and Sole Member

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	items of most importance identified through the quantitative research.			
Athena Infonomics India Private Limited				
September 2015 - October 2016	Assignment name: Market Potential Study: Mapping the Opportunity and Providing Recommendations in Facilitating Finance for Women Entrepreneurs in Bangladesh Brief description of main deliverables: Mapped the potential opportunity in facilitating finance to women SMEs in Bangladesh and estimate the current financing gap, developed comprehensive sectoral knowledge of the ecosystem, Identified the major challenges faced by women SME entrepreneurs in availing finance from financial institutions, identified key areas of focus, which could improve financing for women SME entrepreneurs Output: Extensive Literature Reviewed, Women Enterprise Survey carried out with 500 women SME entrepreneurs sampled from Bangladesh's seven administrative selections (and 12 cities)- Dhaka, Tangail, Gazipur, Rajshahi, Bogra, Rangpur, Chittagong, Comilla, Khulna, Jessore, Barisal and Sylhet., In-depth interviews were conducted with financial institutions and various stakeholders engaged in SME financing, Estimated the Finance Gap	Name of Client: International Financial Corporation, World Bank Country of Assignment: Bangladesh	45,525 USD/ 25,000 USD	Lead Member: Athena Infonomics Partner Member: NARI & Matrix Business Development

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January 2015 -June 2015	Assignment name: Sustainability oriented financial services and products – Analysis of current loan products and government financing schemes for women entrepreneurs in the MSME sector Brief description of main deliverables: A systemic understanding of current lending patterns to women owned MS, get provider perspectives on the efficacy of support schemes and the issues in administration of loans to women entrepreneurs, Understand the issues faced by women who own MSMEs, in accessing credit and their awareness of support schemes Output: Extensive Literature Reviewed, Assessed Demand Side Constraints by surveying 110 women entrepreneurs across six key cities in the country - Delhi, Mumbai, Chennai, Bangalore, Ahmadabad and Hyderabad. The business survey focused on understanding the characteristics, growth potential, financial requirements and sources of finance and supply of credit for women led MSMEs., The evidence generated by the survey was used to draft policy and strategic recommendations to increase credit access for women entrepreneurs	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ Country of Assignment: India	27,600 USD/ 27,600 USD	Lead and Sole Member
September 2015 - January 2016	Assignment name: Preparation of Proposals for assisting Tirunelveli Municipal Corporation and Vellore Municipal Corporation to participate in the Smart Cities challenge	Name of Client: Tirunelveli City Municipal Corporation,	45,000 USD/ 22,500 USD	Lead Member: Shah Technical Consultants Associate Member: Athena Infonomics

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	Brief description of main deliverables: As cities compete in the SCM, consulting support was envisaged to hand-hold cities in identification of innovative and viable smart solutions following a bottoms-up approach with citizens at the centre of the solutions. Output: Collected city level data on GDP, industry composition, ULB service delivery, infrastructure availability among others , Developed a people-driven participatory research framework that calls for active participation of Residents Welfare Associations, Tax Payers Associations, Senior Citizens, Chamber of Commerce and Industries, Slum Dwellers Associations and other groups,Developed research instruments and conducted citizen satisfaction survey for the identification of issues, needs and priorities in line with the smart cities vision. A three-layered engagement strategy (Capture-Investigate-Validate & Disseminate) was deployed to ensure that citizens are meaningfully engaged to provide inputs on the city's vision and goals. Over 3.8 lakh citizens with a focus on low-income groups were engaged as part of the smart cities planning process in Vellore alone. A combination of online google forms, direct interviews using a mobile app, WhatsApp and social media channels were deployed for the outreach activities.	Vellore Municipal Corporation and Ministry of Urban Development Country of Assignment: India		

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February 2014 - Sept 2015	Assignment name: Consultancy Services to develop methodology for ranking urban local bodies (ULBs) based on their quality of service deliveries and conduct Quarterly Performance assessment of services delivered by 665 ULBs in Tamil Nadu Brief description of main deliverables: Develop and implement a comprehensive performance assessment framework to enable the Government to evaluate and rank 664 Municipalities, Municipal Corporations and Town Panchayats on a range of urban infrastructure and governance themes such as poverty levels, public health, sanitation, SWM, urban water supply etc Output: Designed a detailed data driven methodology to assess ULB performance, identified a comprehensive set of parameters - 110 quantitative and qualitative metrics (KPIs) covering the main functions (devolved to the ULBs in Tamil Nadu from the 12th Schedule of the Constitution) to design the assessment framework. The parameters considered are: Financial Management, Water Supply, Solid Waste Management, Sanitation, Public Health, Street Lights, Poverty Alleviation and Special Initiatives, designed a detailed survey tool and developed a comprehensive analytical framework to score the 665 ULBs both quantitatively and qualitatively. Developed an automated dashboard	Name of Client: Commissionerate of Municipal Administration, Government of Tamil Nadu Country of Assignment: India	76,675 USD/ 76,675 USD	Lead and Sole Member

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	– tool that processes the data, calculates the score and visually represents the results			
April, 2015 December, 2015	Assignment name: Consumer Research in Sanitation in the State of Uttar Pradesh Brief description of main deliverables: Identify factors that influence sanitation behaviors (such as open defecation), and identify the most trusted and appropriate channels of communication. The study will inform the Government of Uttar Pradesh in designing its state sanitation marketing and communication strategy. Output: Developed a comprehensive sampling plan for qualitative (600 Focus Group Discussions and In-Depth Interview in 15 districts) and quantitative research (5400 quantitative interviews in 18 districts spread across the State) taking into account agro-climatic aspects, distance from state capital and backwardness of the districts, Designed field guides across 16 cohorts based on socio-economic classification, age, gender etc. ,Conducted training of the moderators and surveyors to implement the qualitative and quantitative research on domain knowledge, technical knowledge, research ethics using audio-visual aids and interactive tools including	Name of Client: World Bank Country of Assignment: India	1,02,965 USD/ 51,482 USD	Lead Member: Athena Infonomics India Private Limited Associate Member: Gorakhpur Environmental Action Group (GEAG)

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	screening and evaluation of field staff, Data monitoring and analysis			
July 2013 - March 2015	Assignment name: Post Award Governance strategies for PPPs in India Brief description of main deliverables: Evaluate the factors impacting project performance 'post-award' of a PPP project and develop a framework to enhance sustainability. Output: Developed a 'Post-Award' Governance framework through in-depth research of 9 PPP projects in India across sectors of urban water supply, municipal solid waste management and urban transport, prepared of a National Report which was released by the Niti Aayog at a national conference that had representation from the Ministry of Urban Development, Department of Economic Affairs and British High Commission	Name of Client: British High Commission Country of Assignment: India	1,68,390 USD/ 1,68,390 USD	Lead and Sole Member
July 2016- 2016	Assignment name: Hiring Firm Strengthening Municipal and National Government Capacity to Deliver Pro-poor, Climate Sensitive Urban Development Brief description of main deliverables: Carried out investigation into current practices under four themes namely i) Policy and Legislation ii) Institutional Roles & Capacities (with special emphasis on data capture and utilization maturity) iii) Municipal Financing and iv) Community	Name of Client: UNDP Bangladesh Country of Assignment: Bangladesh	72,820 USD/ 72,820 USD	Lead and Sole Member

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	Participation structures in Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps; Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps Output: Prepared a National Report on "Strengthening Municipal & National Government Capacity to deliver pro-poor climate sensitive urban development that detailed key drivers of urban poverty in Bangladesh, solution pathways to address them and a potential set of indicators (spatial and non-spatial) that could be integrated into the overall monitoring, learning and evaluation module of the Programme			
Phase I: August 2013 - November 2013 Phase II: December 2013 - May 2014	Assignment name: Accelerating Women Entrepreneurship in Karnataka: A Roadmap to 2020 Brief description of main deliverables: Evaluated the entrepreneurial ecosystem and identify major challenges being faced by women entrepreneurs, to formulate a roadmap, outlining the various programs and policies required to facilitate women's entrepreneurship Output: Phase I: 200 face to face structured surveys with Women Business Enterprises in Bangalore ,50 qualitative interviews with male entrepreneurs, government agencies,	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) Country of Assignment: India	55,000 USD/ 22000 USD	Lead Member: Athena Infonomics Associate Member: Phase I: WE Connect International and Quantum Leaps Phase II: e-MERG

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	business associations, financial institutions and investors; Phase II: 250 structured interviews with women entrepreneurs across 9 cities in Karnataka ,25 qualitative interviews with Government, business associations, NGOs and other stakeholders, Multi-stakeholder conference in Hubli and Mysore. Constructed a Women Entrepreneurial Environment Index (WEEI) in bot Phase I and II			
April 2013 - July 2013	Assignment name: The National Customer Satisfaction Survey-Rwanda Brief description of main deliverables: Carried out a customer satisfaction survey with an aim to track the progress of national customer service from the previous survey that was carried out by OTF, to serve as a common basis for customer care improvement in Rwanda and develop a strategic policy and assess the initiatives to promote excellence. Output: Survey was carried out across three urban centers – Kigali, Huye and Musanze covering national of Rwanda, and EAC – Burundi, Kenya, Uganda and Tanzania, produced a robust data set and carried out statistical analysis of data collected through Chronbach's alpha	Name of Client: Rwanda Development Board Country of Assignment: Rwanda	90,000 USD/ 40,000 USD	Lead Member: RUMA CPA Associate Member: Athena Infonomics
August 2012 - April 2013	Assignment name: Tamil Nadu Skill Gap Assessment Brief description of main deliverables: Undertook a detailed district-level skill	Name of Client:	29,230 USD/ 29,230 USD	Lead and Sole Member

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	gap analysis for the state of Tamil Nadu Output: On identification of the skills gaps and opportunities, recommendations were presented for each key stakeholder including government, industries, skill training Institutes and NSDC to bridge the gap. Policy actions were proposed based on detailed analysis of current policies and the findings of the study.	National Skill Development Corporation Country of Assignment: India		
Economist Intelligence Unit (Sub Consultant)				
2009 - Current	Assignment name: EIU Global Liveability Ranking Brief description of main deliverables: The Economist Intelligence Unit's Global Liveability Ranking scores a range of qualitative and quantitative indicators to provide a robust and global benchmarking study of 140 cities globally. The product uses over 40 indicators in 30 subcategories across five broad lifestyle categories (stability, healthcare, culture, education and infrastructure) to create an overall liveability score. The product takes three forms: Global Liveability Ranking and overview, which is a short ranking report summarising key findings and supplying an overall ranking of 140 cities; the Global Liveability Survey, a full report with 140 city profiles broken down by sub-category (which can be sold separately); and lastly the Global Liveability Matrix, an interactive excel	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

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	tool to compare all scores in all locations. Output: Data gathering (quantitative and qualitative indicators by country) & quality control Desktop research (vetting and triangulation of data; supplementary analysis of overall survey findings) ; Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) ; Benchmarking (design of an interactive benchmarking-index, scoring and weighting of indicators), Report writing and Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			
2009 - Current	Assignment name: EIU Worldwide Cost of Living Brief description of main deliverables: Worldwide Cost of Living is a biannual interactive tool which allows users to compare the cost of living between approximately 145 cities globally. As well as delivering simple city to city comparisons, the tool can be customised and recalculated according to user needs with a variety of add-on features.	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

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	Output: Survey of price data (price data is vetted and weighted individually before again being weighted and compared across categories to form an index) ,Data gathering (quantitative and qualitative indicators by country) and Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy), Benchmarking (design of an interactive benchmarking-index; tracking of aggregate movement of prices against national or city-level inflation), Report writing and editing (ranking report summarising the findings of the survey)			
6/2014- 3/ 2015	Assignment name: Safe City Index Brief description of main deliverables: The Safe Cities Index 2015 is an Economist Intelligence Unit report, sponsored by NEC. The report is based on an index composed of more than 40 quantitative and qualitative indicators. These indicators are split across four thematic categories: digital security; health security; infrastructure safety; and personal safety. Every city in the Index is scored across these four categories. Each category, represented throughout the report by the icons shown in the key, comprises between three and eight sub-indicators. These indicators are divided between inputs, such as policy measures and levels of spending, and outputs, such as the frequency of	Name of Client: NEC Country of Assignment: North America, Latin America, Europe, Middle East & Africa, Asia-Pacific	N/A/ N/A	Lead and Sole Member

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Ministry of Housing and Urban Affairs
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	vehicular accidents. The Index focuses on 50 cities selected by The Economist Intelligence Unit, based on factors such as regional representation and availability of data. Output: Data gathering (quantitative and qualitative indicators by city) and Data cleaning and dataset completion Data verification and validation Data analysis Benchmarking/Modelling Report writing and Data Visualization			
1/2014-6/2015	Assignment name: MENA Cities Brief description of main deliverables: Provided demographic and economic data (with a selection of 5-year forecasts) for 26 Middle East cities, using a combination of secondary and primary research. The EIU produced a workbook which included the following features: map navigation through clickable markers on a map of the region to call up data for relevant cities; population pyramids displaying population breakdowns by age group and gender; customisable rankings of cities by income and population for comparison purposes; access to all indicators included in the workbook. Output: Data gathering (quantitative and qualitative indicators by city)	Name of Client: A multinational conglomerate Country of Assignment: UAE, Egypt, Algeria, Jordan, Iraq, Lebanon, Morocco, Saudi Arabia, Qatar, Iraqi-Kurdistan, Turkey, Kuwait, Bahrain, Iran, Oman, Libya, Tunisia	2,30,769 USD/ 2,30,769 USD	Lead and Sole Member

Dr. विजय कुमार / Dr. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
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	Data cleaning and dataset completion (developing custom estimation models, and/or conducting primary research, and in some cases applying statistical data imputation methods) Data verification and validation (developing documents that present the data to experts and practitioners to review and critique) Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			

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FORM TECH 3:

Comments and suggestions on the Terms of Reference, counterpart staff, and facilities to be provided by the client

TECH-3: COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

A - On the Terms of Reference

Comments on the Terms of Reference

At the outset, we commend the efforts of the Ministry to embark on such a timely and relevant exercise and the detailed methodology document, which serves as a guidance note for the same. We are excited to be given an opportunity to participate in developing a framework for rolling out such an exercise. Based on our experience of developing a technical response to this bid, our observations are summarized below.

Our review of the methodology document confirms need for some form of physical assessment- sample survey or validation required for 24 of these indicators Phase 1 of our proposal. These 24 indicators vary from non-motorized transport, hotels and schools among others. The TOR does not clearly specify what a consultant must do if the data is not available for these indicators. Several of them (for example modal share of transport) are technical outputs that demand detailed studies and cannot be determined through a random physical audit

Given the timelines available, a critical assumption made is that the physical validation will be performed on only those data parameters submitted by the city government, through a random audit/physical inspection

Also our approach categorizes the data sub groups into a) Indicators where secondary data will be provided by city/ report 'as is' and no validation required b) Indicators where secondary data is available and will require validation through field visits/ sample survey/ citizen feedback c) indicators where secondary data is missing but can be collected d) indicators where secondary data is not available and will be excluded.

Our technical proposal and financial proposal is built on this categorisation We would be very keen to discuss and receive your feedback during proposal discussion stage to finetune this categorisation as well as discuss implication of this approach for both the timelines and costs.

B - On Counterpart Staff and Facilities

A summary of the key support areas where we look forward for support for MoHUA is outlined below:

- City officials are informed of the assignment vide a circular of the proposed assessment
- A state nodal officer will be appointed in every state to co-ordinate with the consultants to facilitate the implementation of the entire process
- A clear reporting structure is established for approval and sign off on all the key milestones and deliverables
- A clear process for reconciliation of differences between self-reported and audited data outputs to be identified and put in place early on.
- Facilitation of secondary datasets available across different flagship schemes within the ministry to ensure effective delivery of the 'pre-filled' data templates for each city

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अवर सचिव/Under Secretary
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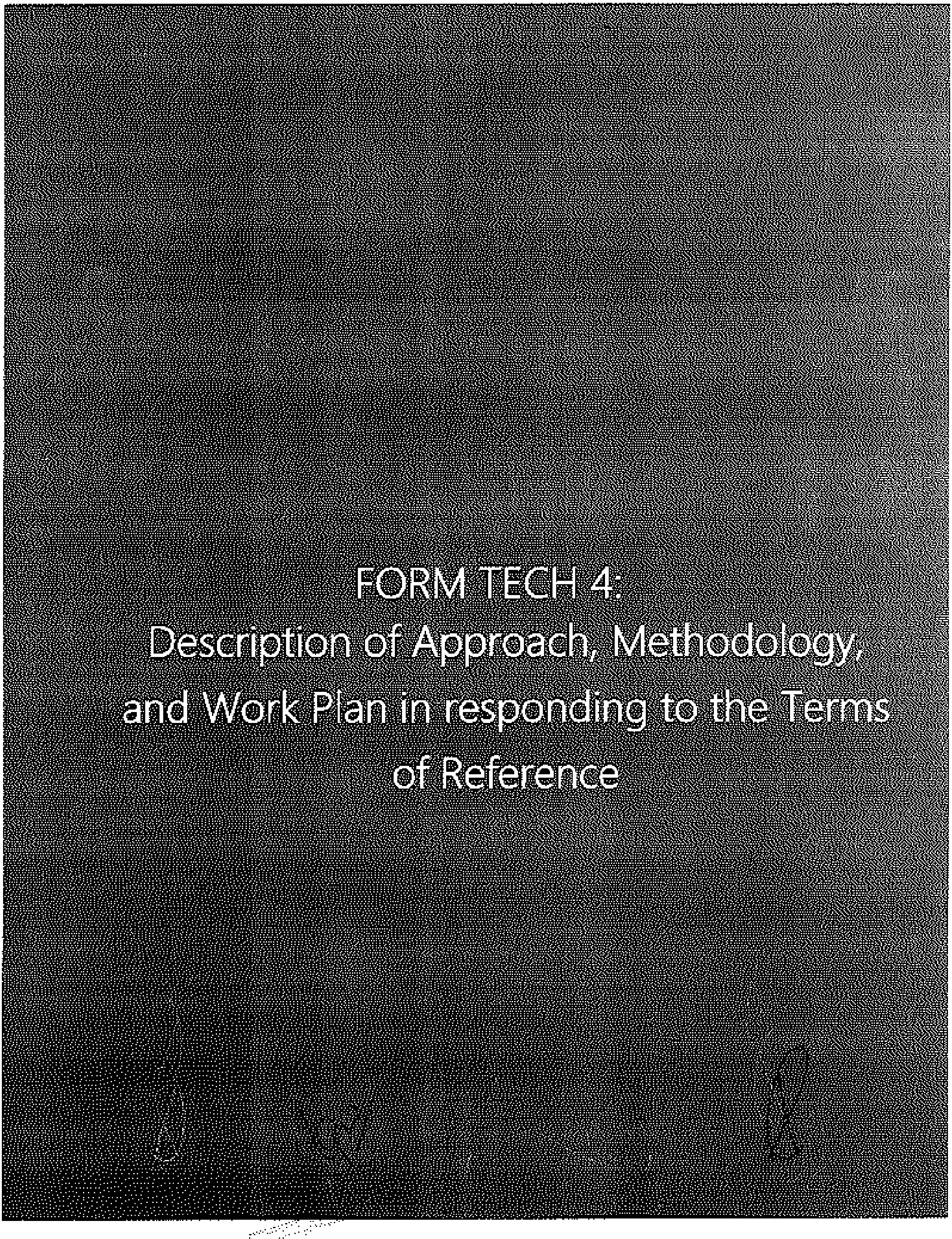

FORM TECH 4:
Description of Approach, Methodology, and Work Plan in responding to the Terms of Reference

TECH-4: DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

A. Technical Approach and Methodology

Liveability – Ranking and Beyond

Urban expansion in India is anticipated to grow at a pace unlike anything the country or the world has seen before, with much of the population likely to be concentrated in cities with a population of a 1 million plus. This trend brings with it several opportunities and challenges and clearly a trend of intensified competition among cities to attract talent and resources, with 'liveability' occupying centre stage in much of the new discourse.

Livability rankings are a common feature in several countries and is an opportunity to systematically quantify the challenges that may be presented to an individual's lifestyle and offers itself as an instrument for policy reform, resource mobilization, investment prioritization and management of services.

It is heartening to note that India, under the leadership of MoHUA, has embarked on measuring the 'liveability' of its cities and we are excited to draw from our collective experience to summarize our appreciation/understanding of what such an exercise can offer.

First, are a set of highlights of our approach to the data collection and the ranking exercise:

1. **Indicator development:** While the guidelines define a set of indicator areas, for the exercise to be objective and consistent, bespoke guiding questions for data collection that is aligned with the 'language of data' used by city governments and aligned with global best-practices needs to be developed. This aim here is to minimise comparability issues – e.g. the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, (mapping what qualifies as access to digital education) Here the team seeks to leverage the experience of the Economist's step by step approach in developing such frameworks and the experience of IPSOS and Athena Infonomics in creating and scaling up similar large scale ranking exercises in India. (Refer Phase 1 of our detailed A&M for a detailed description of this approach)

2. **A pilot for city GDP:** The ability to measure a city's output and use that as a baseline to track its growth can be invaluable particularly in the context of the large capex investments that the identified smart cities are expected to attract. Given the opportunity to interact with a large number of cities, with varying data ecosystems, an attempt will be made to pilot test as part of the data collection exercise an approach to systematically map and calculate the city's GDP, which can be further refined in the subsequent rounds.

3. **Innovations in sampling and audit using spatial data:** A unique system of auditing indicators using publicly available open source spatial data sets will be deployed and a geo-spatial

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sampling strategy to ensure that the citizen surveys are well diversified across the city will be deployed

4. **An online portal for real-time tracking of progress and outcomes:** Through the creation of an online portal right at the start of the assessment and real-time tracking of the progress of the liveability ranking exercise across phases (training workshops, data collection, validation and ranking) we hope to induce and leverage the competitive spirit that has driven the smart city process.

5. **Economist Hub- Effective national and global dissemination:** The Economist Intelligence Unit is a global leader in data intelligence and as a key intellectual partner to this JV will lead the development of a dedicated 'economist hub' with interactive workbooks and dashboards to present the findings of the liveability rankings.

While there are numerous positive spill overs to the liveability ranking, there are three key strands that we hope to get a dialogue initiated on. The team will submit at the end of the exercise a white paper on the potential the liveability ranking exercise has in moving the needle of various policy and programmatic goals of the nation, with a detailed analysis on the following:

- **Data availability, access and quality:** A framework to systematically evaluate the key gaps in data availability and quality will be developed and deployed and suggestions on smart data collection protocols developed to inform future data collection strategies and strengthen the data ecosystem. This approach it segregates "available data" from "quality data". In areas like water and sanitation, which carry with them a number of citizen sensitivities, there is a conflict of interest between data reporting and service delivery functions, which are usually vested in the same agency. By looking at data quality through a standardized process view (representativeness, third party validation etc.), it is possible to identify datasets which are more likely to be error prone than others

- **City-centric use cases- Interoperability and convergence with domestic policy and programme levers:** MoHUA under the smart city mission has already launched an initiative to set up integrated digital platforms which will provide the infrastructure backbone to host and run citizen and other e-government applications. The newly created datasets when generated can be linked to the platform and opportunities for use-cases by overcoming interoperability concerns may be explored. The ranking exercise (once the data maturity improved) may also serve as a planning tool or soft collateral for attracting investments and raising resources as illustrated in the figure below. Some of the key convergence and use-case applications between this exercise and the key goals set out by the MoHUA will be explored and documented

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अवर सचिव/Under Secretary
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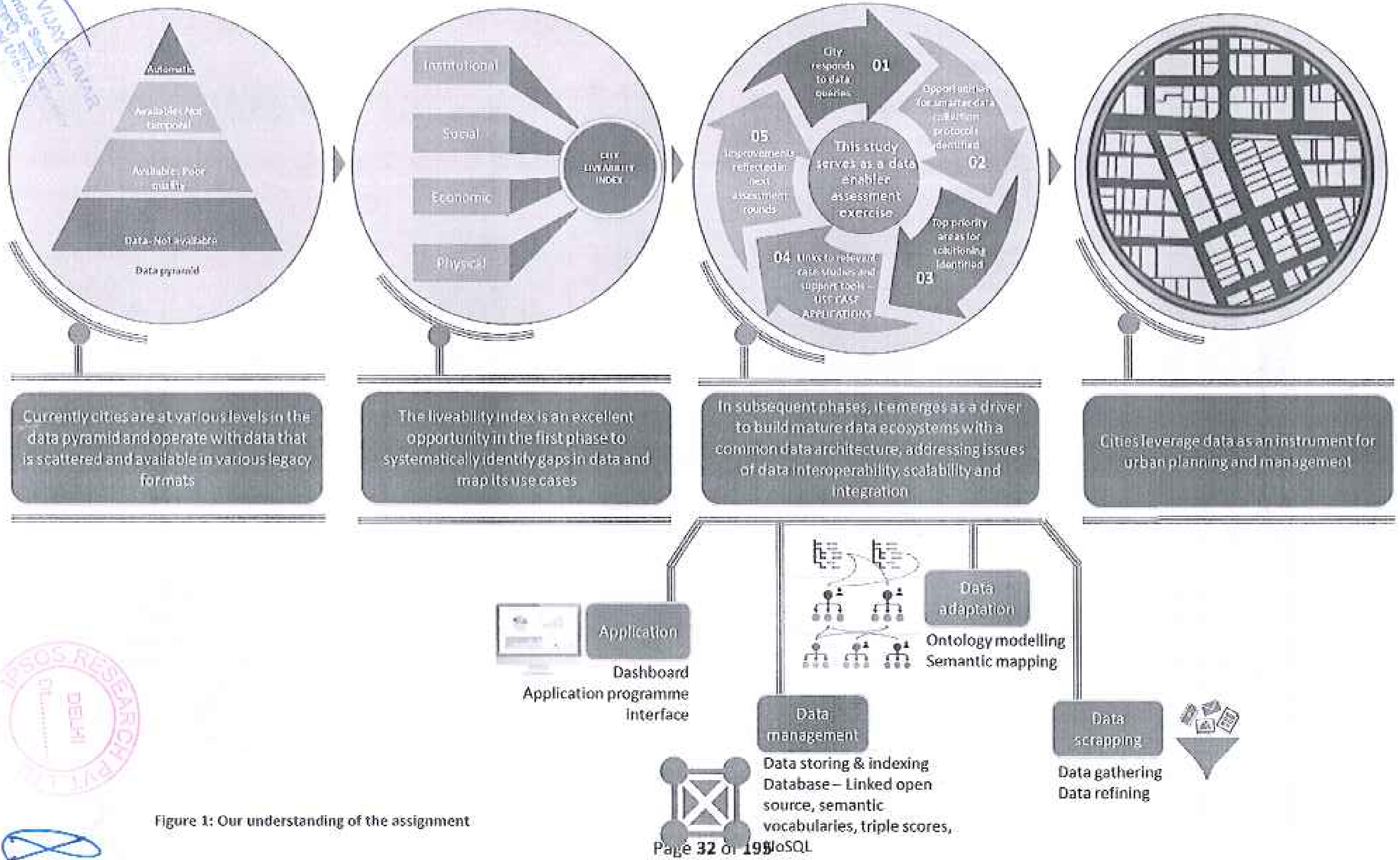
Our understanding of the assignment


Automatic
Available; Not temporal
Available; Poor quality
Data- Not available
Data pyramid
Institutional
Social
Economic
Physical
CITY LIVEABILITY INDEX
01 City responds to data queries
02 Opportunities for smarter data collection protocols identified
03 Top priority areas for solutioning identified
04 Links to relevant case studies and support tools – USE CASE APPLICATIONS
05 Improvements reflected in next assessment rounds
This study serves as a data enabler assessment exercise
Application
Data management
Data adaptation
Data scrapping

Currently cities are at various levels in the data pyramid and operate with data that is scattered and available in various legacy formats

The liveability index is an excellent opportunity in the first phase to systematically identify gaps in data and map its use cases

In subsequent phases, it emerges as a driver to build mature data ecosystems with a common data architecture, addressing issues of data interoperability, scalability and integration

Cities leverage data as an instrument for urban planning and management

Application
- Dashboard
- Application programme interface

Data management
- Data storing & indexing
- Database – Linked open source, semantic vocabularies, triple scores, NoSQL

Data adaptation
- Ontology modelling
- Semantic mapping

Data scrapping
- Data gathering
- Data refining

Figure 1: Our understanding of the assignment

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- **Global use-cases- Alignment with global data reporting requirements:** The newly generated data sets may also serve as an opportunity to systematically explore convergence between the data being generated by cities and global development standards like the SDGs and provides for an opportunity to explore what it means to achieve some of those goals at the local level and generate data at the level of local governments to better track progress on development goals.

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अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
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Summary of our approach & methodology

Phase 1 Preparatory phase

Duration
W1-W5

Literature review of existing studies and data sources (Smart City Reports, AMRUT reports, Data.gov, etc.) to prepare baselines for each city

Data availability/gap assessment to assess a) Data points to be collected through primaries b) Metrics that would merit smart proxies

Indicator development

Finalization of stakeholder participation lists

Development of workshop structure and content

Finalisation of workshop dates for the state workshops

Development of data entry application /interface

Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation

Draft report templates- City Assessment

Preparation of research instrument for primaries and physical validation

Data entry and quality control template

Data administration protocols and data collection monitoring framework

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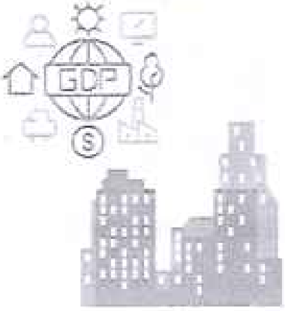
Summary of our approach & methodology

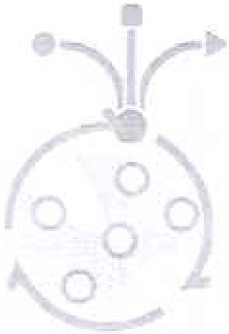
Phase 1 Preparatory phase (Continued…)

Duration
W1-W5



Framework to estimate city GDP

Formulation of media strategy



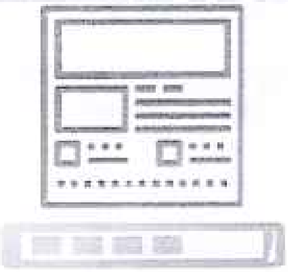
Approach note for data interoperability

Media dissemination through photo journals, national portal to be an on-going exercise

Phase 2 State/City level engagement

Duration
W5-W8

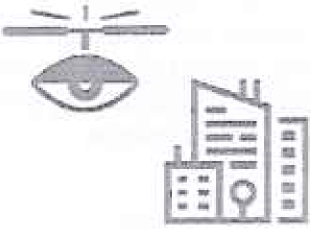
Organisation of State-level Workshops



Launch and updation of nation-wide tracker

Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official



City level Reconnaissance meetings

Final list of indicators (with details on collection protocols), incorporating comments from the workshop; and Inception Report preparation

Media dissemination through photo journals, national portal to be an on-going exercise

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Summary of our approach & methodology

Phase 3 Data collection

Duration
W8-W12

Finalisation of secondary data collection interface/application

Secondary data collection

Setting up a region/state level help-desks for near-real-time troubleshooting)

Final data availability/gap assessment

Household/Citizen Surveys

Physical audit of secondary data provided by cities (all relevant indicators)

GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors

Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC

Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

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Summary of our approach & methodology

Phase 4 Data collation and finalisation

Duration
W13-W14

Preparation of Draft data sets circulation with cities for validation

City level discussions for addressing queries and incorporating revisions, modifications etc.

Sign-off on final list of data points/ indicators

Media dissemination through photo journals, national portal to be an on-going exercise

Phase 5 Report preparation and national workshop

Duration
W15-W20

Indices development and visualisation

Preparation of draft assessment report

Preparation of final assessment report

The Economist
FILMS
THE
Hub

Launch of 'The Hub' @ The Economist

National-level Workshop

Media dissemination through photo journals, national portal to be an on-going exercise

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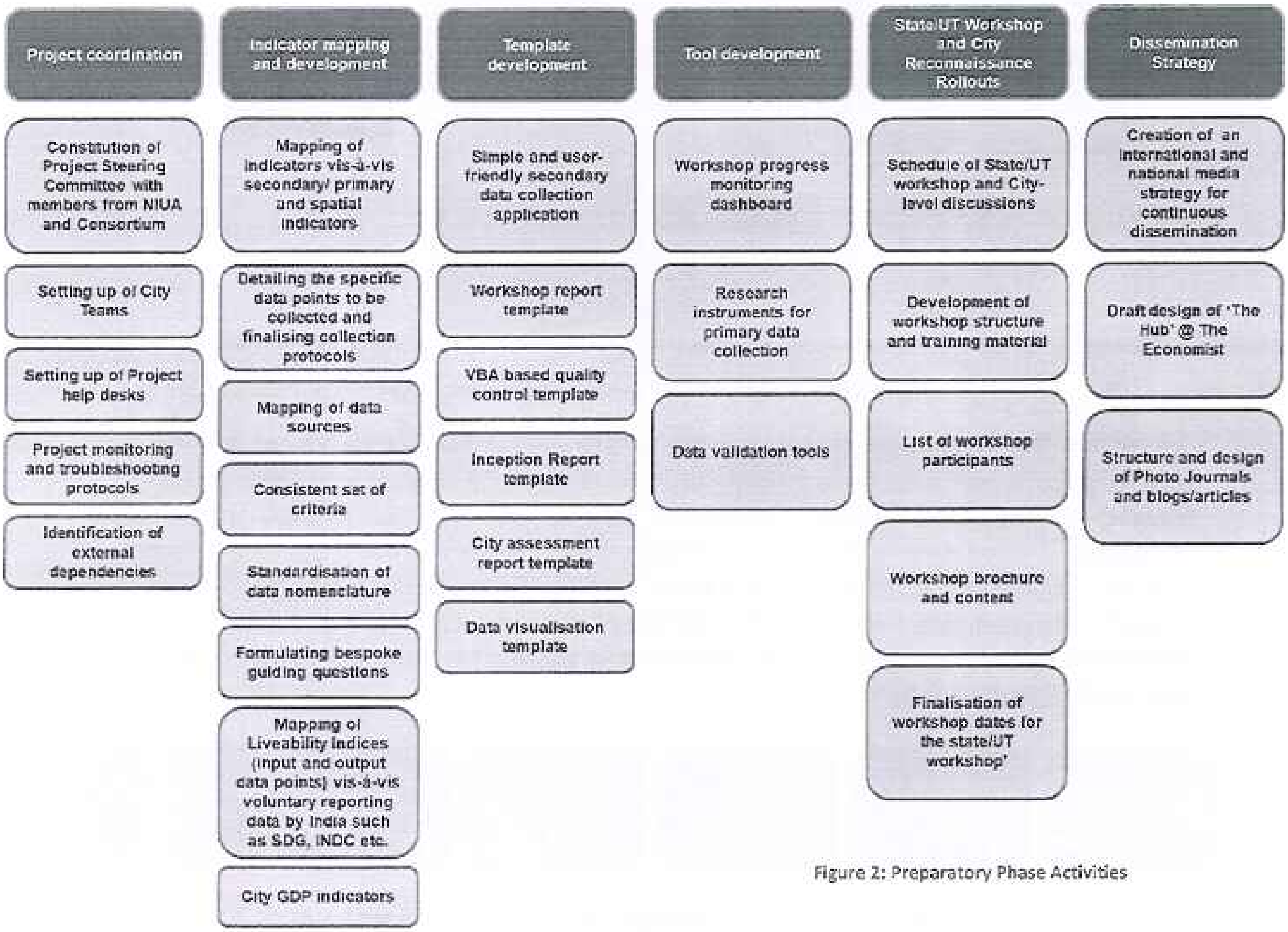
Phase 1: Preparatory phase: [Week 1 – W8]

The first four weeks are extremely crucial for this assignment as it would entail completion of preparatory steps for the short-term project milestones such as state level workshops and city reconnaissance discussions and gain momentum on the mid-term project milestones involving secondary and primary data collection including validation and report preparation. This phase will involve activities on the following areas:



Project coordination	Indicator mapping and development	Template development	Tool development	State/UT Workshop and City Reconnaissance Rollouts	Dissemination Strategy
Constitution of Project Steering Committee with members from NIUA and Consortium	Mapping of indicators vis-à-vis secondary/ primary and spatial indicators	Simple and user-friendly secondary data collection application	Workshop progress monitoring dashboard	Schedule of State/UT workshop and City-level discussions	Creation of an international and national media strategy for continuous dissemination
Setting up of City Teams	Detailing the specific data points to be collected and finalising collection protocols	Workshop report template	Research instruments for primary data collection	Development of workshop structure and training material	Draft design of 'The Hub' @ The Economist
Setting up of Project help desks	Mapping of data sources	VBA based quality control template	Data validation tools	List of workshop participants	Structure and design of Photo Journals and blogs/articles
Project monitoring and troubleshooting protocols	Consistent set of criteria	Inception Report template		Workshop brochure and content	
Identification of external dependencies	Standardisation of data nomenclature	City assessment report template		Finalisation of workshop dates for the state/UT workshop'	
	Formulating bespoke guiding questions	Data visualisation template			
	Mapping of Liveability Indices (input and output data points) vis-à-vis voluntary reporting data by India such as SDG, INDC etc.				
	City GDP indicators				

Figure 2: Preparatory Phase Activities

Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

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Given the short and intense nature of the assignment we propose to have a human resources structure in place to enable seamless effective and timely coordination. A four-tier project team is proposed comprising a Project Steering Committee (PSC), Key Experts (Full time Core Team) and Support Teams shortly after commencement of the assignment.

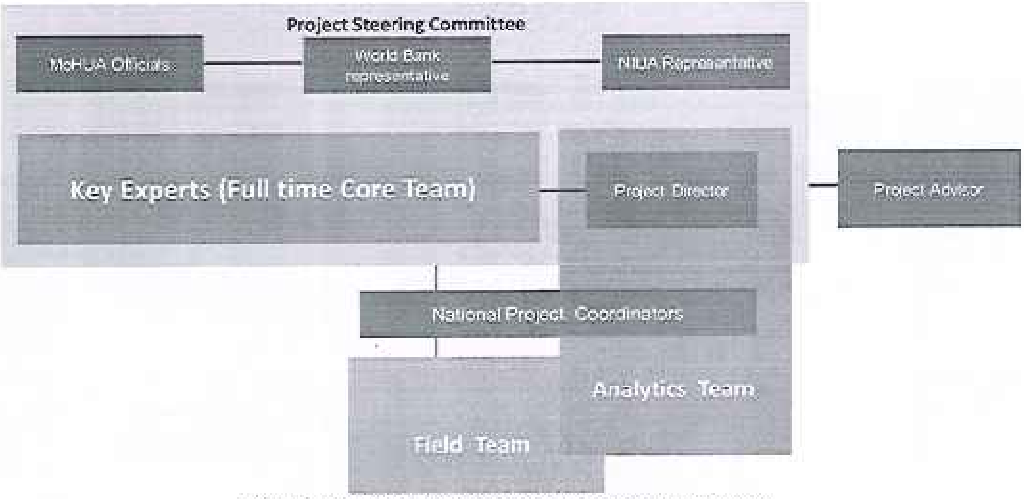
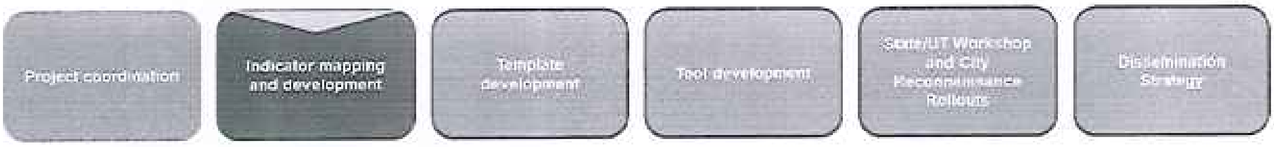

Project Steering Committee
MoHUA Officials
World Bank representative
NIUA Representative
Key Experts (Full time Core Team)
Project Director
Project Advisor
National Project Coordinators
Analytics Team
Field Team

Figure 3: Project Governance and Management Structure

The PSC will have representative from the MoHUA, NIUA, the World Bank and Key Experts. A Project Command Centre with video conferencing facilities would be set up to monitor the entire project including state workshops, secondary and primary data collection. The PSC will have access to dashboards for monitoring the progress of a) state level workshops b) secondary and primary data collection c) Queries and troubleshooting at state/UT-level Help Desks. The PSC will be the final point of approval on protocols for data collection, training content, project reporting, issue escalation and, troubleshooting for various aspects of the project such as support from state/UT/City Governments, data availability/gaps or lags etc.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

While most of the 79 indicators comprising the Liveability Indices can be computed based on secondary data available with the City Government, some of them require primary and/or spatial data inputs/validation. The 'Methodology for Collection and Computation of Liveability Standards in Cities' document has detailed the input data points required for computation of each indicator and has also specified the type (secondary/ primary/ spatial) of data points required. The figure below maps and categorises indicators based on different data collection interfaces.

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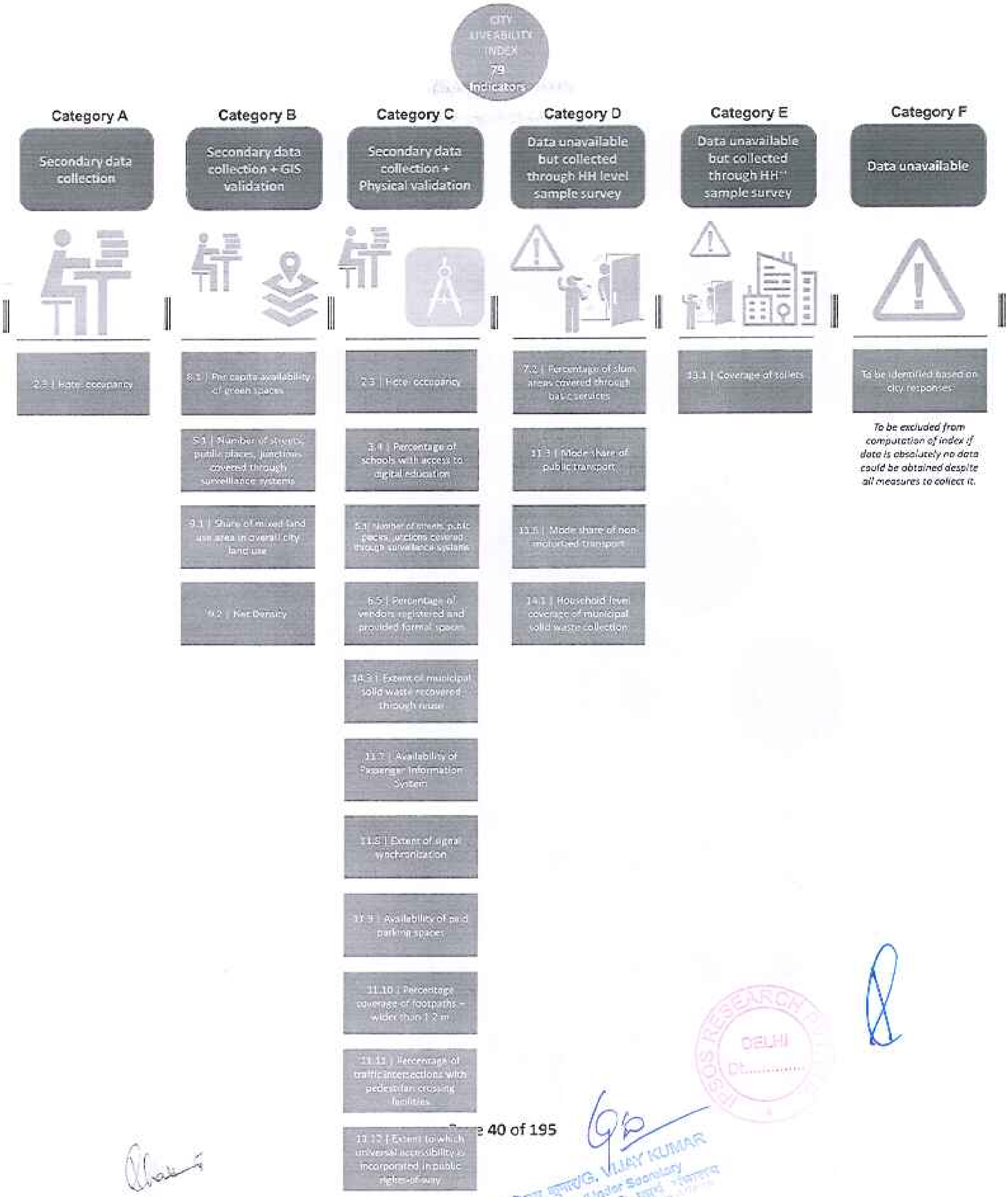

CITY LIVEABILITY INDEX
79 Indicators

Category A
Secondary data collection
- 2.3 | Hotel occupancy

Category B
Secondary data collection + GIS validation
- 8.1 | Per capita availability of green spaces
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 9.1 | Share of mixed land use area in overall city land use
- 9.2 | Net Density

Category C
Secondary data collection + Physical validation
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 14.3 | Extent of municipal solid waste recovered through reuse
- 11.7 | Availability of Passenger Information System
- 11.8 | Extent of signal synchronization
- 11.9 | Availability of paid parking spaces
- 11.10 | Percentage coverage of footpaths – wider than 1.2 m
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

Category D
Data unavailable but collected through HH level sample survey
- 7.2 | Percentage of slum areas covered through basic services
- 11.3 | Mode share of public transport
- 11.6 | Mode share of non-motorized transport
- 14.1 | Household level coverage of municipal solid waste collection

Category E
Data unavailable but collected through HH** sample survey
- 13.1 | Coverage of toilets

Category F
Data unavailable
- To be identified based on city responses

To be excluded from computation of index if data is absolutely no data could be obtained despite all measures to collect it.

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अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
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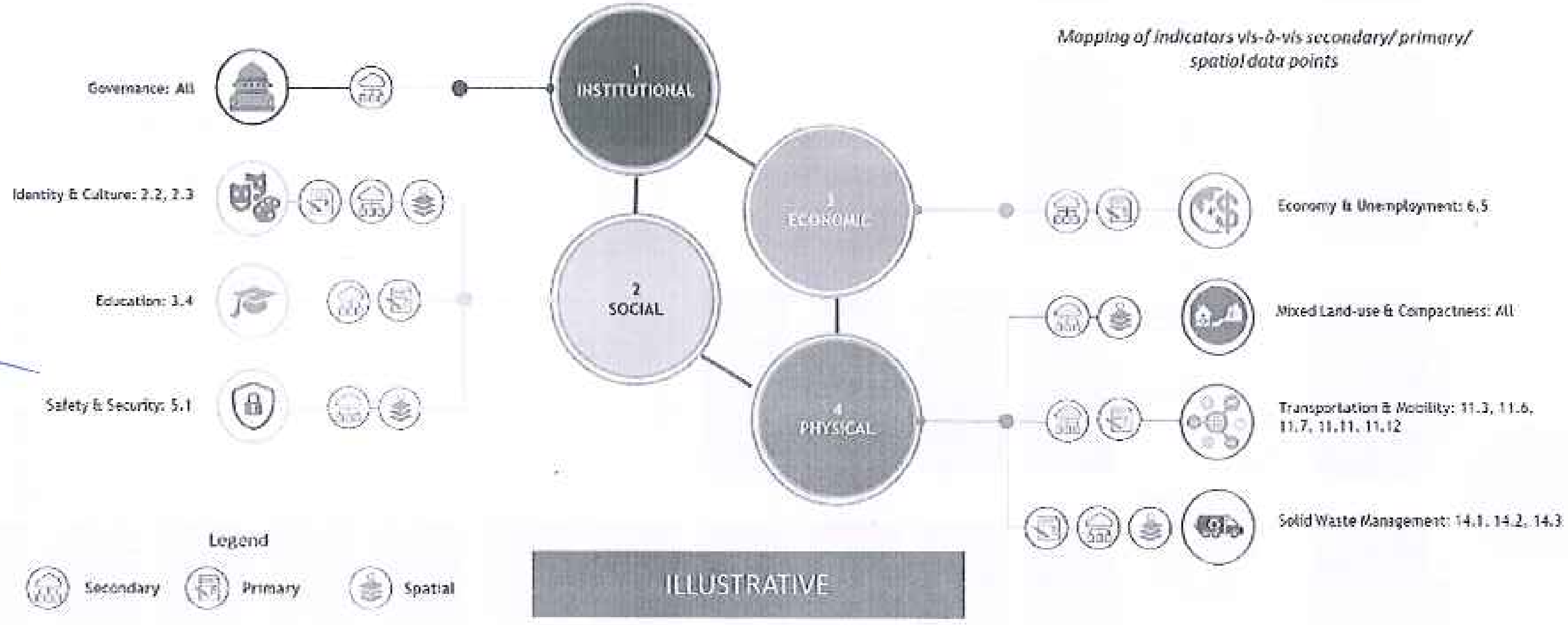
Four pillars of Liveability Index


Mapping of indicators vis-à-vis secondary/ primary/ spatial data points
Governance: All
Identity & Culture: 2.2, 2.3
Education: 3.4
Safety & Security: 5.1
1 INSTITUTIONAL
2 SOCIAL
3 ECONOMIC
4 PHYSICAL
Economy & Unemployment: 6.5
Mixed Land-use & Compactness: All
Transportation & Mobility: 11.3, 11.6, 11.7, 11.11, 11.12
Solid Waste Management: 14.1, 14.2, 14.3
Legend
Secondary
Primary
Spatial
ILLUSTRATIVE

It will also involve building a consistent set of criteria for computation of the indicators – for instance method for estimation of city population (estimating city population based on 2011 Census or estimates provided by City Governments), approach for testing air/water quality etc. that could be used across cities. Our team will deploy a systematic approach to define clearly every indicators and collection protocols to ensure comparability (E.g., what could be construed as a Command Centre? Are there a minimum number of services that should be integrated under the Command Centre?) What is the standard definition of a 'smart meter?' etc. Here, the aim is to provide guidance for cities and analysts, with good tracking mechanisms.

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Under Secretary
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Some of the indicators such as 'percentage of citizen services available online', 'percentage of services integrated through Command Centre,' etc. have been detailed for some of the ULB functions (e.g., property tax functions) and sub-services (e.g., city transport) but the rest needs to be further developed. Please refer figure below for an illustration of our overall approach

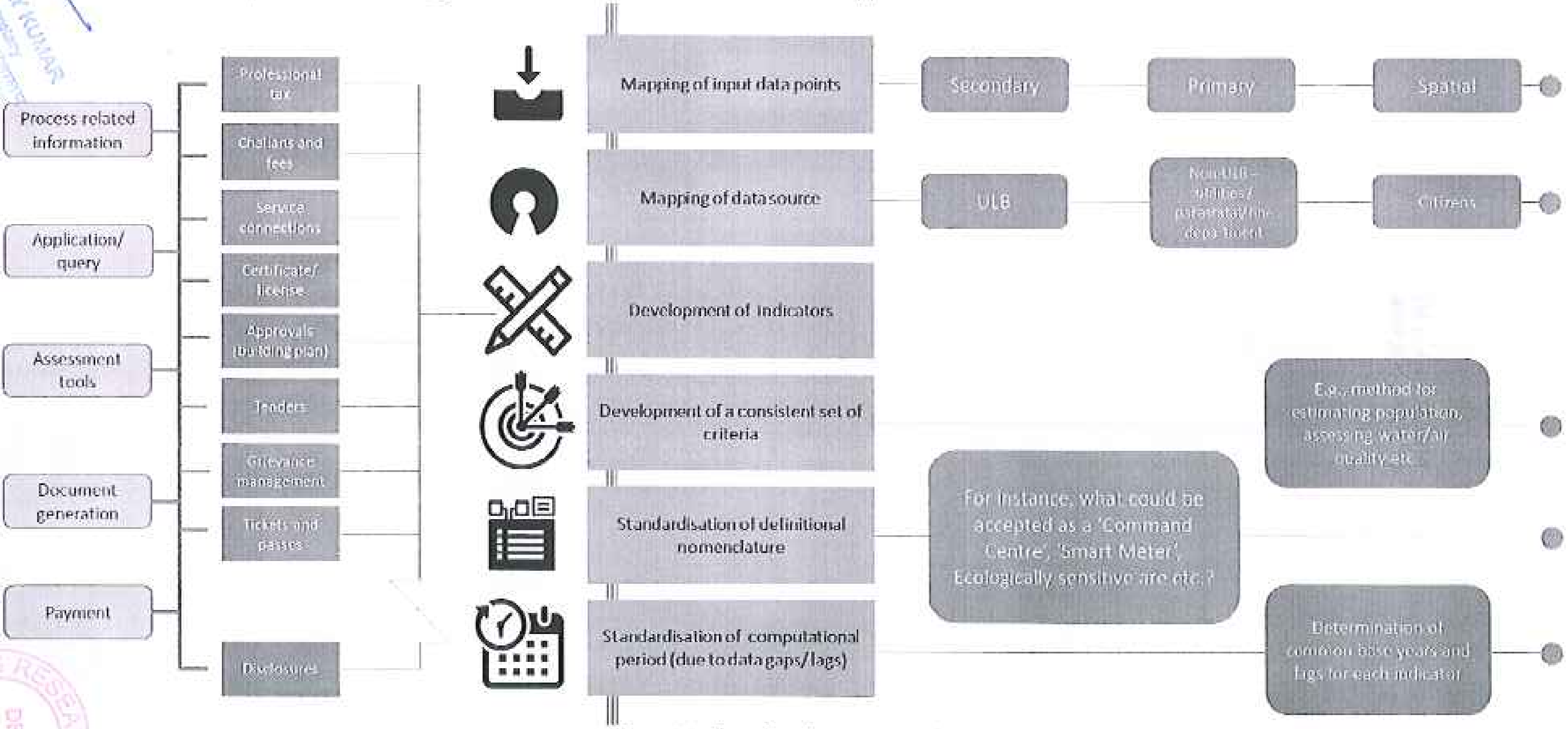
Process related information
Application/ query
Assessment tools
Document generation
Payment
Professional tax
Challans and fees
Service connections
Certificate/ license
Approvals (building plan)
Tenders
Grievance management
Tickets and passes
Disclosures
Mapping of input data points
Mapping of data source
Development of indicators
Development of a consistent set of criteria
Standardisation of definitional nomenclature
Standardisation of computational period (due to data gaps/lags)
Secondary
Primary
Spatial
ULB
Non ULB – utilities/ parastatal/line depa tment
Citizens
For instance, what could be accepted as a 'Command Centre', 'Smart Meter', Ecologically sensitive are etc.?
E.g., method for estimating population, assessing water/air quality etc.
Determination of common base years and lags for each indicator

Figure 4: Indicator development approach

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Our approach aims to minimise comparability issues – e.g., the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, which covers the type of digital infrastructure available as well as various ways to access digital learning networks.

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A detailed guidance document capturing suggestive list of items/key words would be prepared based on secondary research as well as global best practices for key definitions and provided to Cities for reference. The draft detailed indicator list will subsequently be validated in Phase 2.

Scoring indicators requires a robust methodology. To add robustness and objectivity to the scoring, we propose developing bespoke guiding questions (in a manner consistent with local body nomenclature and jargon) for the indicator. This will greatly enhance the robustness of the framework. An example of our step by step approach is shown below, for an existing index namely percentage of population covered under Ward Committees/ Area Sabhas.

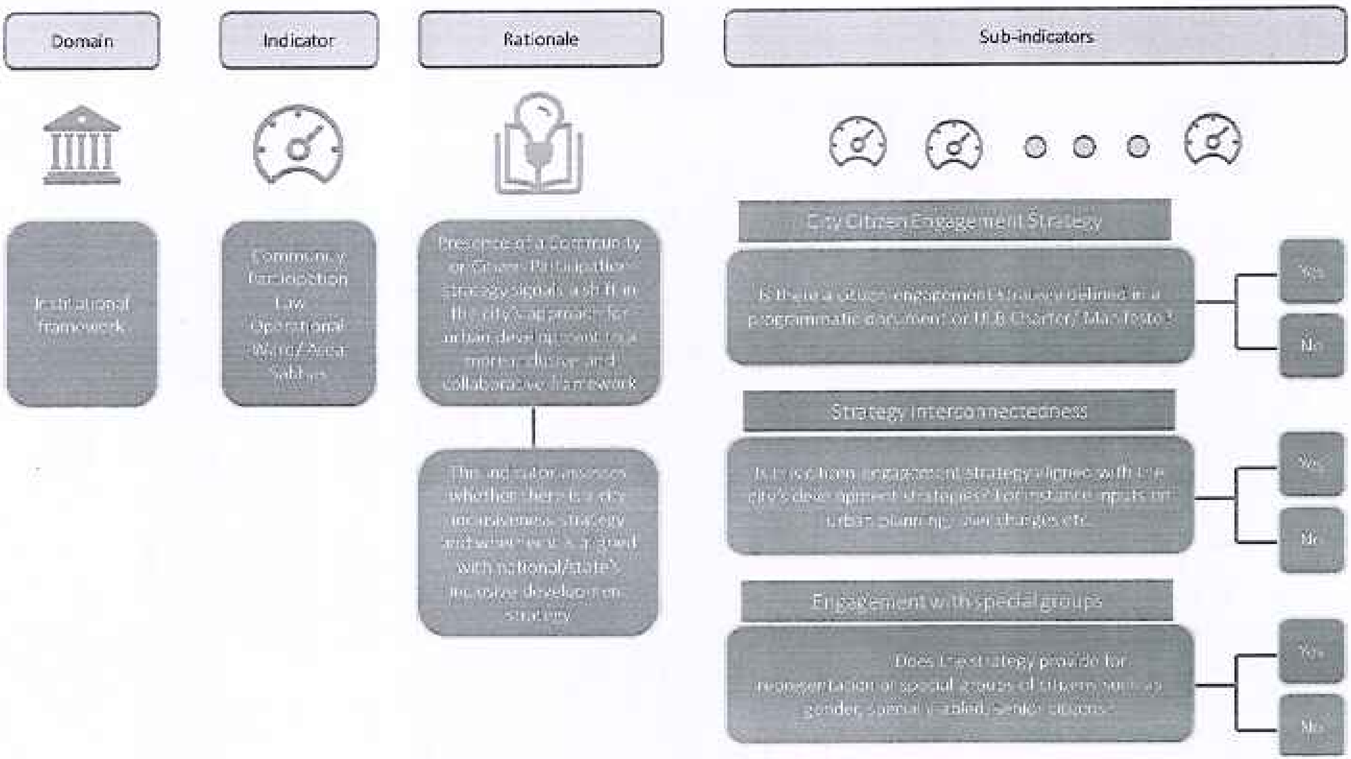
Domain
Indicator
Rationale
Sub-indicators
Institutional framework
Community Participation Law Operational Ward/Area Sabhas
Presence of a Community or Citizen Participation strategy signals a shift in the city's approach for urban development to a more inclusive and collaborative framework
This indicator assesses whether there is a city inclusiveness strategy and whether it is aligned with national/state's inclusive development strategy
City Citizen Engagement Strategy
Is there a citizen engagement strategy defined in a programmatic document or ULB Charter/ Manifesto?
Yes
No
Strategy interconnectedness
Is the citizen engagement strategy aligned with the city's development strategies? For instance inputs on urban planning, user charges etc.
Yes
No
Engagement with special groups
Does the strategy provide for representation of special groups of citizens such as gender, specially abled, senior citizens?
Yes
No

Figure 5: Approach for developing bespoke questions

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अवर सचिव/Under Secretary
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Framework for Measuring City GDP

As part of this exercise, we are keen to explore the feasibility of estimating the economic output of the identified smart cities and explore if a baseline on the same can be created with publicly available data sets/information provided by cities. This is perhaps particularly credible given the kind of capex investments these cities are expected to attract. As part of this exercise we will develop and integrate the data requirements associated with the process of measuring the city's GDP in the overall data collection exercise and explore the quality of the data ecosystem to support such an exercise.

EIU is currently carrying out a similar exercise in China.

Context

The prosperity and welfare of cities around depend on the capacity of cities to take advantage of opportunities for sustained employment growth and minimise the challenges of national and global economic integration and urban population growth. Therefore, the quality of economic development planning and city management is extremely important. Developing sound local economic development strategies at the city level is critical to both good city management and economic performance.

The purpose of the city economic rankings is to augur a health sense of competition between cities to attract investments and high-quality jobs. These rankings will also help smart city managers identify fast-growing economic opportunities in their cities and further propel their growth. As such, growth indicators, rather than those reflecting absolute size or wealth, will be chosen. However, to ensure that the ranked cities have a critical mass attractive to investors and new businesses, a minimum population cut-off point of will be determined and used. A nuanced methodology will be developed after a detailed review of the data ecosystem available. Ex: The metropolitan population will be a measured as the true urban population of a city; it includes the population only in the contiguously built city area.

Proposed Methodology

A comprehensive methodology for assessment of City level economic performance will be developed and tested for top twenty cities as part of the project. The methodology will be akin Economist Intelligence Unit's China Emerging city rankings is to identify where new business opportunities in urban China are likely to emerge because of rapid growth in population and incomes.

Growth over the next five-year period of 2018-2023 in infrastructure and property, economic output (GDP per head), consumption, job creation and population will form the core of the ranking framework. Consumer markets are included in the form of household incomes and spending. For population and GDP per head, five-year forecasts derived from the EIU's demographic and regional forecasting models will be used so that the index reflects expectations for the future.

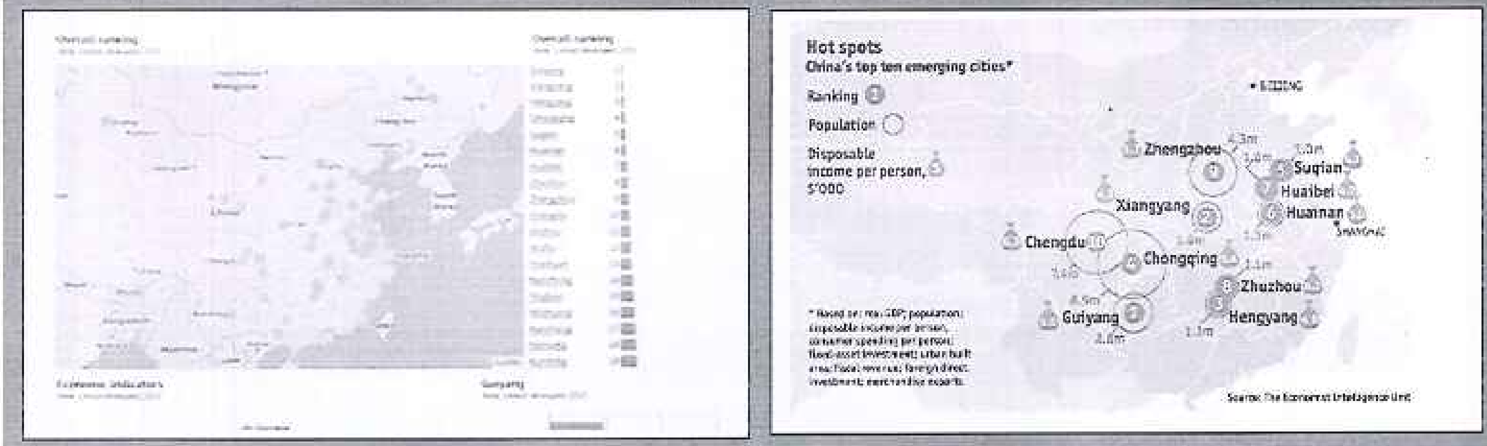
We will supplement these indicators, wherever possible with historic city-level data that assess changes in infrastructure and property (fixed-asset investment and the urban built area), public finances (fiscal revenue) and the external environment (foreign direct investment and goods exports). Although these indicators are historic, the effects they bring to the real economy will be lagged and last for years. The CAGRs will be normalized and benchmarked to produce rankings across each indicator. The nine indicators are weighted equally in the overall index.

Disaggregation of data at the city level using a combination of official statistics and smart proxies will be attempted. Data parameters will be collected and studied at the city level. Inter alia, these include population, real estate market trends, tax receipts, infrastructure investments and demand, transportation, energy consumption, night-time light data (radiance and saturated light emissions) etc.

Illustrations

These illustrations are largely drawn from the China Emerging City Rankings (2010-13) which has been developed in collaboration with the Chinese authorities to analyse and present a city level picture of economic resilience and performance. These Rankings are prepared and disseminated by EIU widely and are highly referenced by analysts and business leaders globally. Significant decisions on job-propelling investments are made with the help if unique and highly nuanced insights provided by this data.

China Emerging City Rankings 2015 - Illustrations


Overall ranking
Hot spots
China's top ten emerging cities*
Ranking
Population
Disposable income per person, $'000
BEIJING
SHANGHAI
Zhengzhou
Suqian
Huaibei
Huainan
Xiangyang
Chengdu
Chongqing
Zhuzhou
Hengyang
Guiyang
4.3m
1.1m

* Based on: real GDP; population; disposable income per person; consumer spending per person; fixed-asset investment; urban built area; fiscal revenue; foreign direct investment; merchandise exports.

Source: The Economist Intelligence Unit

Emerging city rankings: top 20 cities, 2015

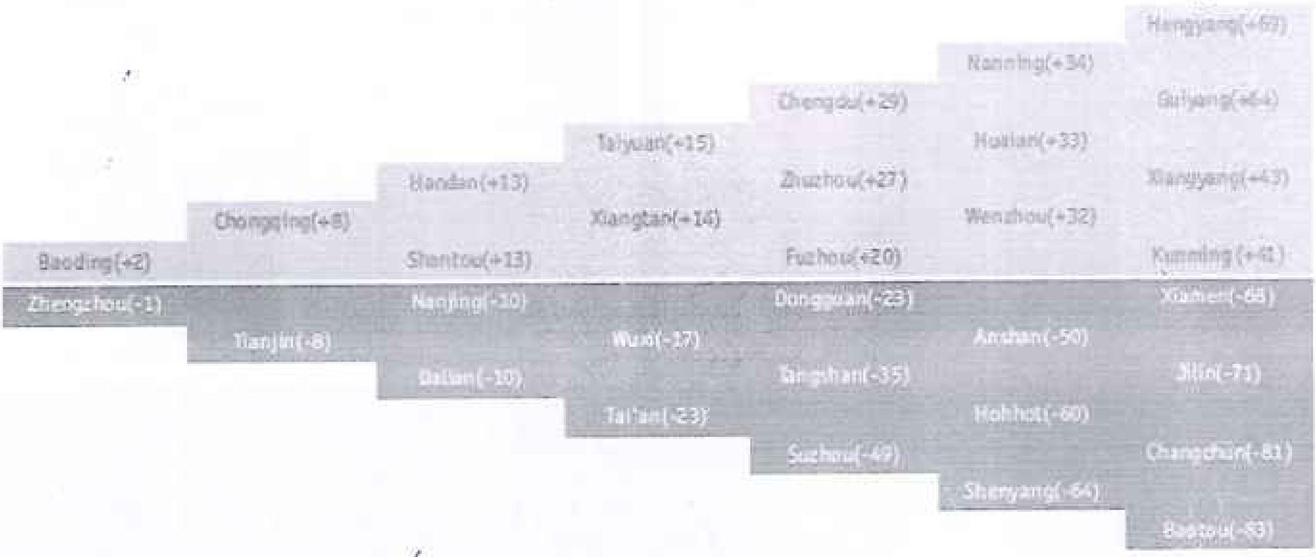
(Note: 93 cities included in the dataset)

Overall ranking	City	Real GDP	Metropolitan population	Disposable income per head	Consumption expenditure per head	Fixed-asset investment	Urban built area	Fiscal revenue	Foreign direct investment	Merchandise exports
1	Guiyang (Guizou)	1	46	16	7	19	5	22	1	10
2	Xiangyang (Hubei)	33	60	30	41	1	10	1	19	11
3	Hengyang (Hunan)	38	40	21	25	2	11	3	37	4
4	Chongqing	3	66	8	3	46	14	28	12	3
5	Suqian (Jiangsu)	16	1	5	5	79	47	5	3	5
6	Huainan (Anhui)	92	72	92	63	14	81	10	34	1
7	Huaibei (Anhui)	12	35	83	48	16	50	39	4	9
8	Zhuzhou (Hunan)	25	75	24	56	5	21	20	33	8
9	Zhengzhou (Henan)	9	19	25	46	49	64	34	31	2
10	Chengdu (Sichuan)	40	27	42	38	67	52	49	6	7
11	Jinzhou (Liaoning)	84	85	45	11	6	77	7	14	18
12	Wuhu (Anhui)	5	15	28	1	17	54	6	22	19
13	Yinchuan (Ningxia)	66	3	61	72	20	42	9	17	21
14	Nanchong (Sichuan)	75	47	12	69	11	9	14	42	14
15	Yingkou (Liaoning)	82	53	57	43	61	73	2	9	20
16	Mianyang (Sichuan)	54	84	53	57	30	36	11	38	13
17	Nanchang (Jiangxi)	7	41	23	21	41	4	32	60	16
18	Nanyang (Henan)	48	31	14	26	56	8	57	8	32
19	Kunming (Yunnan)	57	68	41	16	31	24	48	23	15
20	Xuzhou (Jiangsu)	13	51	19	10	58	22	16	24	24

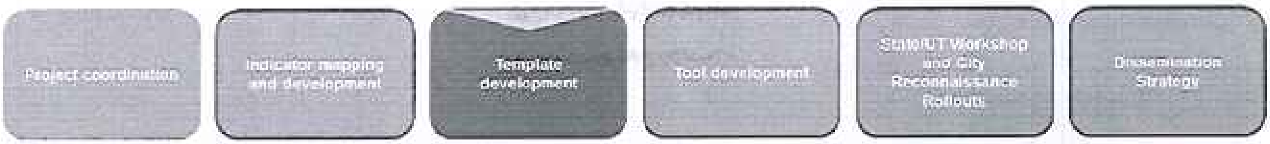
Source: The Economist Intelligence Unit.

Winners and losers

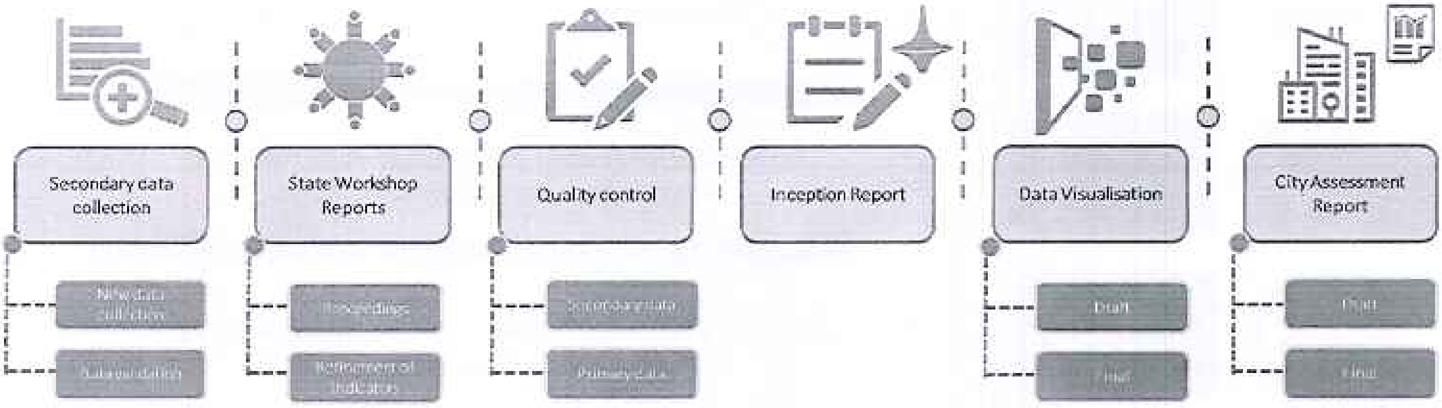
(Shifts in emerging cities index ranking, 2010-15)



Source: The Economist Intelligence Unit.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

To ensure readiness for the subsequent phases, our team will develop templates ranging from secondary data collection to city assessment reports and collect inputs from the MoHUA early on. The following templates shall be prepared during the preparatory phase.


Secondary data collection
New data collection
Data validation
State Workshop Reports
Proceedings
Refinement of indicators
Quality control
Secondary data
Primary data
Inception Report
Data Visualisation
Draft
Final
City Assessment Report
Draft
Final

Customised secondary data template shall be prepared in advance for each city. The data template would comprise two categories of data fields, namely"

- New data fields
- Validation data fields

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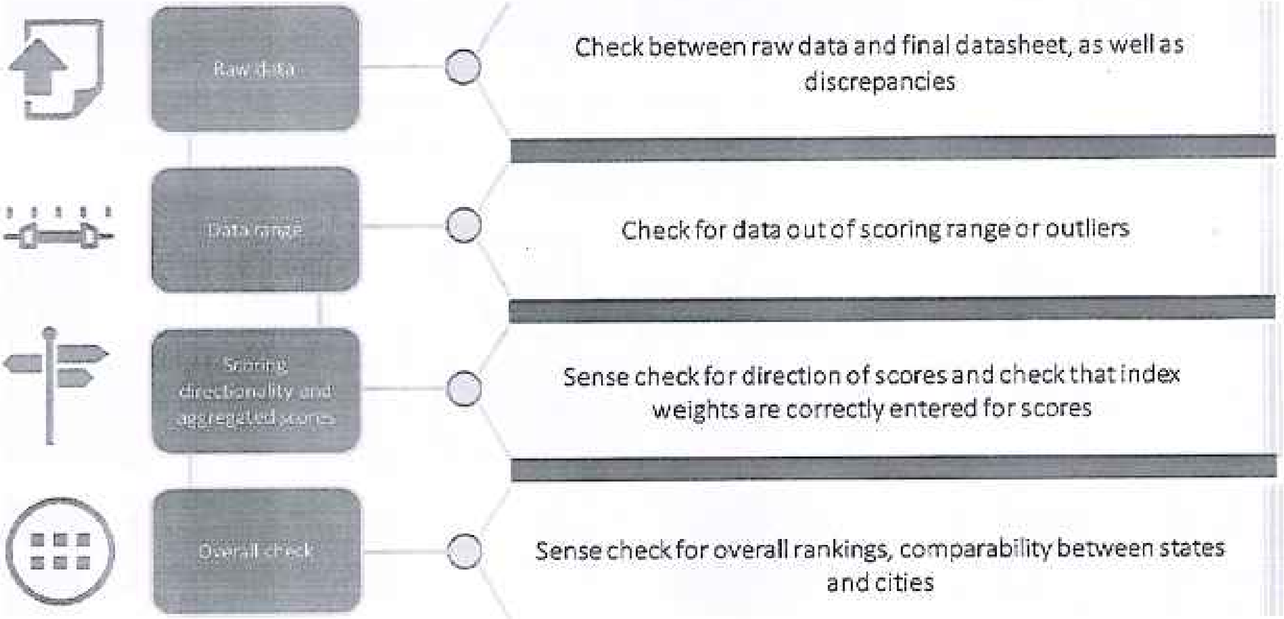
While the new data field will require cities to fill the data points afresh, the validation data field would comprise collation of real data from existing sources such as Census 2011, data.gov.in, *Swacch Bharat Mission* (Urban), Smart Cities Mission, *Swacch Sarvekshan*, HRIDAY, AMRUT and other programmes/schemes that could be either validated or revised by the cities. The data collection template will be an online tool e.g., *sharepoint* with in-built functions including drop-down menus for ease of access; this tool can be used without internet and cities could save draft versions and upload post finalisation. It is our standard practice to have a set of robust quality assurance procedures to be performed on every Excel index to minimise errors and oversight.



Check between raw data and final datasheet, as well as discrepancies

Check for data out of scoring range or outliers

Sense check for direction of scores and check that index weights are correctly entered for scores

Sense check for overall rankings, comparability between states and cities

As stated earlier a simple and user-friendly online data entry portal will be developed on Sharepoint/VB and shared with the cities. Each city will be provided a customized login user name and password. Categories of data will be generated along the thematic heads identified under the Liveability programme guidelines and the user can easily navigate across pages and fill out those data points that are available at hand first. (an illustration of a sharepoint portal developed for Tamil Nadu is provided below)

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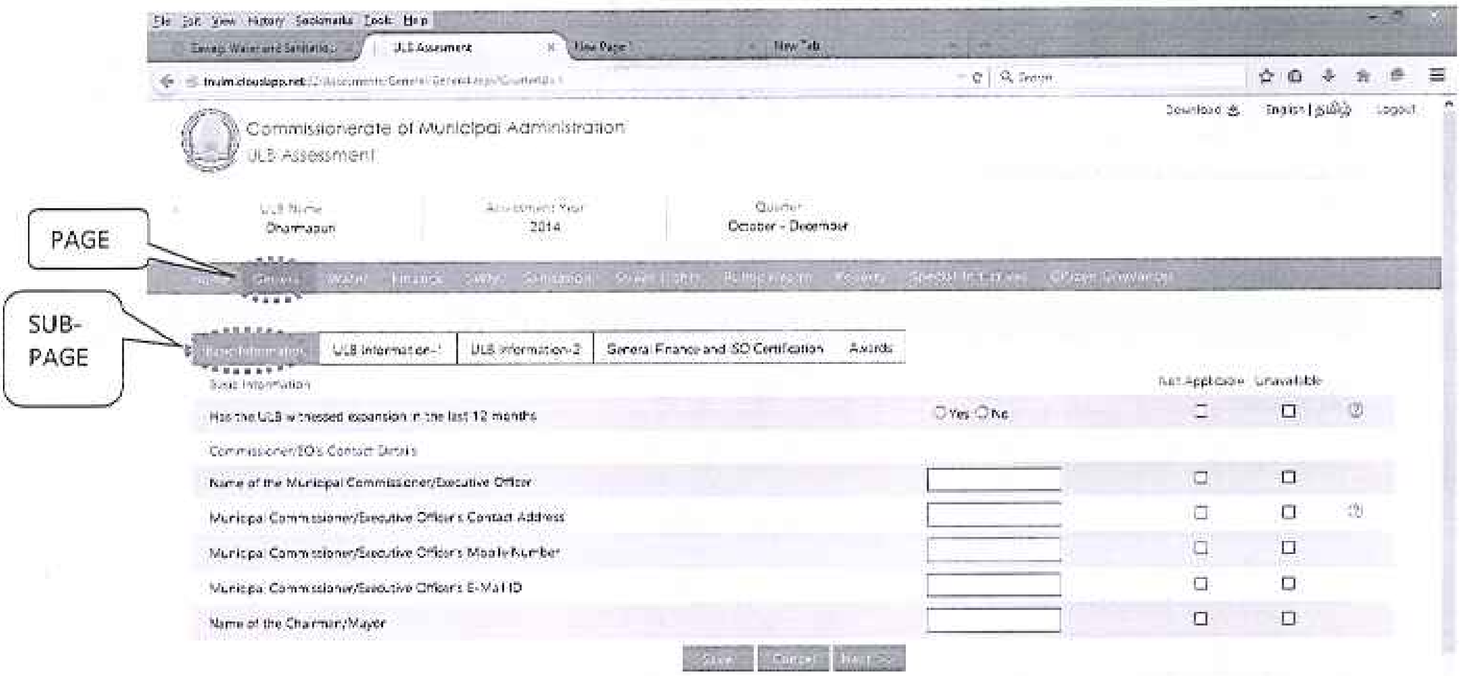
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ULB Assessment
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Logout
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Cancel
Next >>

Commissionerate of Municipal Administration
ULB Assessment

ULB Name: Dharmapuri
Assessment Year: 2014
Quarter: October - December

Basic Information | ULB Information-1 | ULB Information-2 | General Finance and SO Certification | Awards

Basic Information

		Not Applicable	Unavailable
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐
Commissioner/EO's Contact Details			
Name of the Municipal Commissioner/Executive Officer		☐	☐
Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

The user will be given an option to save their work mid-way and resume at any time. For every data indicator, options such as 'not available' and 'not applicable' (for example: some cities may not have a centralized treatment plant and thus the data may not be applicable at all to that city) will be provided.

Once completed, the city will submit the data, no changes can be made to the data that is filled in once the data file is submitted.

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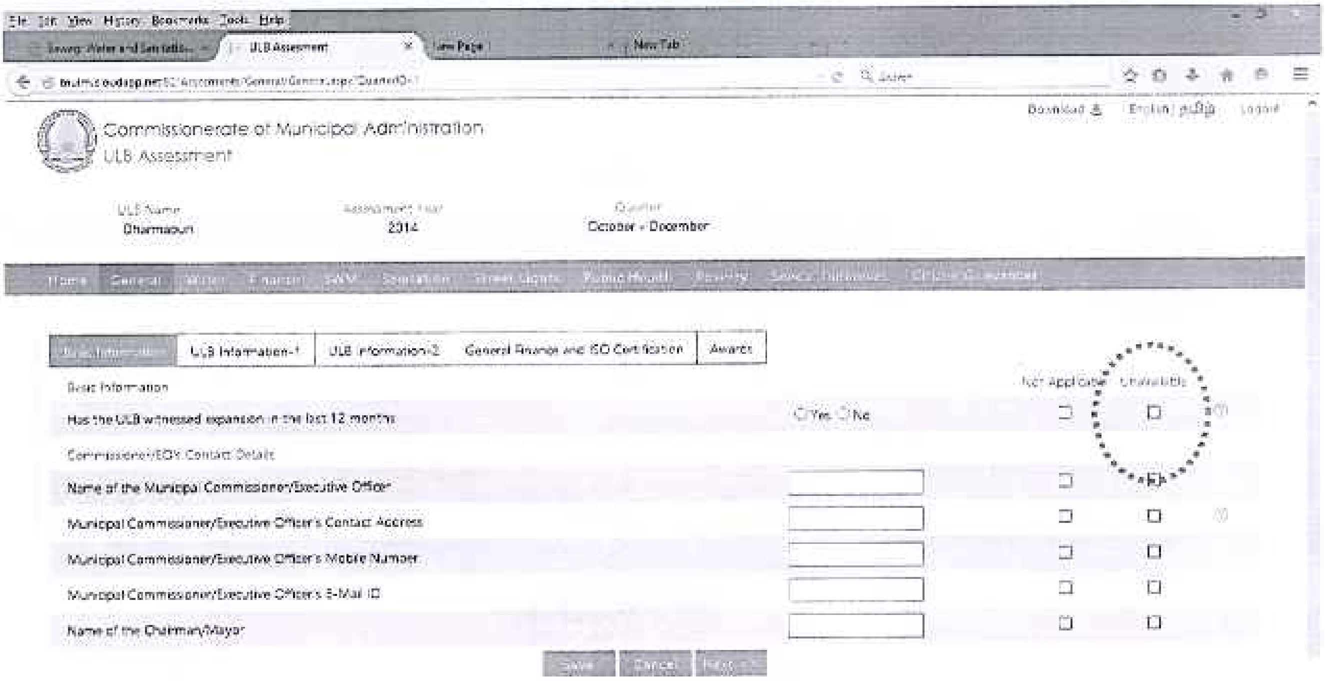
File Edit View History Bookmarks Tools Help
Swachh Water and Sanitatio...
ULB Assessment
New Page
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Search
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English | தமிழ்
Logout
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next

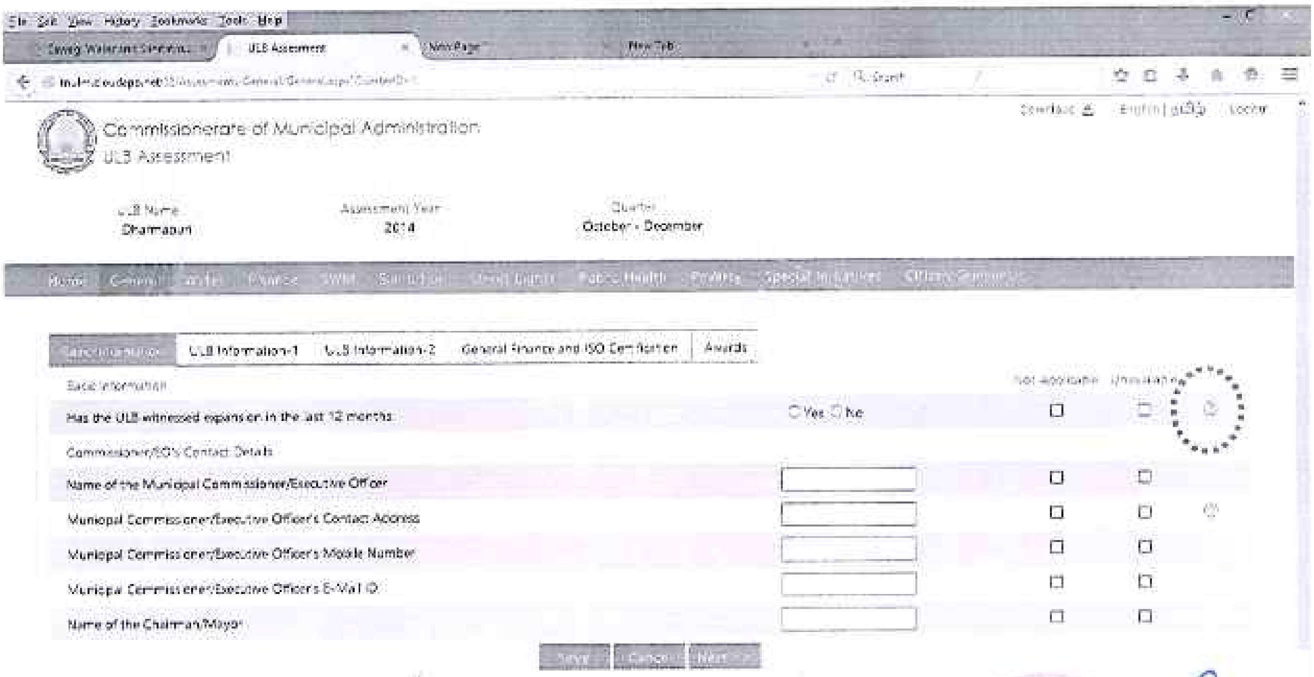
Commissionerate of Municipal Administration
ULB Assessment

ULB Name	Assessment Year	Quarter
Dharmapuri	2014	October - December

Basic Information

		Not Applicable	Unavailable
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐
Commissioner/EO's Contact Details			
Name of the Municipal Commissioner/Executive Officer		☐	☐
Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

Also for every question, a help function will be embedded in the data entry tool to guide the city on the source of data. Efforts will be made to keep the data entry process to filling out raw data and the calculation of ratios and second tier analytics will be done at the back-end


File Edit View History Bookmarks Tools Help
Swachh Water and Sanitatio...
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Logout
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next

Commissionerate of Municipal Administration
ULB Assessment

ULB Name	Assessment Year	Quarter
Dharmapuri	2014	October - December

Basic Information

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Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

वि. विजय कुमार/V. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार, Govt. of India

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The cleaned and checked data will be fed into the model data analysis and visualisation template. Our consortium has the experience and expertise of building stunning data representation, interactive maps and digital story telling. For this assignment, we would develop a craft Excel model[2] which uses an interactive dashboard to visualise the data and benchmarking process; this can include:

- Interactive heat map
- Adjustable weightings to allow for customisation
- A list of city scores by category and/or indicator
- Custom scatterplots and correlation analysis
- Ability to compare multiple cities simultaneously
- Geography profile page with key data, along with strengths and weaknesses

The craft data visualisation template will be presented to the state and city officials during the state/UT-level engagements and shared with MoHUA for review and feedback. At the same time, the template will be revisited by our analysts as part of a quality-control procedure and to ensure city comparability. An example of the EIU's interactive workbooks and dashboards can be seen below

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[2] Examples of the Excel index workbooks developed by the Economist Intelligence Unit can be found for the Safe Cities Index, for the Food Sustainability Index and for the Path to Zero thought leadership

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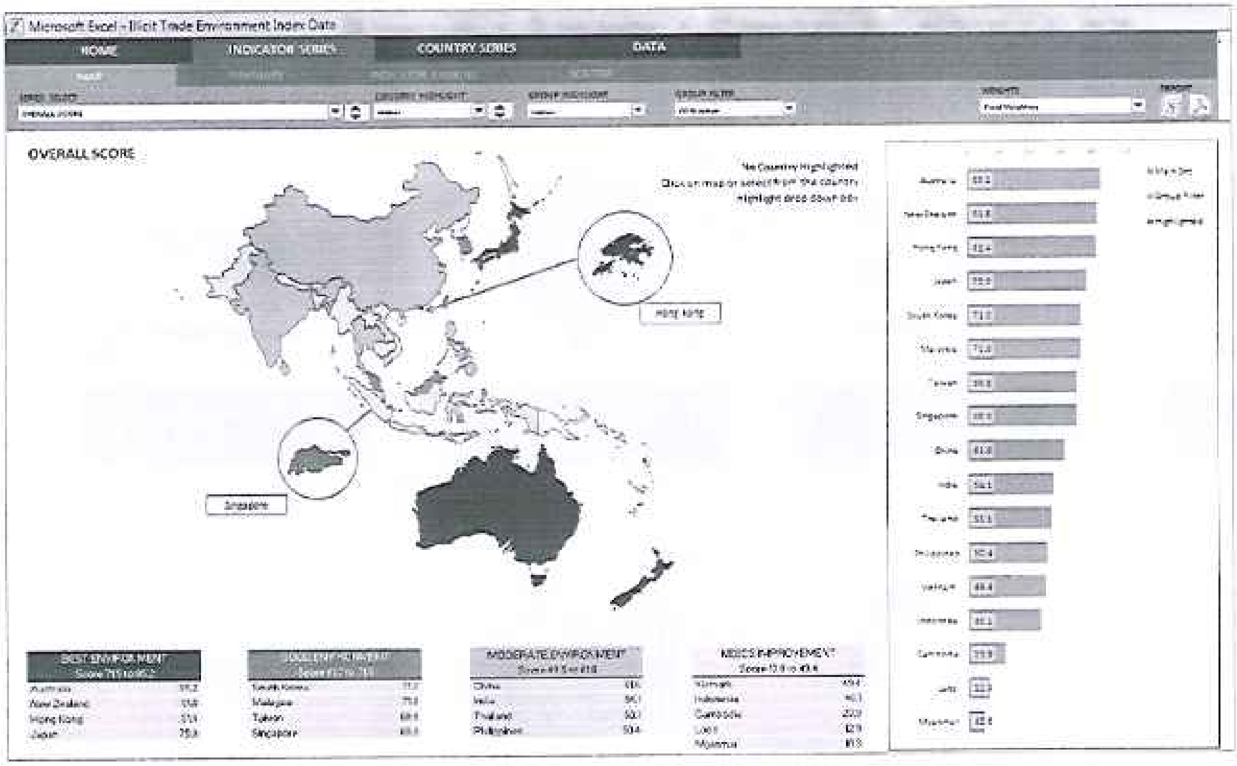
Microsoft Excel - Illicit Trade Environment Index Data
HOME
INDICATOR SERIES
COUNTRY SERIES
DATA
MAP
OVERALL SCORE
No Country Highlighted
Click on map or select from the country highlight drop down box
Hong Kong
Singapore
BEST ENVIRONMENT
GOOD ENVIRONMENT
MODERATE ENVIRONMENT
NEEDS IMPROVEMENT
Australia
New Zealand
Hong Kong
Japan
South Korea
Malaysia
Taiwan
Singapore
China
India
Thailand
Philippines
Vietnam
Indonesia
Cambodia
Laos
Myanmar

Illustration of EIU's Liveability Index visualisation

Illustration of EIU's Liveability Index visualisation

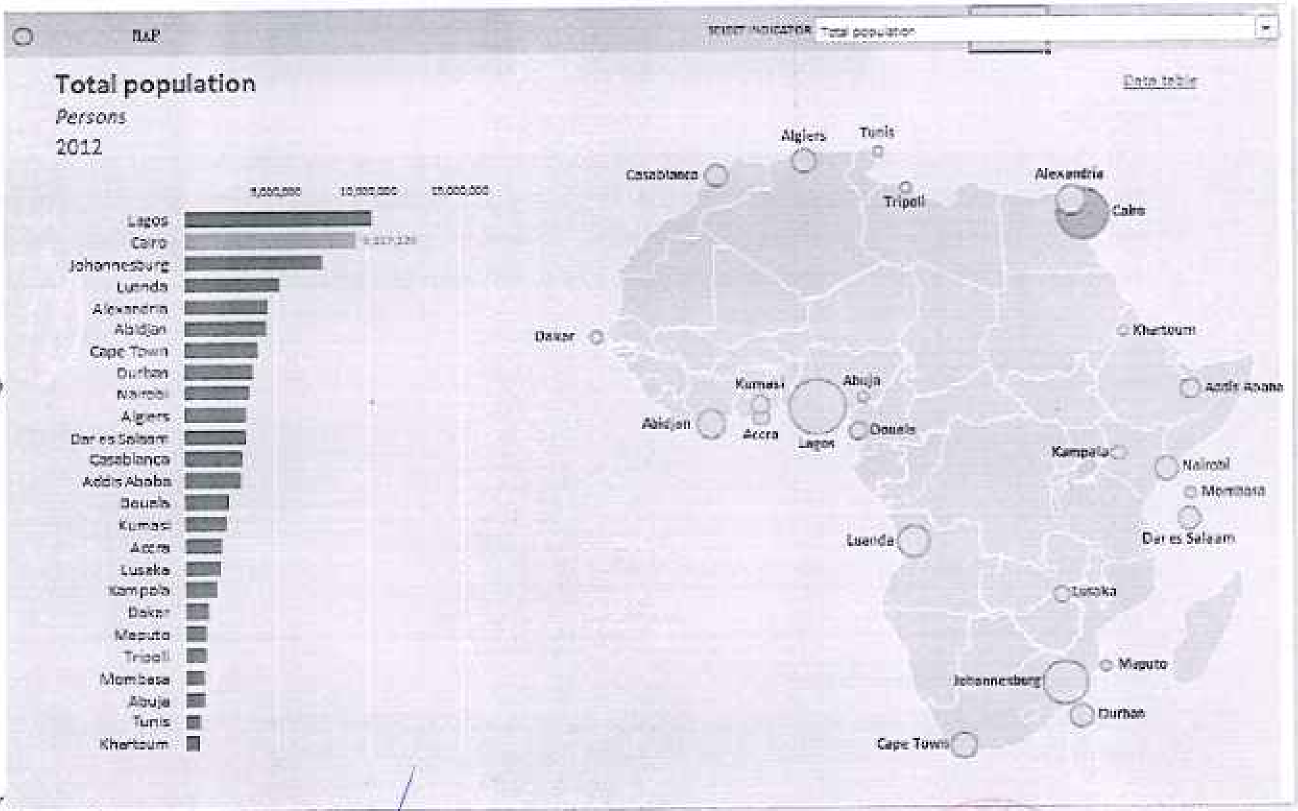
MAP
SELECT INDICATOR Total population
Total population
Persons
2012
Data table
5,000,000
10,000,000
15,000,000
Lagos
Cairo
Johannesburg
Luanda
Alexandria
Abidjan
Cape Town
Durban
Nairobi
Algiers
Dar es Salaam
Casablanca
Addis Ababa
Douala
Kumasi
Accra
Lusaka
Kampala
Dakar
Maputo
Tripoli
Mombasa
Abuja
Tunis
Khartoum

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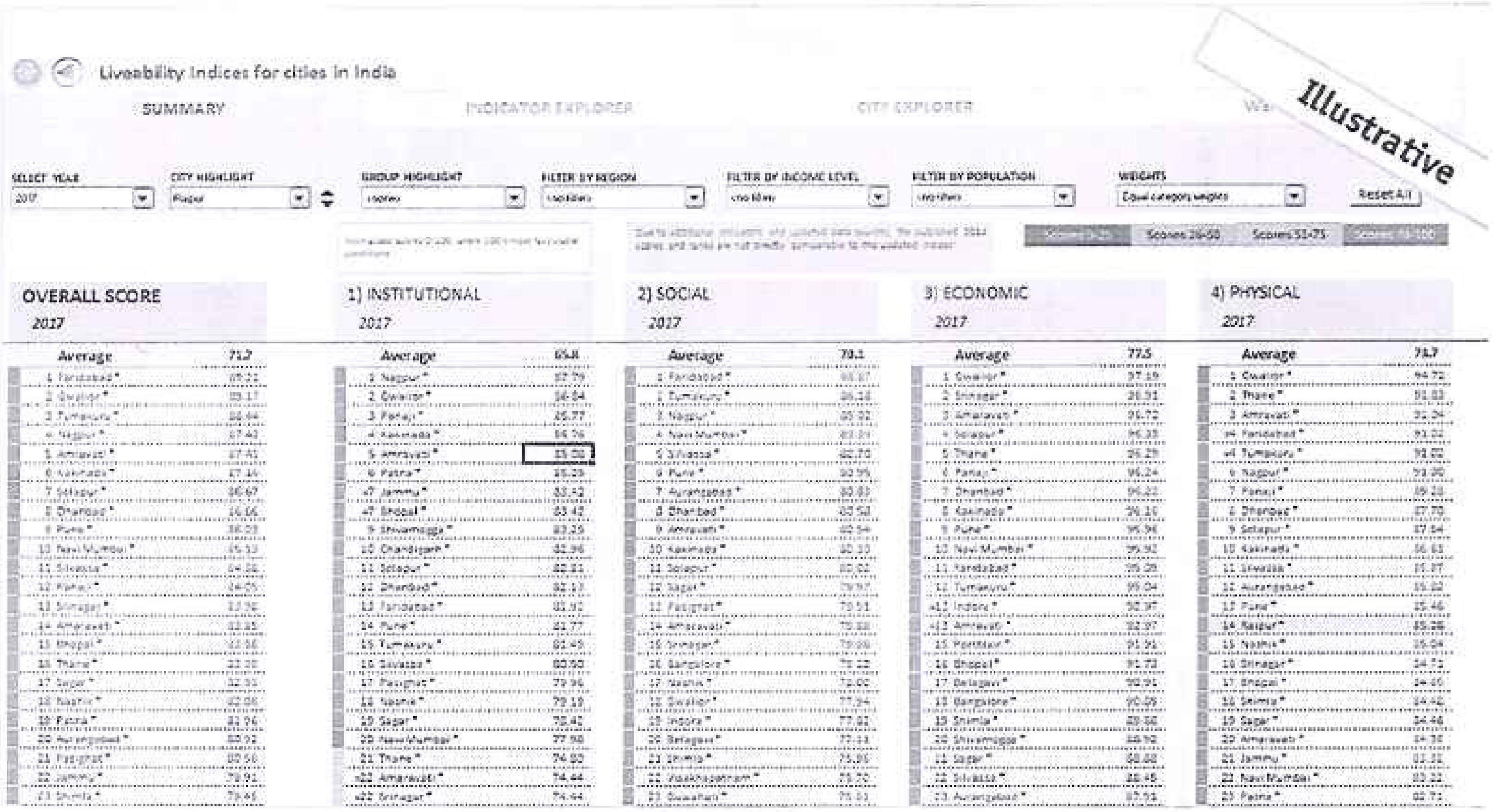
Illustration of EIU's Liveability Index visualisation


Liveability Indices for cities in India
SUMMARY
INDICATOR EXPLORER
CITY EXPLORER
Illustrative
SELECT YEAR
2017
CITY HIGHLIGHT
GROUP HIGHLIGHT
FILTER BY REGION
FILTER BY INCOME LEVEL
FILTER BY POPULATION
WEIGHTS
Equal category weights
Reset All
Scores 26-50
Scores 51-75
OVERALL SCORE
2017
Average 71.7
1) INSTITUTIONAL
2017
Average 65.8
2) SOCIAL
2017
Average 70.1
3) ECONOMIC
2017
Average 77.5
4) PHYSICAL
2017
Average 71.7

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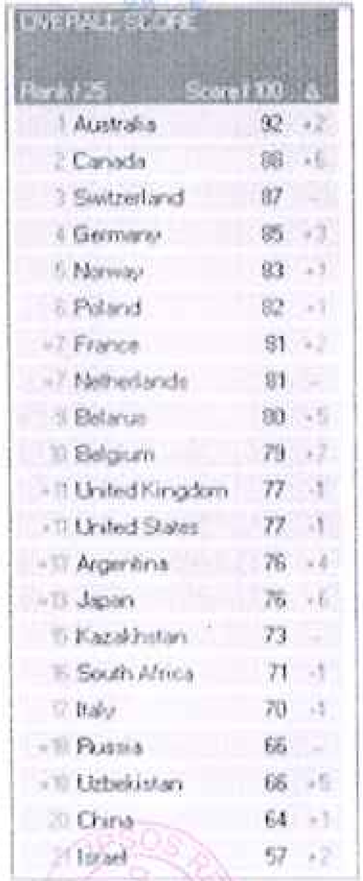
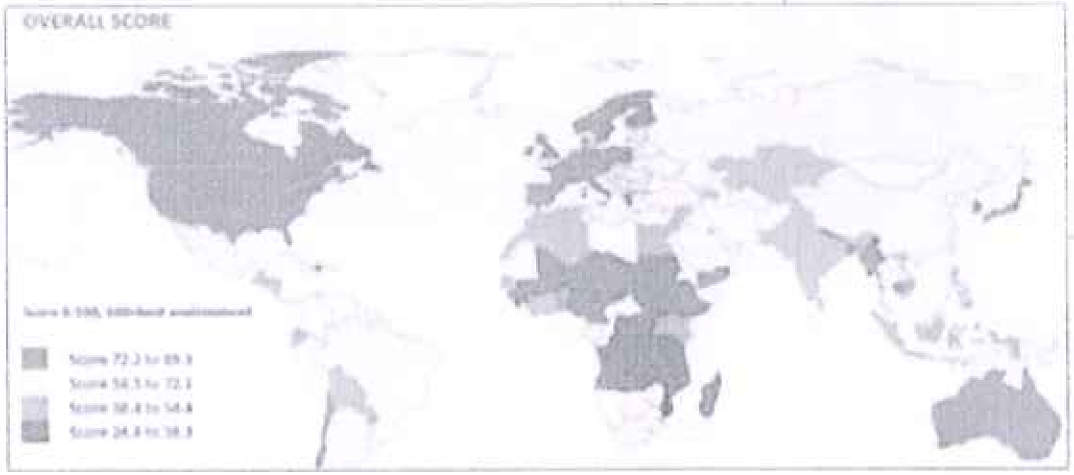
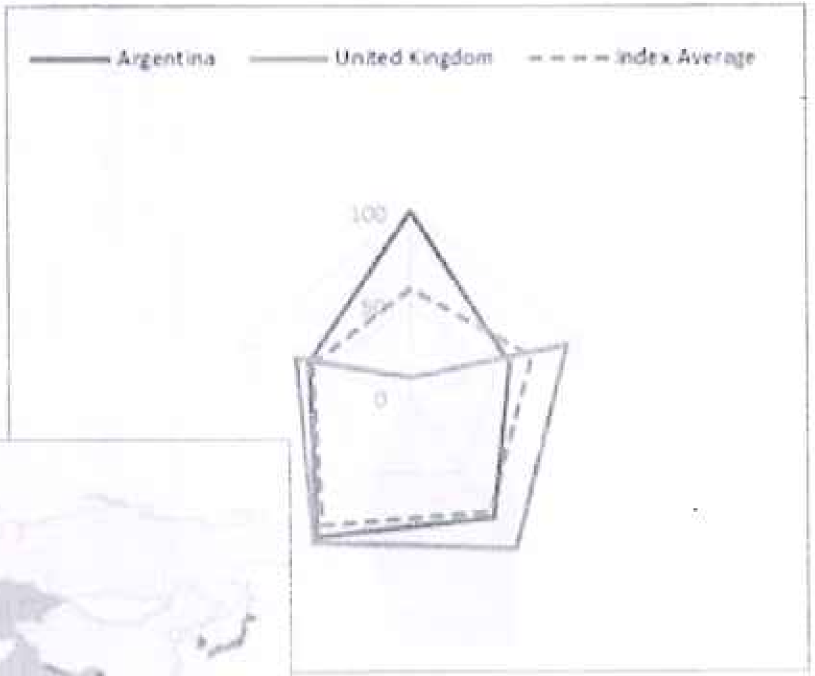


OVERALL SCORE

Rank / 25		Score / 100	Δ
1	Australia	92	+2
2	Canada	88	+6
3	Switzerland	87	–
4	Germany	85	+3
5	Norway	83	+1
6	Poland	82	+1
=7	France	81	+2
=7	Netherlands	81	–
9	Belarus	80	+5
10	Belgium	79	+7
=11	United Kingdom	77	-1
=11	United States	77	-1
=13	Argentina	76	+4
=13	Japan	76	+6
15	Kazakhstan	73	–
16	South Africa	71	-1
17	Italy	70	-1
=18	Russia	66	–
=18	Uzbekistan	66	+5
20	China	64	+1
21	Israel	57	+2





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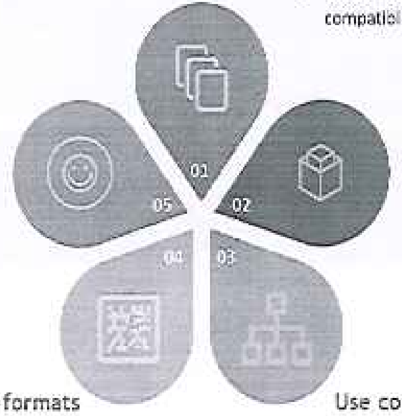
Data interoperability considerations

Global efforts are underway to integrate the increasing gamut of urban data for monitoring understanding, decision making, steering and control of urban landscape. However, the design of urban data is still on-going. with measures to standardise it can be seen even in India through game changing initiatives such as the Smart Cities Mission. We believe that the value of data multiplies when it is easily grasped by key stakeholders e.g., city administrators, citizens, etc. analysed and shared. The multiplicity of sources and formats poses a challenge to addressing queries raised by city stakeholders. These queries could be from city administrators or citizens, for instance, 'where is the greatest risk of mosquito-borne illness?' Or from citizens 'Which parts of the cities have the highest chances of receiving flash floods in the next few days?' The Smart Cities concept globally seeks to move towards this by addressing the issue of interoperability of urban data by defining an overarching framework of concepts and relationships that can be used to describe data from any sector and any source (BSI, 2016).

The liveability assessment exercise provides a platform to leverage the value of data by making it *interoperable*, open yet secure and *use case* applications. We see this assignment as opportunity to move the needle on data interoperability by developing a framework for urban data interoperability based on the principles of interoperability consolidated in the Cape Town Global Action Plan for Sustainable Development (2017). The key guiding principles are presented in figure below:



Use and re-use existing standards

- No new standards should be created in areas they already exist unless absolutely necessary.
- When new standards are created, they must be compatible with existing standards

Do not overlook metadata

- Metadata includes information on origin, authors/producers, date of production/version, etc.
- It is crucial for discoverability, accessibility and fostering trust and understanding of the context in which the data was produced.

Use common classifications wherever possible

- As more and more data is produced, we need to ensure that to the extent possible, the language used to define and classify that data is the same.

Publish data in machine-readable formats

- publishing data in machine readable formats is crucial to interoperability.
- It enables a computer to access, identify and filter data in an automated way.

Ensure that standards are user driven

- For data to be usable, it has to be driven by the needs of users themselves.
- The process of ensuring that data is usable can be complex and require trial and error, but is crucial to long-term success and impact.

Source: The frontiers of data interoperability for sustainable development, Development Initiatives, November 2017

Our framework will also examine the political economy framework for urban data (Edwards et. Al., 2016) that calls for a shift the focus of data driven governance policies and practices from capacity and supply to incentivising service delivery, transparency and accountability. The recent initiative of the MoHUA to provide INR 10,000 crore for municipal reform ushers this spirit in governance of cities in India. The political economy framework calls for provisioning and usage of urban data should be about the solution to concrete problems in urban environments, not just about the pure quantities of urban data.

At the end, urban data is simply a means to do urban monitoring, steering and development more effectively, efficiently and reliably. We also propose to outline some of the use case applications based on the consultations with state/UTs and cities considering the data that will be generated from this assessment exercise. Some of the operation enhancing questions or use case applications could be the following:

- When citizens apply for / obtain multiple services, which service do they typically apply for first?
- Is there a correlation between energy consumption and tenement structures?

ILLUSTRATIVE

- Where is there the greatest risk of mosquito borne illness?
- Is there a correlation between service delivery efficiencies in SWM and settlement type?

G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
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नई दिल्ली/New Delhi

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Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

Three tools would be developed to assist with tracking consultations with state government and cities, primary data collection and for validation of secondary data points

Dashboard – Monitoring State Workshops and Secondary Data Submission by cities
Research Instrument for Primary Data Collection
Validation Tool (Secondary Data Collection)

The first tool i.e., for tracking State/UT/City level consultations will monitor the progress of 36 State/UT level workshops and 116 City Reconnaissance Meetings and provide updates on agreed data points, nodal contact person, timelines, mode of secondary data provision (online tool e.g., *sharepoint* vs. manual) among other aspects. This tool will be in the form of a dashboard that will also monitor the progress made by cities on secondary data submission.

We will develop a set of research instrument for primary data collection for an identified set of indicators. The research instrument will be coded into a mobile application and finalised post field test. Additionally, we will also develop draft template for validation of secondary data pertaining to some indicators such as number of schools having facilities for using digital content etc.

Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

We see the state/UT level engagements as a platform for not only disseminating the objectives and rationale for undertaking the liveability assessment of cities within each state/UT but also as an opportunity to finalise our approach for arriving at the input data points for each of the 79 indicators and associated modalities. As a run-up to the state/UT workshops and city reconnaissance missions, the following preparatory activities would be undertaken:

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Identification of City level Stakeholders

City level stakeholder would be identified with respect to key stakeholder with respect to each indicator. The Methodology Report states the agency/department from which data could be obtained for each of the indicator. For instance, data on cost recovery, online services would be provided by the ULB, data on restoration of historic buildings are to be provided by ASI and State ASI apart from ULB. Similarly, data on projects on ecologically sensitives areas would be provided by the local development authority. Consideration would be given to identify key officials within an organisation as well.

Preparation and dispatch of city wise Secondary data collection sheets

An important step in this phase is to prepare city level data sheets covering the input data points for the 79 indicators to all the cities through the State nodal officer. The data sheets would be populated from existing data sources such as Census 2011, Swachh Sarvekshan, AMRUT, SCM, HRIDAY and other programmes/schemes. Advance dispatch of the sheets would provide cities some time to review and understand the required data points so that issues/clarifications could be made at the workshops.

Scheduling of State-level workshops and City Reconnaissance Missions

Timelines for State-level workshops and City level reconnaissance missions would be scheduled in consultations with the State nodal officer for each State. The dates for the workshop would be reflected on the State Workshop Progress Monitoring Dashboard as and when the dates for each workshop gets finalised. This dashboard would help MoHUA and States to track the progress of State workshops and city reconnaissance missions, respectively. This dashboard would later be utilized to monitor progress of secondary data submission by cities.

Preparation of draft workshop agenda and discussion content

A draft workshop agenda would be prepared and finalised in consultation with the MoHUA and respective State Governments. The workshop would have structured discussions around the following thematic areas – Project Background and Methodology, Understanding the indicators (demystifying nomenclatures and data points), smart proxies, data collection template, standardization of reporting period, data lags, Incentives for timely/early submissions, etc.

Project coordination | Indicator mapping and development | Template development | Tool development | State/UT Workshop and City Reconnaissance Rollouts | **Dissemination Strategy**

We will create a strategy for dissemination of the city liveability assessments at the international and national level. While a national workshop to share the city level rankings is planned towards the end of the study we plan to engage with international, national, state and local level on an on-going basis through a host of media dissemination activities such as photo journals, articles, blogs and a high decibel social media campaign. One key outreach event is the creation of a dissemination platform – 'The Hub' @ The Economist to connect and share progress with global audience. Our dissemination activities will conclude with the national level workshop to demonstrate use-case of evidence generated by this exercise for futuristic urban planning for Indian cities.

जी. विजय कुमार/G. VIJAY KUMAR
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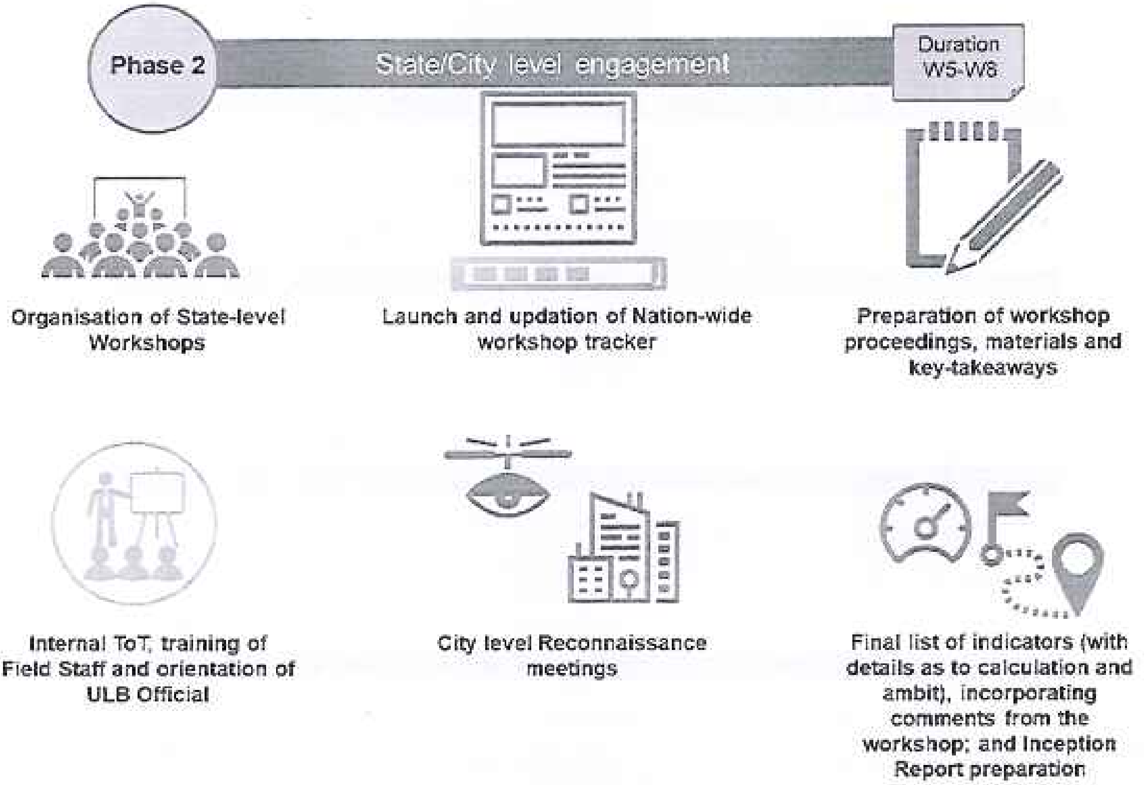
Phase 2: State/UT-level Engagements and City Reconnaissance Missions [Week 5- Week 8]

Phase two will commence with launch of state/UT level workshops. Overall a total of 36 workshops will be conducted over a period of two to three months. Our teams would coordinate with the state level nodal officers early on for tentative dates for scheduling workshops. The objective of the State level workshop will be to familiarize the state/UT government and city representatives about the overall concept of Liveability Index, assessment methodology, data requirements, data sources, data collection interface/application and validation methodology and associated processes and timelines for submission of complete data. Schedule for city level reconnaissance meetings will able to finalised during the state/UT workshops. The figure below summarises the key activities and milestones to be complete in this phase.



Phase 2 State/City level engagement Duration W5-W8

Organisation of State-level Workshops

Launch and updation of Nation-wide workshop tracker

Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official

City level Reconnaissance meetings

Final list of indicators (with details as to calculation and ambit), incorporating comments from the workshop; and Inception Report preparation

Media dissemination through photo journals, national portal to be an on-going exercise

It is expected that about 40-45 participants comprising city representatives, state nodal officer, representatives from relevant line department of the State government and other participants suggested by the State Government will attend the workshop. Key outcomes of the State level workshops will include the following:

- Timelines for city level reconnaissance meetings

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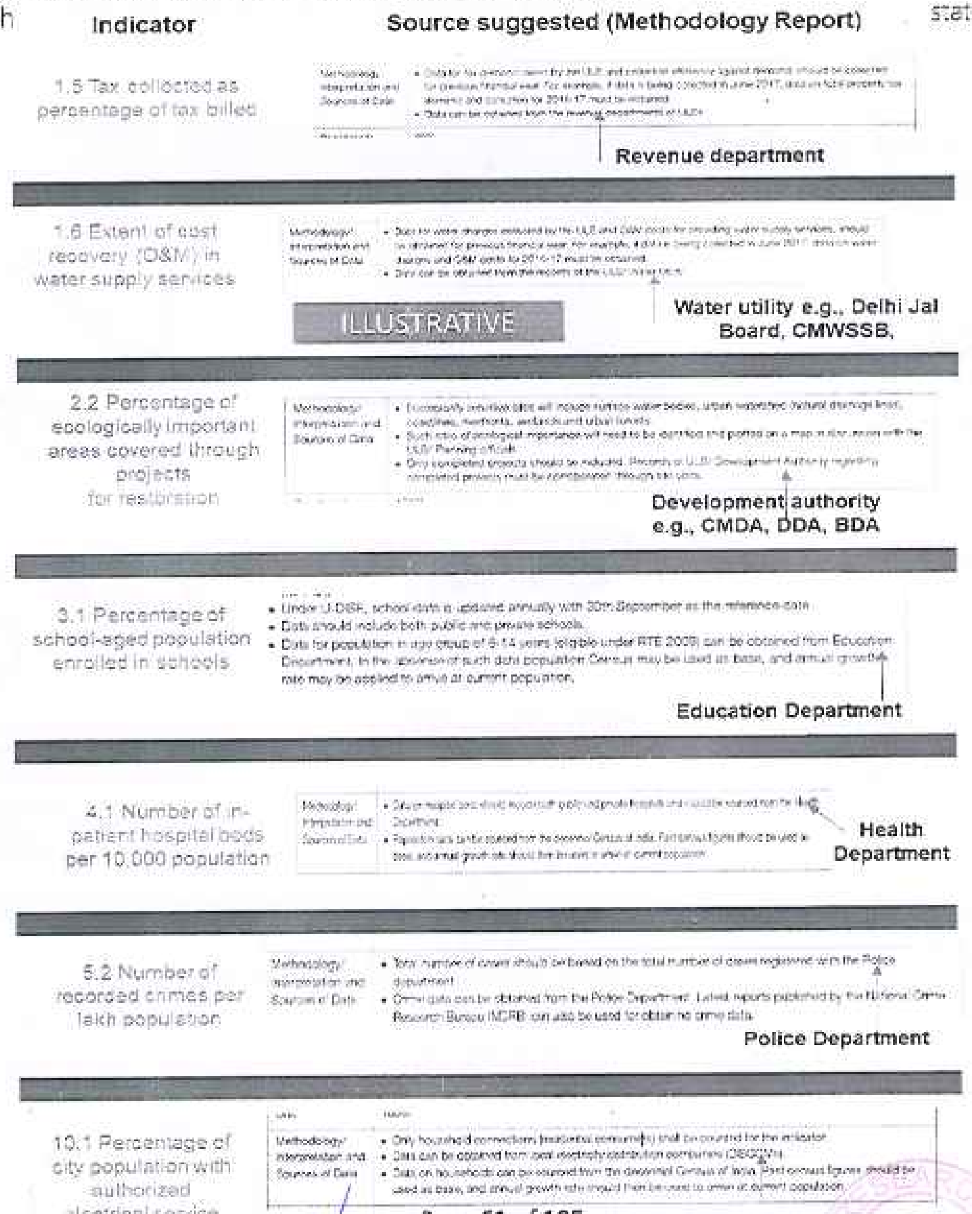
- Identification of preferred mode of data collection interface
- Timelines for confirming availability/unavailability of required data
- Timeliness for submission of secondary data
- Timelines for review and agreement on data
- Protocols for escalation of issues relating to data nomenclature, submission delays etc.
- Incentive structure for timely submission of secondary data

An initial list of participants will be drawn based on the agency suggested for different data points in the 'Methodology Report. This list would be finalised in consultation with the nodal officers of each state.


Indicator
Source suggested (Methodology Report)
1.5 Tax collected as percentage of tax billed
Revenue department
1.6 Extent of cost recovery (O&M) in water supply services
ILLUSTRATIVE
Water utility e.g., Delhi Jal Board, CMWSSB,
2.2 Percentage of ecologically important areas covered through projects for restoration
Development authority e.g., CMDA, DDA, BDA
3.1 Percentage of school-aged population enrolled in schools
Education Department
4.1 Number of in-patient hospital beds per 10,000 population
Health Department
5.2 Number of recorded crimes per lakh population
Police Department
10.1 Percentage of city population with authorized electrical service
DISCOMS

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Key ULB officials will participate in the state level workshops while the remaining officials may be encouraged to participate in city level reconnaissance discussions. An indicative programme structure is presented below:

Programme	Day 1	Day 2	Day 3	Day 4
Internal orientation to state/regional coordinators	√		ILLUSTRATIVE	
State/UT workshop		√		
City/ULB Reconnaissance discussions			√	

Post the State/UT workshops, our team will engage in city-level reconnaissance missions that would involve meeting relevant city-level stakeholders including utilities (DISCOMS, water supply, etc.) SPV for Smart Cities, different project heads, parastatals such as development authorities, district collector, concerned line departments such as health, education, police, tourism, among others. Special focus will be given to engage with key officials within ULBs such as revenue, accounts, solid waste management etc.

For effective coordination, smooth exchange of information flow and continuity, it is proposed that engagement with the cities will be undertaken through a nodal officer at the state/UT level. A critical milestone of this workshop will be designation of nodal officer for overall coordination by the respective state/UT government. The nodal officer will also serve as the State Data Ombudsman and troubleshoot issues relating to data.

Incentive structure for data submission

A key challenge envisaged in this study pertains to potential challenges related to timely submission of secondary data by the cities. We propose to formulate an innovative incentive structure in consultation with MoHUA and convey it at the state/UT workshops/city meetings to ensure their buy-in. Some of the ways in which cities could be incentivised could be 'appreciation of best performing cities on national portal and social media campaign.' with SMS alerts sent to all key city representatives, and exclusive coverage of best performing cities in photo journals etc.

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आवासन और शहरी कार्य मंत्रालय
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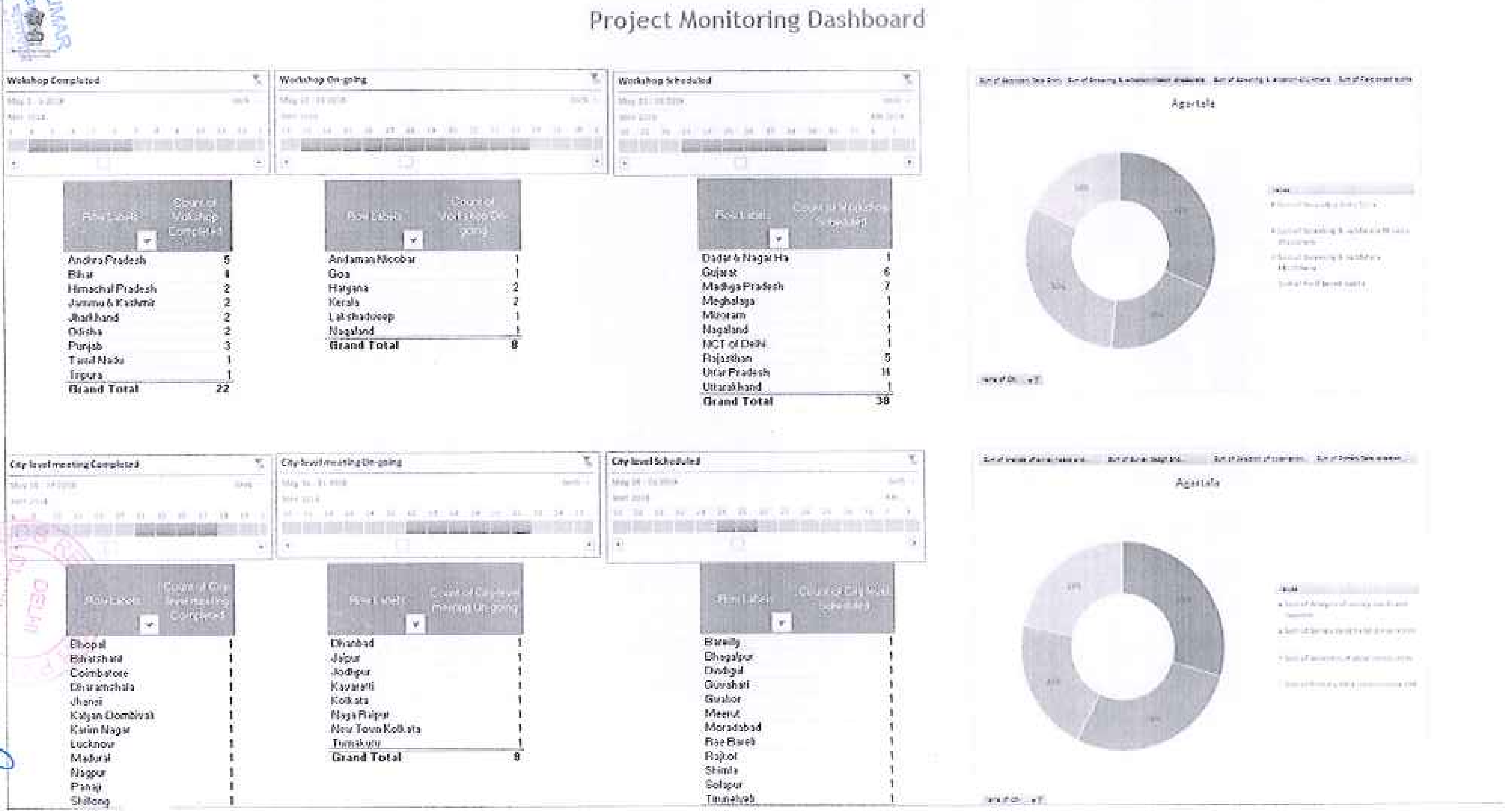
Monitoring progress of state/UT workshops and City Reconnaissance Missions

The progress of the state/UT workshops and City Reconnaissance Missions will be monitored through a dashboard that will be updated near-real time. The dashboard will information on upcoming, on-going and completed workshops and reconnaissance missions. Associated documents such as workshop agenda, list of participants, discussion materials, workshop proceedings/minutes, photographs, etc. will be accessible through the dashboard.



Project Monitoring Dashboard

Row Labels	Count of Workshop Completed
Andhra Pradesh	5
Bihar	4
Himachal Pradesh	2
Jammu & Kashmir	2
Jharkhand	2
Odisha	2
Punjab	3
Tamil Nadu	1
Tripura	1
Grand Total	22

Row Labels	Count of Workshop On-going
Andaman Nicobar	1
Goa	1
Haryana	2
Kerala	2
Lakshadweep	1
Nagaland	1
Grand Total	8

Row Labels	Count of Workshop Scheduled
Dadar & Nagar Ha	1
Gujarat	6
Madhya Pradesh	7
Meghalaya	1
Mizoram	1
Nagaland	1
NCT of Delhi	1
Rajasthan	5
Uttar Pradesh	14
Uttarakhand	1
Grand Total	38

Row Labels	Count of City level meeting Completed
Bhopal	1
Bilaspur	1
Coimbatore	1
Dharamshala	1
Jhansi	1
Kalyan Dombivali	1
Karim Nagar	1
Lucknow	1
Madurai	1
Nagpur	1
Panaji	1
Shillong	1

Row Labels	Count of City level meeting On-going
Dhanbad	1
Jaipur	1
Jodhpur	1
Kavaratti	1
Kolkata	1
Naya Raipur	1
New Town Kolkata	1
Tumakuru	1
Grand Total	8

Row Labels	Count of City level Scheduled
Bareilly	1
Bhagalpur	1
Dindigul	1
Guwahati	1
Gwalior	1
Meerut	1
Moradabad	1
Rae Bareli	1
Rajkot	1
Shimla	1
Solapur	1
Tirunelveli	1

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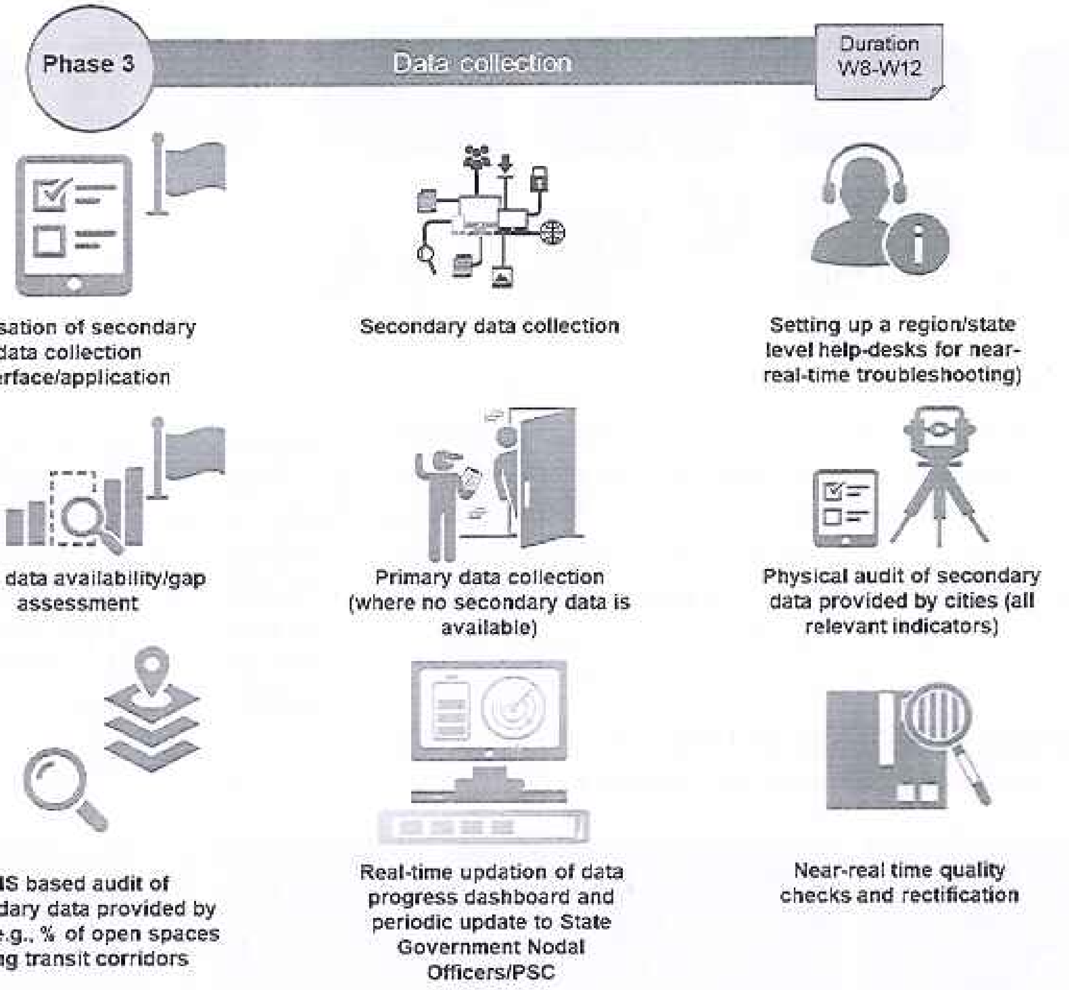
Phase 3: Data collection [Week 9 – Week 12]

This phase will involve the following activities:



Phase 3 — Data collection — Duration W8-W12

- Finalisation of secondary data collection interface/application
- Secondary data collection
- Setting up a region/state level help-desks for near-real-time troubleshooting)
- Final data availability/gap assessment
- Primary data collection (where no secondary data is available)
- Physical audit of secondary data provided by cities (all relevant indicators)
- GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors
- Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC
- Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

We propose collection of secondary data as an on-going exercise as our teams will start collating city level data from the preparatory phase itself and prepare data sheets with pre-filled data covering the 79 indicators to the extent possible. However, formal data collection will commence from week 9 as indicated in the ToR.

As presented in the section on preparatory phase, the 79 indicators could have six categories of data collection interface.

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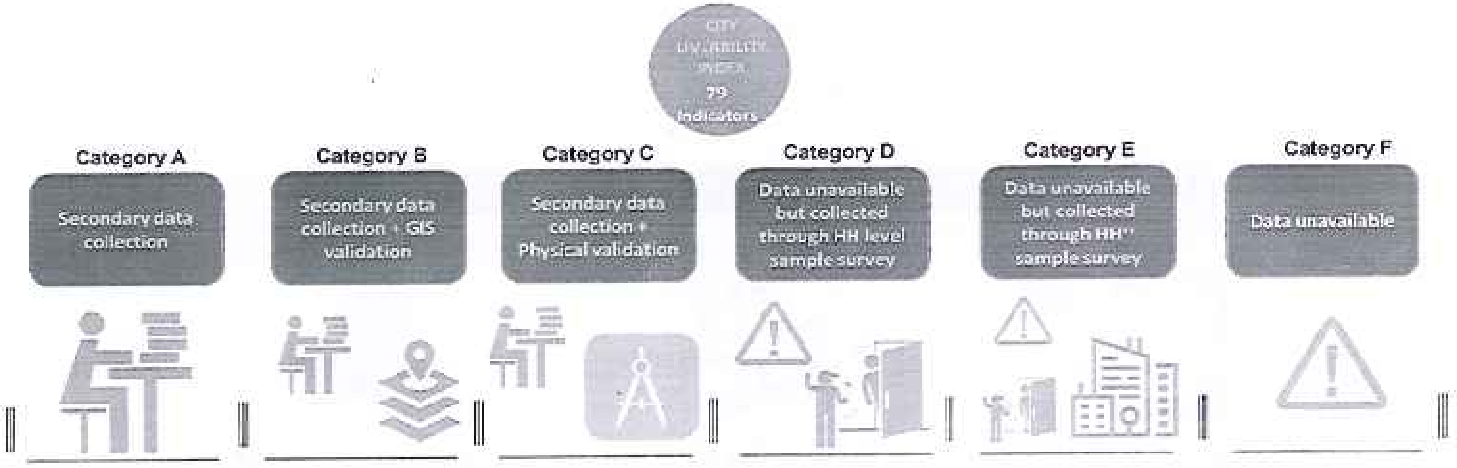
CITY LIVEABILITY INDEX
79 Indicators

Category A	Category B	Category C	Category D	Category E	Category F
Secondary data collection	Secondary data collection + GIS validation	Secondary data collection + Physical validation	Data unavailable but collected through HH level sample survey	Data unavailable but collected through HH** sample survey	Data unavailable

While it is expected that input data associated with all the 79 indicators will be provided by the cities, there could be some data gaps and concerns regarding period of availability, reporting units and formats, reliability etc. In this section we outline our preliminary approach for addressing the issues for various indicator category. For **Category A** (Secondary data collection), pre-filled templates will be prepared for each city wherever possible and shared for validation/filling new data.

Category B involves indicators that merit spatial validation. Some of the indicators under this category are:

State level helpdesks will be set up for each State/UT to assist the cities on any aspect relating to filling secondary data templates. This helpdesk would be manned by respective State level coordinators with technical back stopping facility by the support team.

- 8.1 | Per capita availability of green spaces
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 9.1 | Share of mixed land use area in overall city land use
- 9.2 | Net Density

For these indicators, we will be undertaking validation of the secondary data provided by cities through visual analysis using satellite and vector data. Figure below presents our approach:

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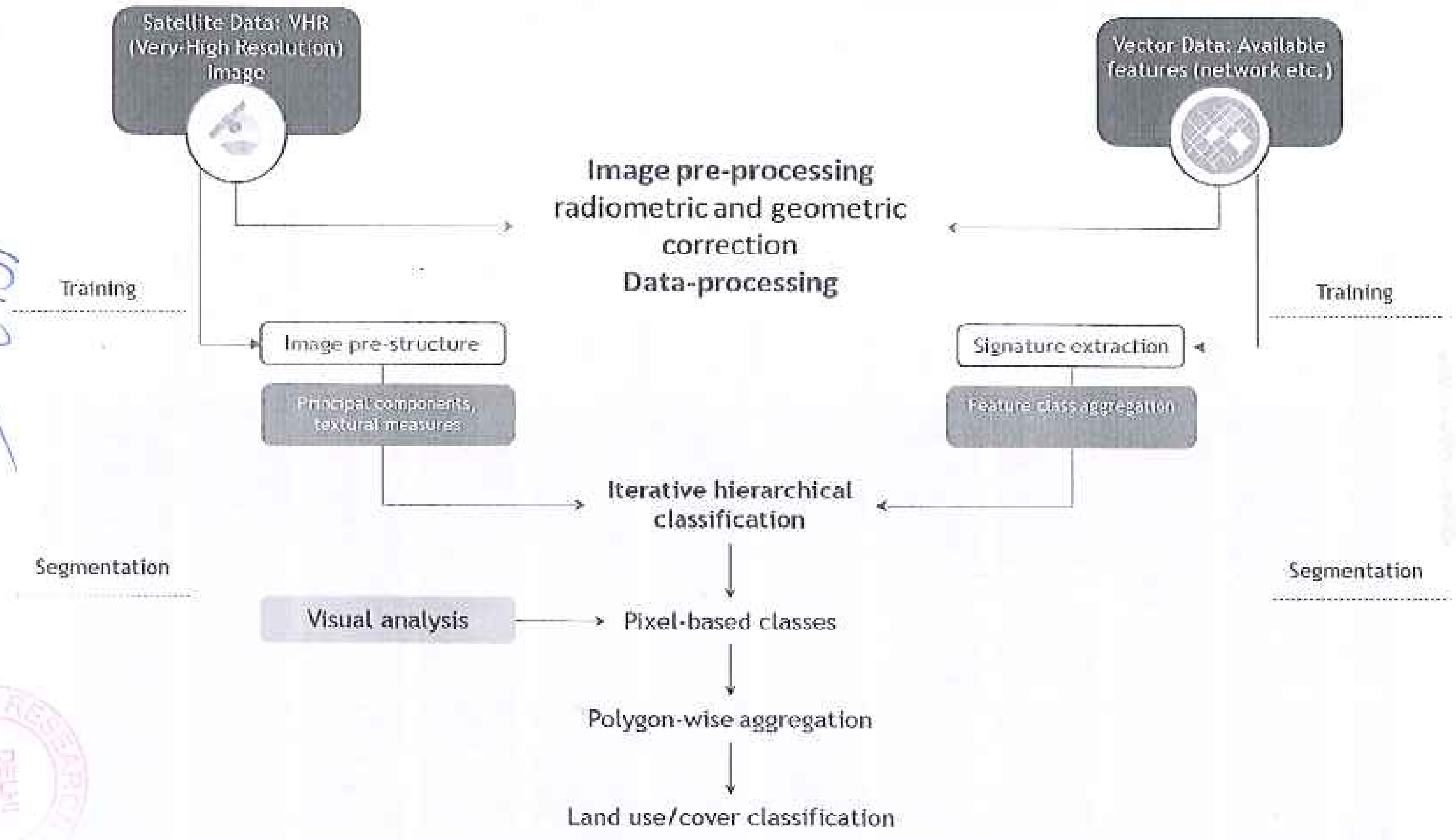
Satellite Data: VHR (Very-High Resolution) Image
Vector Data: Available features (network etc.)
Image pre-processing radiometric and geometric correction
Data-processing
Training
Training
Image pre-structure
Principal components, textural measures
Signature extraction
Feature class aggregation
Iterative hierarchical classification
Segmentation
Segmentation
Visual analysis
Pixel-based classes
Polygon-wise aggregation
Land use/cover classification

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Indicators under Category C merit physical validation in the field to strengthen reliability of the indicators. Preliminary review of the indicators suggest that physical validation exercises would need to be carried out for 11 Indicators. Figure below presents our sampling approach:

Indicator	Validation approach
2.3 | Hotel occupancy	Total 35 hotels; 5 star (5 hotels); 4 star (10 hotels), 3 star (10 hotels) less than 3 star (10 hotels) randomly in each city
3.4 | Percentage of schools with access to digital education	Randomly select 40 schools for validation in each city
5.1| Number of streets, public places, junctions covered through surveillance systems	Inspect 30 major public places and junctions in each city, randomly
6.5 | Percentage of vendors registered and provided formal spaces	Randomly select 30 street vendors in each city
11.7 | Availability of Passenger Information System	Select 30 interchange sites- bus depots/stations, metro or suburban rail stations and water transport terminals (e.g. ferry terminal), randomly
11.8 | Extent of signal synchronization	Randomly select 30 signalized intersections in each city
11.9 | Availability of paid parking spaces	Select 30 paid parking spaces, randomly in each city
11.10 | Percentage coverage of footpaths – wider than 1.2 m	Select 30 footpath sections across major roads, randomly in each city
11.11 | Percentage of traffic intersections with pedestrian crossing facilities	Select 30 intersections randomly in each city
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way	Select 30 public right-of-way areas to represent areas such as Government buildings, sidewalks/ footpaths, subways/city
14.3 | Extent of municipal solid waste recovered through reuse	Random selection and visits of recovery/re-use sites in each city

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Categories D and E call for collecting data from households and households plus institutional and commercial entities such as schools, public offices etc. Category D covers four indicators while Category E covers one indicator as presented below. We propose to undertake a survey of about 400 households in each of the 116 cities for both these categories. For Category C, 400 households will be spread across different socio-economic strata of respective cities and for Category D, 200 households will cover only low-income urban communities (notified slums) in each city.

Category D

Indicator	Validation approach
7.2 | Percentage of slum areas covered through basic services	Random sampling of 200 citizens across ten notified slums in each city
11.3 | Mode share of public transport	Random sampling of 400 citizens across different socio-economic strata in each city
11.6 | Mode share of non-motorized transport	Random sampling of 400 citizens across different socio-economic strata in each city
14.1 | Household level coverage of municipal solid waste collection	Random sampling of 400 citizens across different socio-economic strata in each city

Category E

Indicator	Validation approach
13.1 | Coverage of toilets	Random sampling of 400 respondents It would cover households, schools, public institutions, commercial establishments, etc. per city

Indicators where data is not available will be excluded from computation from the liveability index in line with the suggested methodology

Methodology for sample determination

For arriving at the sample size for this study, we have treated the present research problem as a Case of Proportions, i.e., a problem involving the estimation of the proportion of respondents exhibiting a certain kind of behaviour (in our case, proportion of households who have access to safe drinking water). In a Case of Proportions, the sample size is determined as under:

Let the sample size be n. The various assumptions made in calculating n is as under:

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p is the proportion of the households (our universe in the project area) having benefited from the various urban mission. This proportion p is called the population proportion. In the absence of any estimate of p, a figure of 50 per cent could be used for the anticipated population proportion.

π is the proportion of the sample having benefited from the urban missions. This proportion π is called the sample proportion. π is obviously a dichotomous variable (a dichotomous variable is one which has only two response choices, such as "Yes, benefited from the urban mission " and "No, did not benefit from the urban mission")

E is the allowable error, i.e., the allowable difference between p and π while drawing the sample. We have fixed this 5 percent say 0.05

Z is the number of standard errors associated with the confidence level. The confidence level is fixed at 95 per cent, i.e., the pre-assigned chance of finding the true population proportion p to be within the range of ($\pi \pm 1.96s$), where, s is the standard deviation of the sampling distribution.

At a confidence level of 95 percent, the value of Z is 1.96. The estimated sample size n is worked out based of the below formula.

$$n = \frac{\pi(1 - \pi)Z^2}{E^2}$$

$$n = \frac{0.5(1 - 0.5)1.96^2}{0.05^2}$$

Thus, sample size n works out to 384. Considering the possibility of non-availability and non-consent of the beneficiaries, about 5 per cent additional sample is proposed. With this allowance, the sample size works out to 400 per city.

A total of about 400 respondents will be covered from each city. Given that there are 116 cities to be covered in 1st year, the total sample size works out to minimum 46,400 respondents. This is a minimum sample size needed if we want the observed proportions (π) to be within ± 5 percent of the unknown population proportion (p).

Approach for geospatial sampling:

We propose to select our survey respondents based on a geospatial sampling methodology after evaluating the spread of the city under multiple criteria. The table shown below is an illustration of our approach towards rating each of the wards in the city. It is to be noted that any ward is likely to receive the score based on the presence of the criterion mentioned in each of the question (for eg: Presence of park/playground in the ward = 4.5%, else = 0). The scores obtained against each of these questions will be summed to provide ward level total score. It is to be noted that "slums" have been given a special attention to ensure social inclusion in our geospatial sampling methodology.

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Table 1: Sampling criteria

Questions	Answers	Score / Ward
List the wards having market area in your city?		4.5%
List the wards having tourist attraction places in your city?		5.0%
List the wards having schools in your city?		5.0%
List the wards having hospitals in your city?		5.0%
List the wards having parks / playgrounds in your city?		4.5%
List the wards having rivers, lakes and/or mountains in your city?		4.5%
List the wards having large commercial areas in your city?		4.5%
List the wards having proximity to industries in your city?		4.5%
List the wards having earthen roads in your city?		4.5%
List the wards having footpath in your city?		4.5%
List the wards having good road network connectivity in your city?		4.5%
List the wards having UGSS penetration in your city?		4.5%
List the wards having low incidence of crime in your city?		5.0%
List the wards having high population density in your city?		4.5%
Score (A)		65.0%

Questions	Answers	Score / Ward
List the wards having large slums in your city?		35.0%
Score (B)		35.0%

Based on the obtained total scores, wards will be shortlisted based on the following combination:

- Combo 1: Wards with larger slum population with higher livability characteristics
- Combo 2: Wards with fewer slum population with higher livability characteristics
- Combo 3: Wards with fewer slum population with lesser livability characteristics
- Combo 4: Wards with larger slum population with lesser livability characteristics

Within the shortlisted wards, about 33% of the primary survey (200 Surveys) will be conducted in wards having larger slum population. We would also ensure that the survey conducted within every ward will

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be well spread within the ward boundary to ensure representativeness of the entire city and this will be constantly monitored by the field officer through a mobile application.

Score (A)	SCORE (B)	Sample
High	High	200 SURVEYS
Low	High	
Low	Low	400 SURVEYS
High	Low	

Sampling of Households

In each starting point 10 households(HH) will be covered for eliciting feedback about the various facilities available in the city. The first household shall be z^{th} number household from a starting point. The second household will be $(5+z)^{th}$ household. This process should be continued till the time we achieve the sample size (10 HHs) for that particular starting point. During selection of household serpentine Right Hand Rule will be followed.

Sampling of respondents

Adult members of the sampled household, who are aged 18 and above would be considered as eligible respondents for the survey. Where ever there are more than on eligible respondent in the household KISH grid will be used for unbiased selection of the eligible respondent. The usage of KISH grid will also ensure the fair representation of both the gender in the sample. For the Indicator 7.2, percentage of slum areas covered through basic services, we propose a sample of 200 per city across 10 slums (as per list available with slum rehabilitation board).

Kish Grid Selection - Illustration

Respondent No.	Gender	Age	Adult No.	Selected Respondent
1	M	57	1	
2	M	44	2	
3	M	35	3	
4	F	61	4	x
5	F	27	5	

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The slums will be selected using a simple random sampling from the available list. We will overlay this selection to ascertain the geographical spread across wards / zones in the city. The same process as outlined above will be followed for selection of HHs and individuals in the selected HH.

Overall sample size

The total number of respondents to be covered as part of our primary data collection including physical audit across identified indicators is presented below:

Unit	Sample per city	No of cities	Total sample
HH survey/ Citizen (slum and non-slum)	600	116	69,600
Institutions- Hotels, Schools, Establishments	98	116	11,368
Physical validation through Observation	270	116	31,320
Total	968	116	1,12,288

Data collection team structure

Based on different categories of data to be collected/validated, three different teams will be working in tandem to collect the required data in time. First team comprises regional/state/UT coordinators who will be entrusted primarily with the responsibility of secondary data collection. Second team comprises field investigators and supervisors who will be involved in collection of primary data for indicators identified under Category D and Category E. The third team will include physical auditors who will be validate the reliability of secondary data provided by cities for indicators identified under Category C.

Team 1

Regional/State/UT Coordinators

Responsible for secondary data collection, organising State/UT workshops and city reconnaissance meetings, follow-ups, help desk support, and local support to Team 2 and Team 3

Team 2

Field Investigators and Supervisors

Responsible for pilot testing, primary data collection for indicators identified under Category D and Category E

Team 3

Physical Auditors

Responsible for physical inspection and verification of secondary data provided for indicators identified under Category C

All these team will be supported by a pool of quality control, IT and analytical team. The state

All teams will be supported by a centralised quality control, IT and technical backstopping team

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अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
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coordinators will serve as an additional layer of local support for guiding the field team on different aspects of primary data collection and physical validation.

Training of regional/state coordinators [secondary data collection]

We will conduct an internal brainstorming cum training session wherein the Regional/State Coordinators will participate and familiarise themselves with the assignment and modalities involved along with non-key staff/consultants. Subsequently, we will be conducting a three-day training programme for the Regional/State Coordinators and key city/ULB representative along the State/UT workshops. Training will cover secondary data collection interface/application, data formats including reporting period, reporting units, data collection process, escalation protocols, and ethical considerations among other modules. Subsequently, the Regional/State Coordinators with support from the PCC team will train field supervisors, investigators and physical auditors.

Research instrument development, pilot test and training [primary data collection]

The overall sampling strategy for categories indicated above will be finalised in consultation with MoHUA. Subsequently, the team will develop research instruments covering relevant indicators and target groups. Each of the research instrument will be pilot tested and finalised based on field level insights. Our consortium specialises in developing minimalistic instruments without losing coverage and rigour of data collection. To carry out the survey, the research instruments will be developed as mobile application such as **ODK Collect** or **Kobo Tool Box** that allows that cloud based storage of backend data and provides near analysis ready data.

We will explore using a computer-aided in-person interviewing (CAPI) methodology to collect data on Windows-based phones or tablets, which has numerous advantages over traditional pen-and-paper methods. The programmed instrument will have built-in logic that ensures the correct path through skip-patterns, doesn't allow interviewers to enter invalid responses to closed ended questions, and runs internal consistency checks.

Using CAPI enhances measurement quality, reduces error, and limits the need for editing and cleaning following data collection. For every interview, the exact GPS location is captured, which means that quality control departments can verify interviews are being performed at the correct locations. In addition, quotas are automatically tracked on the mobile device which reduces the need for manual tracking. We have invested significantly in enhancing our CAPI capacities both in terms of infrastructure and human capacity. Ipsos has a well-trained pool of interviewers that are familiar with quality processes for CAPI interviews and used to close scrutiny and rigor of monitoring. Our expert data team will program the survey, after which extensive quality checks will be carried out by the Ipsos team. We will then run sample cases through the survey to test for logic and skip patterns. Following the completion of programming in English, we will overlay the translated instruments and additional quality checks on

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all translations will be done. The programmed instrument will be downloaded to the Phone/Tablet devices to be used by interviewers.

The research instruments will be **translated in all relevant regional languages** for all 116 cities. All translation will be checked by the researchers to ensure that the meaning of the questions has not

Our extensive experience conducting quantitative social research in a variety of fields has taught us that the questionnaire can be designed to maximise participation based on the following key principles:

Concise and well-structured survey design:	A short survey will get more responses than a long survey, and competing priorities can lead to very long questionnaires. It is important to focus on top priorities and understand key opinions while also being realistic both **regarding** length of survey but also respondent ability to report on certain items.
Questions are easy to answer:	Instruments that are difficult to complete lead to errors from the interviewer as well as the respondent. Although we provide extensive training to interviewers, complicated questions can be difficult to complete accurately. Additionally, we ensure that questions are drafted with as few clauses as possible, without double-negatives, and should include as comprehensive a range of answer options as possible.
Take into account the respondent's knowledge and sensitivities:	Sensitive questions, such financial questions or those about socially unacceptable behaviors (for instance open defecation), most often lead to inaccurate reporting and poor data because respondent over/under report or give the more socially acceptable answer.
Questions should allow respondents to not know:	Where respondents are forced to answer questions, they do not feel they know the answer to, they are likely to become frustrated and close the survey early. We therefore recommend that a "DK (Don't Know)/NA (Not Applicable)" option is always provided, particularly in sensitive environments.
Allow respondents to feel heard without burdening them unduly:	Limit open-ended questions to one to two and do not require respondents to fill them out. Additionally, a confusing screener or imprecise definitions of the target respondent can take a lot of time and lead to errors in data collection.

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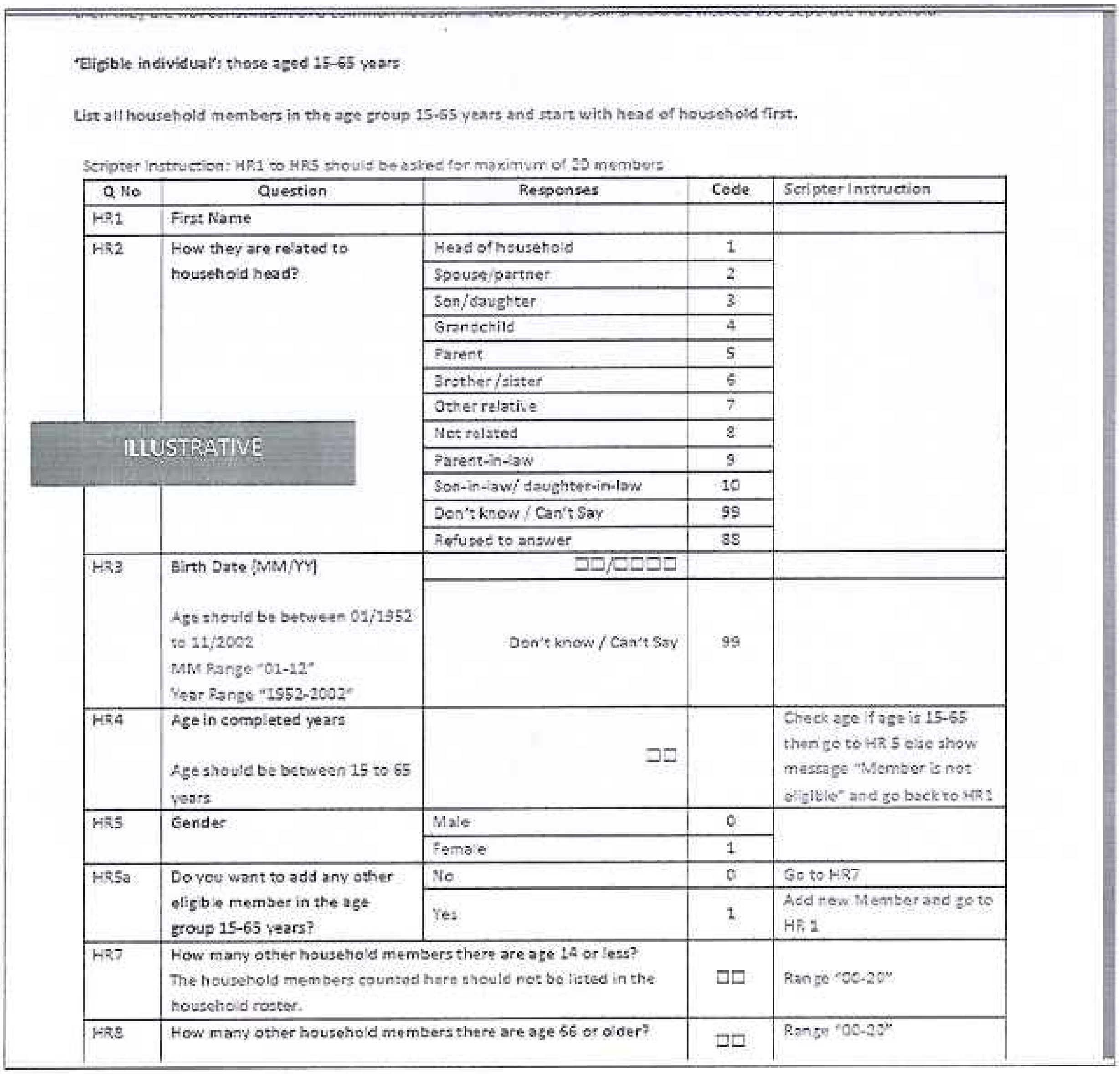
Additionally, we will ensure that questions used are tested and used as a standard. We will also have all survey instruments undergo a thorough review by sociologists and psychologists with expertise in instrument design, who will look to ensure the overall instrument and individual questions are structured in a way that is accessible to respondents (by, for instance, organizing the instrument logically and introducing new topics/question modules so that respondents are not confused about why they are being asked certain questions at a given point in the interview) and cognitively unambiguous (avoiding, for instance, questions where one question asks about multiple constructs).



'Eligible individual': those aged 15-65 years

List all household members in the age group 15-65 years and start with head of household first.

ILLUSTRATIVE

Scripter Instruction: HR1 to HR5 should be asked for maximum of 20 members

Q No	Question	Responses	Code	Scripter Instruction
HR1	First Name			
HR2	How they are related to household head?	Head of household	1	
		Spouse/partner	2	
		Son/daughter	3	
		Grandchild	4	
		Parent	5	
		Brother /sister	6	
		Other relative	7	
		Not related	8	
		Parent-in-law	9	
		Son-in-law/ daughter-in-law	10	
		Don't know / Can't Say	99	
		Refused to answer	88	
HR3	Birth Date [MM/YY] Age should be between 01/1952 to 11/2002 MM Range "01-12" Year Range "1952-2002"	☐☐/☐☐☐☐		
		Don't know / Can't Say	99	
HR4	Age in completed years Age should be between 15 to 65 years	☐☐		Check age if age is 15-65 then go to HR 5 else show message "Member is not eligible" and go back to HR1
HR5	Gender	Male	0	
		Female	1	
HR5a	Do you want to add any other eligible member in the age group 15-65 years?	No	0	Go to HR7
		Yes	1	Add new Member and go to HR 1
HR7	How many other household members there are age 14 or less? The household members counted here should not be listed in the household roster.		☐☐	Range "00-20"
HR8	How many other household members there are age 66 or older?		☐☐	Range "00-20"

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ILLUSTRATIVE

	and therefore influence household decisions	Separated	7	
		Cohabiting	8	
		Not Stated	9	
D6	What is your highest level of schooling completed?	None	1	
		Literate without formal schooling	2	
		Schooling up to 4 years	3	
		Schooling between 5–9 years	4	
		Secondary/Matric/Class-X (10th passed)	5	
		Hr Secondary/Sr Secondary/Pre-university/Class-XII (12th passed)	6	
		Non-technical/Technical diploma or certificate not equivalent to degree	7	
		Graduate / bachelor (General) B.A / B.SC / B.Com	8	
		Graduate / bachelor (Professional) B Tech / BBA / MBBS / LLB	9	
		Post graduate / masters (general) M.A / M.SC / M.Com	10	
		Post graduate / masters (professionals) M. Tech / MBA / MD / LLM / M Phil	11	
D7	How many years of schooling do you have in total? To be asked from all those who have some Number of COMPLETED YEARS, excluding pre-school. All education years including school and university		☐☐	Should be less than (Age D3 minus 3) and cross check with D6. Range 0-99
D8	Do you have any vocational/ professional certificates?	Yes	1	
		No	0	
D9	Are you currently enrolled in any courses to further your education? This can include part-time or full-time study	Yes	1	
		No	0	
D10	What was your main activity during the last 6 months? Main /primary activity to be recorded, as per what they identify their main activity to be Taking care of sick family member can be coded same as unpaid family worker	Cultivator	01	
		Agricultural wage labourer	02	
		Non-agricultural wage labourer	03	
		Self-employed: own account worker (excluding cultivators)	04	
		Self-employed: employer (excluding cultivators)	05	
		Unpaid family worker	06	
		Regular salaried/wage employee	07	
		Did not work but was seeking and/or available for work	08	
		Housewife	09	
		Attending educational institution	10	
		Working as Domestic Help	11	
		Beggar	12	
		Rentier, pensioner, other remittance recipients	13	
		Not able to work due to disability	14	
		Too old to work	15	
		Too young to work	16	
		Others(Specify______)	96	
D10A		Not in the sector	0	

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changed while translating into regional languages. We propose to pre-test the questionnaire in two non-sampled areas in any two selected cities. The pre-testing of the questionnaires will be undertaken on the translated questionnaires. The pretesting will ensure the following aspects:

- Whether all the questions are comprehensible to the enumerator
- Whether the respondents have any difficulty in understanding the questions
- Whether the length of the questionnaire is optimum?
- Whether the questions ordered properly
- Whether any change is required in the questionnaire

Finally, it will help in fine tuning the questionnaire and to determine the flow of questions, to make life easy for the investigator as well as the respondent.

The final tool will be scripted and uploaded in all regional languages for the main survey. Ipsos internal platform i-field will be used for HH survey that brings in the advantage of GPS capture and audio recording as well as real time tracking of field work completion status

Approach to data collection:

Secondary data collection for cities will start immediately after culmination of State/UT workshop and subsequent training of key city/ULB representative through city level reconnaissance meetings. The launch date for cities will vary depending upon the workshop schedule and fixing of appointment for city level meetings in each State. In the mean-time we will update secondary data collection interface/application based on the inputs and suggestions provided by the State and city representative at the workshop. Progress of data collection will be monitored through an integrated dashboard (refer prototype presented in the section on preparatory phase activities). We propose to deploy a team of four field investigators, four physical auditors and one field supervisor per city to undertake primary data collection/audit exercise in each city. Overall 69 such teams will be deployed to complete primary data collection across 116 cities in 16 days' time. Our pool of enumerators is experienced in undertaking large surveys in the urban areas across different sectors and hand-held devices. We will be undertaking a three-day training programme at a regional level to familiarise our field team with project objectives, research instruments, sampling frame and survey ethics. We propose to involve the field team in pilot testing of the research instruments for field-based training and better understanding of the research instrument. Our experience in managing large-scale survey research assignments tells us that the successful organisation and management of an assignment such as this requires the following approach:

A national level presence: We will work through its own offices and teams in all states and Union Territories and will not outsource any part of the survey management or data collection task to any external supplier or vendor. This will ensure that data in each state is collected as per agreed protocols

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and quality norms. All our offices are manned by local teams that have a panel of interviewers and supervisors from the state/ districts that are familiar with the geography and local dialects.

Zonal hubs: The core project management team based in Delhi will be supported by zonal hub managers who will be Ipsos permanent staff – field managers with experience of managing large scale projects. These hubs will help the core team in all phases of the research process. Their contributions are particularly important while team mobilisation, making the route plan, translation in local languages, and managing the fieldwork. They will also provide valuable support at time-intensive stages of the project, such as script checking, fieldwork monitoring, and data checking. These zonal coordinators will operate under the guidance Central Project Team.

Centralised Training of Trainers: We will conduct centralised TOT for Zonal and State Managers to plan and implement the fieldwork. The training will be for 4 days including field visits to ensure that field managers are familiar with the field situations, exposed to potential challenges, and have a thorough understanding of research subject. Emphasis will also be on imparting them facilitation and risk assessment skills required for managing the survey.

Multi-disciplinary expert teams, with resource at the right level to ensure value for money: The organisation and implementation requires expertise in sampling, scripting, and strong operations, but also proven skills in co-ordination, rigorous analysis of quantitative data, high quality reporting skills, as well as relevant experience in the states. Given the scale of this project, there are certain stages that are resource and time intensive, and we know that it is important to maximise the skills of resources to ensure value for money, with senior oversight. We propose a very strong core team together based on their multi-disciplinary skills. In addition, all offices will be supported through layers of reporting by the respective functions- operations, research, and IT for monitoring completion of the survey and reviewing completes.

Fieldwork monitoring procedures

This section details PCC Team monitoring responsibilities **prior to and during the survey implementation** to guarantee timely delivery of the project, while maintaining high quality. There will be several standard monitoring actions undertaken by the PCC-Team prior to and throughout the fieldwork:

- Providing state offices with **guidelines on managing fieldwork** and checking that these guidelines are correctly implemented;
- A dedicated fieldwork manager will be appointed in each state and will be responsible for receiving and reviewing the **weekly resource planning** of its state.
- Project executives from the PCC Team will also review **daily progress and sample reports** (and outcomes) and share their observations with the state teams, following up where necessary.

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The quality control plan envisages quality check mechanisms at the at the data collection level as discussed below.

Table 2: Structure for Quality Checks in the Field

Level of staff	Functions in quality check
Field Investigators	Data Collection
Field Supervisors	100% scrutiny & accompaniments
Core and research support team	25% scrutiny, overall field monitoring and quality checks

1. Spot check and observation

In a spot check, the supervisor will attend an interview along with the investigator, to see if the investigator is comfortable with the flow of the questionnaire, is explaining the questions as they should be and is recording the responses correctly. The following forms a part of the spot checks and observation process to be adhered by the Supervisor:

- Observe some of the interviews, to ensure that the interviewers are conducting themselves well, asking the questions in the right manner, and interpreting the answers correctly
- Spot check some of the addresses selected for interviewing to be sure the interviewers interviewed the right household
- Review the questionnaire to be sure it is complete and is internally consistent
- Meet with each member of the team on a daily basis to discuss performance
- Help to solve any problems that interviewer might have with finding assigned households, understanding the concepts in the questionnaire or with difficult respondents.

2. Back checks

Field supervisors shall ensure that for all sampled areas wherein completion rate is found to be low or seems to be a problem, back checks shall be done by himself/supervisor of other team.

3. Inbuilt Quality Control

The manually filled in questionnaires have a risk of manual errors which would be eliminated completely at the software development process. The following checks would be inbuilt within the questionnaire design:

- Range Checks: To make sure that an entered number is within the right range. For example; a field indicating month cannot be more than 12.
- Consistency Checks: To make sure that the information entered is consistent and there are no errors. These checks are important for open ended questions.

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- Validation Checks: To check that the data type entered is valid as per the design of the questionnaire. For example, age cannot be entered as an alphabetical value.
- Skip Checks: To make sure that the question is chosen logically correctly based on a previously answered question.

Ethical Considerations

Following three categories of ethical norms advocated by our consortium will be adhered to by all project staff:

Integrity

- The staff on payroll or contract always demonstrates honesty, integrity, and professionalism at all times.
- The team understands and appreciates that, while primary data represents attributes of real people, the actual person is not described in the reports.
- The staff is aware of applicable statutes, regulations, practices, and ethical standards governing data collection and reporting.
- The team reports information accurately and without bias.
- The team is accountable, and holds others accountable, for ethical use of data.

Data Quality

- The team promotes data quality by adhering to best practices and operating standards.
- The team provides all relevant data, definitions, and documentation to promote comprehensive understanding and accurate analysis when releasing information.

Security

- The team treats data systems as valuable organizational assets and hence data backup is a mandatory affair.
- The team safeguards sensitive data to guarantee privacy and confidentiality as our servers are accessible to limited staff only.

Within the ambit of the above ethical norms, the team for this assignment would ensure that no violations like collecting data not pertaining to this assignment, accessing areas within the institution premises for which approval has not been taken etc. are committed during the data procurement from various institutions.

The team would also ensure that any data which may have been classified as confidential is not disclosed intentionally or unintentionally. Any other issues that may emerge during the course of the assignment, will be informed to the client and as per the advice given, necessary safeguards would be undertaken by the consultants.

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Real time access to status of fieldwork/ online monitoring: Efficient and fast communication is a pre-requisite for any survey these days to identify problems early on and introduce mid-course corrections. Ipsos globally and in India is transitioning away from PAPI to use of CAPI which helps addresses some of the inherent challenges of PAPI survey in terms of quality and reporting. CAPI will allow the core team to get daily updates across all centres. A dedicated project management team will monitor completes and review trends in data to review that the interviews are being conducted as planned and the quality of interviews is good. CAPI allows us to capture GPS coordinates that is useful in tracking spread of locations for the interviews and ascertain that the sampling protocols are followed, facility to record part of interviews. and capture photograph with consent of respondents provide additional levels of quality checks.

The research team will assess the minimum quality check requirements that can be drawn from CAPI and implement for the survey. We will also schedule regular hub conference calls at key stages of the project can help disseminate essential information, and that hub managers and junior members of the core coordination team are in daily written/telephone contact with field managers.

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Phase 4: Data collation, sign-off and finalisation [Week13 – Week 14]

Once we receive secondary data, validated secondary data and primary data we will collate these into a single format and share them back with the cities post detailed scrutiny and review with proper citation. It is possible that there could be some variation in the secondary data provided by cities vis-à-vis data validated for some of the indicators identified under Category C. For instance, data from City A may report 80% of the schools to have facilities for using digital content but physical validation exercise could report 70%. Such variations are possible even after due consideration of aspects such as sampling only from sub-set of schools reported to have such facilities, random selection of schools etc. We will be developing protocols for addressing such issues during the preparatory phase itself and will work closely with the State Nodal Officer who will also serve as the data ombudsman to help reconcile such deviations.

Overall, each city will have a window of two weeks to review the final data sets and indices and revise/modify and sign-off on their datasets. Post sign-off, we will finalise the datasets (considering receipt of new data from cities during the two-week review window) and develop final indices for report preparation and visualisation.

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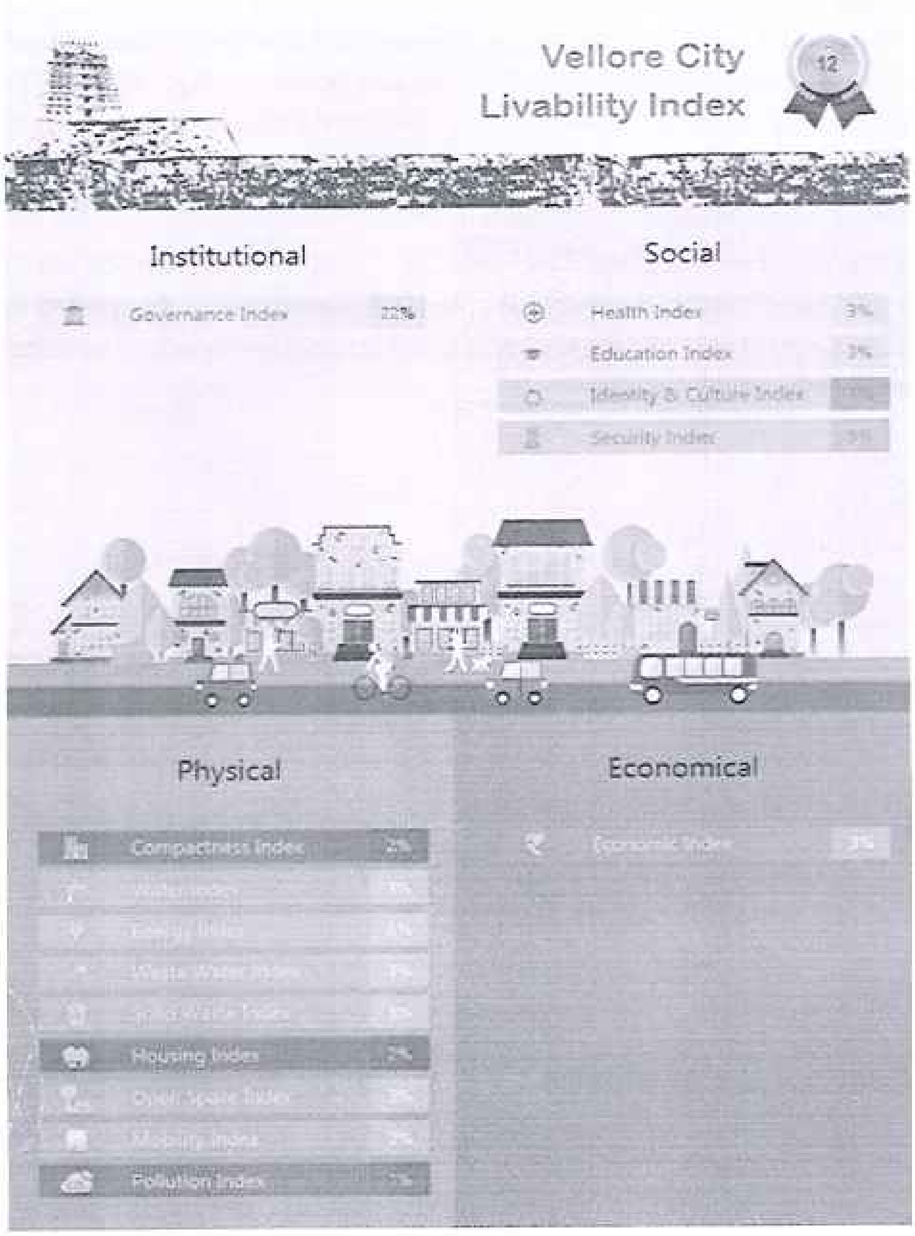
Phase 5: City Assessment Reports, Media and dissemination [Week 15 – Week 20]

This phase involves preparation and submission of city wise final assessment reports and dissemination of the assessment through a national workshop. The structure and content of the report will be standardised across different city typologies and finalised in consultation with the MoHUA on an iterative basis. An illustrative report template is presented below for reference.


Vellore City
Livability Index
12
Institutional
Governance Index 22%
Social
Health Index 3%
Education Index 3%
Identity & Culture Index
Security Index 3%
Physical
Compactness Index
Water Index 3%
Energy Index 3%
Waste Water Index 3%
Solid Waste Index 3%
Housing Index
Open Space Index 3%
Mobility Index 3%
Pollution Index
Economical
Economic Index 3%

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Data availability and quality assessment framework

Cities typically lack the ability and the institutional mechanisms to reliably collect data. Datasets which have internal decision-making linkages are usually better reported than datasets reported solely for compliance purposes. Hence, both criticality and reliability of datasets is not homogenous, but specific to each indicator, and possibly jurisdiction. In this context, we present a rubric to help assess quality and reliability of datasets below:

Table 3: Rubric for Data Quality Assessment

No.	Indicator	Notes
Data Quality and Reliability		Designed to provide an overview of the availability and quality of the dataset in discussion. Calculated as a combination of five sub parameters below
A	Availability	Measure of whether the dataset is available at all. A multiplicative factor (in case data on the indicator is not available, the data quality/availability is given a score of zero, without any further investigation into other sub areas)
B	Open access	Measure of the open availability of the dataset in question. Incorporates both user access (which user groups is the data made available to), nature of access (open access, or access upon request), and the format of availability (paper vs. machine readable formats)
C	Representativeness	In case the collected data is through a sample, this captures the representativeness of the same. A measure of robustness of the sampling and estimation methodology
D	Frequency	Measures the gap between the desired frequency of reporting for the dataset (based on global standards and best practices) with the available frequency. It is important to note that the frequency of datasets is a function of their mutability (e.g., topographic information can be decadal, but toilet usage behaviours warrant more frequent data)
E	Granularity	Measures disaggregation at two levels – by spatial characteristics and user characteristics
F	Reliability	Measure of mechanisms available to audit the data, and the results of such audits. A proxy to the level of confidence which users typically have for the dataset, third party validation etc.

Based on the insights from the data collection exercise pertaining to sectoral and city level data ecosystems, we will develop a data availability and quality assessment framework considering the above parameters.

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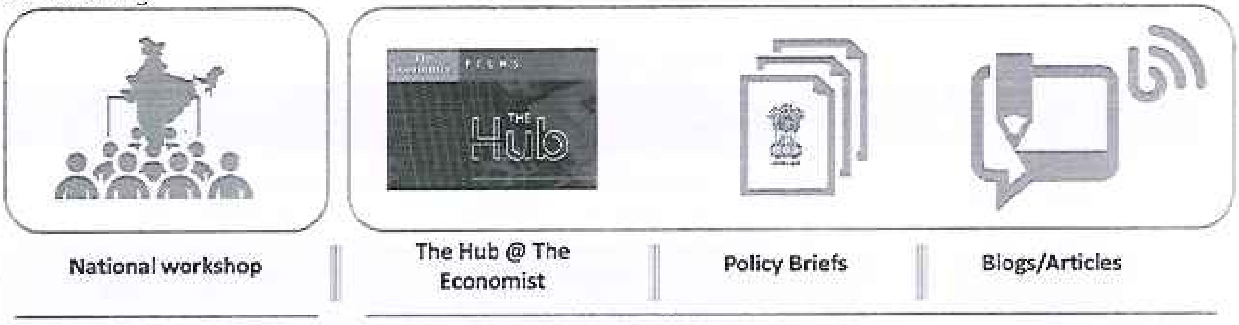
We propose a multi-pronged platform for dissemination of the assessment of the liveability status of the cities. Apart from a national level workshop proposed by the MoHUA to share the findings from the study and set the stage for a futuristic vision wherein the information generated as part of this country wide exercise could inform urban planning, we propose to disseminate the findings to a larger global audience by leveraging our outreach capacities. Overall our media and dissemination channels include the following:



The National workshop could be structured as a panel discussion comprising international and national experts from academia, industries, public authorities, media, civil societies to discuss and debate the concept and measurement of urban liveability and its role in urban and infrastructure planning. City level liveability assessment could be presented on the sidelines of the workshop while the focus would be to help understand how people (and special groups thereof such as women, transgenders, children, specially-abled, senior citizens etc.) assess quality of life, wellbeing and citizen aspirations, and translate and scale them to inform how cities and regional centres can be better designed and managed.

Specific focus could be on defining conditions under which scientific models can encapsulate adaptive and heterogeneous social responses in a meaningful way.

Agenda of National Workshop

- *To drive new knowledge development into the interaction of assets, people and networks across critical aspects of the infrastructure system.*
- *To invite activity and creativity in knowledge development on infrastructure and infrastructure planning and management in the future*

We propose to keep the dissemination as an ongoing activity through a series of engaging and interactive content assets designed for marketing and dissemination such as infographics, photo journals covering State/UT workshops, city reconnaissance missions and data visualisation tools under the Ministry's name both before and after the National workshop.

It is proposed that the liveability assessment results could be housed on 'The Hub' – a prestigious online knowledge dissemination platform of the Economist Group that has global outreach. Our team would design the hub and finalise the design in consultation with MoHUA. The Liveability Index Hub would

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host policy briefs, two interviews from senior officials/policy makers from the MoHUA, infographics and an interactive digital data map of India containing assessment results. Each of the 116 cities will contain the liveability index for that city, its ranking, as well as the rankings for the four underlying pillars of liveability for each city.

Quality Assurance

We provide high quality of services are committed to continuously improving what we do. Our integrated quality, compliance and information security management system, along with our quality assurance guidelines ensures all our projects are delivered to quality standards that we are committed to. Ipsos is ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISI 20252:2012. Athena and EIU serve reputed clients globally.

Our Quality Objectives

Our most important quality objectives are:

- To *provide assurance* to Ipsos's clients that we will deliver reliable and robust research findings by, among other measures, meeting the requirements of the international quality standard for market research, ISO 20252.
- To support the business in meeting its overall objectives, including client retention and new business development – by having effective policies, procedures and practices in place to ensure that we all work to the same quality standards.
- To minimise risk to the business by focussing on quality and continuous improvement.

We achieve these objectives by having in place a Quality Assurance System which is continually reviewed for effectiveness and improvement in a number of ways:

At every step of the project, we will ensure the compliance with the standard working procedures and quality assurance methods that have been designed for the success of the project. Online data input and collection platforms will be very powerful tools that will enable the PCC (Project Command Centre) Team to have tighter control over research process, accurate and up-to date information about state teams' performance and more efficient fieldwork monitoring and quality control. In addition to this, many standard procedures, such as training, supervision and back checking, will be put in place to ensure quality standards are adhered to (and exceeded where appropriate).

Throughout this proposal we discuss the measures we will take to ensure high quality deliverables which will meet the objectives of the study. They are summarised here in brief:

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- Carefully resourced and structured Coordination Team with the relevant skills and experience to design and deliver international studies of this nature including regional social research experts;
- Internal field teams that are part of Ipsos State offices who are familiar with the geography, local dialect, nuances, and experienced in working to expected quality standard.
- Cascading training approach starting with ToT for core team, Centralised State Coordinators training and state level face to face trainings for validation and primary survey
- Direct observation of interviewer training and the early stages of fieldwork in each zone;
- Using Ipsos Dimensions/ Dooblo platform to closely monitor progress and quality indicators across all states allowing any issues to be identified early (daily updates from the field);
- Weekly conference calls with all local teams to discuss the current situation and with MoUHA to assess actual progress and make key decisions for the next steps;
- A detailed risk register updated on a weekly basis;
- At least 15% of back-checks in states;
- A dedicated Quality Director assigned to the project team.

Our approach to minimising problems

As outlined above, we are keen to properly set up this study to minimise problems and risks during execution. In addition, effective project management using an experienced PCC Team with the correct balance of technical expertise and project management expertise means that problems are avoided through clear instruction, regular and open communication, and careful monitoring and review during the project set-up and throughout project implementation. However, we know that even with the best teams in place the complexities of large-scale projects mean that problems do arise, and sometimes quick and effective intervention is needed. We are determined to be proactive and set up the process in a way it will enable us to detect any problem in an early phase and solve it before it escalates.

As a consortium responsible for implementing the project, we regard risk management as a key part of project management. We will put in place **a risk management process** because we know from experience that management of a survey such as this involves dealing with many logistical challenges, complexities and risks.

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We are keen to discuss with you all potential risks in the inception meeting and to register all issues we might experience during the process. This will be a 'live' document, reviewed weekly throughout the project both internally and with you. As Project Co-ordinators, Ankit and Tripti, will retain overall responsibility for risk management, will work with the Technical Team and functional to find solutions if any aspect of the project is deemed at risk.

We would provide a full assessment of what we believe to be the most important risks to the successful completion of the project. This would constitute a starting point for further discussion with MoHUA. Below we have provided an initial assessment of what we believe to be the most important risks to the successful completion of the project.

Key risks and mitigation plan

Risk description	Probability	Impact	Mitigation Plan
Delays in finalizing the schedule for state workshops	Low	High	An intense preparatory phase has been outlined wherein co-ordination with the state mission directorates is expected to begin within the first week of the inception kick-off meeting at MoHUA. A detailed workshop schedule will be developed within the first week of project commencement and a discussion will be initiated early on to fix the dates and finalize and publish the workshop calendar.
Inconsistency in the way data is interpreted and entered by cities	High	High	There is a possibility that the city representatives might interpret the data entry requirement in a manner inconsistent with the required protocol. In addition, to an intensive training session, where cities will be apprised of the data requirements, data sources and entry protocols, the regional and state co-ordinators will be responsible for both auditing the way in which the presented data is being sourced and troubleshooting if there are discrepancies
Delays in data entry by the city	Medium	High	Given the very short timelines of the exercise, any delays in data entry by the city can have serious cascading effects on the overall timelines of the programme. In addition to close follow up that the consulting team will undertake with every city, we hope to co-ordinate closely with the state nodal officer (appointed in every state) to ensure that cities comply with the stated timelines
Challenges in reconciling physical audit data with secondary data	High	High	There is a possibility of discrepancy between the audited data outcomes and the self-reported data. To seamlessly resolve and respond to such instances, we hope to jointly set up a process in place in consultation with MoHUA representatives and the state missions right at the outset and inform cities of the same during the training workshop
Challenge securing	Medium	High	Ipsos' has local teams who has experience of working in the project cities so they are familiar with the process for

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Risk description	Probability	Impact	Mitigation Plan
permissions for research			seeking consent for interviewing. As per our experience of seeking permission for interviews in different officials , a formal letter from client side will be issued to the local office. A senior team member will visit the offices with the letter for prior consent. assuring confidentiality and seek their inputs on timings, accessibility to respondents.
Poor administration of questionnaire by the data collection team	Medium	High	Qualified and experienced field investigators will be recruited. The training programme (face to face) will be intensive and focus on all aspects of the study, sensitisation for self on issues of gender, being aware of implicit biases, and tips on being aware and to counter this bias during data collection. Levels of monitoring in form of accompaniment by supervisors will also facilitate identifying interviewers demonstrating any bias and take corrective measures.
Fieldwork delays- Citizen Surveys and Physical Validation	Medium	Low	At the planning stage, Ipsos local team will review the list of selected clusters for the survey and their geographical spread. Number of teams will be recruited based on the geographical spread of sample locations. The field movement plan will be developed to ensure that a team covers contiguous clusters minimizing travel. The plan will also include off days and travel days with buffer days that allows timely completion.
Challenges in physical validation and primary data collection	Low	High	Quality Assurance plan developed at the onset of fieldwork preparation will detail out the measures and process at each stage of planning and fieldwork to ensure quality. Beginning with training, field plan, and field monitoring detailed parameters of quality and process to monitor the same will be detailed. Each team working will be accompanied by a supervisor and will be monitored daily. Additional layers of

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Risk description	Probability	Impact	Mitigation Plan
			monitoring in form of state coordinators will be deployed who will manage all the cities of a particular state. More over the state coordinators will be in continuous coordination with zonal coordinators. Formats for monitoring will be developed that will focus on reviewing the interviews and interviewers' performance. Regular debriefs and feedback sessions will be led by field coordinator and state coordinators during fieldwork
Inconsistency in data collected	Medium	High	Field investigators when administering paper survey are prone to making mistakes in following the flow and may not check responses that seem inconsistent. To counter this, we propose using CAPI for administration. The scripting process will take care of the logic and consistency check and improve the quality of interviews.
Refusal of respondents to take part / high non-response rate	Low	High	All interviewers will be fully briefed on how to deal with refusal. They will be trained to reassure the respondent that the research is independent, that all information provided is confidential, and to emphasize the survey's short length and the importance of the topics it covers. Interviewer training will stress the importance of confidentiality, safety and ethical aspects of the survey. Reasons for refusal will be recorded so any potential issues can be identified early and resolved.
Issues related to data quality and storage	Low	High	The Ipsos Team adheres to the highest possible standards for market research set by European Society for Opinion and Market Research (ESOMAR) and has been awarded numerous certifications for quality in market research, ensuring data security, confidentiality, and participant safety. Ipsos data storage is audited annually as part of our ISO 27001 and 20252 accreditations.
Issues related to IT security	Low	Medium	We are proud of the reliability and security of the Ipsos data storage systems, at the forefront of best practice in information security. Ipsos has a comprehensive backup

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Risk description	Probability	Impact	Mitigation Plan
			system to ensure that we can retrieve data files from that day or, if necessary, even months beforehand. This system consists of incremental, daily, weekly, and monthly full system backups. All emails, files, and internet content are swept regularly for viruses, and our servers have protection software.

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B. Work Plan

Our approach to this assignment seeks to fully leverage the first 5 weeks of the project as a phase of intensive preparation where all the key templates, tools and formats for secondary and primary data collection will be developed and submitted for inputs and approval to MoHUA. This will allow us time to deliberate on the data collection instruments as well as the interface design and ensure that we pilot test the prototypes to ensure that the entire data entry process is hassle free for the city. Efforts will also be made to mine and integrate the secondary data sets collected through different programmes (Smart City Mission, AMRUT, HRIDAY etc.) and already available with the ministry to create 'pre-filled' instruments (with the source indicated) that may be validated by the cities.

Developing the indicators (defining specific data points to be collected) and ensuring that there are bespoke data collection protocols and sources will be lead by the team by drawing on international benchmarks and national standards.

This phase will also see us commence engagements with state mission directorates to ensure that the scheduling of workshops is in line with the stated timelines. A draft structure for every workshop, with the list of participants required/desired, will be circulated within a week of the inception kick off with MoHUA to give the state mission directorates enough time to plan and mobilize resources. The training material with supporting reading material will be circulated at least 1 week before the training commences to provide participants with enough preparation time. State level discussions will also serve as a channel to do a first level reconnaissance on data availability and map the current sources and the need for proxies. Draft frameworks for documenting the workshop proceedings and the city level assessment reports will also be developed during this phase, along with an internal training workshop for the core staff.

Another unique value proposition that this team brings to the table is an effective global and national media and dissemination strategy and real-time tracking system to closely monitor the progress of the assignment. The blueprint for the media strategy and the tracking system will also be developed and submitted for inputs with the MoHUA in the preparatory phase.

Phase 1: Deliverables

This phase will culminate with the following deliverables at end of 5 weeks from project commencement:

1) Indicator development
2) Data collection instruments (primary and secondary)
3) Data entry portal (secondary)- Beta version
4) Blueprint for media strategy and project progress tracking
5) Workshop structure, content and participant list
6) Draft templates for workshop proceedings and city reports
7) Training of core staff (Key Consultants, Regional Co-ordinators and State Co-ordinators)
8) Framework for city GDP measurement

Phase 2, which is expected to last 3 weeks, will commence with the launch of the 'Liveability Tracker' and will see the roll out of the state workshops and city reconnaissance visit, led by a team of 20 trained

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professionals. The training of the field staff (field supervisors and enumerators) will also be conducted during this phase. The key outcomes/deliverables envisaged under this phase include:

Phase 2: Deliverables

1. State workshop and city-reconnaissance reports
2. Finalization of data entry interface and collection protocols based on feedback from cities
3. Updation of the Liveability Tracker
4. Dissemination of the workshop interactions and outcomes through social media

Much of the actual data collection is expected to be undertaken in phase 3, which will be for a period of 4 weeks, and will be backed by a team of market research professionals and analysts who will perform real time QC checks on the quality of data that is generated and aggregated at the back-end. The core consulting staff alongside the network of state and regional coordinators will work closely with the cities and the field staff to trouble shoot on questions/clarifications through a network of help-desks and work towards encouraging cities to complete data collection over a period of 10 days. This phase will also see the commencement of the primary surveys and physical validation, which will be closely supervised with strong QC checks. Unique geo-spatial sampling methods will be deployed to ensure that we capture citizen feedback in the context of different geo-spatial incident conditions and 600 citizens (with 33% of the sample concentrated in slums) will be interviewed in every city. Open data that is spatial will also be leveraged to validate certain data sets in combination with physical audits of a random set of units. The key deliverables in this phase include:

Phase 3: Deliverables

1. Sampling plan for citizen surveys
2. Raw data sets

Each city will be given an opportunity to review the final data sets in detail and sign off on the same in phase 4. Reconciliation between self-reported and audited data if any will commence in this phase and the Index will be developed and the cities will be ranked based on the formula. The draft and final city assessment reports will also be prepared in this phase over an 8-week period and submitted for approval to MoHUA.

Phase 4: Deliverables

1. Ranking List
2. Draft and final city assessment reports
3. Updated online tracker/portal
4. Social media dissemination

Phase 5, which is likely to last 4 weeks, will involve creating a dedicated economist portal with the findings of the study to be disseminated to a global audience and will culminate with a national workshop where the experience and the findings of the exercise are shared with all the cities and other key stakeholders. Special focus on the use-case applications of this process and alignment with national and global programs and specific opportunities to strengthen data interoperability and quality will be discussed.

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Phase 5: Deliverables

1. Economist Hub Portal
2. National workshop
3. White paper on use-case applications, interoperability and levers

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs

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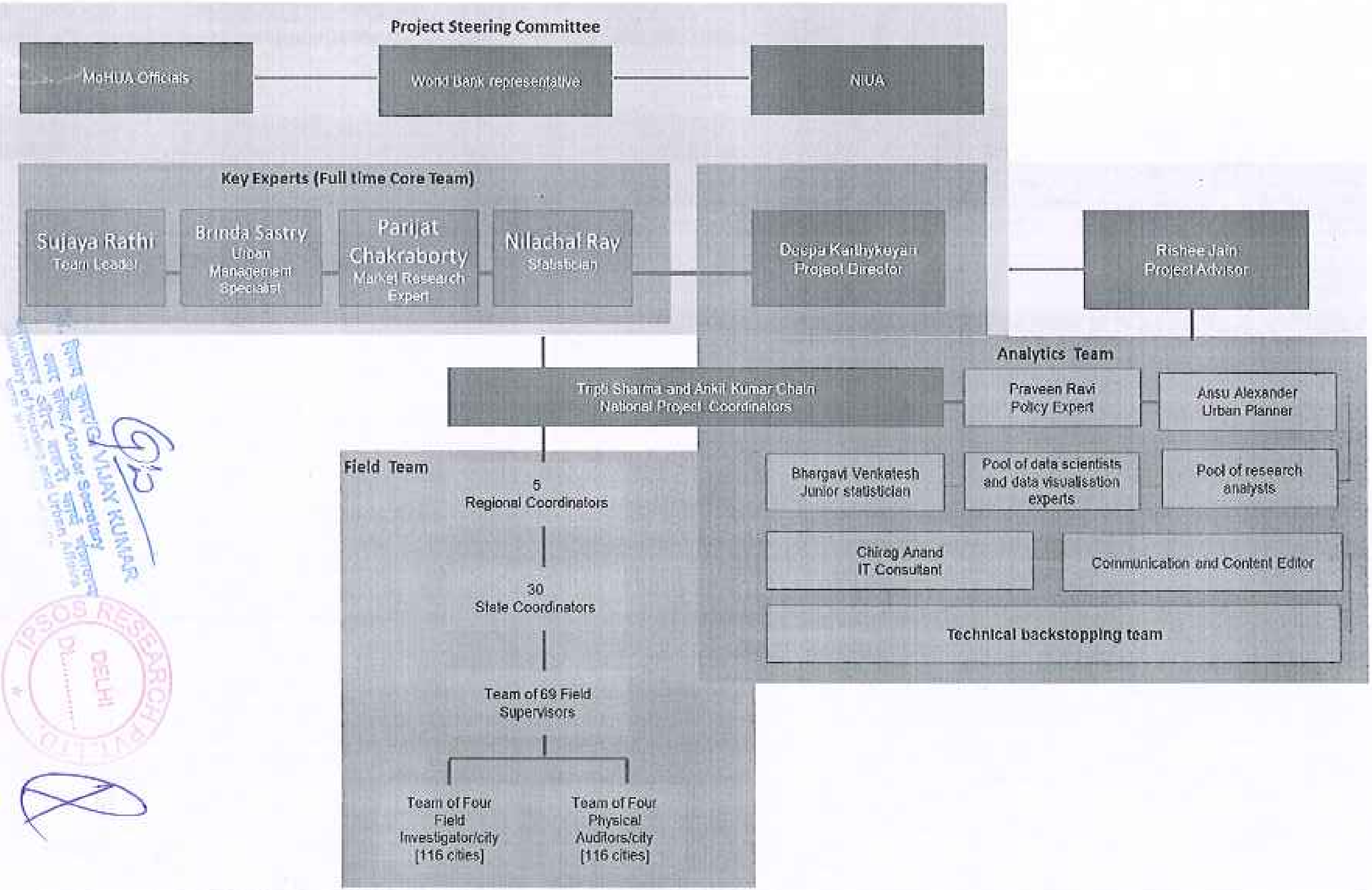
C. Organization and Staffing

We propose a four-tier project planning, governance and execution team for timely completion of the overall project and sub-tasks thereof. For continuous updation and monitoring of the overall project progress we propose to constitute a Project Steering Committee with representatives from the MoHUA, NIUA, World Bank, Full-time Core/Key Experts and Project Director to conceptualise, plan, guide and troubleshoot during the 20-week period. The Core/Key Experts, Project Director, National Project Coordinators, and Senior members from the Support/Analytical Team will constitute the Project Command Centre Team. We have structured the Project Command Centre (PCC) Team to ensure that the appropriate level of skills, experience and resource is available to carry out the tasks involved in a timely and cost-effective manner. The PCC will coordinate and manage all activities for the Assessment of Liveability Indices and provide a central point of contact for both MoHUA and the Technical Team, State Specific teams. The PCC will ensure compliance of with the working procedures and quality assurance measures that have been designed for the success of this project.

Two national level project coordinators along with five regional coordinators and 30 state/UT level coordinators will manage information exchange across the core team, field team and support/analytics team. A 15 to 18 member support team comprising senior economists, policy expert, statisticians, data scientists, visualisation experts, senior analysts, urban planner, IT expert and content editor will provide research, analytical and technical support to the core and field teams. Figure below presents our organisation and staff of key and non-key experts on this assignment. The Core Team, Project Director, Project Coordinators, and regional and functional teams illustrated in our team structure will be responsible for the overall design and delivery of the central tasks as well as monitoring quality on each. They are supported by an experienced senior director of the consortium

The core team will be supported by 5 regional coordinators all senior permanent staff of Ipsos who will coordinate all activities for the project for the states in their region. The Regional Coordinators will support the State Facilitators in scheduling and conduct of state level workshops, support facilitation of city level kick-off meetings, oversee the translation of the questionnaire and other materials into the relevant languages, provide feedback on the pilot and oversee all data collection activities. The Regional Coordinators will attend a project briefing in Phase 1 before delivering the training to their team members. They will contribute to the interim and technical reports and be responsible for reviewing and approving the datasets for the states and cities in their region. At the State level, the State Coordinators/Facilitators will be responsible and the POC for State Mission Director's office and allied departments. They will be supported by city specific teams for carrying out the tasks outlined such as scheduling and conduct of state level workshops (supported by Regional Coordinator) and PCC team, city reconnaissance studies, coordinating and facilitating submission of secondary data, training the city teams for primary validation, and HH surveys.


Project Steering Committee
MoHUA Officials
World Bank representative
NIUA
Key Experts (Full time Core Team)
Sujaya Rathi
Team Leader
Brinda Sastry
Urban Management Specialist
Parijat Chakraborty
Market Research Expert
Nilachal Ray
Statistician
Deepa Karthykeyan
Project Director
Rishee Jain
Project Advisor
Analytics Team
Tripti Sharma and Ankit Kumar Chain
National Project Coordinators
Praveen Ravi
Policy Expert
Ansu Alexander
Urban Planner
Bhargavi Venkatesh
Junior statistician
Pool of data scientists and data visualisation experts
Pool of research analysts
Chirag Anand
IT Consultant
Communication and Content Editor
Technical backstopping team
Field Team
5
Regional Coordinators
30
State Coordinators
Team of 69 Field Supervisors
Team of Four Field Investigator/city [116 cities]
Team of Four Physical Auditors/city [116 cities]

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Planning and Conceptualisation team comprising Project Director, Project Advisor and National Project Coordinators

Project Coordination team comprising Team Leader, National Project Coordinators and Regional Coordinators

Data Collection team comprising State Coordinators, Field Supervisors, Field Investigators and Physical Auditors

Support team comprising Senior Economist, Data analytics, visualisation, quality control, IT and technical backstopping staff

FORM TECH 5:
Work Schedule and Planning for Deliverables

TECH-5: WORK SCHEDULE AND PLANNING FOR DELIVERABLES

Our five phased workplan spread over 20 weeks is presented below:

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 1: Preparatory Phase	▨	▨	▨	▨	▨															
1	Literature review of existing studies and data sources (Smart Cities Report, AMRUT reports, Data.gov, etc.) to prepare baseline for each city	▨	▨																		
2	Data availability/gap assessment	▨	▨																		
3	Preliminary review and detailing the specific data points to be collected and finalising collection protocols		▨	▨																	
4	Development of Stakeholder Participation Structure			▨																	
5	Development of Workshop Participation Structure			▨																	
6	Finalisation of workshop dates for the state workshops'			▨	▨																
7	Development of data entry application /interface		▨	▨	▨																
8	Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation			▨	▨	▨	▨	▨													
9	Draft report templates						▨	▨													
10	Preparation of Research Instrument for primaries and physical validation							▨	▨	▨											
11	Data entry and quality control template				▨	▨	▨	▨													
12	Data administration protocols and data collection monitoring framework						▨	▨													
13	Framework for estimate city GDP	▨	▨	▨	▨	▨	▨														
14	Formulation of media strategy			▨	▨	▨	▨														
15	Approach note for data interoperability			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨						

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2: Conducting State/UT Workshops and City Reconnaissance Missions																				
16	Organisation of State-level Workshops					▨	▨	▨													
17	Launch and updation of Nation-wide workshop tracker					▨	▨	▨													
18	Preparation of workshop proceedings, materials and key-takeaways					▨	▨	▨													
19	Inception Report						▨	▨	D1												
20	Internal ToT, training of Field Staff and orientation of ULB Official						▨	▨	▨												
21	City level Reconnaissance meetings						▨	▨	▨												
22	Final data availability/gap assessment							▨	▨												
23	Final list of indicators								▨												
	Phase 3: Data collection					▨	▨	▨	▨	▨	▨	▨	▨								
24	Finalisation of secondary data collection interface/application					▨	▨	▨	▨												
25	Secondary data collection									▨	▨	▨									
26	Setting up a region/state level help-desks for near-real-time troubleshooting)								▨	▨											
27	Primary data collection (where no secondary data is available)										▨	▨									
28	Physical audit of secondary data provided by cities (all relevant indicators)										▨	▨									
29	GIS based audit of secondary data provided by cities										▨	▨									
30	Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC								▨	▨	▨	▨									
31	Near-real time quality checks and rectification										▨	▨									
32	Draft assessment report												D2								

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Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2: Conducting State/UT Workshops and City Reconnaissance Missions																				
	Phase 4: Data collation, Sign-off and Finalisation													▨	▨						
33	Preparation of Draft data sets (Indices wherever complete data is available) and circulation back to cities for validation											▨	▨								
34	City level discussions for addressing queries and incorporating revisions, modifications etc.													▨	▨						
35	Sign-off on final list of data points/ Indicators													▨	▨						
	Phase 5: Report Preparation, National Workshop										▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
36	Indices development and visualisation										▨	▨	▨	▨	▨	▨	▨				
37	Submission of final assessment report															▨	▨	▨	▨	▨	D3
38	Organising National-level Workshop															▨	▨	▨	▨	▨	▨
39	Submisison of digital database and raw database																			▨	▨
40	Framework for City GDP Estimation					▨	▨	▨	▨	▨	▨	▨				▨	▨	▨	▨	▨	▨
41	Framework for Interoperability					▨	▨	▨	▨	▨	▨	▨				▨	▨	▨	▨	▨	▨

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

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FORM TECH 6:
Team Composition, Assignment, and Key Experts' Inputs

TECH-6: TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
KEY EXPERTS												
K-1	Sujaya Rathi	[Team Leader]	[Home]	2	[Home]	1	[Home]	2		5		5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-2	Brinda Sastry	[Urban Management Specialist/ Planning Expert]	[Home]	2	[Home]	1	[Home]	1.5		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-3	Parijat Chakrabarty	[Market Research Specialist]	[Home]	0.5	[Home]	1	[Home]	0.5		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
K-4	Nilanchal Ray	[Statistician]	[Home]	1	[Home]	0.5	[Home]	2		3.5		3.5
			[Field]	0	[Field]	0	[Field]	0			0	0
			Subtotal (D-1)	5.5	Subtotal (D-2)	3.5	Subtotal (D-3)	6		15		15
NON-KEY EXPERTS												
N-1	Rishee Jain	[Non-Key Expert -1]	[Home]	0.2	[Home]	0	[Home]	0.3		0.5		0.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-2	Deepa Karthykeyan	[Non-Key Expert -2]	[Home]	0.5	[Home]	0.5	[Home]	0.5		1.5		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-3	Tripti Sharma		[Home]	1.5	[Home]	0.5	[Home]	2		4		4.5
			[Field]	0	[Field]	0	[Field]	0				

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N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
N-4	Ankit Kumar Chatri		[Home]	2	[Home]	0.5	[Home]	2		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-5	Praveen Ravi		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-6	Dr. Rajarshi Singh		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-7	Ambrin M		[Home]	0.5	[Home]	0.5	[Home]	1		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
N-9	Bhargavi V		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-10	Kowshik Ganesh		[Home]	0.75	[Home]	0	[Home]	0.75		1.25		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-13	Ansu Alexander		[Home]	0.5	[Home]	0.25	[Home]	0.5		1.25		1.25
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Anusha Ghosh		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Samvita Kalyan		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Leo Abruzzesse	Home	[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5

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N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1.2		D-2.1		D-3.2			Home	Field	Total
N-14	Roxana Slavcheva		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Stefano Scuratti		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Regional Coordinators: (5 Nos)		[Home]	2.5	[Home]	5	[Home]	2.5		10		10
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	State Coordinators (30 Nos)		[Home]	7.5	[Home]	15	[Home]	7.5		30		30
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Executives (116 Nos)		[Home]	0	[Home]	290	[Home]	0		290		290
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Physical Auditors (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Enumerators (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Supervisors (116 Nos)		[Home]	0	[Home]	232	[Home]	0		232		232
			[Field]	0	[Field]	0	[Field]	0			0	0
							Total			1306.5	1.5	1308

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1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1. 2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty-two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

Section 3 – Technical Proposal – Standard Forms

3 "Home" means work in the office in the expert's country of residence. "Field" work means work carried out in the Client's country or any other country outside the expert's country of residence.

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APPENDIX-B

Key Experts

Details of Key Experts:-

S.No	Position	Name of key Expert	Details of Qualification & Experience
1	Team Leader	Sujaya Rathi	As per CV Attached
2	Urban Management Specialist/Planning Expert	Brinda Sastry	As per CV Attached
3	Market Research Specialist	Parijat Chakarborty	As per CV Attached
4	Statistician	Nilachal Ray	As per CV Attached

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CURRICULUM VITAE (CV)

CV of Team Leader

Position Title and No.	Team leader
Name of Expert:	Sujaya Rathi
Date of Birth:	15th September 1969
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Masters in Community and Regional Planning, Iowa State University, USA, 1998
- Masters in Economics, Jadavpur University, India, 1994

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
November 1, 2017 – current	Self/ Independent Consultant	India	Urban transport, urban sanitation, urban planning, decision support, capacity building Project involved: Faecal Sludge Management (FSM)Toolbox Rapid Assessment and Market Priming, Athena Infonomics, Client: Bill and Melinda Gates Foundation, November 1, 2017 – January 31 2018

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June 2010 to October 2017	Center for Study of Science Technology and Policy (CSTEP)/ Principal Research Scientist Ref: Vivek Vaidyanathan, vivek.v@cstep.in	India	Led and formed the urban planning team. Responsible for all urban domain projects related to planning, transport, sanitation, development of decision support systems, modelling, infrastructure assessment, evaluation studies, urban development projects such as evaluation of smart city plans, policy analysis Project involved: • Intersectionality-Informed Framework for Implementation of Effective Gender Mainstreaming in WSH: Andhra Pradesh (Bill and Melinda Gates Foundation (BMGF), along with partners Administrative Staff College of India (ASCI), and Centre for Research and Advocacy (CFAR), July 2017 – October 2017) • Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche (Client: International Finance Corporation)- May 2017 – October 2017 • Implementation plan for electrification of public transportation in Kolkata and Bangalore city – Shakti Foundation, 2016-2017 • Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog, 2015 • CSTEP (2015) Electric Vehicles: Technology, Policies and Benefits, 2015-16 – Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore • Need for Government support for public transport – BMTC, 2015 • Review of urban transport in India, 2014 – Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore • Development of Decision Making Platform for Integrated Sanitation Investment Planning – Bill

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			and Melinda Gates Foundation, 2013 – August 2017 (Phase 1 and 2) • Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change, IDRC Opportunity Fund, 2015 Other Projects: • Have been involved with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. • Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative • Faculty for Sensitization Module on Urban Transport, IUT, Bangalore, 2013 • Coordinator for India- Fecal Sludge Management Toolbox – validation, dissemination and training. • Worked with Planning Commission, Government of India to develop a systems dynamics model for identifying future development trajectories for India. This chapter titled, "Scenarios: Shaping India's Future" has just been published by the Planning Commission • Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP • Pedestrian Guidelines for Karnataka (Client: Directorate of Urban Land Transport, Govt. of Karnataka)
2006 to 2010	Wilbur Smith Associates, Bangalore, India/	India	Projects Involved: • Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area, 2009-10

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	Transportation Project Manager; Contact information for references: available upon request		• Mobility Indicators for Bangalore, India-2008 (Client: Directorate of Urban Land Transport, Govt. of Karnataka) • Guwahati Comprehensive Mobility Plan, 2008-09 • Capacity Building for Sustainable Urban Transport Planning- India, 2008 - Client-DFID-World Bank, Ministry of Urban Development, Government of India • Jaipur Comprehensive Mobility Plan, Jaipur, India-2009 (Client: Jaipur Development Authority) • Chennai Comprehensive Traffic and Transportation Study, Chennai, India-2008 (Client: Chennai Metropolitan Development Authority) • Traffic and Transportation policies and strategies for urban areas in India, 2007(Client: Ministry of Urban Development, Government of India) • Techno-Economic Feasibility for Light Rail Transit, Kolkata, India -2009 -2010(Client: Kolkata Mass Rapid Transit Pvt. Ltd) • Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 (Client: Urban Mass Transit Corporation) • Bagmane Tech Park-Traffic Impact Study, Bangalore, India-2007-2008 (Client: Bagmane Developers)
2003 to 2006	The Transpo Group, Kirkland, WA, USA/ Transportation Project Manager; Contact information for references: available upon request	USA	Projects Involved • Northwest Landing Developments, DuPont (Washington, USA)-2003-2006(Client: Quadrant Corporation, WA, USA) • City of Bonney Lake (Washington, USA) Land-Use-Transportation Plan-2005(Client: City of Bonney Lake, WA, USA) • Interstate-405 Congestion Relief Project (Washington, USA)-2005(Client: Washington Dept. of Transportation, WA, USA)

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			• State Route 539 Corridor Study (Washington, USA)-2004-2005(Client: Washington Dept. of Transportation, WA, USA) • PSRC Air Cargo Study (Washington, USA)-2004-2005(Client: Puget Sound Regional Council, WA, USA) □ University of Washington, West Camous Garage Expansion Environmental Impact Statement (Washington, USA)-2005(Client: University of Washington, WA, USA) • Traffic Calming Study for California Department of Transportation (CalTrans)-2004(Client: California Dept. of Transportation, WA, USA) • City of Bellingham Parking Study (Washington, USA)-2004 (Client: City of Bellingham, WA, USA) • Feasibility Analysis for Wal-Mart (Oregon, USA)-2004(Client: PACLAND, USA) • City of Lynden (Washington, USA) Transportation Plan-2003 (Client: City of Lynden, WA, USA)
2000 to 2003	Howard R Green, Des Moines, Iowa/ Transportation Planner; Contact information for references: available upon request	USA	Projects Involved: • Ankeny Comprehensive Plan, City of Ankeny (Iowa, USA)-2002-2003(Client: City of Ankeny, IA, USA) • 2002 Land-use and Transportation Analysis and Planning, City of Johnston (Iowa, USA) 2002-2003(Client: City of Johnston, IA, USA) • Outer Drive Project, Sioux City (Iowa, USA)-2002(Client: City of Sioux City, IA, USA) • Russell Street Access Management Study, Sioux Falls (South Dakota, USA)-2002(Client: South Dakota Dept. of Transportation, WA, USA) • Traffic Impact study for Century Trace/Century Woods and Windsor Park Development, Johnston, (Iowa, USA)-2002(Client: City of Johnston, IA, USA) • N. 19th Ave Corridor Study, City of Newton (Iowa, USA)-2001-2002(Client: City of Newton, IA, USA)

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			• Traffic Impact Study and Regional Land-use Transportation Model Evaluation, West Des Moines (Iowa, USA)-2000-2003(Client: City of West Des Moines, IA, USA) • Transportation Engineering Assistance Program (TEAP), Iowa Department of Transportation2000-2003(Client: Iowa Dept. of Transportation, WA, USA) • West Side Visioning Study (Land Use Update) West Des Moines (Iowa, USA) -20002003(Client: City of West Des Moines, IA, USA)
1996 to 1999	Center for Transportation Research and Education, Iowa/ Research Analyst; Contact information for references: available upon request	USA	Project Involved: • "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. 1997-2000 (Client: Iowa Department of Transportation, IA, USA)
1996-1998	Iowa State University, USA/ Graduate Research Assistant; Contact information for references: available upon request	USA	• Involved in "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. • Collected data and conducted research on traffic patterns and mode choice behaviors based on several factors. • Developed intercity passenger and freight transportation models based on the research. • Involved in computer applications for development of the conceptual strategy for integrating these models with Geographic Information Systems (GIS).
1994-1996	CII, Kolkata, India/ Executive Officer ; Contact information for	India	• Representative of industry for addressing and analyzing problems related to transport, infrastructure, and economic affairs. □ Made recommendations on policies and issues to

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	references: Indrani Kar, indrani.kar@cii.in		government agencies, on behalf of regional industry. • Responsible for making recommendations to the State Budget to the Finance Ministry. • Conducted seminars and conferences for awareness of contemporary policies and issues, technology transfer between India and United States, Britain, Belgium etc.

Membership in Professional Associations and Publications:

- Member, American Institute of Certified Planners, USA
- Member, American Planning Association, USA
- Individual Member, National Faecal Sludge and Septage Management (NFSSM) Alliance, India
- Member of the Technology and Gender Task Forces of the NFSSM Alliance
- Life Member, Institute of Urban Transport, India
- Alumni, Strategic Non-Profit Management Course-India, Harvard Business School

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Lead the state level and national workshops • Lead the design and implementation plan in conducting Reconnaissance Study of all cities • Survey Design and Indicator Finalization • Analysis Review	Project Name: Reconceptualising Smart Cities: A Reference Framework for India Client: NITI Aayog Year: 2015 Position Held: Project Lead Activities Performed: — Project lead involved in the development and dissemination of a reference framework based on the sustainability principles — Application of the reference framework for analysis of the smart city proposal for Indian cities

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• Database Wireframe Design • Review and submission of reports • Client Engagement and Governance Stakeholder Liasoning	— Published a report titled "Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog."
	Project Name: Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change Client: IDRC Opportunity Fund Year: 2015 Position Held: Project Lead Activities Performed: — Contributor to the research on governance, specifically focusing on land and water — Guided and reviewed participatory scenario development and primary surveys.
	Project Name: Engagement with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. Client: Planning Commission Year: 2013 Position Held: Principal Research Scientist Activities Performed: — Participatory consultation, — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Developing analytical systems approach — scenario development and documentation — Reviewed and submitted reports

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	Project Name: Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP Client: IDRC Think Tank Initiative Year: 2010- 2013 Position Held: Principal Research Scientist Activities Performed: — Principal Investigator for the project, developed methodology, conducted data collection, reporting — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Capacity Building for Sustainable Urban Transport Planning- India Client: DFID-World Bank, Ministry of Urban Development, Government of India Year: 2008 Position Held: Activities Performed: — Gap Analysis of the urban transport planning scenario for the cities of Kolkata, Guwahati, Pune and Bangalore — Development of Alternative Analysis Toolkit and Training Material — Have been involved in capacity building for transportation professional all over India where I imparted training to over 100 officials as part of the "Training the Trainers" program for the Ministry of Urban Development.
	Project Name: Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban

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	transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative scenarios for India. Client: UMTC, GIZ for Ministry of Urban Development Year: 2012 Position Held: Principal Research Scientist Activities Performed: — Independently developed the module — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Mobility Indicators for Bangalore, India Client: Directorate of Urban Land Transport, Govt. of Karnataka Year: 2008 Position Held: Project Lead and Project Manager Activities Performed: — Development of indicators that can be measured regularly — Development of the methodology and templates to be replicated — Year-long dissemination with different stakeholders including the government and the citizens
	Project Name: Traffic and Transportation policies and strategies for urban areas in India Client: Ministry of Urban Development, Government of India Year: 2007 Position Held: Transport Project Manager Activities Performed: — Stakeholder engagement and project management — Data analysis

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	— contribution to final recommendations and report.
	Project Name: Review of Urban Transport in India Client: Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore. Year: 2014 Position Held: Project Lead Activities Performed: — Project lead involved in the development of urban transport review conceptual and working model which focuses on travel demand, energy consumption and emissions from various categories of cities in India.
	Project Name: Electric Vehicles: Technology, Policies and Benefits. Client: Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore Year: 2015-16 Position Held: Team Leader Activities Performed: — Involved in the preparation of report to highlight the need for looking at green growth strategies for public transport and identification of policy gaps associated with the adoption of battery electric buses at National, State and City levels
	Project Name: Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche Client: International Finance Corporation Year: May 2017 – October 2017 Position Held: Team Leader Activities Performed: — Stakeholder engagements with the cities of Bhubaneshwar, Bangalore, Chennai and Thane — Coordination with the team — Review of policies, guidelines for EVs in India

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	— Study of schemes and policies used globally for promoting EV adoption — Identification of gaps in existing EV schemes/ policies in India — Recommending supply and demand - side incentives to promote investments in EV manufacturing and related infrastructure
	Project Name: Need for Government support for public transport – BMTC Client: BMTC Year: 2015 Position Held: Principal Research Scientist, Project Lead Activities Performed: — Involved in the preparation of report to highlight the need for funding bus system in Bangalore city and recommended the need for alternative funding mechanisms for sustainable public transport in Bangalore
	Project Name: Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area Client: BMTC Year: 2009-10 Position Held: Transport Project Manager Activities Performed: — Development of the integrated land use and transport strategy for the area — Co-ordination with Consultant doing Structure Plan for the area –working in tandem to ensure consistency with structure plan and the transport plan scenarios — Formulated long term Metropolitan Regional Transportation Strategies for BMR-203
	Project Name: Guwahati Comprehensive Mobility Plan Client: Transport Project Manager and Lead Year: 2008-09

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	Position Held: Activities Performed: — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Jaipur Comprehensive Mobility Plan Client: Jaipur Development Authority Year: 2009 Position Held: Transport Project Manager Activities Performed: Data analysis, reviewing modeling outputs and options for mobility — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Chennai Comprehensive Traffic and Transportation Study Client: Chennai Metropolitan Development Authority Year: 2008 Position Held: Transport Project Manager Activities Performed: Land use and transport integration, developing transport strategies — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Techno-Economic Feasibility for Light Rail Transit, Kolkata

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	Client: Kolkata Mass Rapid Transit Pvt. Ltd Year: 2009 -2010 Position Held: Transport Project Manager, Project Lead Activities Performed: Methodology design, conducting primary surveys in Kolkata, review transport modeling, suggest technology options, client engagement
	Project Name: Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 Client: Urban Mass Transit Corporation Year: 2008 Position Held: Transport Project Manager, Lead Analyst Activities Performed: Methodology design, reviewed primary data collection methods and survey plan, analysis, recommendations and final documentation

Publications/Articles:

- Singh, Shubhra & Mohan, Riya & Rathi, Sujaya & Raju, Nandimandalam. (2017). Technology options for faecal sludge management in developing countries: Benefits and revenue from reuse. Environmental Technology & Innovation. 7. 10.1016/j.eti.2017.02.004.
- Electronic Waste Management in India: Issues and Recommendations, Shramana Dey, Sonali Anusree Patro, Shubhra Singh and Sujaya Rathi, Annual Technical Volume, Environmental Engineering Division Board, Session-2015-16, The Institute of Engineers, India, 2016
- Sujaya Rathi, Author on the Chapter on India in Pojani, D. Stead (Eds.), The Urban Transport Crisis in Emerging Economies, 1st ed. 2017, XV. This edited volume discuses urban transport issues, policies, and initiatives in twelve of the world's major emerging economies – Brazil, China, Colombia, India, Indonesia, Iran, Mexico, Nigeria, Russia, South Africa, Turkey, and Vietnam - countries with large populations that have recently experienced large changes in urban structure, motorization and all the associated social, economic, and environmental impacts

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- Development of the systems model and its interpretation and development of the scenarios for the Planning Commission Report – " Scenarios: Shaping India's Future" http://planningcommission.nic.in/reports/genrep/scenarios_v10712.pdf
- Ashish Verma, H.S. Sudhira, Sujaya Rathi, Robin King and Nibedita Dash, "Sustainable urbanization using high speed rail (HSR) in Karnataka, India" Research in Transportation Economics, 2013, Vol. 38 ,pp. 67-77
- Robin A. King, Sujaya Rathi and H.S. Sudhira, "An approach to regional planning in India," International Journal System of Systems Engineering, 2012, Vol. 3, pp. 117-128.
- Abhik K Das, Sujaya Rathi, "An Empirical Geometric Model for City Expansion", published in the Proceedings of the First International Conference on Intelligent Infrastructure, Computer Society of India, December 2012
- Anantha Lakshmi P, Sujaya Rathi and Abhik Kumar Das. 2015. A Dynamic Model for a Scenario based Analysis of Modal Split of Road based Passenger Mobility, 3rd Conference of Transportation Research Group.
- Anantha Lakshmi P, Sujaya Rathi.2013.Strategies to reduce energy consumption from commuting by employees, Elsevier, Procedia- Social & Behavioral Sciences, Volume 104, Pages 952-961. Available at http://www.sciencedirect.com/science/article/pii/S1877042813045813
- Anantha Lakshmi P, Sujaya Rathi. 2015. Article on 'Intelligent systems for smart and sustainable transport' published in Sustainability next. Available at http://sustainabilitynext.in/cstep/intelligent-systems-for-smart-and-sustainable-transport/
- Sujaya Rathi, Anantha Lakshmi P.2014. Article on 'Building towns to save our cities' published in India Together. Available at http://indiatogether.org/towns-government
- Sujaya Rathi, Anantha Lakshmi P.2013. Article on 'The way out of the mess on road' published in The Hindu. Available at http://www.thehindu.com/opinion/open-page/the-way-out-of-themess-on-road/article4614715.ece
- Holistic approach for Smart Cities mission: Need for a reference framework, Business Standard, July 5, 2015. http://cstep.in/pressroom/newspaper-articles/218
- Think beyond building toilets, Sustainability Next, January 2015, Sujaya Rathi. http://sustainabilitynext.in/toilet-special/think-beyond-building-toilets/ □ Republished version: Beyond toilets: Improving the sanitation value chain, Ideas for India, July 20, 2015. http://www.ideasforindia.in/article.aspx?article_id=1480
- Can Bangalore's planners solve its commuter woes?- http://indiatogether.org/need-for-mobilityplan-for-bangalore-economy
- Planning for a climate-resilient city- http://indiatogether.org/urban-planning-and-climateresilience-environment
- Building towns to save our cities, Sujaya Rathi and Anantha Lakshmi, India Together, October 24, 2013

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- Are Slums a problem or a solution? The Hindu, 14th July 2013 (http://www.thehindu.com/todays-paper/tp-features/tp-openpage/are-slums-a-problem-orsolution/article4913512.ece) □ The way out of the mess on road, The Hindu, 14th April 2013
- The Derelict mile, The World Streets Forum (http://worldstreets.wordpress.com/2012/12/13/letter-from-bangalore-the-derelict-mile/)
- Target Sustainability, Become Smart, Sujaya Rathi and Shrimoyee Bhattacharya, Infrastructure Today, March 2015.
- Smart-City Challenge: Building on pillars of good governance, Shrimoyee Bhattacharya and Sujaya Rathi, Economic Times, May 12, 2015.
- What can Bengaluru gain from Smart Cities Mission? Sujaya Rathi and Shrimoyee Bhattacharya, Deccan Herald, August 26, 2016

Expert's contact information: (e-mail: sujaya.rathi@gmail.com , phone: 9900087161)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Sujaya Rathi	Sujaya Rathi	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

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CV of Urban Management Specialist

Position Title and No.	Brinda Sastry
Name of Expert:	Urban Management Specialist
Date of Birth:	11-JAN-1965
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelors in Architecture programs at the RV College of Architecture, Bengaluru, 1981
- Master of Urban Management and Design, University of Oregon, Eugene, Oregon, USA, 1993
- Diploma in Architecture - equivalent to a degree and recognized by the Royal Institute of British Architects (RIBA) - Center for Environmental Planning and Technology, School of Architecture, Ahmedabad, India, 1988

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
2000 To: PRESENT	VARIOUS GOVERNMENT, PRIVATE AND NGO ORGANISATIONS Positions / ADVISOR, COMMUNITY DEVELOPMENT EXPERT, PROJECT COORDINATOR Contact Information: ROBIN KING, Director of Knowledge Capture and Collaboration, WRI, Washington DC, USA	India	• Institutional arrangements that shape urban settlements within the framework of inclusivity, equity, disaster resilience, and sustainability. • Technical assistance to citizen groups on various urban planning matters, and conducts independent research in the areas of participatory planning, livability, spatial planning, urban governance, and urban design policy implementation

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	EMAIL: RKING@WRI.ORG PHONE: +1 (202) 729-7816		
2004 To: PRESENT	RV COLLEGE OF ARCHITECTURE, BENGALURU / ADJUNCT FACULTY	India	• Teaching courses in architecture • Urban management and planning research
2014 To: PRESENT	HABITAT FORUM (INHAF) / PROJECT COORDINATOR Contact Information: KIRTEE SHAH, PRESIDENT, INHAF (HABITAT FORUM) EMAIL: kirtee@ksadps.com , kirtee0107@gmail.com PHONE: +91-99250 10706	India	• Prepared a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy
Nov. 2012 To: Feb. 2013	INDIAN INSTITUTE FOR HUMAN SETTLEMENTS, BENGALURU / VISITING FACULTY Contact Information: Available upon request	India	• Teaching • Urban management and planning research
From: 2012, 2013, 2014, 2016	EPFL LUASSANE, SWITZERLAND, SUMMER SCHOOL IN BENGALURU / EXTERNAL FACULTY	India	• Teaching • Urban management and planning research
2004 To: 2010	GROUPE SCE / EGIS INDIA PVT LTD., BENGALURU/ SENIOR PLANNING CONSULTANT, COMMUNITY DEVELOPMENT	India	• Reviewed and provided technical input on the data analysis and Master Plan Projects

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	EXPERT, PLANNING ADVISOR		
2000 To: 2004	DEPARTMENT OF INFORMATION TECHNOLOGY AND BIOTECHNOLOGY, GOVERNMENT OF KARNATAKA/ PLANNING CONSULTANT / PROJECT COORDINATOR	India	• Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
1996 To: 2000	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON, USA / CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net	USA	• Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. Organised and conducted public meetings, workshops and neighborhood walks. Prepared questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000. • Developing design standards and guidelines for residential zones in the city of Portland
1993 To: 1996	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON,	USA	• Prepared a community plan for 18 neighborhoods in East Portland: Worked with a team to develop alternative zoning concepts and a summary document for

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	USA / ASSOCIATE CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net		the plan area. Organised public workshops, and worked with the Citizen Advisory Committee to solicit input from neighborhoods and businesses and develop the plan. The plan was abandoned due to lack of funds • Prepared a transportation plan for the Broadway-Weidler. Provided technical assistance on zoning, development regulations (bye-laws) and design guidelines issues to develop a transportation plan for the corridor. • Westside Light Rail Project: Developed a station area plan (micro-level plan) for the Goose Hollow District in Portland city and coordinate with all concerned agencies. Prepared a background report, an urban design plan, and special design guidelines for the Goose Hollow District. This involved preparing a historic conservation strategy for the District. Developed a land use plan and zoning recommendations for the light rail station area. Served as an advisor to the design review team for new projects in this area. Prepared legal documents for adoption of the plan. The Portland City Council officially adopted the Goose Hollow District Plan in February 1996. • Livable City Project: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering for discussing light rail station area planning, and organized public workshops.
August 1993 To: December 1993	CITY OF PORTLAND, OFFICE OF TRANSPORTATION, REGIONAL RAIL PROGRAMME,	USA	• Assisting on urban and city related projects

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	PORTLAND, OREGON, USA/INTERN Contact Information: Available upon recuest		
June 1993 To: August 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA/ ADJUNCT INSTRUCTOR Contact Information: Available upon request	USA	- Assisting on urban and city related projects
1990 To: 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA / GRADUATE TEACHING FELLOW, RESEARCH ASSISTANT Contact Information: Available upon request	USA	- Assisting on urban and city related projects
1988 To: 1990	BOPAIAH AND ASSOCIATES, ARCHITECTS AND PLANNERS, BENGALURU /PROJECT ARCHITECT Contact Information: Available upon recuest	India	- Working on urban and city related projects
1988 To: 1988	CEPT, SCHOOL OF ARCHITECTURE, AHMEDABAD / RESEARCH ASSISTANT Contact Information: Available upon request	India	- Assisting on urban and city related projects
1986 To: 1987	JAIN ASSOCIATES, ARCHITECTS AND URBAN DESIGNERS,	India	- Working on urban and city related projects

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	AHMEDABAD /JUNIOR ARCHITECT		
1986 To: 1986	WACHTL AND ASSOCIES, ARCHITECTS, ZURICH, SWITZERLAND/INTERN	Switzerland	• Assisting on urban and city related projects

Membership in Professional Associations and Publications:

- COUNCIL OF ARCHITECTURE, INDIA
- CEPT FAAA
- UNIVERSITY OF OREGON ALUMNI ASSOCIATION

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Gujarati
- Kannada
- Tamil

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Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Urban indicators assessment and finalization • Ground-level urban data collection, analysis • Benchmarking (Ranking) and comparative analysis • Organising urban citizen level engagements	Name of Assignment or Project: Revisioning JnNURM Year: 2014 Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: Conducted a secondary literature, urban data collection and analysis of 65 JnNURM cities under the JnNURM, the money spent, projects completed and citizens' review of the mission. Used this to prepare an approach paper, an information brochure to advocate for a need for re-visioning, and several grant proposals to be submitted to the TATA Trust, Ford Foundation and other funding agencies. This Project outlines the goals and criteria for assessment that aim for principles of good governance - accountability and transparency
	Name of Assignment or Project: Draft report on data assessment for 65 JNNURM cities (work in progress) Year: Ongoing Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: • Assess role of ULBs in JNNURM and impact of the Mission on performance of ULBs; • Highlight the role of the public or lack of it in the process of implementing JNNURM; - • Assess if intended outcomes were achieved; • Assess ULB performance with respect to reforms achievement, funds utilization, and project implementation; • Identify, from the analysis of data, criteria for city selection and key questions that need to be investigated through on-ground consultations and interactions with participating ULBs; and • identify factors for recommending a revised framework for a re-visioned strategy for urban development

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	• Review of data from JNNURM, HUPA, MoUD, and other official websites for UIG as well as UIDSSMT towns. Data concerning Additional Central Assistance (ACA) funds released; funds utilized; project completion rates including BSUP housing completion status with occupancy rates; reforms performance; credit ratings of ULBs; and best practices and awards are considered for this review. Most data accessed is 2013-14 data, except in some instances data for 2010-11 is used. • Employed gathering data through empirical work, including public consultations, surveys, and interviews with ULBs, among other tasks.
	Name of Assignment or Project: Green Logistics Project – Gandhi Bazaar Market Street, An inclusive re-design. Year: 2017-18 (on-going) Location: Bengaluru Client: GIZ and the Government of Karnataka (DULT and BBMP) Positions held: Team Leader, Urban Designer and Planner Activities performed: Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
	Name of Assignment or Project: Saving cities, building towns - A case of spatial reorganisation Year: 2014 Location: Bengaluru Client: Center for Study of Science, Technology and Policy (CSTEP), Bengaluru Main project features: Review of small town growth and development dynamics Positions held: PLANNING CONSULTANT Activities performed: • Reviewed the report: Saving cities, building towns - A case of spatial re-organisation, prepared by CSTEP and provided technical and methodological advice in written form for changes and improvements.

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	• Assessed the indicators and framework assigned for urban data collection
	Name of Assignment or Project: An assessment of the role of NGOs in CSR Activities Year: 2017-18 (on-going) Location: Bengaluru Client: Habitat Forum (INHAF) Positions held: Project Coordinator, Principal Researcher Activities performed: Preparing a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy.
	Project name: Preparation of development controls for the Indiranagar Metro Station area Location: 2013 Client: EMBARQ (WRI), Bengaluru Position: SENIOR URBAN DESIGN AND PLANNING CONSULTANT Activities performed: • Co-authored with other team members the draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru • Prepared a city-wide assessment of station area typologies. Developed a work plan and conducted ground surveys of the Metro station area to prepare a land use, ground-level urban data collection & analysis and urban design plan, with development control proposals using a hybrid of form based codes and land use regulations. Also, prepared methodologies to be applicable to other station areas for plan preparation and plan implementation.
	Name of Assignment or Project: Revision of the Structure Plan for the Bangalore Metropolitan Region Year: 2008-10 Location: Bengaluru Client: Bangalore Metropolitan Region Development Authority (BMRDA) Positions held: SENIOR URBAN PLANNING CONSULTANT Activities performed:

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	• Reviewed and analyzed land use planning policies and land management instruments, planned the implementation and consultative / participatory approach; conducted existing situation analysis, used trend analysis and population projections for development analysis, SWOT analysis, and preparing development scenarios and visions; prepared sector specific vision and policy guidelines, provided. • Lead extensive urban data collection for assessment of the existing conditions of the Bengaluru Metroplitan region and the proposals for future planning of the region. • Also involved in the land use analysis, spatial transportation proposals, the economic strategy of cluster and nodes, and the preparation of the zonal regulation • Link: http://www.bmrda.kar.nic.in/rsp_report.pdf
	Name of Assignment or Project: Hollywood and Sandy Area Plan Year: 1998-2000 Location: Portland, Oregon, USA Client: City of Portland Positions held: CITY PLANNER Activities performed: • Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. • Organised and conducted public meetings, workshops and neighbourhood walks. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000.
	Name of Assignment or Project: Creston Kenilworth Neighborhood Plan Year: 1996-98 Location: Portland, Oregon, USA

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	Client: Bureau of Housing and Community Development, City of Portland Positions held: CITY PLANNER Activities performed: • Worked independently to develop an urban design plan, policies, and implementing actions and legal findings for this low-income neighborhood. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Organised and conducted public meetings, workshops and made presentations before official bodies. The Portland City Council officially adopted the plan in June 1998
	Name of Assignment or Project: Preparation of DPRs under the JnNURM for Heritage Conservation, Urban Renewal, Basic Services for the Urban Poor and Mobility Plan Year : 2008-09 Location: PANAJI, GOA Client: CCP, PANAJI Positions held: PUBLIC PARTICIPATION CONSULTANT Activities performed: Prepared a public participation strategy and timeline, identified primary and secondary stakeholders (over 35 target groups), held meetings with the Mayor and Councillors, conducted ward level outreach, surveys, and meetings with target groups to document issues, conducted 6 open houses at city level, compiled the process into a report that was officially submitted to the City Corporation of Panaji.
	Name of Assignment or Project: Livable City Project Year: 1993-94 Location: Portland, Oregon, USA Client: City of Portland Positions held: ASSOCIATE CITY PLANNER Activities performed: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering

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	for discussing light rail station area planning, and organized public workshops.
	Name of Assignment or Project: Master Plan (Revision II) – 2021 A.D. for Mangalore Year: 2007-12 Location: Bengaluru Client: CITIZEN FORUM FOR MANGALORE" S DEVELOPMENT Activities performed: Prepared a report assessing the Plan and suggesting revisions by identifying the gaps in information and analysis. Prepared a participatory process work plan for the citizens group.
	Name of Assignment or Project: Draft Master Plan for the Hampi World Heritage Site Year: 2007-10 Location: Bengaluru Client: ASI and UNESCO Positions held: PLANNING CONSULTANT (to INDE, Bengaluru) Activities performed: Reviewd the Hampi Master Plan and provided technical inputs for revision in the form of a report. Prepared a work plan for conducting a public participation process.
	Name of Assignment or Project: Review of the working paper: Transit-Oriented Development Policy Mapping: comparing TOD implementation in three cities - Portland (Oregon), Mexico City and New Delhi Year : 2016 Location: NA Client: World Resources Institute (WRI), Washington DC, USA Positions held: PLANNING CONSULTANT Activities performed: Assessed the breadth and depth of information related to TOD policy and provided written technical and policy related notes identifying a) gaps in method and information, and b) areas for improvement for the working paper
	Name of Assignment or Project: Metropolitan Spatial Data Infrastructure Project Year: 2004

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	Location: Bengaluru Client: Bangalore Development Authority Positions held: SENIOR URBAN PLANNING AND DESIGN CONSULTANT Activities performed: As consultant, reviewing and preparing a Vision Document, Planning Districts Report and a planning Handbook for the Revised Master Plan. Prepared brochure explaining the Master Plan and assisted in preparation for the public participation process. Participated in an advisory role in team discussions on zoning regulations, and land use planning issues.
	Name of Assignment or Project: Bangalore Information Technology Corridor Project Year: 2000-04 Location: Bengaluru Client: NA Positions held: PROJECT COORDINATOR - Consultant Activities performed: Coordinated with other consultants in preparation of the Structure Plan and reviewed their works. Dealt with official correspondence, prepare presentations on the project and drafts for the Cabinet note. Participated in discussions on and assisted in preparing the amendments to the proposed the IT Corridor Authority Bill.
	Name of Assignment or Project: Proposed Recommendations for the Karaikal Master Plan Year: 2007 Location: Karaikal, Puducherry Client: Architecture and Design (A&D), Paris, and Development Alternatives, New Delhi, India Positions held: URBAN PLANNING CONSULTANT Activities performed: Prepared a review of the Master plan document and recommended strategies for revisions

Training and certificates attained:

- City of Portland, Bureau of Planning, Portland, Oregon, USA (1993-2000) : Professional development training conducted by the American Planning Association - Portland Chapter, and Oregon Department of Transportation, USA. Involved sessions on transit-oriented planning, community development, public involvement strategies and growth management principles.

Publications:

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Sastry, B., and Rajagopal, C. 'Stakeholder participation process for preparing Detailed Project Reports (DPRs) under JnNURM, Panaji, Goa,' in Urban Initiatives - Peer Experience and Reflective Learning (PEARL) under JnNURM. New Delhi: National Institute of Urban Affairs. Vol. 4. pp. 92-97. 2011.

N, Asha., and Sastry, B. 'A Study of urban villages - A case of Bangalore', in Proceedings of IUDI National Urban Design Thesis Seminar, Bengaluru. 2010.

Sastry, B. 'Barmer' and 'Bikaner', in Oliver, Paul (ed) Encyclopecia of Vernacular Architecture of the World. Oxford: Basil Blackwell Ltd. Vol. 2.II. pp. 7-8. 1997.

Brown, G.Z., Meacham, M.A., Miller, P.A., McDonald, M., Kline, J.A., and Sastry, B., in Technical Report Number CONF - 9208196-1 of InterSymp '92, Baden-Baden, Germany. 1992.

Selected Official Reports:

Towards a walkable and sustainable Bangalore- Development Control Regulations for Indiranagar Metro Station, September 2013, draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru (co-authored with other team members)

Bangalore Metropolitan Region Revised Structure Plan 2031, Draft document for the Bangalore Metropolitan Region Development Authority, Bengaluru, 2009 (co-authored with other team members)

Report on Stakeholder Participation Process for the Detailed Project Reports under the JNNURM, Corporation of the City of Panaji, September 2008 prepared for Groupe SCE India Pvt. Ltd.

Revised Master Plan 2015, Bangalore, Volume 1, Draft document for the Bangalore Development Authority, Bengaluru, March 2006 (co-authored with other team members)

Master Plan 2015, Planning Districts Report, Volume 5, Draft document prepared for the Bangalore Development Authority. March 2006 (co-authored with other team members)

Hollywood and Sandy Plan, City of Portland, Bureau of Planning, Portland, Oregon, April 2000 (co-authored with other team members)

East Portland Community Plan Project Summary Report, City of Portland, Bureau of Planning, Portland, Oregon, August 25, 1997 (co-authored with other team members)

Adopted Creston Kenilworth Neighborhood Plan, City of Portland, Bureau of Planning, Portland, Oregon, June 1998

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Goose Hollow District Design Guidelines, City of Portland, Bureau of Planning, Portland, Oregon, Adopted by the Portland City Council, February 21, 1996 Goose Hollow Station Community Plan for the Westside Light Rail Station Community Planning Project, City Council Adopted Ordinance No. 169699, City of Portland, Bureau of Planning, Portland, Oregon, January 10, 1996 (co-authored with other team members)

Expert's contact information: (e-mail: brinsastry@gmail.com, phone: +91 9844252552)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Brinda Sastry	Brinda Sastry	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

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CV of Market Research Specialist

Position Title and No.	Market Research Specialist
Name of Expert:	Parijat Chakraborty
Date of Birth:	02 August 1972
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelor of Engineering - from Indian Institute of Engineering Science and Technology, Shibpur (Erstwhile Bengal Engineering College, Calcutta University) - Mining Engineering (1989-1993).
- Executive MBA ISB Hyderabad

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Jan 2017 to present	IPSOS India /Executive Director and Head of Public Affairs research Contact: Ipsos, 801, 8th Floor, Vipul Square B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana.	India	• As an Executive Director and Head of Public Affairs research at IPSOS India, Parijat Chakraborty leads the division and ensure the clients receive the best quality service aligned with rich heritage of Ipsos Public Affairs globally. He and his team work closely with several organizations and entities in developmental, commercial and Government sectors

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July 2007 to Jan 2017	TNS India/ Executive Director Contact: TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001	India	• As an Executive Director at TNS India, Parijat Chakraborty was primarily responsible for entire business of the divisions, in India (second largest and fastest growing team). His key responsibilities includes Business development as per target, P&L of the division, Presenting research findings to top/senior management of client organisations, Assisting researchers in conceptualizing complicated studies and cull out actionable findings from the data, Ensuring quality of deliveries within given time-frame, Client as well as employee satisfaction and motivation, Ensuring Knowledge Management and refresh/update in a high employee-turn-over environment and Setting up and maintaining processes for all key initiatives.
April 2001 to June 2007	International Data Corporation, Gurgaon /Associate Vice President Contact: Cyber House, B 35, Sector 32, Gurugram, Haryana 122001	India	• Associate Vice President in International Data Corporation, Gurgaon. IDC is the leading research and consultancy organisation with the mission to provide strategic and tactical guidance to builders, providers and users of information and communication technology in order to help them make appropriate business decisions. Parijat developed the End-user research division there and made it contribute to 40% of the company revenue eventually. He also re-established Telecom research as a major pillar of success for the company
May 1998 to April 2001	NFO MBL India Limited (NFO World group), New Delhi /Associate Project Manager Contact: Company got acquired by TNS.	India	• Served as Associate Project Manager in NFO MBL India Limited (NFO World group), New Delhi. In NFO MBL, Parijat was heading one of the Research teams. He managed reputed accounts (independently or jointly) for Dabur, RCI, Hero Honda, Nestle etc. He also Initiated Industrial Market Research in the company.

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	TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001		
March 1995 to January 1998	B2B / Industrial Market Research division /Research Executive in ORG-MARG India. Company got acquired by Nielsen India Private Limited, 7th Floor, 404-405, ILAB Info Technology Centre, Udyog Vihar Phase 3, Gurgaon, Haryana, 122016	India	• Worked as Research Executive in B2B / Industrial Market Research division. He had complete project management responsibility for all projects under this division. He headed Industrial Market Research team in Delhi and was driving a team of four researchers and more than 10 Operations executives.

Membership in Professional Associations and Publications:

Nil

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Technical inputs on research design, sampling, analysis and generation of fact sheet	Project name: Comprehensive National Nutrition Survey (CNNS) Year: 2016-2017 (study in progress in some states) Location: UP, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh and West Bengal Client: UNICEF

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• Management support with mobilization and organization for market research • Schedule Finalization and training	Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling, analysis and generation of fact sheet.
	Project name: FPwatch Family Planning Outlet Survey, 2016 Year: 2016 Location: Bihar & Uttar Pradesh Client: PSI, Washington Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling and analysis including determination of market size by various family planning methods and generating products penetration estimates.
	Project name: Road user satisfaction survey for Himachal Pradesh Year:2016 Location: Himachal Pradesh Client: HPRIDC / World Bank Funded Project. Position: Project coordinator Activities performed: Finalization of schedules, training, inputs for sampling of speed survey and creation of road users' satisfaction indices using factor analysis.
	Project name: The Nodal Agency (NA) for the Nationwide Concurrent Evaluation study of the flagship programme of MGNREGA Year:2015 Location: All India Client: Ministry of Rural Development Position: Project Advisor Activities performed: Provided technical inputs to ministry on research design, sampling, analysis and report writing. Participated in various stakeholders' workshops and dissemination of study findings.
	Project name: Rating of cities on sanitation parameters Year:2015 Location: Maharashtra, Rajasthan, Gujarat

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	Client: Ministry of Urban Development Position: Project Advisor Activities performed: Participated in core expert training, contributed in data collection strategy, conducted pilot in Biwadi town, provided logistics support particularly for the identification of NABL accredited labs for the testing of water sample, designed template with algorithms for the calculation of scores, presented scores at the Ministry level stakeholders' workshop.
	Project name: Assessment of Routine Immunization Coverage and Maternal and Child Health Services in 75 districts of Uttar Pradesh Year:2015 Location: Uttar Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling and immunization coverage estimates.
	Project name: National Integrated Biological Behavioural Surveillance Year: 2015 Location: J&K, Himachal Pradesh, Punjab, Chandigarh, Haryana Client: National Aids Control Organization Position: Project Advisor Activities performed: Participation in regional workshops, training, mobilization logistics support particularly for biological component, inputs for sampling HRG and migrant domains.
	Project name: Assessment of Implementation of Reservation Provision for Children from Weaker Section and Disadvantaged Group in Unaided Private Schools under RTE Act Year:2015 Location: Madhya Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.

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	Project name: Data collection for component Clinical Anthropometric and Biochemical (CAB) test under Annual health survey Year:2014 Location: All India Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Provided logistics support and critical inputs at various stages of Implementation and generation of anthropometric and bio-chemical related estimates.
	Project name: Assessment of SMO Performance under CSMP and Overall Impact of CSM Programme Year:2013 Location: All India Client: Technical Support Group to NACO Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Annual health survey Year:2011–2013 Location: Bihar & Jharkhand Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and generation of fact sheet
	Project name: Evaluation of link worker scheme Year:2012 Location: All India Client: National AIDS Control Organization (NACO) Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Comprehensive socio-economic assessment of project catchment area of Moradabad - Bareilly expressway road Year:2012 Location: Uttar Pradesh Client: IL&FS

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	Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Socio-Economic & Health Assessment around Zeawar and Kayad mines Year: 2012 Location: Rajasthan Client: Hindustan Zinc Limited Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.

Training and certificates attained:

- Certified Lead Auditor for ISO 9001:2008 Quality Management System
- Distinction on "Six Sigma" (Green Belt level)
- Training on high-end statistical application for Marketing and Research applications
- Several other MDP programs organized by the employers

Expert's contact information: parijat.chakraborty@ipsos.com, Ph: 9810496838

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Parijat Chakraborty	PChakraborty	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty	PChakraborty	26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

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CV of Statistician

Position Title and No.	Statistician
Name of Expert:	Nilachal Ray
Date of Birth:	06 Oct, 1955
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- M.A. in Economics, Madras University, 1987,
- Graduate Diploma in Operational Research, Operational Research Society of India, 1984
- M.Sc. in Statistics, Calcutta University, 1977
- B.Sc.(Hons.) in Statistics, Calcutta University, 1975

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Aug 2016 – Present	Self / Independent	India	• Survey designing, collection, large-scale data processing, compilation, tabulation, dissemination and statistical and economic analysis, report writing, editing, multiple copy preparation and publishing including teaching and training of several types of data, viz. trade, socio-economic, industrial, agriculture, health, etc. • Wide experience in collection, compilation, validation, tabulation, analysis and dissemination of large-scale survey data at national level.

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			• use of personal computer based software packages for statistical computing, data collection, compilation, presentation, analysis and dissemination.
17 Jun 2016 - 03 July, 2016	Food and Agriculture Organization (FAO) of the United Nations / International Consultant, Strategic Planning in Agricultural Statistics; Contact information for references: Mukesh Kumar Srivastava Senior Statistician Economic, Social and Policy Assistance Group (ESP) FAO Regional Office for Asia and the Pacific 39 Maliwan Mansion, Phra Athit Road, Bangkok 10200, Thailand E-mail: mukesh.srivastava@fao.org Mob: +66818275767	Bhutan	• Undertaken field visits to selected farms to enable an appreciation of the agricultural system in Bhutan and document findings. • Assisted with preparations for a technical workshop on Renewable Natural Resources (RNR) census and survey planning. • Participated in the technical workshop and provide a summary report of key points discussed. • Participated in broad level discussions to prepare a detailed work program on the way forward. • Prepared a document on a strategy for the RNR census and surveys, including scope and coverage as well as a detailed survey calendar and data collection strategy. • Undertaken detailed discussions with relevant officers to obtain information needed to prepare this strategy document. • Provided an end of assignment report.
30 Nov 2015 - 04 Jan, 2016	Eastern Africa Statistical Training Centre (EASTC) / Teaching and Consultancy; Contact information for references: Dr. FAE Mkumbo Rector, EASTC PO Box 35103	Tanzania	• Very successfully done a teaching and relevant consultancy assignment for 5 weeks for 2 courses "Trade Statistics" for 3 weeks and "Industrial Statistics" for 2 weeks for 3 Master in Statistics Batches – one 1st year and two 2nd year.

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	Dar es Salaam Tanzania E-mail:faemkumbo@yahoo.com		
14 Nov 2011 - 31 Oct, 2015	National Sample Survey Office (FOD) / Deputy Director General;Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked as Deputy Director General in the higher pay-scale of Additional Director General at National Sample Survey Office (Field Operations Division), Zonal Office (ZO), Eastern Zone, Kolkata of Ministry of Statistics & Programme Implementation, Government of India from 14.11.2011 to 31.10.2015 and retired from the service on 31.10.2015. This ZO was responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO). Worked as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of industries (ASI) on annual basis in Industrial sector, Area Enumeration Survey with Area Aggregation Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price

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			Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as work of all on-going statistical activities in the respective states besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) as and when required basis. I was responsible to monitor the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
01 Mar 2011 - 11 Nov. 2011	National Sample Survey Office (FOD) / Deputy Director General; Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked as Deputy Director General at National Sample Survey Office, Field Operations Division, Regional Office (RO), Ranchi, Jharkhand of Ministry of Statistics & Programme Implementation, Government of India. • This RO employs 102 personnel spread over the whole state of Jharkhand in 4 Sub-Regional Offices (SRO's) at Ranchi, Dumka, Hazaribagh & Jamshedpur. Worked as the Techno-administrative Regional Head of the Office to look after all technical and administrative matters of the Regional Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of Industries (ASI) on annual basis in Industrial

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			sector, Area Enumeration Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as and when required basis. I was also functioning as State Statistical Adviser for the state of Jharkhand to look after effectively coordinate all on-going statistical activities in the state besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP). I opened a new SRO at Dhanbad on 25.10.2011 and another new SRO at Daltonganj opened in 2012 due to my proper initiative.
01 Jul 2009 - 14 Feb, 2011	All India Institute of Hygiene & Public Health (AIIH&PH) / Director-Professor and Head of the Department of Statistics Contact information for references: Director AIIH&PH 110, CR Avenue Kolkata-700073	India	• Worked as Head of the Department of Statistics to look after all day to day technical and administrative matters employing 40+ personnel to run the Institute in general and Department smoothly. As Director-Professor and Head of the Department of Statistics my primary responsibility was to ensure that the Statistics Department functioned efficiently and was fully geared up to take up the responsibilities of teaching, research, projects and other activities assigned

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			to it. I was very effectively engaged in monitoring and evaluation of various Health Programmes through the on-line analytical studies of HMIS data on regular and continuous basis. Since the Department had several vacancies in the ISS and the SSS, all the existing faculty members were required to share added responsibilities to ensure that the primary activities of the Department do not suffer. Worked as techno-administrative head of the department as a Faculty Member. Rendered lot of techno-administrative help, guidance and consultation to the Institute administration on various techno-administrative issues with the direct involvement on those issues. The job was mainly of academic and research nature besides conduct of various Scientific Projects and Studies and Technical Courses with lot of administrative work to run the institute in smooth manner.
01 Feb 2007 - 30 Sep, 2009	Directorate General of Commercial Intelligence & Statistics (DGCI&S)/Ministry of Commerce & Industry/Govt. of India Director General Contact information for references: Director General DGCI&S,1, Council House Street, Kolkata-700001	India	• Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.

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04 Nov 2006 - 31 Jan, 2007	Data Processing Division(DPD)/National Sample Survey Organisation (NSSO) / Deputy Director General; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys.
05 Jun 2000 - 04 Nov, 2006	Central Statistical Organisation/ Director;Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of CSO, MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI.
09 Apr 1999 - 05 Jun, 2000	Central Statistical Organisation/ Joint Director;Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI). Functioned as techno-administrative head of the Department employing 205+ personnel.
17 Oct 1997 - 08 Apr, 1999	National Sample Survey Organisation (SDRD) / Joint Director;Contact information for references:	India	• Worked in Survey Design & Research Division (SDRD) NSSO, MOSPI, GOI and oversaw conduct of various large-scale Socio-economic Surveys

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	Additional DG NSSO(SDRD) 164, GLT Road Kolkata-700108		including 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
16 Aug 1996 - 16 Oct, 1997	Data Processing Centre (DPC)/ National Sample Survey Organisation (DPD) / Deputy Director Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of unit / center employing 150+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
01 Oct 1993 - 15 Aug, 1996	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of the office employing 75+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
08 Aug 1986 - 30 Sep, 1993	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director; Contact information for references: Additional DG NSSO(DPD)	India	• Functioned as techno-administrative head of units / sections employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.

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	164, GLT Road Kolkata-700108		
01 Apr 1984 - 07 Aug, 1986	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) / Deputy Director; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Worked in National Sample Survey Organisation (Data Processing Division) of MOSPI, GOI. Functioned as head of units/sections employing 80+ personnel to look after all techno-administrative issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
15 Sep 1982 - 31 Mar, 1984	National Sample Survey Organisation/ Regional Assistant Director; Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked for Gwalior (MP) Regional office of National Sample Survey Organisation (Field Operations Division) of MOSPI, GOI. Functioned as techno-administrative head of the Regional Office employing 95+ personnel.
15 Sep 1980 – 14 Sep, 1982	Central Statistical Organisation / Indian Statistical Service Probationer; Contact information for references: Director General CSO, MOSPI SP Bhawan,Parliament Street New Delhi-110001	India	• Underwent for 2 years' Probation-cum-Training on Administration, Economics, Statistics, Law, etc.

Membership in Professional Associations and Publications:

- Ex-Member of Standing Committee on Industrial Statistics (SCIS).
- Ex-Member of few technical sub-groups on Industrial Statistics.
- Ex-Member of technical sub-group on 5th Economic Census.
- Ex-Member of technical sub-group on revision of Wholesale Price Index Number.

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- Ex-Member of the Board of Directors in Export Inspection Council of India (EICI), Delhi.
- Ex-Member of the Board of Directors in National Centre for Trade Information, Delhi.
- Ex-Member of Computer Society of India.
- Member of Operational Research Society of India, India.
- Member of Indian Association of Research in National Income and Wealth, India.
- Ex-President of Indian Statistical Service Association (Eastern Chapter), Kolkata for consecutive 3 terms.
- Life Member of Administrative Staff College of India (ASCI), Hyderabad, India.
- Life Member of Presidency College Alumni Association, Kolkata, India.
- Life Member of Australian National University (ANU) Alumni Association, Canberra, Australia

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Statistically designing and managing sample surveys • Large Data Sets Management and Analysis • Data Sets checking and correcting for errors and inconsistencies	Project Name: NSS Socio-economic Sample Surveys including Urban Price Index Client: National Sample Survey Organization (NSSO) / Central Statistical Organization (CSO/ MOSPI Year: 2011 to 2015& 1982 -1999 Position Held: Deputy Director General (2011 to 2015) Various Capacities (1982 to 1999) Activities Performed: — **1982 to 1984:**Worked as Regional Assistant Director from 15.09.1982 to 31.03.1984 for Gwalior (MP) Regional office of National Sample Survey Organization (Field Operations Division) of MOSPI, GOI for both Urban and Rural Sectors. Functioned as techno-administrative head of the Regional Office employing 95+ personnel — **1984 to 1986:**Worked as Deputy Director at Data Processing Centre (DPC), Delhi of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI from 01.04.1984 to 07.08.1986. Functioned as head of units / sections employing 80+ personnel to look after all techno-administrative issues for

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	large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1986 to 1993: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of units / sections employing 150+ personnel from 08.08.1986 to 30.09.1993 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors — 1993 to 1996: Worked as Deputy Director at Data Processing Centre (DPC), Giridih (Jharkhand) of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of the office employing 75+ personnel from 01.10.1993 to 15.08.1996 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1996 to 1997: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of unit / center employing 150+ personnel from 16.08.1996 to 16.10.1997 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1997 to 1999: Worked as Joint Director from 17.10.1997 to 08.04.1999 at National Sample Survey Organization (Survey Design & Research Division) of MOSPI, GOI and oversaw conduct of 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors.

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	— 2006 to 2007: Worked as Deputy Director General from 04.11.2006 to 31.01.2007 at National Sample Survey Organization (Data Processing Division) HQ, Kolkata of MOSPI, GOI and oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys for both Urban and Rural Sectors. — 2011 to 2015:Responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and acted as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys. — Worked very successfully for more than 33 years in National Statistical Office of Government of India in the fields of expertise, mainly as the Techno- Administrative HEAD of the organization
	Project Name: Annual Survey of Industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Held: Deputy Director General (2011 to 2015) Various Capacities (1999 to 2006) Activities Performed: — 1999 to 2000: Worked as Joint Director from 09.04.1999 to 05.06.2000 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 205+ personnel.

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	— .2000 to 2006: Worked as Director from 05.06.2000 to 04.11.2006 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI. — 2011 to 2015:Conducted the Annual Survey of Industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector from 2011 -2014 spreads across 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys
	Project Name: Field work in data collection and validation on Consumer Price Index (Urban), Rural Price Collection (RPC), International Comparison of Price (ICP) and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Deputy Director General Activities Performed: — Responsible field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and on many other schemes as work of all on-going statistical activities in the respective states.

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	— Guided and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) as and when required basis. — Monitored the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
	Project Name: Generated and released Foreign Trade Statistics with indices (Foreign Trade Index) in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis. Client: Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India, Kolkata Year: 01.02.2007 to 30.06.2009 Position Held: Director General Activities Performed: — Worked as Director General at Directorate General of Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India, Kolkata from 01.02.2007 to 30.06.2009 for both Urban and Rural Sectors. Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.
	Project Name: Engagement on formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Client: by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Year: 2017 Position Held: Independent Expert Activities Performed:

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	— Formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India.

Publications/Articles:

- — (1) Workers Engagement in Factory Sector in India (Staff Papers, CSO (IS Wing), MOSPI, GOI – October 1999);
- — The Pattern of Concentration of Major Industries (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 1999);
- — Economics of Environment Management – Can Indian Economy afford to shut down Dirty Industries? (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2000);
- — Sources, Impact and Control of Industrial Pollution (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- — Economics of Environment Management (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- — Growth in Factory Sector- Mathematics & reality (Staff Papers, CSO (IS Wing), MOSPI, GOI – March 2001);
- — Pollution Load in Small, Medium and Large-Scale Industries (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2001);
- — Industrial Scenario in West Bengal (Quarterly Bulletin, Ministry of Industry & Commerce, Govt. of West Bengal – March 2002);
- — Women Participation in Organized Factory Sector (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- — Unorganized vis-à-vis Organized Manufacturing Sector in India (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- — Understanding Social Choice Through PI Factor of Indian Dirty Industries (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- — Indian Farmers: Challenges Ahead – Presented in the National Seminar organized by NSSO, MOSPI, GOI on 17.10.2005 in Kolkata;
- — Evolving Trends in Indian Manufacturing: A Case Study for West Bengal (Quarterly Bulletin, Directorate of Industries, Govt. of West Bengal – September 2005);
- — Index of Industrial Production: Its problems (Quarterly Bulletin, Min. of Industry & Commerce, Govt. of West Bengal – March 2006);
- — Global Economic Imbalances (Vaanijya– October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);

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Under Secretary
Ministry of Housing and Urban Affairs
Govt. of India
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— Purchasing Power Parity – The Economy and Policy (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);

— Export Diversification of China – A Sectoral Study (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);

— Determinants of Infant Mortality in India: Income vis-à-vis Other Socio-Demographic Factors – Presented and Published in the 25th Annual Conference of Indian Society for Medical Statistics (ISMS) on 11-13 November 2010 at New Delhi;

— ASI Frame: How Dynamic It Should Be? – Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 17 October 2011.

— Manufacturing Sector in India: Performance Differentials - Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 4 October 2012.

Training/Workshops Attended and Software Skills:

— Attended Regional Roundtable on the World Programme for the Censuses of Agriculture 2020 (WCA 2020) of the FAO of the UN held in Bangkok, Thailand during 19-23 September 2016.

— Attended a specialized training course on "Survey Data Analysis" at Australian National University (ANU), Canberra, Australia during the period from 10.06.1997 to 04.07.1997.

— Attended various relevant training courses in India.

— Attended an International Workshop on Classification conducted by UNESCAP, Bangkok and UNSD, New York at New Delhi during 14-16 October 2003.

— Organised very successfully the 1st Meeting of the Heads of the Statistical Organisations of the SAARC Member Countries in Kolkata during 26-27th May, 2005.

— Attended an International Conference On Towards BIMSTEC- Japan Comprehensive Economic Cooperation: Vision and Tasks Ahead on 16-17 December 2005 in Kolkata.

— Attended and delivered lectures in SAARCSTAT Workshop on Classification at New Delhi in 2006.

— Attended an International Workshop on International Merchandise Trade Statistics conducted by UNESCAP, Bangkok and UNSD, New York at Bangkok, Thailand during 09-12 September2008.

— Worked as Resource Person in various Training Courses conducted by UNSIAP in India.

— Attended Advanced Management Development Course of 6-weeks duration at Indian Institute of Management (IIM), Lucknow from 08.11.2010 to 17.12.2010 in which I visited various Institutes /International Organisations at Amsterdam (Netherlands), Luxemourg, Paris (France), Brussels (Belgium), London (UK) & Southampton (UK).

— Software Skills: Experienced in Computerized Large- Scale Data Processing since 1984 by using dBase software like ORACLE, Developer, FOXPRO and MS – OFFICE, STATA, SPSS, SAS, LIMDEP, E-Views, M-fit, NVivo, ATLAS.ti etc.

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
Ministry of Housing and Urban Affairs

Expert's contact information: (e-mail:nray111@yahoo.co.in, phone: +917980135371 / +918961515397 (WA))

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Nilachal Ray	Nilachal Ray	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

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APPENDIX-C

Breakdown of Contract Price

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अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
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भारत सरकार/Govt. of India
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FORM FIN 2:
Summary of Costs

Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

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FORM FIN 3:
Breakdown of Remuneration

Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

			Field	1122000	0.5	561000
N-15	Tripti Sharma	Project Coordinator	Home	682000	4	2728000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	550000	10	5500000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

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Model Form - Consultant's Representations Regarding Costs and Charges

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

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FORM FIN 4:
Breakdown of Reimbursable Expenses

Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
	State Level Workshops				
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
	National Level Workshop				
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
	City Level Meetings				
	City level kick off meetings	Facilitation Costs	116	10000	1160000

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Under Secretary

	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

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INCEPTION REPORT

सत्यमेव जयते

Ministry of Urban Development
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A. Executive Summary

The Liveability Index is a flagship initiative embarked upon by the Ministry of Housing and Urban Affairs (MoHUA) to help cities systematically assess themselves against global and national benchmarks and encourage cities to shift towards an 'outcome-based' approach to urban planning and management.

The implementation of the assessment commenced formally on 19th January 2018 and is expected to be completed by 25th June 2018.

This report marks the first milestone in the implementation of the initiative and seeks to summarize the overall delivery approach, timelines, governance structure and the progress made so far.

A.1 Progress Achieved

Finalization of the detailed assessment questionnaire

The Methodology Guidelines prepared by MoHUA provides a detailed overview of the indicators to be covered including rationale, description, formula, unit, potential data sources, benchmark and the SDG references. The following key activities were undertaken to break down the indicators and ensure that all cities fill information on a standard set of data inputs, which are comparable:

- All 79 indicators listed were revisited and evaluated on the basis of the robustness of the formula proposed. Several modifications were proposed to the original calculation of indicators for various considerations such as theoretical robustness, efficiency of the metric to capture the objective of the indicator, availability and accessibility of data, etc. A complete list of all the changes made to the indicator list is provided in Annexure 1.

- Every indicator was broken down into granular questions which the cities can relate to and respond with ease. This list of questions was developed through extensive desk-research followed by two rounds of consultations with senior officials at the MoHUA. The 79 indicators have been broken down into 500 plus unique questions and all the questions have been classified by 'data owners' to ensure smooth coordination across multiple departments. The detailed questionnaire is provided in Annexure 2.

- A National Orientation Workshop was held on 13 February 2018 at *Vigyan Bhawan*, New Delhi to discuss the questionnaire and evaluate the availability of data and the ease of using the questionnaire through an audience response system. The workshop had participation from 55 cities from 27 States/ UTs. The questionnaire was refined based on the feedback provided in the National Orientation Workshop and through a final round of expert review. The proceeding of the National Orientation Workshop is attached in Annexure 3.

- As part of the assessment, cities are required to provide supporting documents against the data provided for all the 79 indicators. Additionally, a set of 8 indicators will undergo physical audits in each of 116 cities. There are about 5 indicators where data is less likely to be present across cities and the consortium will support the cities in collecting the corresponding data sets. A more detailed description of the data sets to be collected through secondary and primary channels is provided in Chapter 3.

Development of data collection and monitoring tools

To enable the cities to effectively collate and submit the data online, a data entry portal is developed. Unique username and login has been provided to all 121 Urban Local Bodies[1] (ULBs). The data entry portal is designed to be user-friendly, with options to fill data both online and offline (through spreadsheets). A more detailed description of the data entry portal is provided in Section 3.2.

In addition to the data entry portal, a progress monitoring dashboard has also been developed where the overall timelines and the data collection progress is captured real time. The project monitoring dashboard has a public interface which is open to all and provides an overview of the workshop schedules, workshop presentations, participants list and state workshop reports. (Refer Chapter 7 for more details).

Training and deployment of the State and City Coordinators

A total of 3 regional coordinators, 3 Senior Consultants, 24 state coordinators and 99 city coordinators[2] have been trained and deployed in the respective states/ cities. An intensive 3-day training workshop was held for the State Coordinators and Regional Coordinators from 26-28 February 2018 in Chennai to familiarise the coordinators on the overall liveability assessment, indicators, potential data sources, data audit protocols, structure and schedule of state orientation workshops and overall roles and responsibilities. The workshop was structured to be interactive and a combination of game-based and participatory learning techniques were applied.

The detailed training structure along with the Training the Trainer's Workshop proceeding is provided in Annexure 4. The roles and responsibilities of the regional, state and city coordinators and the overall protocols for co-ordination and project governance is described in greater detail in Chapter 7. Also, the list of state and city coordinators is attached in Annexure 4.

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[1] In NCT Delhi, four municipal corporation are covered and each ULB is provided with a unique login ID and password. Data from all the four ULBs will be collated subsequently for the Liveability Assessment of NCT Delhi as a whole.

[2] Select state coordinators are also performing the responsibilities of a city coordinators in the following instances: 1) Manage the coordination of those cities where the state coordinators are physically present and 2) States where only one city is under assessment, no city coordinators are appointed. They will be managed completely by State Coordinators

Commencement of State Orientation Workshops

30 Orientation workshops are expected to be undertaken to cover all states and union territories. The workshops commenced on March 9, 2018 with the Chhattisgarh State workshop and the detailed schedule for the same is provided in Chapter 5 This section also outlines the workshop structure/agenda along with the expected participant list.

The workshop is expected to have 5 key sessions covering a range of topics such as 'why is this assessment relevant to cities' to providing cities with very specific information on the liveability assessment framework, key timelines and protocols for data collection.

Commencement of City Reconnaissance Missions (CRMs)

The state coordinators and city coordinators initiated their activities from 2nd March 2018 (post their ToT workshop) starting with the workshop schedule and invitation. While the terms of reference had suggested CRMs to be a one-time activity, the consortium believes that cities may require continuous handholding support during the overall data submission period given the nature of the assignment. Hence, city coordinators are deployed in the cities for a duration of one month (12th March until 16th April) as part of the city reconnaissance strategy to support the cities with data collation and submission.

Creation of data collection protocols for primary data collection

The National Orientation Workshop brought forward the issue of poor data availability and reporting for some of the indicators; hence many cities may not have secondary data. A list of five indicators were identified in the discussion and is listed below:

Sl. No.	Indicator	Indicator Category
1	Indicator 4.3: Average response time in case of health emergencies	**Supporting**
2	Indicator 11.3: Mode share of public transport	**Core**
3	Indicator 12.3: Quality of water supplied	**Core**
4	Indicator 15.4: Level of noise pollution	**Core**
5	Indicator 15.5: Quality of water in public surface water bodies	**Core**

Data for these select five indicators will be collected through rapid assessments to help cities create a baseline that will serve as reference points for improvements in the future liveability assessment rounds. Detailed notes on the data collection protocol for each of these 5 indicators is provided in Section 3.3

Formulation of secondary and physical audit protocols

Secondary audit protocols

It is expected that cities provide supporting documents in lieu of every data submitted by them for an objective and fair assessment. As part of the data submission process, cities will be required to submit a dossier of all supporting documents referenced to each question/indicator for verification. Wherever data is available in soft copy, the same will be collected through a secure email to ensure data confidentiality. State and city coordinators will check the dossier submitted by the cities and flag missing or unacceptable documents. To familiarise cities with the nature of supporting documents to be submitted, a checklist of standard documents will be provided to them for reference purposes. A detailed description of the secondary and primary audit protocols is outlined in Section 3.4.

Physical audit protocols

For eight indicators, the data validation process will involve verification through field visits (referred to as ‘physical audits’ henceforth). Detailed approach note for each of the eight indicators is prepared that will assist in reconciliation of data reported by cities. Physical audits will involve selection of random samples from the list of data points submitted by cities for physical inspection.

Creation of draft research instruments for citizen surveys

While the overall assessment of liveability standards of cities is based on secondary data submitted by cities, a citizen perception survey is planned for each of the 116 cities to gather citizen perspective of their cities on a host of thematic areas such as availability of citizen services, access to amenities etc. Close to 600 citizen surveys will be carried out in each city. A detailed questionnaire and analysis framework has been developed to evaluate the perception of cities and the same is described in greater detail in Chapter 4. Inputs from the Citizen Perception Survey is envisioned to be reference points for cities to identify areas for improvement highlighted by citizens. The findings from the citizen survey will not feed into the computation of liveability indices of the cities.

Creation of a draft media plan/strategy

To enable effective participation from all the cities a draft media strategy combining multiple channels that can be driven by Ministry and State officials has been prepared and described in Section 6.2

A. 2 Report Structure

The report is structured as follows:

- Chapter 1: Context

The introduction of the report sets the context for the liveability assessment and presents the meaning of liveability and value of the ranking exercise.

- Chapter 2: Delivery Approach

This chapter describes the overall approach of the study and presents an overview of the key activities involved across the five phases

- Chapter 3: Indicator Development and Data Collection

This chapter outlines the process of aggregating city government data across 79 indicators and the data validation protocols

- Chapter 4: Citizen Perception Survey

This chapter presents the approach for conducting "Citizen Pulse" which aims to provide insights on citizens' level of satisfaction or dissatisfaction with city services as well as their priorities for improvement

- Chapter 5: Engaging with the State and City Government

This chapter outlines the engagement practices- City Reconnaissance and State Orientation Workshop employed by the consortium to continuously interact with the state/city officials during the data collection phase

- Chapter 6: Analysis & Dissemination

This chapter presents the ranking and index methodology for the liveability assessment and outlines the dissemination strategy

- Chapter 7: Quality Control and Project Management Structure

This chapter lays down the overall management framework including governance structure and project reporting

Chapter 1: Context

Urban expansion in India is anticipated at a pace unlike anything the country or the world has seen before, with much of the population likely to be concentrated in cities with a population of a 1 million plus. This trend brings with it several opportunities and challenges and clearly a trend of intensified competition among cities to attract talent and resources, with 'liveability' occupying centre stage in much of the new discourse.

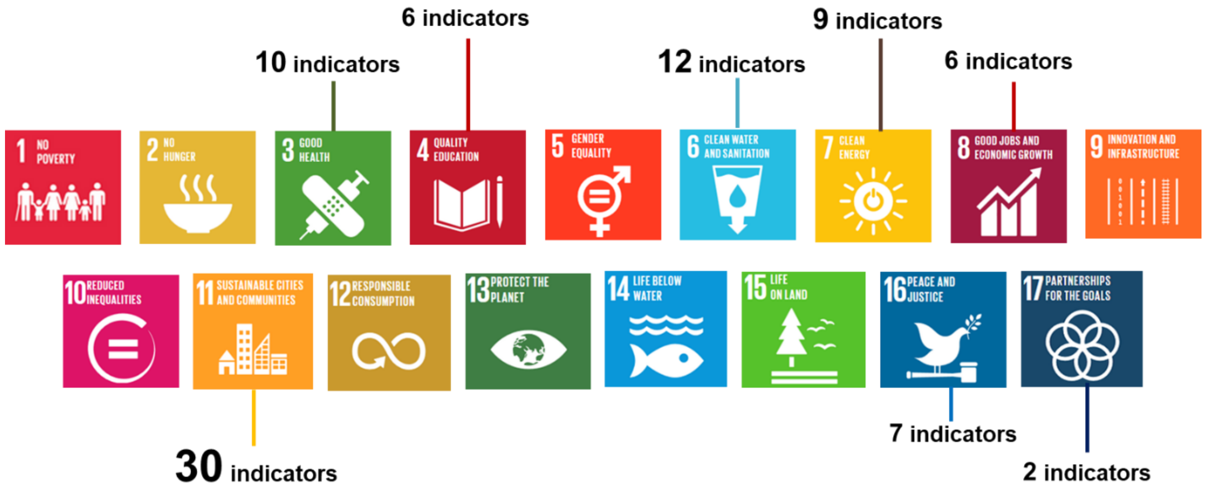
'Liveability' as a term is often difficult to define. For some, it is fundamentally tied to physical amenities such as water supply, solid waste management, parks and green space etc.; for others it relates to cultural offerings, career opportunities, economic dynamism, or some degree of reasonable safety within which to raise a family. However, liveability as a concept is a common feature in several countries and is an opportunity to systematically quantify the challenges that may be presented to an individual's lifestyle. It offers itself as an instrument for policy reform, resource mobilisation, investment prioritisation and management of services.

The Ministry of Housing and Urban Affairs (MoHUA) has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly survey and compilation of datasets across the various indicators, analysis of such datasets, development of indices and ranking of cities. The implementation of this framework will help cities to understand their baseline and pursue tangible outcomes over time.

MOHUA has developed a set of liveability criteria in cities which was launched in June 2017. The objective of developing these standards is to generate a liveability index and rate cities against these standards to facilitate a competitive environment and encourage systematic improvement in the quality of life of citizens.

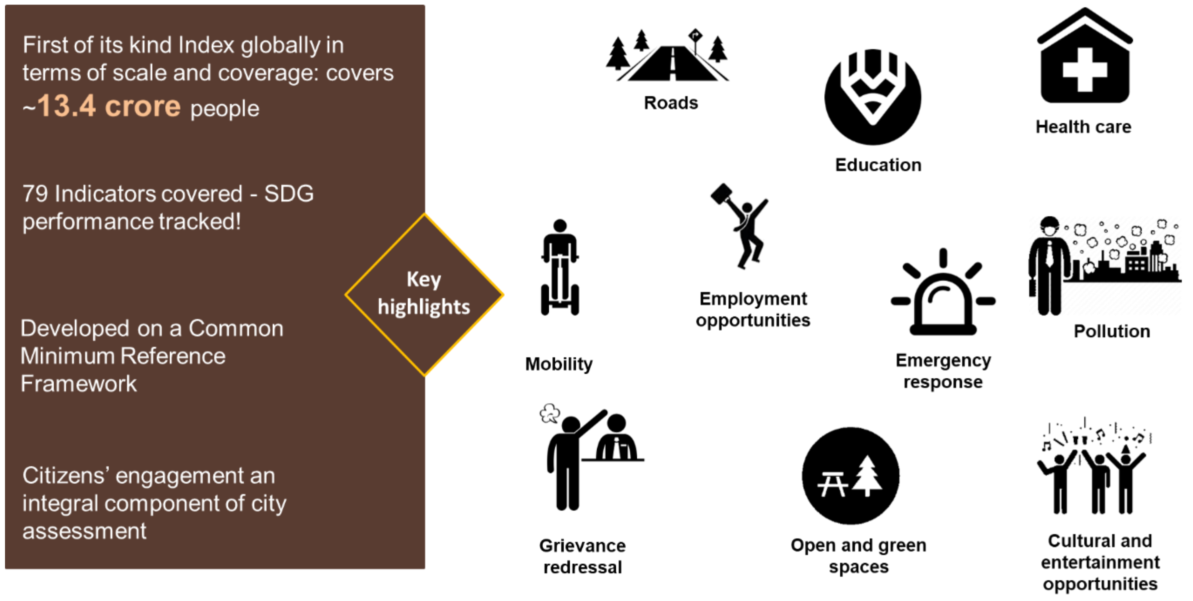
All these standards are also strongly linked to Sustainable Development Goals (SDGs). An illustration of some of the key SDG indicators that the Liveability Indicators feeds into in provided below in Exhibit 1.

Exhibit 1: Sustainable Development Goals and Liveability Assessment


6 indicators
10 indicators
12 indicators
9 indicators
6 indicators
1 NO POVERTY
2 NO HUNGER
3 GOOD HEALTH
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 CLEAN ENERGY
8 GOOD JOBS AND ECONOMIC GROWTH
9 INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION
13 PROTECT THE PLANET
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE
17 PARTNERSHIPS FOR THE GOALS
7 indicators
30 indicators
2 indicators

These indicators have been adapted from various national/international indicator sets and service level benchmarks and finalised after extensive consultations with State/City Governments and citizens through MyGov portal and peer review by sector experts. There are 79 indicators that have been organized in 15 distinct categories covering aspects such as Governance, Health and Education, Safety, Identity and Culture, Economy, Pollution, Mixed Land Use and Compactness, Open Spaces, Urban Mobility and various Core Urban Services, and contribute to the four essential pillars of comprehensive development namely: institutional, social, economic and physical.

Exhibit 2: Framework for Liveability Index



First of its kind Index globally in terms of scale and coverage: covers ~**13.4 crore** people

79 Indicators covered - SDG performance tracked!

Developed on a Common Minimum Reference Framework

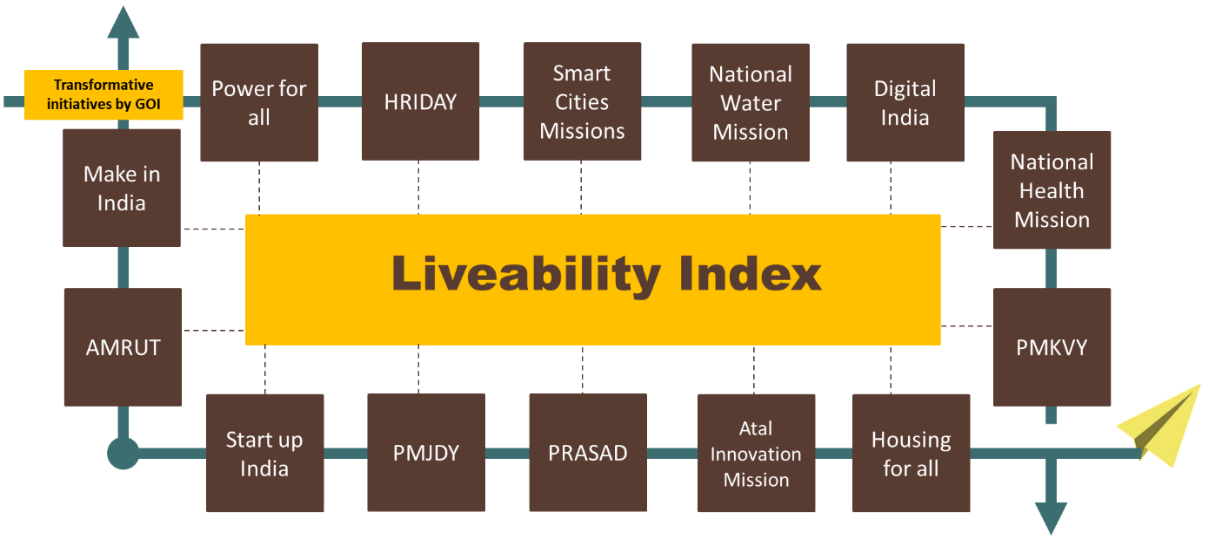
Citizens' engagement an integral component of city assessment

Key highlights

Roads
Education
Health care
Mobility
Employment opportunities
Emergency response
Pollution
Grievance redressal
Open and green spaces
Cultural and entertainment opportunities

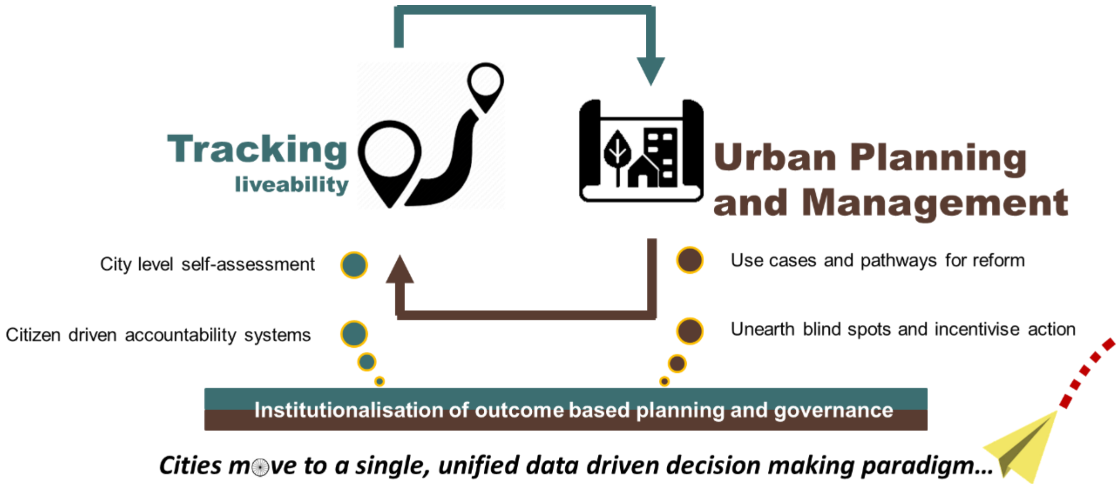
The index serves as an opportunity to further provide momentum to an 'outcome-based' planning and management approach and monitor the performance of various central, state and city government driven programmes and schemes as illustrated in Exhibit 3 below

Exhibit 3: Convergence of Liveability Assessment with Central Government Initiatives


Transformative initiatives by GOI
Power for all
HRIDAY
Smart Cities Missions
National Water Mission
Digital India
Make in India
National Health Mission
Liveability Index
AMRUT
PMKVY
Start up India
PMJDY
PRASAD
Atal Innovation Mission
Housing for all

It also provides an opportunity to empower cities to organize their investment and reform priorities based on the self-assessment and move towards an evidence-based system of planning and management.

Exhibit 4: Evidence Based Planning


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

Chapter 2: Delivery Approach

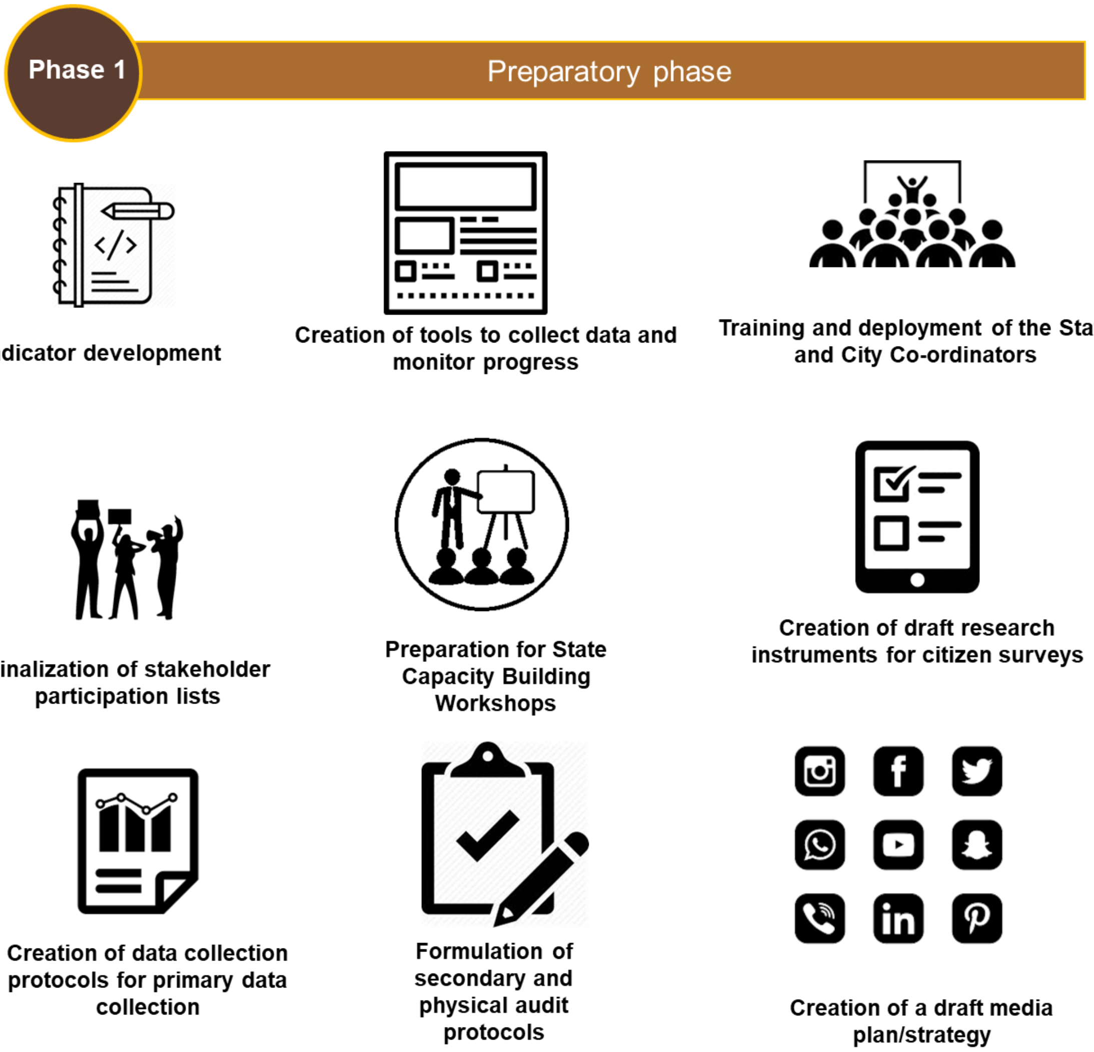
This section describes the approach deployed to roll out the liveability assessment programme in India. The tasks are described in a chronological order and is divided into five phases as illustrated below:

Phase 1: Preparatory	Phase 2: National/State/City level engagement	Phase 3: City Reconnaissance Mission data submission/collection	Phase 4: Data audit	Phase 5: Analysis, ranking and dissemination
19th March - 8th March	13th Feb – 21st March	2nd March – 16th April	1st April - 23rd April	1st May onwards

2.1 Phase 1: Preparatory Phase

The preparatory phase is an intensive one, entailing a series of parallel activities required to lay the ground to create an enabling ecosystem for cities to participate in the exercise. The following activities have been completed in phase 1:

- Indicator Development
- Creation of tools to collect data and monitor progress
- Training and deployment of the state and city coordinators
- Preparation for State Orientation Workshops
- Creation of draft research instruments for citizen surveys
- Creation of data collection protocols for primary data collection
- Formulation of secondary and physical audit protocols
- Creation of a draft media plan/strategy



Phase 1 Preparatory phase

Indicator development

Creation of tools to collect data and monitor progress

Training and deployment of the State and City Co-ordinators

Finalization of stakeholder participation lists

Preparation for State Capacity Building Workshops

Creation of draft research instruments for citizen surveys

Creation of data collection protocols for primary data collection

Formulation of secondary and physical audit protocols

Creation of a draft media plan/strategy

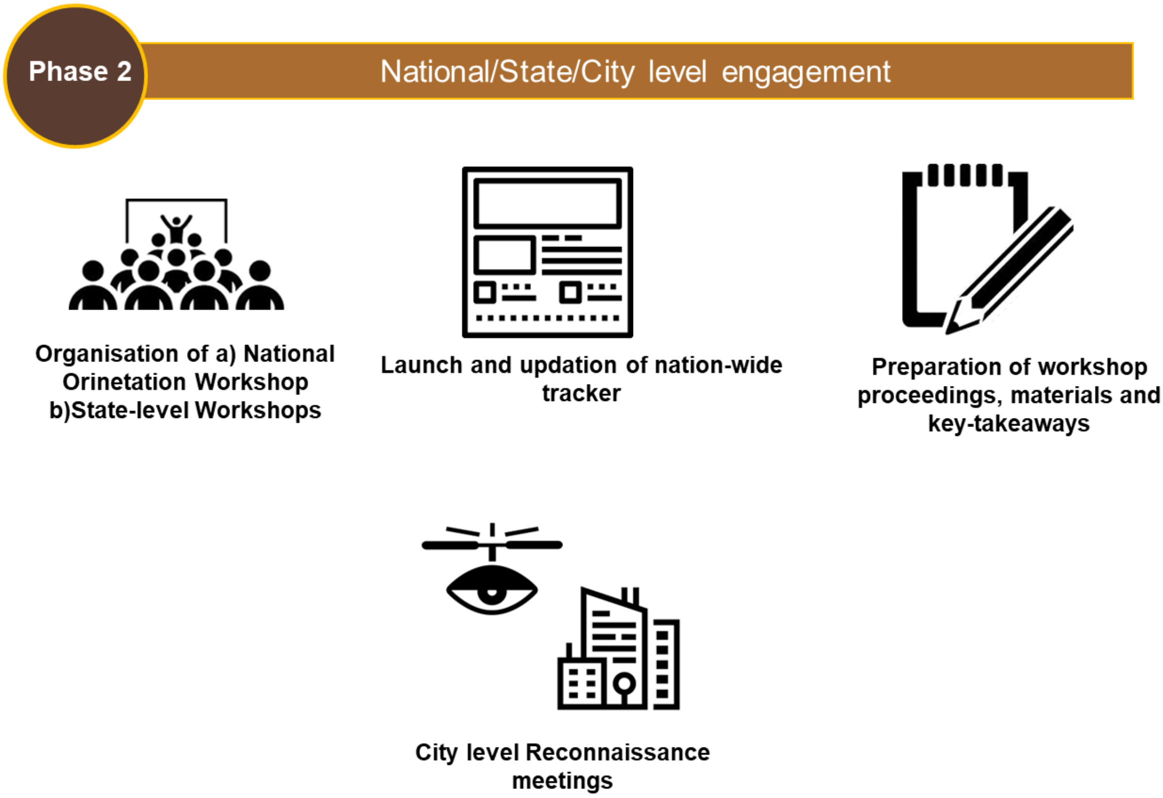
2.2 Phase 2: State and City Level Engagement

This phase signals commencement of engagement with the states and cities by the network of regional, state and city coordinators and begins with the delivery of the state orientation workshops.

The goal of this phase is to acquaint all the key relevant stakeholders within the state and the city on the expectations from the assessment and discuss in detail the assessment questionnaire and the data collation and submission protocols.

A dedicated city coordinator will be deployed in every city as part of the city reconnaissance mission (CRMs) to support cities to better acquaint themselves with the assessment questions and hand-hold them in collating the data and making the submission.

A detailed description of the roles of the city coordinators and the expected outcomes from the city reconnaissance missions is described in chapter 6.



Phase 2 National/State/City level engagement

Organisation of a) National Orinetation Workshop b)State-level Workshops

Launch and updation of nation-wide tracker

Preparation of workshop proceedings, materials and key-takeaways

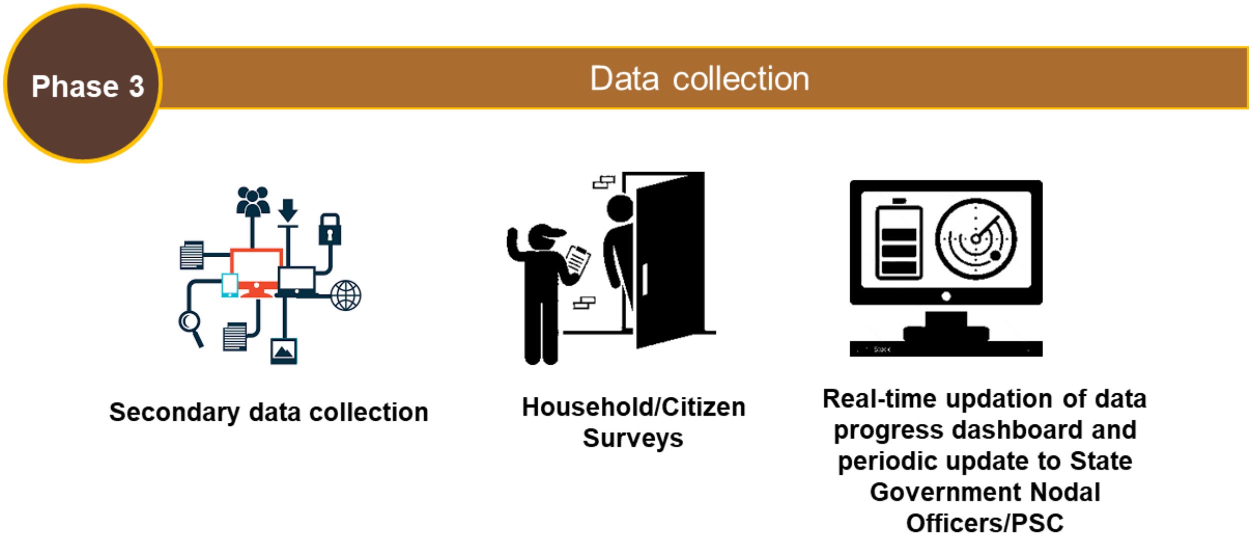
City level Reconnaissance meetings

2.3 Phase 3: Data Collection

Three parallel strands of data collection will be undertaken -

- The **first** entails facilitating collation of secondary data sets available with multiple departments and agencies within cities
- The **second** is a primary data collection exercise where data on 5 of the 79 metrics (where data may not be available with the cities) is collected though rapid assessments.
- The **third** strand includes citizen perception surveys, where feedback is collected from citizens directly on their perception about the 'liveability' of their cities. In the current assessment round, citizen perception is not expected to feedback into the 'index' but to act as a barometer for cities to assess and benchmark themselves.

All three strands of data collection are expected to complete by the 16th of April.



Phase 3 Data collection

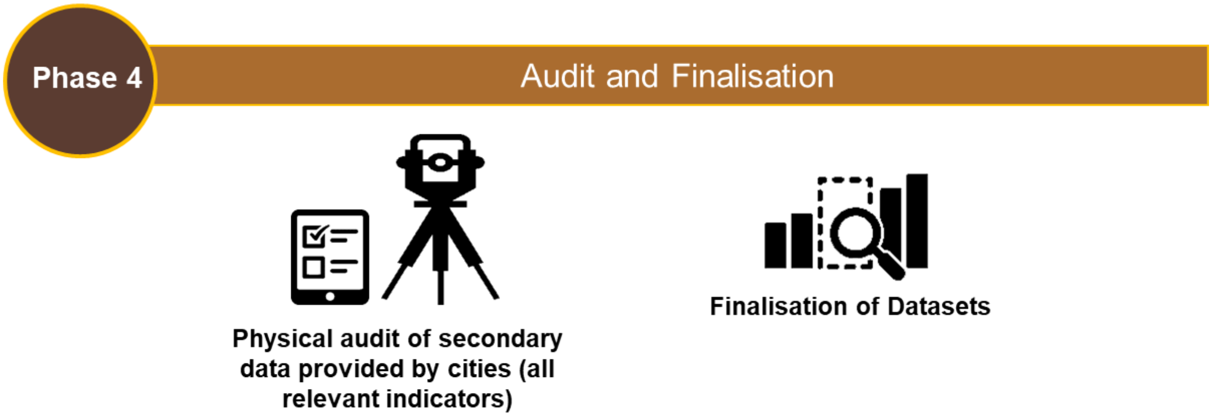
Secondary data collection

Household/Citizen Surveys

Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC

2.4 Phase 4: Audit and Finalization

Given the short duration of the assignment, audit of secondary data submitted by the cities will be an ongoing exercise and will be completed by 23rd April 2018. A combination of secondary and physical audits will be performed, and the final datasets will be updated based on the audit results and this dataset will be considered for calculation of final indices.



Phase 4 Audit and Finalisation

Physical audit of secondary data provided by cities (all relevant indicators)

Finalisation of Datasets

2.5 Phase 5: Ranking and Dissemination

A detailed scoring rubric will be developed for every indicator and the ranks will be calculated.

A detailed assessment report articulating the results of the index for every city will be prepared and the same will be made available to each city for review and validation.

Additionally, a note presenting an approach to systematically map and calculate the city's GDP as well as a framework for key convergence and use-case applications between this liveability assessment and the key goals set out by the MoHUA will be developed. This will help the MoHUA refine the subsequent rounds.

The results will be published on the Smart Net Dashboard and will also be presented on the Economist Portal. A national workshop will be held to announce the results of the index assessment.

Phase 4 Ranking and Dissemination

Preparation of Draft data sets circulation with cities for validation

City level discussions for addressing queries and incorporating revisions, modifications etc.

Sign-off on final list of data points/ indicators

Indices development and visualisation

Preparation of draft assessment report

Preparation of final assessment report

Framework to estimate city GDP

Approach note for data interoperability

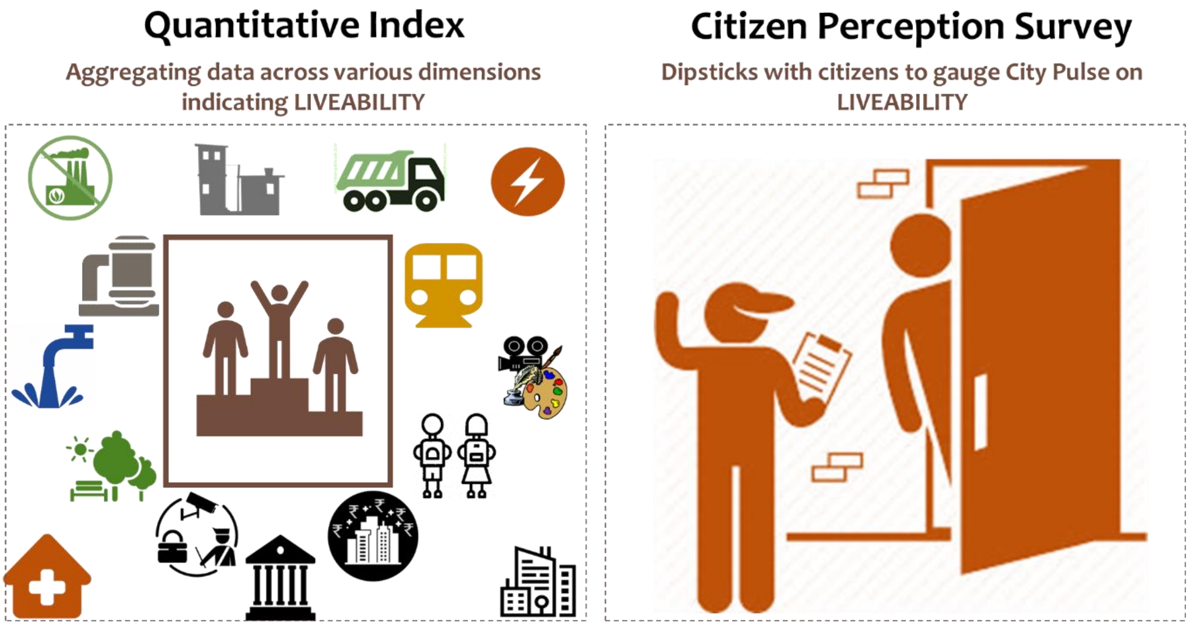
National-level Workshop

The Economist
FILMS
THE
Hub

Launch of ‘The Hub’ @ The Economist

Chapter 3: Indicator Development and Data Collection

The study involves aggregating data across 79 listed indicators for the quantitative liveability index; this includes government data collated from secondary sources or through rapid surveys. Additionally, to complement liveability assessment exercise, citizen perception survey will be conducted to capture "Citizen Pulse" on liveability, determine satisfaction with the local government and gather inputs to help cities determine priorities for improving the quality of governance and liveability.


Quantitative Index
Aggregating data across various dimensions indicating LIVEABILITY
Citizen Perception Survey
Dipsticks with citizens to gauge City Pulse on LIVEABILITY

Only the ***Quantitative Index*** *will be considered for computation of the Index*

This chapter outlines in detail the process for collecting city government data and Chapter 4 presents the approach for collecting citizen feedback

3.1 Indicator Development

All 79 indicators listed were revisited and evaluated on the basis of the robustness of the formula proposed. Several modifications were proposed to the original calculation of indicators for various considerations such as theoretical robustness, efficiency of the metric to capture the objective of the indicator, availability and accessibility of data, etc. The following examples will illustrate the rationale for suggesting modification for some of the indicators

- For Indicator 1.7 which measures capital spending as percentage of total expenditure, it was proposed that the metric will be modified to focus on capital expenditure made from ULB's own income. This metric is a better representation to assess the fiscal health of the city better.

- Indicator number 10.3 and 10.4 which measures average number and length of electrical interruptions per customer per year, respectively were re-defined to include only the absolute number/length of electrical interruptions to eliminate the base effect (which in this case is the number of customers).

- Due to non-availability of data on pass rates and new students joining a particular school, the indicator capturing 'survival rate' (Indicator 3.5 and Indicator 3.6) was modified to capture the estimated survival rate using the 'Apparent Cohort Method' instead of the actual survival rate. This methodology has also been suggested by the Sarve Shiksha Abhiyan manual.

- Several modifications in indicators were also incorporated based on the suggestions and feedbacks received from the National and the State Orientation Workshops. For instance, the indicator on the number of cultural/ sports events hosted by the city was broadened to include privately hosted non-restrictive events as well as city authorities need to facilitate them, and they add to a city's liveability. A complete list of the changes made to the indicator list attached in Annexure 1
- Every indicator was broken down into simple granular questions through extensive desk-research followed by two rounds of consultations with senior officials at the Ministry of Urban Development. The 79 indicators were broken down into ~540 unique questions and all the questions were classified by 'data owners' to ensure smooth coordination across multiple departments. (Refer Annexure 2 for the full final assessment questionnaire)

- A national orientation workshop was held to discuss the questionnaire and evaluate the availability of data and the ease of using the questionnaire through an audience response system. The outcome of the National Orientation workshop is attached in Annexure 3.

- The questionnaire was refined based on the feedback provided in the National Orientation workshop and through a final round of expert review.

The indicators were further classified into 'Secondary' and 'Primary' based on the data collection methods with the consortium extending support on conducting sample-based studies and data collection in the latter.

- **Secondary Data**: Secondary data collated by the city governments from various sources including reports, surveys and government statistical reports and inputted in the online data portal or spreadsheet.

- **Primary Data**: Primary data collection protocols have been developed for those indicators where computation based on secondary data is not possible.

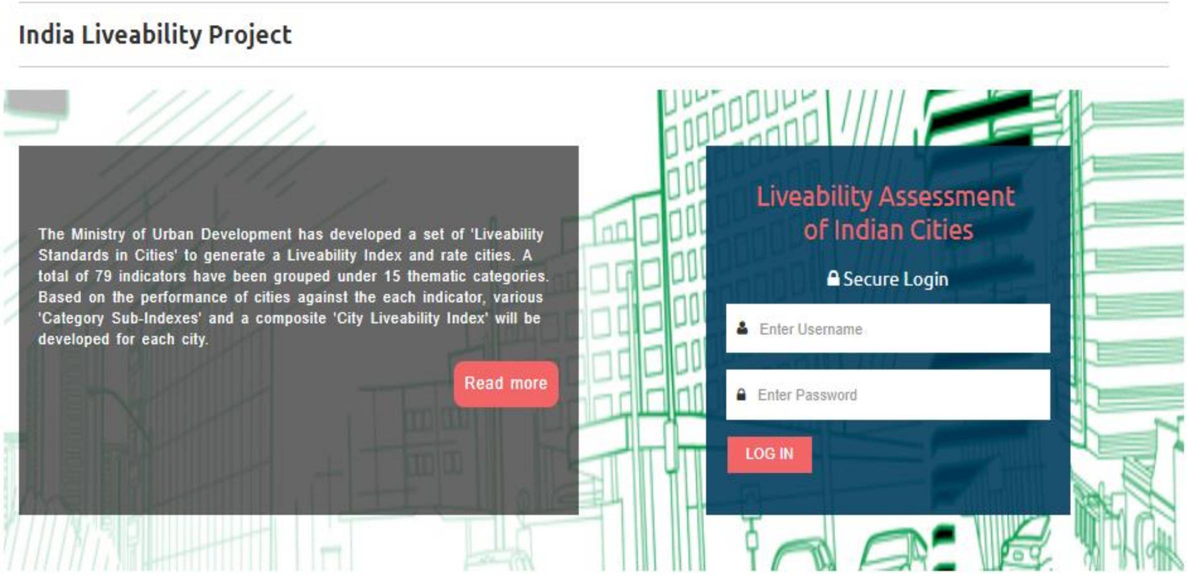
The survey instruments for secondary data collection, primary data collection has been designed by the consortium in line with the 'Methodology for Collection and Computation of Liveability Standards in Cities' document developed by the MoHUA. Inputs from the Ministry, Sector Expert and the National and State Orientation Workshops helped to refine and finalise the questionnaire.

Additionally, the indicators have also been classified based on the validation technique that will be adopted to verify the accuracy of the reported data. For eight out of the 79 indicators, the validation will be through physical audits where a random sample will be selected and observed. For the remaining data points, a detailed audit strategy explaining the potential sources of data which will be accepted as evidence/data source, has been listed.

Category A	Category B	Category C
Secondary data collection	Secondary data collection + Physical validation	Primary Data Collection
79 indicators	8 indicators	5 indicators

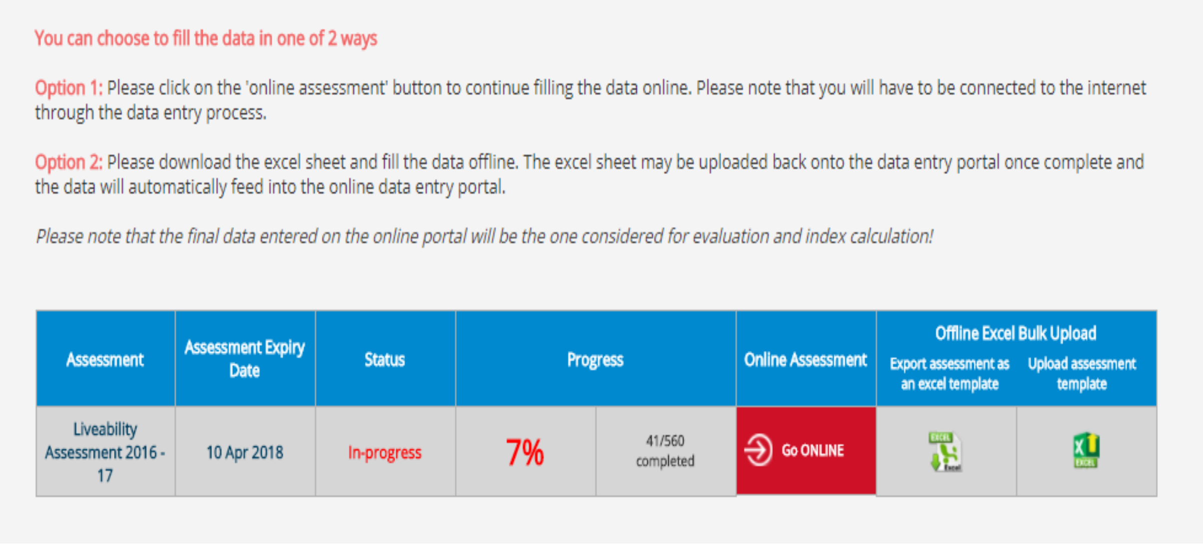
3.2 Secondary data collection

To enable the cities to effectively collate and submit the data online, the consortium has developed a web- based application which is hosted by the MoHUA's portal (https://smartnet.niua.org/). The secondary data collection commenced on March 1, 2018 with the online portal going live online. Secured access and login credentials has been shared with the city governments to allow the officials to familiarise themselves with the portal, data requirement, data sources and the validation process. Any queries and clarification will be addressed through the state orientation workshops.


India Liveability Project

The Ministry of Urban Development has developed a set of 'Liveability Standards in Cities' to generate a Liveability Index and rate cities. A total of 79 indicators have been grouped under 15 thematic categories. Based on the performance of cities against the each indicator, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

Data can be entered either by completing the online data entry form or offline, by filling in a detailed spreadsheet which can be uploaded on the web portal. The data in the spreadsheet will automatically feed into the online data entry portal. The online platform also allows to monitor the progress made by the cities on the secondary data submission.



You can choose to fill the data in one of 2 ways

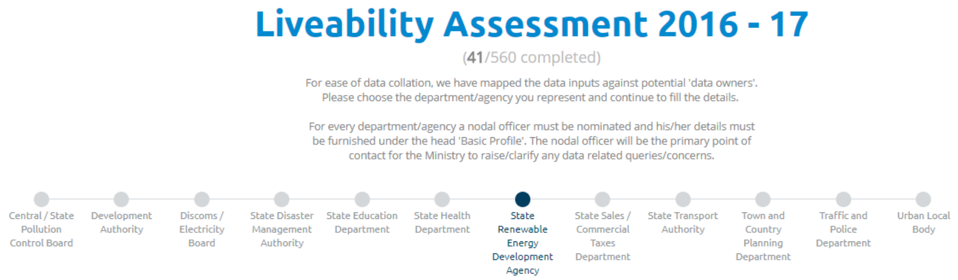
Option 1: Please click on the 'online assessment' button to continue filling the data online. Please note that you will have to be connected to the internet through the data entry process.

Option 2: Please download the excel sheet and fill the data offline. The excel sheet may be uploaded back onto the data entry portal once complete and the data will automatically feed into the online data entry portal.

Please note that the final data entered on the online portal will be the one considered for evaluation and index calculation!

Assessment	Assessment Expiry Date	Status	Progress		Online Assessment	Offline Excel Bulk Upload	
						Export assessment as an excel template	Upload assessment template
Liveability Assessment 2016 - 17	10 Apr 2018	In-progress	7%	41/560 completed	Go ONLINE		

For ease of administration and coordination, the questionnaire is grouped by the originator or owner of the data source. A set of 'potential data owners' have been identified across state departments, parastatal agencies and Urban Local Bodies (ULBs).



Liveability Assessment 2016 - 17

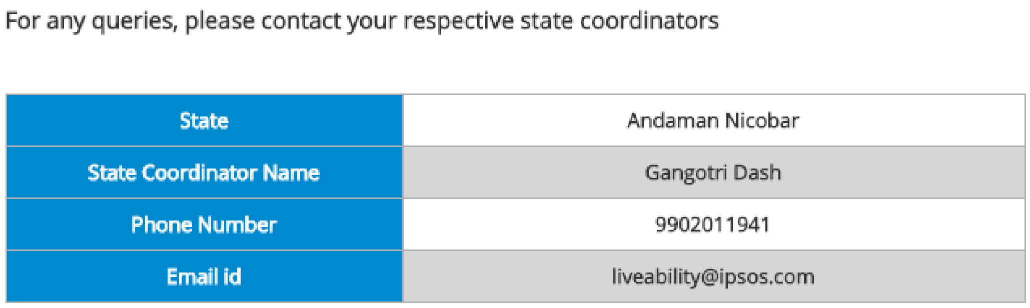
(41/560 completed)

For ease of data collation, we have mapped the data inputs against potential 'data owners'. Please choose the department/agency you represent and continue to fill the details.

For every department/agency a nodal officer must be nominated and his/her details must be furnished under the head 'Basic Profile'. The nodal officer will be the primary point of contact for the Ministry to raise/clarify any data related queries/concerns.

Central / State Pollution Control Board
Development Authority
Discoms / Electricity Board
State Disaster Management Authority
State Education Department
State Health Department
State Renewable Energy Development Agency
State Sales / Commercial Taxes Department
State Transport Authority
Town and Country Planning Department
Traffic and Police Department
Urban Local Body

State and city coordinators are the fulcrum of the response protocol initiated by the consortium. As part of the data entry portal, information of the state coordinators (their mobile number and email-id) has been furnished. City officials are encouraged to actively seek help from the state coordinators. The state coordinators have undergone an intensive training programme (for 3 days) and are equipped to trouble shoot on a wide range of aspects such as definition of the metric, data collection protocol, potential data sources, audit method and protocol. The state coordinators also have direct lines of communication with the central technical team – allowing for quick escalation and resolution of queries, if required.

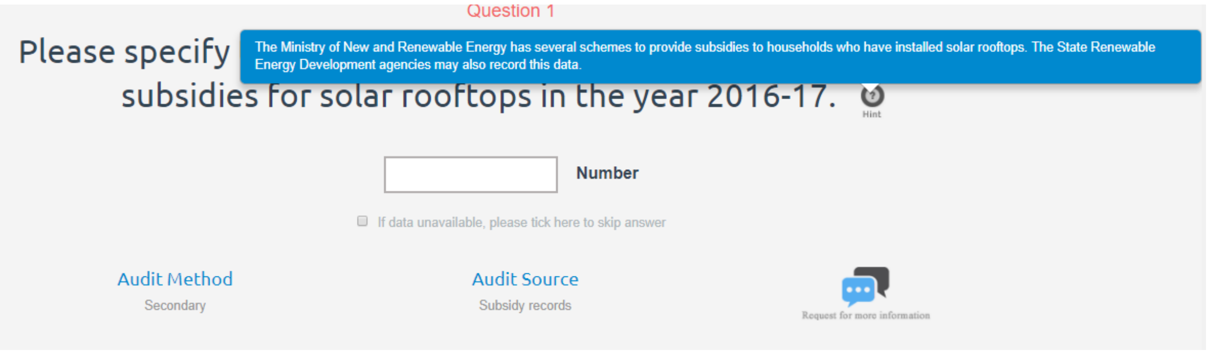

For any queries, please contact your respective state coordinators

State	Andaman Nicobar
State Coordinator Name	Gangotri Dash
Phone Number	9902011941
Email id	liveability@ipsos.com

Every query raised by the city and the responses provided by state coordinators/ Central Team will be recorded (daily) in a pre-determined format illustrated below.

Sl.no	Date of Query	Department	Name and contact details of Official Who Raised the query	Issue/ Clarification Raised	Response Provided	Escalated to the Central Technical Team (Y/N)	Date of Resolution	Follow up Actions Required (if any)

Detailed rules for understanding the questions, data validation, potential data sources and supporting documents are provided as guidance note on the online platform as well as the spreadsheet. This reference document has been developed based on secondary research as well as global best practices for key definitions to aid the city officials in completing the questionnaire.


Question 1

Please specify

The Ministry of New and Renewable Energy has several schemes to provide subsidies to households who have installed solar rooftops. The State Renewable Energy Development agencies may also record this data.

subsidies for solar rooftops in the year 2016-17.

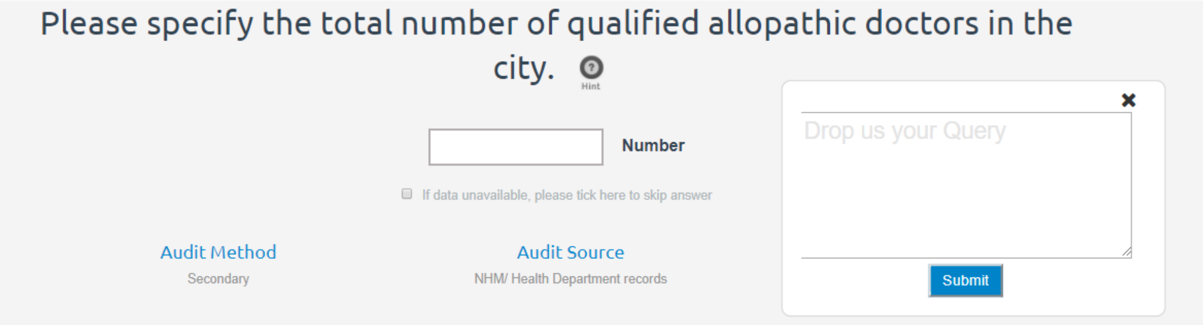
Number

☐ If data unavailable, please tick here to skip answer

Audit Method
Secondary

Audit Source
Subsidy records

Provisions has also been made for the city officials to submit queries online for any additional clarification. A central technical team will review the queries raised and responses will be provided daily.



Please specify the total number of qualified allopathic doctors in the city.

Hint
Number
☐ If data unavailable, please tick here to skip answer
×
Drop us your Query
Submit

Audit Method
Secondary

Audit Source
NHM/ Health Department records

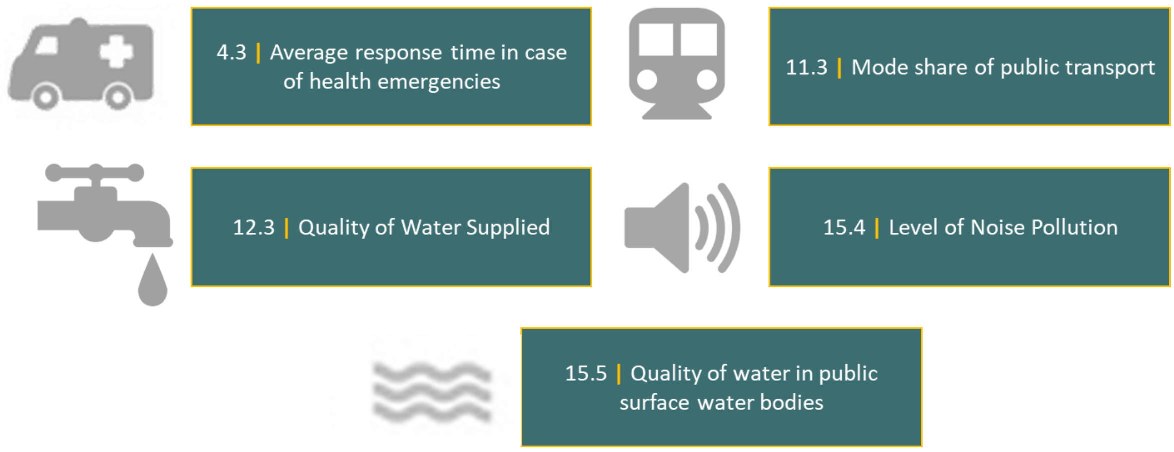
The standard response time for answering queries is provided below:

Queries received before 13:00 PM	**The response will be provided before close of business on the same day (19:00)**
Queries received after 13:00 PM	The response will be provided before 11:00 AM next day

3.3 Primary Data Collection

The MoHUA has identified a set of five indicators where existing datasets may not available. For these indicators, rapid surveys will be conducted, and the data will be collected directly from the source using standardised approach.

Exhibit 5: Indicators which requires Rapid Surveys



4.3 | Average response time in case of health emergencies
11.3 | Mode share of public transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution
15.5 | Quality of water in public surface water bodies

Detailed notes on the data collection protocol for each of these five indicators are provided below:

Indicator 4.3 Average Response Time in case of Health Emergencies

The approach to collect baseline data on the average response time for the Emergency Medical Response System (EMRS) is outlined below:

Option 1: Collect data/ official records from the state health department (State Mission Director under National Health Mission) or agencies[3] operating ambulance services under the National Health Mission) for the last quarter of the financial year March 2017- February 2018 on the following parameters:

Exhibit 6: Data Entry Template - EMRS

Particulars	Oct 2017	Nov 2017	Dec 2017	Jan 2017
1. Details of call				
1.1 Number of call				
1.2 Number of unanswered call				
1.3 Number of calls answered				
2. Types of Calls				
2.1 Number of Emergency Calls				
2.1.1 Number of medical emergency call				
2.1.2 Number of Police Emergency Call				
2.1.3 Number of Fire Emergency Calls				
2.2 Non-emergency calls				
2.3 Ineffective Calls				
3. Ambulance Services				
3.1 Number of Medical Emergency Dispatch requests				
3.2 Total number of ambulance trips				
3.3 Number of ambulance services utilised				
3.4 Total number of cases transported				
4. Call/ Dispatch Time				
4.1 Average call to dispatch time				
4.3 Average time taken from the base to Scene/ Incident				
4.4 Average time taken from the scene to the hospital				

---

[3] For e.g. GVK EMRI which provides 108 emergency response service, is currently operational in 15 States and 2 Union Territories i.e. Andhra Pradesh, Telangana, Gujarat, Uttarakhand, Goa, Tamil Nadu, Karnataka, Assam, Meghalaya, West Bengal, Himachal Pradesh, Chhattisgarh, Uttar Pradesh, Rajasthan and 2 Union Territories, Dadra & Nagar Haveli and Daman & Diu.

Option 2: Private Ambulance Record Data

Many hospitals operate ambulance services and maintain records of calls and response time. This record will be collected by the researchers during their primary visit to the hospitals for surveys.

Option 3: Rapid Survey

i) Number of hospitals and sampling criteria

In cities where secondary data are unavailable, a hospital-based survey will be conducted to collect data on response time. The distribution of the sample of hospital for each city classification is given below:

Exhibit 7: Sample Size- EMRS

Sl. No.	Classification of Cities	Number of Hospitals to be surveyed
1	Megapolis	3
2	Metropolitan Cities	3
3	Large Towns	2
4	Medium Town	2
5	Small Town	2

The hospitals for the survey will be purposively sampled based on the following criteria:

Exhibit 8: Sampling Criteria-EMRS

City category	Sampling distribution
Metropolitan cities and Metropolis	• The sample distribution based on the type of hospital are as follows: ○ 1 Multi Speciality hospital which has a trauma care facility ○ 1 Government Hospital (District Hospital or corporation hospital) ○ 1 private hospital with accident care facilities • Located near main accident-prone areas within the city (derived from the accident record data) • Select the largest/ prominent hospital in the city
Small, Medium and Large Towns	• District hospital/ corporation hospital will be covered in the study • Located near main accident-prone areas within the city (derived from the accident record data) • Select the largest/ prominent hospital in the city

ii) Respondent Selection

Surveys will be conducted with patients who are admitted in the hospital or by standers of the patients.

Exhibit 9: Respondent Selection - EMRS

Classification of the City	Sample Distribution	Total Number of Surveys
Megapolis	• 50 Patients who have used the ambulance service per hospital • 10 Patients who arrived at the hospital in private vehicles per hospital	180
Metropolitan Cities	• 50 Patients who have used the ambulance service per hospital • 10 Patients who arrived at the hospital in private vehicles	180
Large Towns	• 30 Patients who have used the ambulance service per hospital • 5 Patients who arrived at the hospital in private vehicles	70
Medium Town	• 30 Patients who have used the ambulance service per hospital • 5 Patients who arrived at the hospital in private vehicles	70
Small Town	• 30 Patients who have used the ambulance service per hospital • 5 Patients who arrived at the hospital in private vehicles	70

- A systematic random sampling strategy will be adopted to identify respondents (patients or by stander) the survey.
- The respondents, who are currently hospitalised will be selected from the emergency or trauma care ward patients' records. Respondents who arrived at emergency or trauma care ward and later shifted to other wards (including maternity, general or other specialist ward) will also be considered for the study.
- The treatment group will involve those patients who utilised the Government Ambulance Service (108/102/100) and the control group will include those who utilised private vehicles to arrive at the emergency facility
- The questionnaire for the patient survey is presented in Exhibit 10

Exhibit 10: Questionnaire for the Patient Survey

Name of the city	
Name of the hospital	
Gender of the respondent	
Age of the respondent	
Did you avail govt. transport from PHC/ 108? If yes, what kind of transport facility did you avail?	A) Yes b) No If yes, 1) 100 – Police

	2) 102- Ambulance 3) 108- Ambulance 99) Don't know
When did you avail this facility?	
What was the response time of the transport?	1) Within 15 minutes 2) 15 min-30min 3) More than half an hour but less than 1 hr. 4) More than one hour 99) Don't Know

Indicator 11.3: Mode Share of Public Transport

The different approach to collect data on mode split is outlined below:

Option 1: Secondary Data Sources

Mode share taken from secondary **data sources** (see below). If data is more than 5 years old, it can be extrapolated based on vehicle registration data trends.

Data Needs:

- Mode Share
- Vehicle registration data

Data Sources:

- Comprehensive Mobility Plans for each city – mostly available with Institute of Urban Transport/Ministry of Urban and Housing Affairs
- Comprehensive traffic and transport plan prepared for the city independently or as part of a Master Plan exercise /under the JNNURM / any other planning efforts
- If no plan exists, ridership data can be obtained from local Transport agency (Metro, bus, feeder services, rail, and car) or from research institutions who have conducted transport studies for the city.
- Review of Urban Transport (2014)- Pg 65 – Motorized Trip Rates by Category (based on inputs from several CMPs) for different category cities (attached)
- http://planningcommission.nic.in/sectors/NTDPC/voulme3_p2/urban_v3_p2.pdf contains modal split data collected from various cities across India. See page 387, Table 5.4. This data was compiled in 2014.

Option 2: Secondary Data is Unavailable

If secondary data is not available at all, **Method 2** will be applicable.

If data not available, conduct primary surveys at a sample of mid blocks involve vehicle counts and a visual assessment of occupancy is appropriate.

Mode Share is also calculated as Occupancy X # of vehicles /for each mode
Occupancy = # of persons/vehicle
For Public Transport (if difficult to count- a visual assessment could be done using the following rule)
Seating Capacity of the vehicle: Seating + Standing capacity= X
Spill Over: X* 1.25
Full = X
Half = X * 0. 5
Quarter= X*0.25

The primary surveys may be conducted as follows:

Classified Volume Counts

Objective of the Survey: These surveys shall be conducted at identified mid-block and junctions for 4-6 hours covering morning and evening peak hours, which will be used for calculation of mode share. The mode of survey could be 1) Manual or 2) Video camera placed at median to record traffic in both directions.

Conduct of the Survey:

- Traffic counts will be carried out on a typical working day at major arterials.
- The city could be divided into zones and mid-block locations identified accordingly with high activity centres like schools, colleges, commercial places, Government institutions and near slums and also different categories of streets (arterials, sub arterials, collectors, etc.)
- Where a city has a bypass, count locations should be placed at the approach to the bypass from the city.
- At each identified station, both directional counts will be carried out by vehicle type. i.e. cars, jeeps, vans, buses, trucks, MAVs, LCV's tractors, motorized two wheelers and three wheelers, and slow moving vehicles.
- Additionally, occupancy of each vehicle also need to be noted. Occupancy = # of persons/vehicle

Monitoring Time

The traffic counts will be conducted for 3 hours each in the morning and evening peak periods (6 hours per site) at 15 minute intervals for continuous 3 hours. Each city may have different peak periods.

- Day shift – 3 hrs
- Evening shift- 3 hrs

The traffic data collected from the field will be scrutinized and processed.

Mode of Survey

These surveys shall be conducted at identified mid-block and junctions.

The mode of survey could be 1) Manual (see template) or 2) Video camera placed at median to record traffic in both directions (and then processed based on the template)

Sample Size

- At least 10 to 20 locations based on size of city.

Recording the data

The data will be recorded at 15 minute intervals for 3 hours shifts for peak periods. See template attached.

Exhibit 11: Template for Recording Data on Mode Share

Location	Direction:																										
Time (based on morning and evening peak periods)	Buses								Private Vehicles & IPT						Goods Vehicles								Slow Moving Vehicles			Pedestrians	
	City bus	Occ	Mofussil bus	Occ	Other bus	Occ	Mini Bus	Occ	Cars/Van/Jee	Occ	Two wheeler	Occ	Auto rickshaws	Occ	Trucks	Occ	MAV	Occ	LCV	Occ	Tractors	Occ	Cycles	Occ	Carts	Pedestrians	Total Passengers
8.00-8.15																											Sum (# of vehcicles each mode X occupancy)
8.15-8.30																											Sum (# of vehcicles each mode X occu

																											pancy)
8.30-8.45																											
8.45-9.00																											
9.00-9.15																											
9.15-9.30																											
9.30-9.45																											
																											0
Total passengers	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. Occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**Total vehicles**	**Avg. occ**	**0**

Indicator 12.3: Quality of Water Supplied

The approach below describes in detail the process and guidelines for identifying sampling locations, collecting water samples and testing for the quality of water supplied for drinking.

Location of sampling points

One objective of surveillance is to assess the quality of the water supplied by the water supply agency and of that at the point of use, so that samples of both should be taken. Any significant difference between the two has important implications for remedial strategies.

Identify sampling locations

The number of locations from where samples for water quality testing should be collected is based on the source of water and the water supply system in a city.

Water samples should be collected at the fresh water and ground water source (if directly supplied to customers). Many cities draw water from their own surface source, while others buy treated water from Water Supply and Sewerage Board. Many cities or parts of cities with no fresh water source of their own often buy raw or treated water from State agencies, Irrigation Department or private agencies to supplement their ground water resources.

Locations where samples must be collected:

1. Ground water source
2. Own surface water source
3. Purchase water (not necessarily from treated sources)
4. Water treatment plant
5. Water distribution system (WDS)
6. Consumer end (taps and tankers)

Sampling Points

Sampling points should be selected such that all different sources from which water is obtained are covered.

- There should be at least one sampling point at the clean-water outlet of each water treatment plant (WTP).- Sample size - 1
- Similarly there should be at least one sampling point at the inlet of sump in a water distribution system (WDS). – Sample size -1
- Samples in all WDS zones in the city should be collected for testing. Within a WDS zone, sampling sites should be geographically distributed to include areas in close proximity as well as far from the WDS station.- Sample 1 per 2500 population
- In addition to the fixed locations, sampling should also be carried out at variable locations which prove helpful in detecting local problems in the water supply system- Identified locations- 1 per location

Sampling locations at consumer end should be identified based on the population served by each water distribution zones.

- Samples should be collected in slum as well as non-slum areas proportionate to the slum population in a city – 1 per 2500 population
- A portion of samples collected at consumer end should include community stand posts.
- Sampling at consumer end should include sites such as municipal schools and government hospitals – distributed geographically

Required on field and laboratory tests

Test.	Test location
Residual Chlorine	On site using Water Quality Field Test Kits
Physical (turbidity, taste, colour, odour and temperature)	On site using Water Quality Field Test Kits
Chemical	Indicative tests using on site using Water Quality Field Test Kits. Samples to be sent to laboratories for testing.
Bacteriological	H2S Vial Test. Preliminary test on site. Only positive cases sent to Municipal or other accredited laboratories

How to collect samples at site

The objective of sampling is to collect a small portion of water which can be easily transported to laboratory if needed, without contamination or deterioration and which should accurately represent the water being supplied.

1. **Preparation and Planning**
   - Based on the established sampling regime identify the total number of samples to be collected, the sampling locations and the parameters for which samples need to be collected.
   - Make a list of equipment for sample collection and on site testing.

List of equipment for sample collection and field testing is presented in the table below:

Exhibit 12: List of Equipment- Water Quality Testing

List of equipment	
For sample collection	For onsite RC and physical testing
Sampling bottle	Field testing kits
Sticker label	Chlorometer
Sketch Pen	Test tube
Date collection formats	H2 S Vial Kit
Labels	Others, as mentioned in the kits (reagents etc.) Please check the need for reagents as they might not be available in smaller cities

- For physical and RC tests, 500 ml virgin plastic bottles with air tight cap should be used for one sample collection. Purchase a mineral water bottle with its seal intact. Transfer/ consume the mineral water. Bottles are ready for sample collection.
- For chemical and bacteriological tests that are carried out at the state/ district laboratory, contact the laboratory to obtain trip blank bottles, the appropriate sterilized sample bottles and preservatives, and to confirm storage conditions and holding times.
- Prepare/ print data recording formats for various tests.
- Obtain any necessary permission for site access.
- Pre-clean sampling and sample processing equipment.
- In case of residual chlorine, the test is carried out at site itself. In such case standard test tube of capacity 10 to 25 ml may be used.
- Print off all necessary sample labels, sample tracking forms

2. Sample collection from surface source

- Note sampling conditions such as location, time and surrounding conditions on the sample format.
- Always collect samples keeping the bottles facing upstream.
- Make sure any disturbed sediments are moved downstream by the current before collecting the sample.
- Samples should be collected in the river/lake/dam site if possible but if this area is to deep, choose a point in the channel cross-section where water is flowing and appears to be well-mixed (avoid backflows and eddies). In wetland areas with little or no flow, extreme caution should be taken to avoid contamination from sediment stirred up by boats or walking to sample locations.
- Use regular plastic bottles for collecting samples for physical and chemical tests and sterilized bottles for bacteriological testing. Reach forward facing the bottle opening into the current upstream and quickly plunge the container below the surface to avoid any introduction of surface scum or floating debris. Do not touch the inside of the bottle cap, lip of the container, or inside of the container. Avoid touching the bottle to the stream bottom.
- Be careful not to overfill sample bottles, unless directed by laboratory. For bottles pre-filled with preservative, overfilling could cause loss of the preservative.
- Bring the bottle up out of the water and immediately replace the cap.
- Repeat for the remaining sample bottles

3. Sample collection from ground water source

- Wash your hands thoroughly.
- Note sampling conditions on field formats.
- Start the pump. Allow water to flow for 5 to 10 minutes.
- Use regular plastic bottles for collecting samples for physical tests and sterilized bottles for bacteriological testing. Remove the sample bottle cap. Do not touch the inside of the bottle cap, lip of the container, or inside of the container.

- Be careful not to overfill sample bottles. Fill 80%-90% of the bottle with sample water. Leave some space for oxygen to avoid killing the bacteria in the sample. For bottles pre-filled with preservative, overfilling could cause loss of the preservative.
- Close the bottle tightly.
- Bring the bottle up out of the water and immediately replace the cap.
- Repeat for the remaining sample bottles.
- Note sampling conditions on field sheet formats.

4. **Sample collection from distribution system (WTP/ Head work/ Storage)**
    - Always collect samples facing from depth at least 30 cm from water level of WTP/Storage
    - Use regular plastic bottles for collecting samples for physical tests and sterilized bottles for bacteriological testing. Remove the sample bottle cap.
    - Submerged the bottle (if empty), collect the water sample from 30 cm depth
    - In case of bottles filled with preservative, (For bottles pre-filled with preservative, overfilling would cause loss of the preservative and therefore some headspace must be remaining).
    - Avoid touching the bottle to the stream bottom.
    - Bring the bottle up out of the water and immediately replace the cap.
    - Repeat for the remaining sample bottles.

5. **Sample collection from consumer end (House connection/ Stand post)**
    - Allow water to flow from tap or stand post for about one bucket.
    - Take 3 samples of 500 ml in test bottles (sterilized virgin plastic bottle with airtight cap for bacteriological testing and regular plastic bottles for RC, chemical and physical tests).
    - Remove the sample bottle cap.
    - Reach forward facing the bottle opening into the flow direction.
    - Do not touch the inside of the bottle cap, lip of the container, or inside of the container.
    - Be careful not to overfill sample bottles, unless directed by laboratory.
    - For bottles pre-filled with preservative, overfilling would cause loss of the preservative and therefore some headspace must be remaining.
    - Immediately replace the cap.

6. **Sample Handling**

Samples for physical and RC testing:

Since these tests are carried out on site, there are no special handling, storage or transportation procedures. The samples collected should be immediately transferred to test tubes and tested. These samples need not be labelled. The samples collected for these tests should be discarded after the tests are done.

Exhibit 13: Specimen Format for Water Sample Collection

Specimen Format for Water Sample Collection for Laboratory Analysis

Name and Address of Municipal corporation/ Municipality :
Date of Sample Collection

Time of Sample Collection

Sample No:

Purpose of Examination: (Physical / Chemical / Bacteriological)

Source of Water Sample (Location of sample)

Weather information
Season (summer/ monsoon/ winter)

Temperature

Rainfall
Need For Analysis : Routine / based on complaint or local epidemic

Name of Sample Collector:

Sign of Sample Collectors Sign of Supervisor

Date & Time of Dispatch:

Label
(Paste on Sample Collected)

Sample No	
Date/Time	
Sample Location	
Date of Dispatch	
Sign/Name (Supervisor)	

Samples for chemical and bacteriological testing:

Once the samples are collected from different locations, the bottles must be properly labelled. Sample label format is shown below.

The water quality testing field kits generally allow the following parameters to be tested:

- Physical: Colour, Odour, Turbidity
- Residual Chlorine
- Chemical: Ph, hardness, indicative tests for chloride and fluoride and nitrates

7. Sample Testing

1. Performing residual chlorine test

Aim

Chlorine is added to drinking water before distribution for disinfection. Chlorine also acts as an oxidizing agent. The residual chlorine test should be routinely carried out to check that a sufficient amount of chlorine was added to the water to kill disease causing bacteria. As per IS 10500, the acceptable limit of residual chlorine in water is 0.2 mg/l and permissible limit is 1 mg/l. In case of epidemics when protection against viral infections is required, the quantity should be minimum 0.5 mg/l.

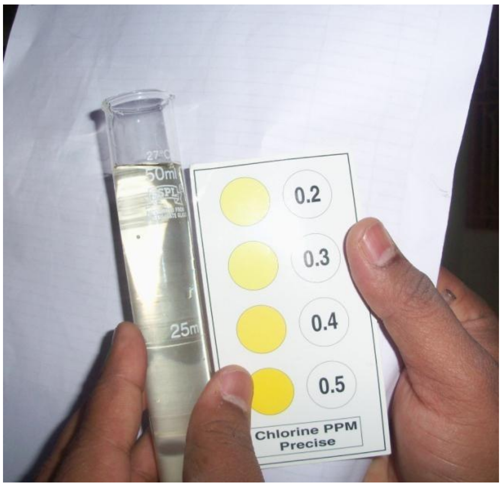
Required instruments

- Nessler tube/ test tube (50 milliliters)
- Standard colour chart / chloroscope
- Appropriate Reagent Rod
- Nessler stand

Method

- Add 10 to 12 drops of the reagent in the test tube. Add water sample up to the 50 millilitre marking and stir with a rod.
- Match colour of water in the tube with standard colour chart for chlorine or use a chloroscope.
- The reading of the matching colour on the charts indicates the amount of residual chlorine in water.
- If the results shows nil or less than 0.2 ppm then perform the same \test again with a sample taken from the same spot within 5 minutes.
- If the amount of residual chlorine is still less than 0.2 ppm immediately send the sample for bacteriological testing.

RC testing on site , Source : SOP, UMC



2. **Performing Physical Tests**

The following physical parameters should be checked by the field staff and noted on the recording formats.

- Color (By looking at the color of water)
- Odor (By smelling the sample water)
- Transparency / Turbidity (By looking for the clarity of water)
- Temperature (measured using thermometer)

3. **Conducting turbidity test**

Aim

Turbidity is the amount of cloudiness in the water and can be caused by silt, sand and mud as well as bacteria and other germs chemical precipitates. As per IS 10500, 1 NTU is the acceptable limit and 5 NTU is permissible limit.

Required instruments

- Glass beaker (100 millilitres)
- Ideal acknowledged picture with turbidity chart (provided in water quality test kits)

Method

- Take water sample up in a beaker to the100 millilitre marking.
- Place turbidity chart on a raised platform in an area with ample sunlight.
- Keep the beaker with the water sample on the ideal acknowledged picture.
- Look at the Ideal acknowledged picture through the beaker
- Match the ideal acknowledged picture seen from beaker with the turbidity chart.
- Record the turbidity NTU.

Result

- If the picture is seen clear, the water sample is clean with zero turbidity.
- If picture seen is not very clear, the water is turbid.
- If turbidity is less than 5 NTU, water is potable
- If turbidity is more than 5 NTU, water is not potable.
- If picture is not seen at all, the water is muddy. Muddy water is not potable.

4. Conducting pH test:

Required instruments

- pH paper
- Given pH colour chart
- Beaker

Method

- Take a small amount of water sample for testing in a beaker.
- Immerse the pH paper (about 1/2 inch) into the water.
- The pH paper will change its colour. Match the colour of paper with the given pH chart and record the corresponding value.

Result

- If the pH value of water sample is in the range of 6.5 to 8.5, the water is potable (good for drinking).

5. Conducting TDS (total dissolved solids) test

Required instruments

- TDS meter
- Beaker

Method

- Pour the sample water in a beaker.
- Dip the TDS testing machine in the sample water.
- Record the reading on the digital display on the machine.

Result

- If the reading is up to 500 mg/l, the water is potable. A reading up to 2000mg/l is permissible to be considered as potable by IS 10500.

6. Performing bacteriological tests

This could be done through a H_2S vial test to check for the presence or absence of e.coli an indicator bacteria for more harmful bacteria in the water

- Buy some H2S vial test bottles[4]
- Pick a water sample of the water in the different locations (random samples)
- Fill it till the blue line visible on the bottle.
- Observe for 48 hours.
- If the water turns black as in the bottle to the leftmost then the water has e.coli. If it stays brown as in the water bottle to the centre then there is no e.coli in the water.

7. Performing chemical tests

Chemical tests are not conducted on site. Some kits allow indicative tests on site. In any case samples for chemical testing should be sent to accredited laboratories. A list of laboratories in different states carrying out different water quality tests could be used based on the proximity of the city. Some indicative chemical tests such as **fluorides, chlorides and nitrates** can be conducted on field by following the instructions provided in the booklet of the water quality testing kits.

Indicator 15.4 Level of Noise Pollution

The approach to collect noise pollution data is based on the Government of India document titled 'Protocol for Ambient Level Noise Monitoring' developed by Central Pollution Control Board and is described in detail below:

Determine the Sample size: The number of sample location to collect noise pollution data is based on the city population and city type. The site selection[5] for each city type is presented below:

Exhibit 14: Sample Size - Noise Pollution Data

Classification of Cities	Population	

---

[4] Water Health Laboratories 4, Hydel Road, Industrial Area,

Roorkee - 247 667 INDIA

Tel: +91 (1332) 265320, 270053

Fax: +91 (1332) 274950

Cell: +91 94120 74490 (Dr. S.K.Sisodia)

[5] Sample size determination and distribution is in line with The Study on Ambient Noise Monitoring in Metropolitan city 2014 in Maharashtra

		Total Number of Location
Megapolis	Population ≥ 5 million	10
Metropolitan Cities	Population ≥ 1 million < 5 million	10
Large Towns	Population ≥ 5 lakh < 1 million	4
Medium Town	Population ≥ 50,000 < 5 lakh	4
Small Town	<1 million	4

The location selected for the study should meet the land use pattern as prescribed in the standard e.g. Industrial (I), Commercial (C), Residential (R) and Silence Zone (S). The distribution of the sample for each city classification is given below:

Exhibit 15: Sample Distribution by Land Use Pattern

Classification of Cities	Sample Distribution			
	S	R	I	C
Megapolis	3	2	2	3
Metropolitan Cities	3	2	2	3
Large Towns	1	1	1	1
Medium Town	1	1	1	1
Small Town	1	1	1	1

Collate information on the location of ambient air quality monitoring stations from the PCB in the illustrated template to aid in the site selection for ambient noise pollution monitoring. The site for collecting data on noise pollution can be in close proximity to the air quality monitoring station.

Exhibit 16: Data Entry Template- Noise Pollution Data

Sl.no	Location of the Air Quality Monitoring Station	Land Use Pattern	Address and Landmark

In the absence of air quality monitoring stations, the selection of the sites will be purposive based on inputs from the Urban Local Bodies and Pollution Control Board. The following criteria can be kept in mind while selecting the sites:

Exhibit 17: Criteria for Site Selection - Noise Pollution Data

Silence Zone	• **Ideally located within 100 meters around premises such as government hospitals, high courts or government educational institutions (University)**
Residential Areas	• For small, medium and large towns, identify residential areas which have high population density. • In case of metropolitan cities and Megapolis, identify two residential areas- one with high population density and second with medium population density.
Industrial Areas	• Identify industrial areas with heavy concentration of industries operating in close proximity
Commercial Areas	• For small, medium and large town, identify a site which is at the heart of the city and hence has many commercial shops and heavy traffic density is seen • In case of metropolitan cities and Megapolis, the first location will be at the heart of city having many commercial shops and heavy traffic. The second location can be located in proximity to a railway station or bus depot or airport where many commercial shops and hotels are located

The sites selected for monitoring noise pollution can located in close proximity to the air ambient quality monitoring station. However care must be taken ensure that the station is located at the ambient level i.e. away from the direct source, away from any vibration and any obstruction.

Monitoring Time: The noise level will be monitored in the identified location (s) continuously for a period 4 hrs each during the peak and off-peak hours. The monitoring period will at fifteen-minute intervals on a working day (Monday)[6]. For each city, the peak and off-peak hours will vary and will be informed by inputs provided by the City Traffic Police.

Instrument for data collection: The ambient noise-level will be monitored with the help of Sound Level Meter (like AZ Instruments, 8921 or MS 6701 Type II)[7] which consist of a microphone, a processing section and read-out unit will be used for monitoring.

Few things to keep in mind while using the Sound Level Meters are listed below:

---

[6] The guideline states that the monitoring should be carried out minimum 75% of the prescribed Day time (06.00 am to 22.00 pm) and Night time (22.00 pm to 06.00 am). Duration is of 6 hours from 18.00 Hrs to 24.00 Hrs with 1 sec sampling period.

[7] The Government of India recommends a Type 1 integrating sound level meter with free-field microphone which meets the Accuracy of noise measurement as per IEC 804 (BS 6698) Grade I or ANSI Type I or equivalent IEC 61672-1(2002-05) Class-I.

- Only pre-calibrated Sound Level Meters should be used for the monitoring[8].
- Hand held monitoring should be avoided and a tripod stand should be used which is located at above the ground level of 1 to 1.5 m for areas
- The noise measurement equipment will be supervised continuously during the monitoring period and notes will be made of the date, time and prevailing weather conditions;
- Noise measurements should not be made in fog and rain
- The instrument must be isolated from strong vibration and shock and a wind shield can be used to prevent interference of reflecting noise

Recording the data: Standard instruments can record measurement (upto 500 records) which can be later transferred to a computer for analysis. The following data should be recorded in the data sheets provided to the field investigators:

- The date, time and location of measurement
- Details of equipment used, together with model and type numbers, calibrators used and dates of last calibrations
- All predominant noise sources, which may include extraneous noise such as road traffic, aero-planes and other activity
- Weather conditions will be recorded including wind speed and approximate direction, cloud cover, rain and ground frost

Indicator 15.5: Quality of water in public surface water bodies

Types of public surface water bodies found in a city include rivers, streams, lakes / tanks, reservoirs, wetlands, and the ocean. Public surface water bodies that are identified for the designated best use in the city needs to be tested to see if they meet the benchmarks mentioned in the table above (CPCB, Guidelines for Water Quality Management, 2008). A detailed approach note to collect and test surface water sample is outlined below:

OPTION 1: Collect background information / available secondary data.

First check if data on quality of public surface water bodies is available in your city.

- Check if the municipality or State Pollution Control Board has a water quality management / monitoring system or program that has been measuring the water quality[9] of the surface bodies in your city. If the data is available from such programs, this may be used to compare the trends / changes in water quality over the years.

---

[8] Measurements should be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

[9] From the user's point of view, the term "water quality" is defined as "those physical, chemical or biological characteristics of water by which the user evaluates the acceptability of water". For example for drinking water should be pure, wholesome, and potable. Similarly, for irrigation dissolved solids and toxicants are important, for outdoor bathing pathogens are important and water quality is controlled accordingly. Textiles, paper, brewing, and dozens of other industries using water, have their specific water quality needs.

- There are 1032 monitoring stations set up by the CPCB spread over all important water bodies in the country.[10] Check if any of these are located in your city. If yes, then obtain surface water quality data from this station for that particular water body. This may be used to compare the trends / changes in water quality over the years.

OPTION 2: If data on quality of public surface water is not available, the following process for primary data collection can be adopted

STEP 1: Conduct an inventory of the various water bodies and identify the designated best use of each

- Collect background information on the city such as geography, topography, climate and weather, hydrology, hydrogeology, land use, urbanization, industrialization and agriculture, including farming in riverbeds.
- Record and map human activities and potential polluting sources around the water body.

All sources of waste, all entering tributaries that might contribute a potential pollutant, and all uses, and abstractions of the water need to be noted. Also schedules and quantity of water flow regulated is to be noted. This information will help in an appropriate siting of sampling locations.

- Locate the surface water bodies on a base map or the existing land use map of your city obtained from the ULB / Development Authority.

Identify all the surface water bodies such as rivers, streams, lakes, ponds, reservoirs, and estuaries that contribute to the water ecology and are critical for maintaining health. They include public water bodies used for irrigation, swimming, fishing, rafting, boating, and industrial uses. Satellite images / Google earth map of the city may also be used to locate them on the base map.

- Based on the location and surrounding land uses and activity areas, and random interviews with the people in the areas surrounding the water body, categorize the water bodies by designated best use

STEP 2: Select the water bodies to be sampled. In a given city, select the surface water body under each designated use classification as shown in Box 4 of the Guidelines for Water Quality Management, 2007-08.

- Drinking water source without conventional treatment but with chlorination
- Outdoor bathing (organized)
- Drinking water source with conventional treatment
- Propagation of wildlife and fisheries
- Irrigation, industrial cooling, and controlled disposal

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[10] Guidelines for Water Quality Monitoring, Central Pollution Control Board, 2007-08.

If a city has more than one surface water body for any designated best use, then select at least one of them for sample collection / testing.

STEP 3: Decide the sampling location (sampling site selection) and the number of samples to be taken

The table below shows where samples must be collected for testing based on the selected water body.

Exhibit 18: Guideline for Collecting Sample - Surface Water

	Up stream	Centre	Down stream	Inlet - the point where the principal feeder opens into the water body	Outlet - the place where the overflow occurs	Centre - the point that gives the general water quality of the water body	Other* To be specified – but generally three samples are to be taken
Rivers	**X**	**X** ***(from well-mixed section of the river (main stream) 30 cm below the water surface using a weighted bottle or DO sampler)***	**X**				
Streams	**X**	**X**	**X**				
Lakes / ponds				**X**	**X**	**X**	
Reservoirs				***collected from the outgoing canal, power channel or water intake structure, in case water is pumped. When there is no discharge in the canal, sample should be collected from the upstream side of the regulator structure, directly from the reservoir.***	**X**	**X**	
Wetlands							**X**
Ocean							**X**

b. Since surface water bodies are large and deep, it is necessary to keep in mind the place from where the sample should be collected. It should be collected

- Against the current flow
- Away from banks of river/ lake
- About 30cm below the surface
- Midway across the river and midway between the top and bottom of the river.

c. The GPS location of all the sampling points must be noted and mapped (GIS / MapInfo) to show the exact location of sampling points and other features.

d. To get effective results, some general criteria for site selection are to be followed as mentioned below[11]. Some general criteria to be followed for site selection[12]:

1) Sites should be accessible under all conditions of weather and river flow.
2) Sites for biological sampling should match with sites for chemical sampling.
3) Biological sampling stations need to be selected with proper attention to representative habitats (kind of substrate, depth and flow).
4) The sampling team normally must carry an appreciable burden of sampling gear and water samples, and the distance they can walk is limited. Accessibility is therefore an important consideration.
5) Travel time greater than 24 hours between the site and laboratory is not recommended.
6) Sites that are hazardous in bad weather (such as high flow) should be avoided.
7) Sites with disturbing influences in the rivers, especially cattle wading, melon farming, fishing, and sand recovery and Dams and barrages should be avoided.
8) Availability of sampling facilities such as bridges, boats, and possibilities for wading are important criteria in the selection of sampling sites.

e. Sampling frequency: Since this data collection exercise is to be carried out in a short time frame, sampling and testing may be carried out only once in the chosen sampling sites. That is sampling across days, weeks and seasons is not expected to be done.

STEP 4: Conducting the tests / analysis of samples

- On-site analysis includes air and water temperature, transparency and dissolved oxygen. Ammonia, coliform bacteria, fluoride, iron, pH (in the field), phosphorus, residual chloride, and turbidity for samples may be tested using a Jal-Tara Water Quality Testing Kit produced by Development Alternatives in New Delhi (Development Alternatives 2000).
- Laboratory analysis[13] includes: acidity, alkalinity, biochemical oxygen demand (BOD), chemical oxygen demand (COD), chloride, chlorine residual, coliform bacteria, dissolve oxygen (DO),

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[11] Guidelines for Water Quality Monitoring, Central Pollution Control Board, 2007-08

[12] This list is not exhaustive. For complete list of the criteria, refer to the Guidelines for Water Quality Monitoring, Central Pollution Control Board, 2007-08

[13] Labs where samples may be sent for testing:
http://www.labgo.in/nabl-accredited-testing-labs-India

electrical conductivity (EC), fluoride, hardness, iron, nitrate, pH, phosphate, potassium, sodium, sulphate, solids (total, total dissolved, and total suspended) and turbidity.

- The majority of analyses should follow standard procedures published by the Indian National Environmental Engineering Research Institute (NEERI, 1998).
- Parameters to be measured: Conduct tests to measure the parameters mentioned in the table below, that is, total coliform, pH, Dissolved Oxygen14 and Biochemical Oxygen Demand as indicated in the table for benchmarks. The table below indicates the testing parameters for each designated use:

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http://indiawater.gov.in/IMISReports/Reports/WaterQuality/rpt_WQM_EntryStatusLabs.aspx?Rep=0&Rtype=BI
http://www.cwc.nic.in/newsite/Documents/annexure-3.pdf

[14] DO is determined in a sample collected in a DO bottle using a DO sampler. The DO in the sample must be fixed immediately after collection, using chemical reagents. DO concentration can then be determined either in the field or later, in a level I or level II laboratory.

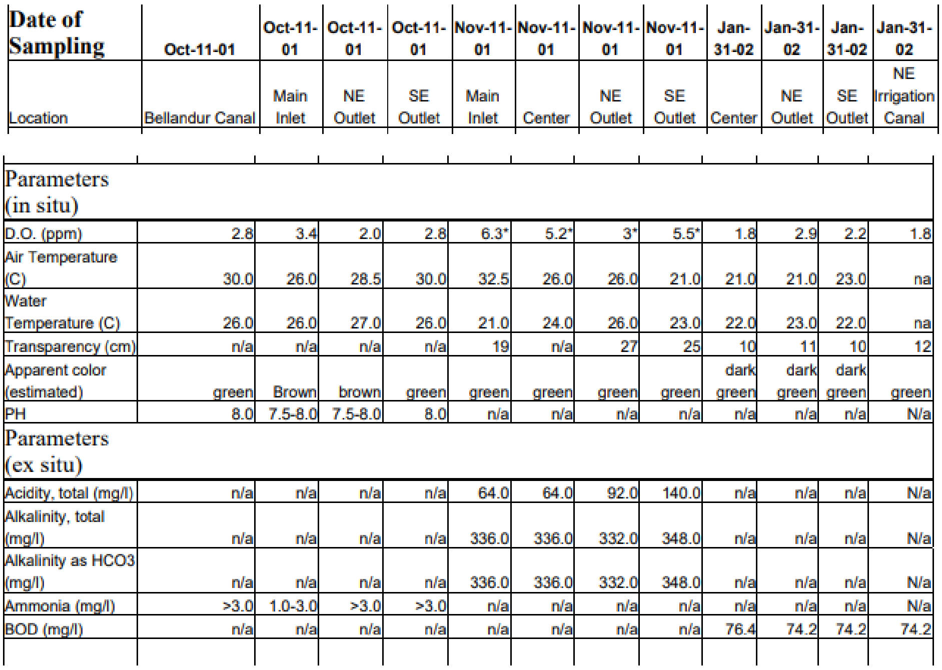
Exhibit 19: Testing parameters- Surface Water

Designated Uses	**Drinking water source without conventional treatment but with chlorination**				**Outdoor bathing (organized)**				**Drinking water source with conventional treatment**				**Propagation of wildlife and fisheries**			**Irrigation, industrial cooling, and controlled disposal**		
	Total coliform organisms	pH	DO	BOD	Total coliform organisms	pH	DO	BOD	Total coliform organisms	pH	DO	BOD	pH	DO	Free Ammonia	pH	Electrical conductivity	Sodium Absorption
Rivers																		
Streams																		
Lakes																		
Reservoirs																		

STEP 5: Recording of data collected (in-situ and lab)

The following is an example of how the data collected in-situ and ex-situ may be recorded.

Exhibit 20: Recording of Data - Surface Water



Date of Sampling	Oct-11-01	Oct-11-01	Oct-11-01	Oct-11-01	Nov-11-01	Nov-11-01	Nov-11-01	Nov-11-01	Jan-31-02	Jan-31-02	Jan-31-02	Jan-31-02
Location	Bellandur Canal	Main Inlet	NE Outlet	SE Outlet	Main Inlet	Center	NE Outlet	SE Outlet	Center	NE Outlet	SE Outlet	NE Irrigation Canal
Parameters (in situ)												
D.O. (ppm)	2.8	3.4	2.0	2.8	6.3*	5.2*	3*	5.5*	1.8	2.9	2.2	1.8
Air Temperature (C)	30.0	26.0	28.5	30.0	32.5	26.0	26.0	21.0	21.0	21.0	23.0	na
Water Temperature (C)	26.0	26.0	27.0	26.0	21.0	24.0	26.0	23.0	22.0	23.0	22.0	na
Transparency (cm)	n/a	n/a	n/a	n/a	19	n/a	27	25	10	11	10	12
Apparent color (estimated)	green	Brown	brown	green	green	green	green	green	dark green	dark green	dark green	green
PH	8.0	7.5-8.0	7.5-8.0	8.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	N/a
Parameters (ex situ)												
Acidity, total (mg/l)	n/a	n/a	n/a	n/a	64.0	64.0	92.0	140.0	n/a	n/a	n/a	N/a
Alkalinity, total (mg/l)	n/a	n/a	n/a	n/a	336.0	336.0	332.0	348.0	n/a	n/a	n/a	N/a
Alkalinity as HCO3 (mg/l)	n/a	n/a	n/a	n/a	336.0	336.0	332.0	348.0	n/a	n/a	n/a	N/a
Ammonia (mg/l)	>3.0	1.0-3.0	>3.0	>3.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	N/a
BOD (mg/l)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	76.4	74.2	74.2	74.2

3.4 Audit protocol

Confirming the accuracy of data is a critical part of the study, necessary to validate and safeguard the integrity of the overall liveability assessment. A detailed audit strategy has been developed to encourage cities to provide reliable data backed by well-recognised sources. A combination of secondary evidence-based audit and primary audit will be deployed to evaluate the reliability of the information/data provided by the cities.

3.4.1 Documentation review to cross check reported data

Document review will ensure that data from the source documents were accurate and entered the right data fields. During the indicator development process, efforts were made to identify and determine the key secondary sources for all the 79 indicators. This includes reports, administrative data, survey results and other statistical records, log books among other. A detailed checklist of the source documents has been prepared agency wise and is illustrated below:

Exhibit 21: Illustrative Checklist of Secondary Audit Sources

Department	Data source
Pollution Control Board	• Air Quality Monitoring Programme (NAMP) Report • Water Monitoring Programme report

Development Authority	• URL of the authority to check if relevant services are available online • Planning permission records • Occupancy certificate records
Discom/ Electricity board	• URL of the authority to check if relevant services are available online • Grievance register (online/ offline) • Electricity connection records • Metered connection records
State Education department	• Unified District Information System for Education
State Health department	• URL of the authority to check if relevant services are available online • NHM records of medical infrastructure • Department records of medical personnel • Integrated Disease Surveillance Programme records
Renewable energy development agency	• Subsidy register of Renewable Energy Development Agency
State sales/Commercial taxes department	• Periodic revenue report for VAT
Town and Country Planning Organisation	• Land-use/Masterplan • URL of TCPO's web portal for online services provided (building plan approval) • Planning permission records
Traffic and Police Department	• Accident reports • National/ State Crime Records Bureau (N/SCRB) reports • Intelligent Traffic Study • FIR Register of city police
Transport Authorities	• Grievance register (online/ offline) of respective transport agency • Route network map • Service time table (bus time table, metro time table etc.) • Vehicle registration records
Electricity Board/DISCOM	• SAP Reports • Standard of Performance Report • URL of EB's/ DISCOM's web portal for online services (electricity connection, payment etc.)
Education Department	• School Report Cards • U-DISE data
Urban Local Body	• Planning permission records • Pradhan Mantri Awas Yojana (PMAY) records/ Demand Survey data • Citizen's Charter (Committed time period for grievance redressal) • City Master Plan • City ward map • Comprehensive Mobility Plan • District Census Handbook, Census 2011 • Gazette notification (Constitution of Ward Sabhas) • Minutes of Ward Sabhas meeting • Property-tax register

	• Category-state wise approved hotels report, Ministry of Tourism • Income & expenditure statement • Slum Compendium • Budget document • Balance Sheet • Hawker/Vendor Registration List • Service connections register/ Water supply payment register • Service Level Improvement Plan (SLIP) under AMRUT • Smart City Proposal • Sanitary Inspector logbook • STP logbook • Slum Maps • Weighbridge receipts • Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP • Coastal Regulation Zone (CRZ) records • Current consumption charges register • URL of ULB’s web portal (for online services) • Government Order (G.O.) [e.g., addition of new areas within city limits]

The state coordinator is tasked with the responsibility of collecting the supporting documents - hard copy or through secure emails. State coordinators will verify all the supporting documents and flag to the City/State Nodal Officer any documents that is not clear or is unacceptable. The state coordinator will maintain confidentiality of the supporting documents provided by cities throughout the data collection phase (protocols for document archiving is presented in Annexure 6)

3.4.2 Conduct site-visit for physical audit

For eight select indicators, random audits and site visit will be conducted to ensure that the data submitted on the portal are accurate and reliable. General standards and indicator specific criteria that the auditors will use have been detailed out in the Physical Audit Protocols document.

Exhibit 22: Indicators where Physical Audit will be conducted

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

The state coordinators have been informed about the physical audit process requirements and will be leading the following activities with support from the city coordinators:

- Procure official authorisation letters from the State Nodal Officer and relevant departments to conduct the physical audit
- Inform the department and city officials of the objective and process of audit
- Determine mutually agreeable dates with the city governments to conduct the site visit
- Conduct audit using standardised audit tools to physically verify if the data reported by the city governments is valid, accurate and reliable

Indicator 1.2 Percentage of services integrated through Command and Control Centre (CCC)

It is envisaged that cities may have integrated or singular CCCs due to modular nature of their development. The physical audit for this indicator will involve the following:

- Visit to the CCC (one location for ICCC and multiple locations for singular or independent CCCs
- Inspection of the dashboard for each of the services integrated under the CCC
- Collection of feeds for each of the service from the CCC that is claimed by the city to be integrated through the CCC

Indicator 2.3 Hotel Occupancy

As the first step, the following information about hotels in the city will be sourced from the city governments and/or the tourism department:

- Total number of hotels in the city
- Total number of hotels with HRACC certificates in the city.
- Total number of hotels with Municipal Corporation licenses in the city.

- Hotel-wise data entry:

All hotels in the aforementioned list should have the following data entered across their respective names

- Name of the hotel
- Type of the hotel (5-1 Star, Heritage-Grand/ Classic/ Basic)
- Address of the hotel
- HRACC issued certificate number of the hotel
- Municipal corporation issued license number of the hotel
- Total number of rooms available in the hotel
- Percentage of rooms occupied per month (2016-17)

Exhibit 23: Data Entry Template – Hotel Occupancy

SL. No	Hotel Name	Type	Address	HRACC Certificate No.	Municipal corporation issued License No.	Occupancy rate	
						Total no. of rooms	Average occupancy rate for 2016-17 (%)
1							January
							February
							March
							April
							May
							June
							July
							August
							September
							October
							November
							December
2							January
							February
							March
							April
							May
							June
							July
							August
							September
							October
							November
							December

A random sample of 30 hotels per city will be selected from the listing provided by the ULBs and shared with the auditors.

The below-mentioned process will be followed to complete the validation of Hotel Occupancy Rates by the auditors:

a. Request Management: Once the auditor reaches premises of the sampled hotel, he/she will meet the hotel manager and explain the purpose of the visit and request for support from the hotel management.

b. Furnish Authorized Letter: The authorised letter provided to auditor by the city government to conduct the physical audit will be presented to the hotel managers

c. Set Context: The hotel managers will be briefed by the auditors on the objective of the audit exercise

d. Request Bookings Register: The bookings register[15] for the calendar year 2016-17 will be requested for the audit

e. Validation: The total occupancy of rooms for the past 12 months (01.01.2016 and 31.12.2017) will be calculated and entry will be made in a pre-determined template.

F. Documentation: Photograph of the bookings register will be captured as evidence

Indicator 3.4 Percentage of Schools with Access to Digital Education

The following information about schools in the city can be accessed from the U-DISE School Database:

Exhibit 24: Categories of Information Sourced from U-DISE

School U-DISE code	
School Name	
Address	
School Category	All school categories should be included in the search criteria. Schools could belong to any of the following categories based on the grades they offer: • Primary only (Class 1-5); • Primary with Upper Primary (Class 1-8); • Primary with Upper Primary, Secondary and Higher Secondary (Class 1-12); • Upper Primary only (Class 6-8); • Upper Primary with Secondary and Higher Secondary (Class 6-12); • Primary with Upper Primary and Secondary (Class 1-10); • Upper Primary with Secondary (Class 6-10) • Secondary only (Class 9 & 10) • Secondary with Higher secondary (Class 9-12) • Higher Secondary only/ Junior College (Class 11 & 12)
School management/ Managed by	All kinds of school management should be included in the search criteria. These would include schools managed by:

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[15] The auditors will request to review the physical bookings register as against the hotel's digital bookings register.

	- Department of Education - Tribal/Social Welfare Department - Local Body - Private Aided - Private Unaided - Central Government - Unrecognized - Madarsa recognized - Madarsa unrecognized - Others
Total number of students enrolled	
Availability of ICT Lab	
Availability of Computer room	
Total number of computers in the school	
Total number of functional computers in the school	
Availability of Audio/Visual/Public Address System	
Availability of LCD Projector/ Overhead Projector	
Availability of internet connection	

From this larger database, schools should be filtered based on the following criteria:

a. Schools which have an ICT Lab and/or Computer room
b. Schools which have at least 10 computers
c. Schools which have an Audio/Visual/Public Address System and/or LCD Projector/ Overhead Projector
d. Schools which have internet connectivity

A random sample of 30 schools per city shall be selected from the above list and considered for the audit. This list will be shared by the central team with the auditors in the below format and will include information from U-DISE.

Exhibit 25: Data Entry Template- Digital Education in Schools

School U-DISE code	School Name	Address	School Category	School management/ Managed by	Total Number of students enrolled	Availability of ICT Lab	Availability of Computer room	Total no. of computers	Total no. functional computers	Availability of Audio/Visual/ Public Address System/ LCD Projector/ Overhead Projector	Functionality of Audio/Visual/ Public Address System/LCD Projector/ Overhead Projector	Availability of internet connection	Time taken for loading the web-page
Pre-filled	Pre-filled	Pre-filled	Pre-filled	Pre-filled	Pre-filled	Yes/No	Yes/No	Number	Number	Yes/No	Yes/No	Yes/No	Time (in seconds)

Auditors will visit each of the sampled school for a physical inspection and will inspect the following for each school:

- **Inspection Item #1**: **One** Information and Communication Technology (ICT) Lab / Computer lab/ Computer room (any of the suggested names are accepted).
- **Inspection Item # 2**: A total of **ten** functional computers inside that are located at any of the following places:
  - Information and Communication Technology (ICT) Lab / Computer lab/ Computer room
  - Class rooms
  - Any other student lab or room used for teaching
- **Inspection Item #3**: Any **one** of the following audio-visual facilities can be considered:
  - Projector
  - Loud speaker
  - Sound system
  - OHP
  - Any other audio-visual facility used to teach
- **Inspection item #4**: Internet connection (broadband or wi-fi)

The physical audit protocol is described below:

- **The auditors will meet the head of the school administration (Head Master/ Head Mistress/ Principal / Head In-charge)**, present the authorisation letter and elaborate on the objective of the audit exercise
- **The auditors will check physical availability of ONE** Information and Communication Technology (ICT) Lab / Computer lab/ Computer room and computer systems
- **The auditors will verify the functionality** of **any 10 computer systems** used for teaching purposes that are located at labs/ classrooms/ other student's room by switching on the systems
- **The auditors will check the availability of any one type** of audio-visual facilities (e.g., Audio/Visual/Public Address System/ LCD Projector/ Overhead Projector, etc.)
- **The auditors will verify the functionality of Audio-visual facilities** by switching on a device randomly selected and connecting it to the computer system
- **The auditors will check the internet connectivity** by accessing the following link through the available web-browser https://smartnet.niua.org/liveability
- **The auditors will record the time** taken **to load the web-page**
- **The auditors will document** labs, functional computer systems, functioning Audio-visual facilities and the web browser **through photograph**
- **The auditors must complete the data entry template** shared by the central team for the audit

Exhibit 26: Data Entry Template - Digital Education

School U-DISE code	School Name	Address	School Category	School management/ Managed by	Total Number of students enrolled	Availability of ICT Lab	Availability of Computer room	Total no. of computers	Total no. functional computers	Availability of Audio/Visual/ Public Address System/ LCD Projector/ Overhead Projector	Functionality of Audio/Visual/ Public Address System/LCD Projector/ Overhead Projector	Availability of internet connection	Time taken for loading the web-page
Pre-filled	Pre-filled	Pre-filled	Pre-filled	Pre-filled	Pre-filled	Yes/No	Yes/No	Number	Number	Yes/No	Yes/No	Yes/No	Time (in seconds)

Indicator 5.1: Number of streets, public places, junctions covered through surveillance systems

A data template will be shared with the city authority and details of the surveillance cameras installed will be sought. The data entry template should be circulated among the **Police Department, Traffic Police Department** and the **Control Centres monitoring the camera feeds** for their inputs.

The data should be facilitated in the excel format and will include the following information:

- The unique ID for CCTV cameras installed
- The address or geographical coordinates of the exact location where the CCTV cameras have been installed.
- The address of the centre where the footage from cameras is monitored from.
- The authority which installed the camera.

Exhibit 27: Data Entry Template- Surveillance Systems

Camera unique ID	Placement Location address	Monitoring centre address	Installing authority

A total of 30 surveillance location or cameras will be audited in each city. A random sample will be drawn from the list of CCTV camera installations provided by the city. The sampled CCTV cameras will be validated in terms of physical presence as well as their functionality. A random day in the last 30 days will be selected for which the video footage/ time stamp will be collected.

The following protocol will be followed by the auditor:

- As the first step, the auditor will meet the Nodal person at the City Police and Traffic Department with the authorization letter to conduct the audit
- The purpose of the audit will be clearly explained by the auditor
- The list of sampled CCTV cameras and pre-determined date will be shared with the Nodal Officer
- Request will be made to the nodal person to access footage/time-stamp of the feed of the sampled cameras on the selected date

Indicator 6.5: Percentage of street vendors registered and provided formal spaces

As the first step, data on street vendors will be requested from the ULBs and should contain registered / licensed vendors list, the records of the TVC, and the details regarding the vending zones allocated by ward / city zones (map with holding capacity details) as illustrated below:

Exhibit 28: Data Entry Template- Street Vendors

Sl. No.	Ward and token	Vendor name	Phone No.	Vendor Type	Gender	Vending product	Area name	Street name	Landmark
1	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB	To be pre-filled by ULB
2									

A total of 30 random sample of vendors will be selected in each city for the audit. The physical audit team will contact the selected vendors and understand from them whether license/ formal vending spaces has been provided to them by the city. Copy of the vending licences issued by the concerned authority will be collected from the sampled vendors.

Indicator 11.7: Availability of Passenger Information System

For conducting the physical audit, the data on all major transport interchanges with passenger information systems in the city will be collated in a pre-determined format illustrated in the Figure 10. This data will have to be collected from all the transport agency – ferry, sub-urban railways, metro rail among others. From this list, a random sample of 30 transport interchanges will be selected and shared with the physical auditors.

Exhibit 29: Data Entry Template- Passenger Information System

SL. No	Type of transport interchange	Address	GPS Coordinates	Total no. of gates/ platform	Total no. of LCD/ LED display boards installed	Total no. of audio announcement system installed	Remark
1	To be pre-filled	To be pre-filled	To be recorded by Physical Auditor	To be recorded by Physical Auditor	To be recorded by Physical Auditor	To be recorded by Physical Auditor	To be recorded by Physical Auditor
2	To be pre-filled	To be pre-filled					
…							
3	To be pre-filled	To be pre-filled					

Three main types of passenger information system will be audited – Display Board, Audio Announcement System and Vehicle Tracking System. The auditor will chose a minimum of two and a maximum of 5 gates/ platform at the interchanges to conduct the audit. Detailed audit checklist (refer Figure 11) will be provided where the auditors will record remarks and photographs on both presence and functionality.

Exhibit 30: Audit Checklist- Passenger Information System

Entrance - Master Display Board				
Question	**Yes**	**No**	**Remark**	**Reference**
Are there display boards installed in the main entrance?				
Are display boards installed in the main entrance operational?				
Does the display board feature real time information of arrival of all vehicles in station/ shelter?				
Does the display board feature real time information of departure of all vehicles in the station/ shelter?				

Does the display board feature gate/ platform number of all vehicles outbound/ arriving?				
Does the display board feature vehicle number/ route number of all vehicles outbound/ arriving?				
Does the display board feature Estimated Time of Arrival (ETA)?				

Gate/ Platform - Display Board

Question	Yes	No	Remark	Reference
Are there display boards installed in every gate/ platform?				
Are display boards installed in every gate/ platform operational?				
Does the gate/ platform display board feature real time information of arrival?				
Does the gate/ platform display board feature real time information of departure?				
Does the display board feature gate/ platform number?				
Does the gate/ platform display board feature vehicle number/ route number?				
Does the gate/ platform display board feature Estimated Time of Arrival (ETA)?				

Audio Announcement

Question	Yes	No	Remark	Reference
Are there loudspeaker and/ or similar systems installed in the main entrance?				
Are there loudspeaker and/ or similar systems installed in regular interval across all gates/ platforms?				
Are the loudspeaker and/ or similar systems installed in the main entrance operational?				
Are the loudspeaker and/ or similar systems announce real-time updates of departure/ arrival?				
Are the loudspeaker and/ or similar systems announce real-time updates of gate/ platform number?				
Are the loudspeaker and/ or similar systems announce real-time updates of vehicle/ route number?				

Vehicle Tracking System (VTS)

Question	Yes	No	Remark	Reference
Does the interchange have a dedicated centre for vehicular tracking with GPS?				
Does the interchange share the real-time tracking of vehicular movement with passengers?				

If yes, do the display boards feature real-time GPS data of vehicles?				

Indicator 11.11 Percentage of traffic intersections with pedestrian crossing facilities

Data on major roads with pedestrian crossing facilities will be sourced from the Urban Local Bodies and Transport Department in the following template:

Name of the Major Road	**Name of the intersections/ junctions**	**Please indicate Y/N to the availability of pedestrian facilities.**				
		Pedestrian Crossing at the intersection using Zebra Crossing and/or Retro Reflective Pavement Marker's	**Mid-Block Zebra Crossing away from the intersection**	**Signalized pedestrian crossing with pedestrian push buttons**	**Subways**	**Foot overbridge**
Major Road 1_____	Intersection 1___					
	Intersection 2___					
	Intersection 3					
Major Road 2____	Intersection 1___					
	Intersection 2___					

A total of 30 random locations with pedestrian facilities will be drawn from the master list shared by the city government for the audit. In the event, the total number of pedestrian crossing in small, medium and large towns is equal to or less than 30, then all sites will be visited as part of the physical audit. A Population Proportionate Sampling approach will be adopted to determine the sample distribution across type of pedestrian crossings. Checklist for each type of pedestrian crossing facilities will be shared with auditors to record observations on the availability and any problems or obstructions to its use by citizen. The checklist will also capture basic information on road name, name of the auditor, designation, landmarks and date before starting the audit.

Exhibit 31: Audit Checklist - Pedestrian Crossing

Checklist for Pedestrian Crossing at the intersection using Zebra Crossing and Mid-Block Zebra Crossing away from the intersection

1) **Is there a Zebra Crossing at the intersection/ at the mid-block zebra crossing?**
   Yes No

2) **Is the zebra markings clear and visible?**
   Yes No

3) **Is the pedestrian crossing at the same level as the footpath for easy access?**
   Yes No

4) **Are there any Potholes or uneven road surface on the crossing path at the intersection?**
   Yes No

5) **Is there street lighting at the intersection?**
   Yes No

Checklist for Signalized pedestrian crossing with pedestrian push buttons

1) **Is there a Signalized pedestrian crossing with pedestrian push buttons?**
   Yes No
2) **Is the pedestrian push buttons functioning? (Please test it!)**
   Yes No
3) **Is the push buttons aligned in such a way that it is comfortably accessible to people on wheel chair?**
   Yes No

Checklist for subways

1) **Is there a subway at the intersection?**

Yes No

2) **Does the crossing involves climbing a large number of steps?**
Yes No

3) **Is there elevators/ lifts for easy access?**
Yes No

4) **Is there escalators for easy access?**
Yes No

5) **Are the elevators/ escalators fully functional?**
Yes No

6) **Is the opening to subways wide enough to at least to allow two people to comfortably cross each other?**
Yes No

7) **Is there adequate lighting and illumination?**
Yes No

8) **Is the facility clean?**
Yes No

9) **Is CCTV surveillance provided?**
Yes No

Checklist for foot over bridge

1) **Is there a foot over bridge at the intersection?**
Yes No

2) **Does the crossing involves climbing a large number of steps?**
Yes No

3) **Is there elevators/ lifts for easy access?**
Yes No

4) **Is there escalators for easy access?**
Yes No

5) **Are the elevators/ escalators fully functional?**
Yes No

6) **Is the opening to FOB wide enough to at least to allow two people to comfortably cross each other?**
Yes No

7) **Are railings provided along the stairs for safety?**
Yes No

8) **Is CCTV surveillance provided?**
Yes No

INDICATOR 11.12 Extent to Which Universal Accessibility Is Incorporated In Public Rights-Of Way (ROWs)

Information on public right-of-way areas designed as per universal design principles will be sought from the ULBs and the Public Works Department. This information will be sought for six categories as presented below:

- Total number of government buildings in the city constructed as per universal design principles.
- Total number of subways in the city constructed as per universal design principles
- Total number of Foot-over-Bridges (FOB) in the city constructed as per universal design principles.
- Total number of roads with footpaths (>1.2m) in the city as per universal design principles.
- Total number of malls in the city constructed as per universal design principles.
- Total number of public toilets (public convenience) in the city constructed as per universal design principles.

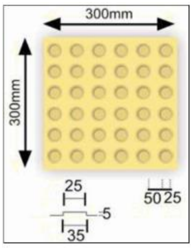
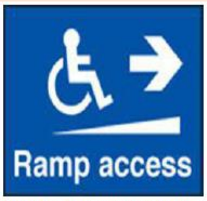
Exhibit 32: Data Entry Template- Right Of Ways

SL. No	Type of ROW	Name of Building/ Street	Address	GPS Coordinates	Remark

A total of random 30 ROWs with universal access design principles will be audited in each city and the sample will be drawn from the master list shared by the ULBs. A Population Proportionate Sampling approach will be adopted to determine the sample distribution across the various type of ROWs. The auditor will choose random feature for inspection and complete the audit checklist. The auditors will also take photographs of appropriate features (as indicated in the template) of the Public ROW for documentation.

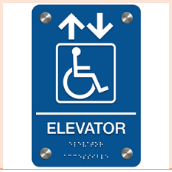
The list of features for different types of Public ROWs are provided in the physical audit template.

Exhibit 33: Checklist- Right of Ways

Validation of buildings for universal access design by physical auditors					
Building Feature	**YES**	**NO**	**NOT APPLICABLE**	**REMARKS**	**Reference**
Are there any staircase in the building?					
Is the minimum width of the stairs 1200mm?					
Is the landing length not less than 1200mm?					
Is the landing surface non-slippery?					
Are there warning blocks installed at the beginning and end of all flights?					 Figure 5-1: Warning blocks
Is there a ramp?					
Does the ramp have a railing?					
Is the location of the ramp (appropriate signage) clearly identifiable?					 Figure 6-1: Directional signage for ramp

Is the ramp gradient no steeper than 1:12?					
Is there a landing of at least 1500 mm x 1500mm, at 9m intervals provided (for ramp)?					
Is there landing at the top and bottom of every ramp?					
Is the minimum width of the ramp 1500 mm?					
Are there continuous handrails, on both sides (of the staircase), at a height between 760 mm – 900 mm?					
Is the handrails installed in the centre of the stair width, which is more than 3m wide?					
Are handrails easy to grip?					
Are handrails securely attached?					
Is the space between the handrails and the wall no less than 50mm?					
Are the handrails painted in contrast colours to be easily indefinable?					

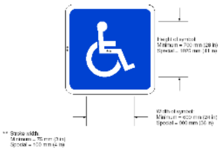
Does the entrance permit access to an elevator (if any)?					
Is there a path leading to the elevator?					
Is the clear door opening width 1m or more?					
Are the minimum internal dimensions of the elevator 1500 mm x1500 mm minimum or having 13 persons capacity?					
Is the control panel placed at a height between 800 mm – 1m, from the floor level?					
Is there an audio and video system installed in the lift indicating arrival at a floor?					
Are there Braille/raised numbers on the control panel?					
Is the elevator provided with a handrail on the three sides?					
Are the handrails mounted (in the lift) at a height between 800 mm and 1m?					

Is the elevator door easy to identify?				Please check for appropriate signage (Elevator sign)	
Is the emergency intercom provided inside the elevator?					
Are there tactile or Braille instructions for the communication system?					
Is the emergency intercom usable without the voice communication?					
Is the door opening/closing interval long enough?				Duration (at least 30 seconds)	

Validation of toilets for universal access design by physical auditors

TOILETS	YES	NO	NOT APPLICABLE	REMARKS	Reference
Are there accessible toilets for Persons with specially-abled?					
Are the toilets easily identifiable?				Please check for appropriate signage (Specially-abled sign)	
Is there sufficient space (of 2m x 2.2m) inside to move a wheelchair?					
Are water closet (WC) and bidets mounted at a height between 450mm – 480mm?					
Is there space between the wall					

and WC?					
If Yes, is the closest adjacent wall, fitted with a grab bar is between 450 mm – 500mm?					
Is the washbasin mounted at a height between 750mm – 850mm?					
Are the grab bars installed near WC and showers at a height between 750 – 850 mm?					
Is the toilet equipped with an emergency alarm system?					
Can doors be locked from inside and releasable form outside under emergency situations?					
Is the floor material skid proof, well drained and waterproof?					
Do pivoted doors open outwards?					

Validation of signages for universal access design by physical auditors					
SIGNAGES	**YES**	**NO**	**NOT APPLICABLE**	**REMARKS**	**Reference**
Are accessible spaces identified by the international symbol of accessibility?					 Height of symbol Minimum = 700 mm (28 in) Width of symbol Minimum = 600 mm (24 in) Special = 900 mm (36 in) ** Stroke width Minimum = 75 mm (3 in) Special = 100 mm (4 in)
How far away is the signage placed from the accessible space?					

Are there directional signs indicating the location of accessible facilities?					
How far away are the directional signs placed from the accessible space?					
Are maps, information panels and wall-mounted signs placed at a height between 900mm and 1800mm?					
Are signs clear, simple and easy to read?					
Is the colour of signs clearly distinguishable?					
Is the surface of the sign processed so as to prevent glare?					
Is the sign supplement by a text in embossed letters or in Braille available next to information signs?					
Is the lettering size proportional to the reading distance?					

Validation of sidewalks/ footpaths for universal access design by physical auditors

Sidewalk/ Footpaths	YES	NO	NOT APPLICABLE	REMARKS	Reference
Does the sidewalk have non-slip floor surface?					
Is the height of the sidewalk less than 150mm?					
Is the sidewalk at least 1800 mm wide?					

Does the sidewalk have tactile guiding blocks for persons with visual impairments					
Does the sidewalk have tactile warning blocks installed next to all entry and exit points from the pathway					

Chapter 4: Citizen Perception Survey

In addition to collecting data from city authorities on a range of metrics, the assessment exercise also seeks to capture the pulse of citizen's perception on 'how liveable their cities are'. Close to 600 citizen surveys (400 among HHs in the cities and 200 among slum population) are expected to be carried out in each city to capture their views on a whole range of liveability metrics. A detailed questionnaire and analysis framework is being developed to evaluate the perception of cities and the same is described in greater detail below:

The objective of the citizen interviews is to understand liveability from citizens' point of view - the aspects that are most important for those living in the city, their current levels of satisfaction on these parameters, and their vision for the city. While as per the methodology document, indicator calculation and ranking is only based on 79 indicators, the citizen perception will provide useful insights specifically on satisfaction level of current services.

Towards this, a household survey of 400 respondents per city is planned as part of the liveability assessment.

Geographical coverage: In each city, 20 locations spread across the geography of the city representing various socio-economic profile of citizens residing will be randomly selected. At each location, 10 interviews will be carried out. These locations will be mapped across the wards in the city. In each selected location, 20 interviews will be conducted that represent different demographic profile of the citizens that represent gender and age groups.

Thematic Areas: The information areas for the survey will represent the 4 pillars, 15 domains, and citizens' views on indicators that have a direct interface and impact on liveability in the city. The indicative information areas are as below:

Exhibit 34: Information Area - Citizen Pulse

PILLAR OF COMPREHENSIVE DEVELOPMENT	CATEGORY	INDICATOR	TYPE	INFORMATION AREAS

INSTITUTIONAL	1. Governance	1.3 Percentage of citizens using online services	Core	Include questions related to awareness of online services
		1.4 Average delay in grievance redressal	Core	Ask if they are aware of grievance redressal
		1.8 Percentage of population covered under Ward Committees/ Area Sabhas	Core	Add question about awareness of ward committees, area sabhas, and if they have attended any meetings
SOCIAL	2. Identity	2.1 Restoration and reuse of historic buildings	Core	Awareness of historical sites, view on its maintenance, frequency of visit to historical areas
	3. Culture	2.2 Percentage of ecologically important areas covered through projects for restoration	Core	Awareness of ecologically important areas, need of protection and restoration
		2.5 Number of cultural/sports events hosted by city	Supporting	View on facilities available for sports and cultural activities, frequency and number of events held- too many, too less, just right
	4. Health	4.3 Average response time in case of health emergencies	Supporting	Perception on emergency health facilities in city, good, average, bad,
	5. Safety and Security	5.1 Number of streets, public places, junctions covered through surveillance systems	Core	Awareness of city surveillance system, how satisfy with city surveillance system
		5.3 Extent of crimes recorded against women, children and elderly per year	Core	How safe is the city for women, children and elderly at different period of a day
		5.4 Transport-related fatality per lakh population	Supporting	How safe citizen feel to drive in city?

PHYSICAL	8. Public Open Spaces	8.1 Per capita availability of green spaces	Core	Perception on city's natural environment, how clean and green is the city? Whether have access to parks, and gardens
		8.2 Per capita availability of public and recreational places	Core	perception on recreational facility available for different age group
	10. Power Supply	10.2 Percentage of electrical connections covered through smart meters	Supporting	Ask HHs if they have a smart metre
		10.3 Average number of electrical interruptions per customer per year	Core	Ask Hhs of black outs - frequency and duration
		10.4 Average length of electrical interruptions per customer per year	Supporting	Ask length of electrical interruptions (more than 5 minutes)
		10.5 Percentage of total energy derived from renewable sources	Core	Knowledge of renewable sources and whether they are ready to opt for renewable sources/ gaps to opt for renewable sources
	11. Transportation and Mobility	11.2 Availability of public transport	Supporting	How comfortable with choosing public transport? What factors prompt or hinder to choose public transport?
PHYSICAL		11.4 Percentage of road network with dedicated bicycle tracks	Core	Is the city safe for bicycle ride?
		11.7 Availability of Passenger Information System	Supporting	whether have access to passenger information system?
		11.11 Percentage of traffic intersections	Supporting	how safe and comfortable the pedestrians on city roads?

		with pedestrian crossing facilities		
	12. Assured Water Supply	12.2 Per capita supply of water	Core	Is the supplied water enough for family consumption?
		12.3 Quality of water supplied	Core	How satisfy with the quality of water?
		12.5 Percentage of water connections covered through meters	Supporting	whether have water meters
		12.6 Percentage of plots with rainwater harvesting facility	Supporting	Whether ready to opt rain water harvesting
	13. Waste Water Management	13.1 Coverage of toilets	Core	How satisfy with the availability of public toilets?
		13.2 Coverage of sewerage network and/or septage	Core	How satisfy with the sewerage system of city?
		13.4 Extent of reuse and recycling of waste water	Core	Whether ready to install water recycling mechanism at home?
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection	Core	Whether segregate waste? How frequently waste is collected? Whether ready to compost?
	15. Reduced Pollution	15.1 Concentration of SO_2 - air pollution	Core	Citizen's rating on air quality of city
		15.4 Level of noise pollution	Core	Citizen's rating on rate noise level
		15.5 Quality of water in public surface water bodies	Core	Citizen's rating on rate water bodies

Survey Implementation: The questionnaire will be elaborated based on the information areas, translated into 11 languages and scripted to administer the survey digitally (CAPI- Computer Assisted Personal Interviews).

The survey will be carried out from 29th March until 29th April by internal field teams of Ipsos deployed in each city. A team of 1 supervisor and 5 interviewers will complete the surveys in each city in about 20 working days. The team will be trained on questionnaire administration and sampling by the Operational team headed by Deepak Garkhel and supported by Swati Sen.

Data Analysis: While the data from the citizen perception survey will not feed into indicator calculation, it is proposed that an independent index based on citizens' perception be calculated for each city and ranking of all 116 cities based on this perception index be calculated. This exercise is undertaken primarily with the view to highlight gaps, if any in peoples' perception and data. A comparison based on citizens ranking and data based ranking on 79 indicators will generate useful insights for urban planners and city officials on how they can address this perception gap, normalise expectations, as well as prioritisation of inputs for indicators that have a direct bearing on citizens' perception regarding liveability of their cities.

It is envisaged that the citizen perception component of the liveability assessment piloted in this round will provide opportunity to pilot test the methodology for calculating perception based index and generate recommendations for subsequent round of liveability assessment.

Chapter 5: Engaging with State/ City Government

The consortium views engagement with state and city officials as a critical determinant for the success for the project. An engagement plan has been drafted and initiated by the consortium through the state and city coordinators to assist the city officials with the tasks of collating data for the liveability assessment. The engagement practice encompasses two main activities– City Reconnaissance and State Orientation Workshop, which is described in detail in this chapter

5.1 State Orientation Workshop

A total of 30 workshops have been scheduled during the weeks 9 March-24 March 2018. The objective of the State level workshop is to familiarize the state/UT government and city representatives about the overall concept of Liveability Index, assessment methodology, data requirements, data sources, data collection interface/application and validation methodology and associated processes and timelines for submission of complete data. The day-long workshop will focus on the following:

- Introduction to the concept of 'liveability' and what is means in the context of a city.
- **The advantages of measuring liveability through a common index** – the aim of this exercise is to motivate city and state officials to collaborate and provide the necessary data by presenting possible outcome and impact of a liveability assessment. The officials will be taken through the various underlying efficacy of this exercise which includes:
    - Provision of a baseline for future evidence-based planning
    - Contribution to the SDG data gathering exercise
    - Peer-Comparison
    - Domestic and international visibility

- A **high-level description of MoHUA's Liveability Assessment** exercise including the components of the quantitative index and the city perception survey.

- A **deep-dive into the Liveability Index** to the extent that it directly involves city and state officials. This will include –
    - Introduction to the 'pillars' and 'categories' used in the index construction.
    - Demonstrating to workshop participants how indicators map into questions which need to be answered by them for the index score for their respective cities to be calculated.
    - Explaining how data entered will be validated by state/ city coordinators through review of documentation submitted ('secondary audit') or physical observation ('physical audit').
    - A detailed engagement with questions – a list of questions has been shortlisted from the questionnaire, that are likely to be relatively challenging for city/ state officials to answer for different reasons (e.g. need for data to be aggregated/ disaggregated at the city level, or multiplicity of agencies collecting the data). These have been further classified by potential 'data owners'. Workshop participants will be similarly grouped by sector of operation. For example, representatives from the Development Authority, the Town and Country Planning Department and the relevant ULB departments will be grouped together to engage with challenging questions related to Planning. Representatives from the State Electricity Board,

Renewable Energy Agency and Environment Department will be grouped to take them through relevant questions for them. This will help ensure that any gaps in data are identified at the outset, and responsibility for providing the data are placed at the door of the most relevant authority. This exercise is expected to instigate the process of inter-departmental and inter-agency cooperation. This can also help clarify any definitional issues to the officials and allow for fine-tuning of the questionnaire, if required. Further, this offers a chance to answer queries on questions that may have been identified by officials before the workshop.

- **Overview of processes and protocols involved in the assessment exercise**. This will involve the following –
    - a live demonstration of the Data Entry Portal, that will familiarise the participants with the different features including the ability to fill the data online/ offline, ability to refer to guidance notes for every question, post online queries for further clarifications, see alerts for data entered incorrectly and the 'auto-save' feature.
    - A view of the Project Monitoring Dashboard that will allow the ministry, city officials and the citizen to track the progress on the assignment, deadlines, state workshop reports and other documentation.
    - Roles and responsibilities of the city and state officials including –
        - Nomination of nodal officers for provision of data and supportive secondary documentation, and inter-agency coordination.
        - Timely and accurate data provision.
        - Provision of authorisation letters for primary data collection and physical audits.
        - Cooperation with other agencies and MoHUA consultants (state and city coordinators).
    - Delineating the nature of support made available by the ministry –
        - Off-line, through the MoHUA methodology document and guidance notes.
        - Online, through the dedicated help-desk to answer queries.
        - Physical presence of city and state coordinators for facilitating cooperation with other departments, trouble-shooting etc.

The workshop is expected to result in:

- A jump-start to the data collection process through -
    - Developing greater familiarity of city and state officials with the overall objectives, needs and design of the liveability assessment exercise to get their critical buy-in.
    - Acquainting the state and city officials with the questionnaire, so that they can begin to appreciate the possible data sources.
    - Establishing working familiarity of city and state officials with the Data Entry Portal so that they can comfortably navigate their way through the same.
    - Articulating the support extended by MoHUA and its consultants to the city/ state bureaucracy to undertake the liveability assessment exercise. While City and state coordinators are already in touch with relevant officials, this will be an opportunity to meet members of the central technical team as well and understand the escalation matrix of communication.

- Providing a common platform for facilitating coordination and cooperation between different stakeholders for relevant questions and data sources to be discussed.

As a run up to the state level workshops, the following activities have been undertaken:

1. Identification and Mobilisation of State and City Level Stakeholders

The list of participants for the state workshops were identified based on the data owner mapping exercise conducted by the consortium and the suggested list of agencies enumerated in the 'Methodology Report'. The list of potential stakeholders is presented in the Figure 14 below.

Exhibit 35: List of Potential Stakeholders

Sl.no	Stakeholder	Designation(s)
1	State Government Officials (Senior)	1. Secretary, Municipal Administration Department 2. State Mission Director, Smart Cities Mission 3. District Collector
2	Urban Local Bodies	1. Municipal Commissioner/Secretary 2. Chief City Planner/ Town Planner (Town Planning wing/ Department of Planning) 3. Chief Engineer/ City engineer (Engineering wing/ department) 4. Revenue Officer (Revenue Department) 5. Health Officer (Health wing/ Department) 6. Assistant Executive Engineer (Solid Waste Management Department) 7. Education Officer (Education Department) 8. Dy. Chief Engineer (E/S&D) (Sewerage & Drainage Department) 9. IT Officer (Information Technology Department) 10. Officer in charge (Social Welfare & Urban Poverty Alleviation Department) 11. Data entry operator
3	Development Authority	1. Chief Urban Planner /Deputy Planner
4	Town and Country Planning Department	1. Joint Director (or) 2. Deputy Director
5	State Health Department	1. State Programme Manager (NUHM) and 2. District Medical and Health Officer
6	State Transport Authority	1. Joint Transport Commissioner (or) 2. Deputy Transport Commissioner
7	Traffic and Police Authority	1. Director General of Police (DGP) 2. Additional Director General of Police (ADGP)
8	State Energy Development Agency (Renewable Energy)	1. Director (or) 2. Deputy Director/ Principal Secretary
9	State Education Department/ Programme Authority	1. Joint Director (or) 2. Director of Education (Secondary and Higher Secondary) (or) 3. State Project Director (SSA/RMSA)
10	State Pollution Control Board	1. Chief Environmental Officer (or) 2. Chief Environmental Officer (Central Labs) (or) 3. Regional Officer

11	Discoms / Electricity Board	1. Chief Engineer (or) 2. Deputy Chief Engineer (or) 3. Executive Engineer

The state and city coordinators are mobilising the participants for the workshops with support from the State Nodal Officer.

2. Finalisation of the Workshop Schedule

A tentative workshop schedule has been developed and is in the process of getting finalised in consultation with the respective State Nodal Officers and the Chief Secretary of each state. A status update as on 14 March 2018 is presented in the Figure 15 below.

Exhibit 36: Workshop Schedule

Sl No	State/UT Name	Date of Workshop	Venue for Workshop	Status
1	Chhattisgarh	09-March-18	Hotel Babylon International VIP Road, Rajiv Gandhi Marg, Raipur, Chhattisgarh.	Completed
2	Kerala and Lakshadweep	19-March-18	Hotel Masquat, Playam, Antonment House Road, LMS Compound, PMG Trivandrum	Scheduled
3	Uttar Pradesh	23rd March-18	Non-Conventional Energy Development Agency, Lucknow	Scheduled
4	Tamil Nadu	12-March-18	Hotel Crown Plaza, Adeyar Park, TTK road, Chennai	Completed
5	Puducherry	14-March-18		Completed
6	Andaman and Nicobar	TBC		TBC
5	Madhya Pradesh	12-March-18	EPCO Campus, Ekant Park, Char Imli, Bhopal	Completed
6	Assam	TBC	TBC	
7	Jharkhand	16-March-18	Raj Residency, Kutchery Chowk, CIRCULAR ROAD, Ranchi	Scheduled
8	Tripura	21-March-18	Pragya Bhawan, Hall No. 4, Gurkhabasti, Agartala, Tripura	Scheduled
9	Haryana	17-March-18	Hotel Ramada, Gurgaon	Scheduled
10	Jammu & Kashmir	TBC	K C Residency, Residency Road, Jammu Tawi	

Sl No	State/UT Name	Date of Workshop	Venue for Workshop	Status
11	Andhra Pradesh	20 March -18	Fortune Murali Park, MG Road, Labbipet, Beside DV Manor, Vijayawada	Scheduled
12	Arunachal Pradesh	19-March-18	PYBSS Hotel. D-Sector, Near Civil Secretariat, Itanagar	Scheduled
13	Himachal Pradesh	14-March-18	K3 Banquet, Shimla Bypass, Kasumpti Colony, Panthaghati, Shimla	Completed
14	Karnataka	24-March-18	37th Crescent Hotel", Crescent Road, Near Race Course, High Grounds, Bengaluru	Scheduled
15	Manipur	TBC	Nirmala Hotel, Near Gandhi Avenue, Thangal Bazar, Imphal	TBC
16	Odisha	15-March-18	Hotel Kalinga Ashok Goutam Nagar, Bhubaneswar	Completed
17	Punjab	19 March—18	Municipal Corporation office, Jalandhar	Scheduled
18	Chandigarh	14-March-18	New Deluxe Building, Sector 17E, Chandigarh 160017.	Completed
18	Bihar	15-March-18	Hotel Chanakya, Bir Chand Patel Marg, R Block, Patna	Completed
19	NCT of Delhi	15-March-18	NDMC Convention Hall, Connaught Place, New Delhi	Completed
20	Uttarakhand	15-March-18	Hotel Aketa", 113-1/2, Rajpur Road, Dehradun	Completed
21	Telangana	16-March-18 for Hyderabad		Scheduled
22	Rajasthan	21-Mar-18	Conference Hall, Directorate of Local Bodies, Jaipur	Scheduled
23	Gujarat, Daman & Diu, Dadar & Nagar Haveli	16-Mar-18	Ahmedabad Management Association, Dr. Vikram Sarabhai Marg, Bastrapur, Ahmadabad	Scheduled
24	Meghalaya	19-March-18	Shillong Club, Karachi Road, Shillong	Scheduled
25	Mizoram	16-Mar-18	Hotel Regency, B/49, Zarkawt Main Road, Mac	Scheduled

Sl No	State/UT Name	Date of Workshop	Venue for Workshop	Status
			Donald Hill, Zarkawt, Aizawl	
26	Sikkim	20-March-18	The Regal Hotel, Tadong, Gangtok	Scheduled
27	West Bengal	TBC	The Stadel, Vivekananda Yuba Bharati Krirangan Gate No: 03 Salt Lake, Kolkata -700098	TBC
28	Maharashtra	17-Mar-18	YB Chavan Auditorium	Scheduled
29	Nagaland	TBC	Hotel Japhu Conference hall, B.O.C, P.R. Hill, Kohima	TBC
30	Goa	20-Mar-18	Imagine Panaji Smart City Development Limited, Adil Shah Palace, Old Secretariat, Panaji Goa – 403001	Scheduled

3. Finalisation of Workshop Agenda

The State Orientation Workshop has been conceived and designed to familiarise the States and cities on the rationale for the liveability assessment, indicator definition, potential data sources and associated processes for data submission. The objective is to promote action-oriented interactions among different data owners on the 79 indicators and encourage them to work together as a team for sourcing, troubleshooting and timely submission of all the requisite data points.

A draft workshop agenda was drafted by the consortium and finalised in consultation with the state and city coordinators. The finalised workshop agenda is presented in Figure 16

Exhibit 37: State Orientation Workshop Agenda

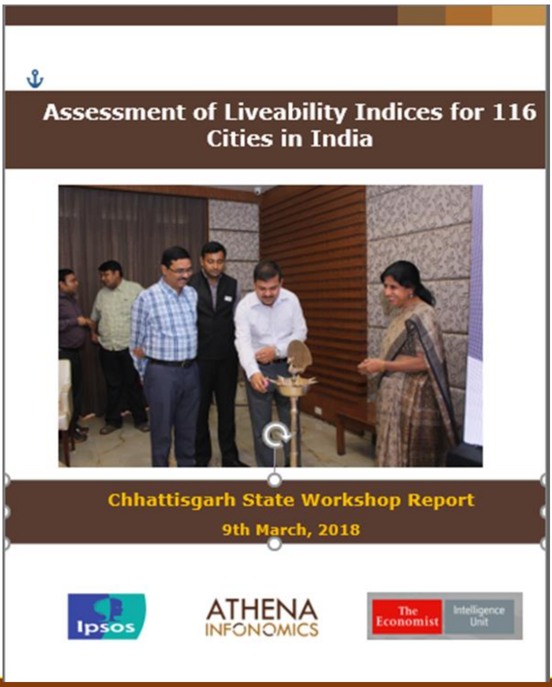
Inaugural Session		
Time	**Session**	**Speaker**
10:00 – 10:10	Welcome address	State representative
10:10 - 10:30	Inaugural Address by Chief Secretary/ Principal Secretary	
10:30 – 11:30	Liveability Index: Overview of Liveability Pillars, Indicators, Methodology for Collection and	MoHUA Consultants

	Computation, Organisation of the Questionnaire, Support provided by the MoHUA, Key timelines	
Tea break		
11:45 – 12:15	Overview of the Liveability Index Data Entry Portal, Progress Monitoring Dashboard,	MoHUA Consultants
12:15 – 13:00	Support required from ULB, other State Government Department/Parastatals and District Administration (Standard Operating Protocols for data collection strategy)	State Nodal Officer/MOHUA Consultants
Lunch Break		
14:00 – 15:30	Group exercise on select questions, sources and approach (30 minutes) Presentation by each group on data availability, likely challenges and solutions (60 minutes)	MOHUA Consultants
Tea Break		
15: 45 – 16:30	Physical audit and primary data collection	MOHUA Consultants
16:30 – 17:15	Next steps, coordinates exchange and close	MOHUA Consultants
17:15- 17:30	Vote of Thanks	MOHUA Consultants

4. Finalisation of the Structure of the Workshop Proceeding Report

A report summarising the proceedings of the workshop will be prepared for all the State/UT Orientation Workshops and capture discussion around the 79 indicators and supporting questions, overall status of data availability, any specific concern at state or individual city level. It will highlight suggestions or initiatives proposed by the city level stakeholders to collect data which may not be readily available. The structure of the workshop report

A tentative table of content for State Workshop Report is presented in Figure below



Assessment of Liveability Indices for 116 Cities in India

Chhattisgarh State Workshop Report
9th March, 2018

Ipsos
ATHENA INFONOMICS
The Economist Intelligence Unit

Section 1	Project Overview
Section 2	Inaugural Session: Welcome address and key note address
Section 3	Overview of Liveability Assessment and indicators: Key discussion points
Section 4	Discussion on roles and responsibilities of ULB and other data owners
Section 5	Overview of the online date entry portal: Queries raised by participants and suggestions on features, functionality
Section 6	Key discussion points on available data, data with potential challenges and suggestion by participants on data collection
Session 7	Discussion on indicators involving primary data collection and physical audits
Annex 1	List of participants
Annex 2	Workshop photographs

5.2 City Reconnaissance Mission

A total of 3 regional coordinators, 3 Senior Consultant, 24 state coordinators and 99 city coordinators[16] have been trained and deployed in the respective states starting 2nd March until 12th March. An intensive 3-day training workshop was held for all state coordinators in Chennai where a combination of game-based and participatory learning techniques was applied. All city coordinators will report to the state coordinator who are responsible for ensuring timely collection and submission of data. The detailed training structure along with the Training the Trainer's workshop proceeding is provided in Annexure 4.

Structured as an ongoing engagement process, the city reconnaissance visits began on March 2, 2018 (post the completion of the Training of the Trainers workshop held in Chennai during 26 February to 28th February 2018) and will conclude on April 16, 2018 (final date for the submission of data by the city officials). The city coordinators will be based in the city for the entire duration of the data collection phase and will extend necessary support to the city officials for coordination and collation of data.

The objective of the initial set of city reconnaissance meetings is to host data scoping meetings with the city officials to present the city-level data sheets for review, discuss timelines, identify key data gaps and understand issues/ clarifications that could be addressed during the state level workshops. The visit also intends to help the consortium to establish contacts with the government officials and examine modalities of cooperation during the assessment period.

City Reconnaissance meetings will be conducted with various stakeholders including utilities (DISCOMS, water supply, etc.) SPV for Smart Cities, different project heads, parastatals such as development authorities, district collector, concerned line departments such as health, education, police, tourism, among others. Effort will also be made to engage on a one-on-one basis with key officials within ULBs such as revenue, accounts, solid waste management etc. as well.

The principle of 'Stakeholder involved Engagement' is at the core of City Reconnaissance Meetings. This requires identifying key stakeholders, getting their attention, facilitating the engagement, generating interest, eliciting their commitment, ensuring timely action and resolving obstacles. City coordinator were encouraged to meet assigned nodal officer[17] from ULB who will be responsible for uploading the data on the portal on priority to initiate the assessment process. The city coordinator will work closely with nodal officer and other department officers which will allow them to develop a comprehensive picture of project schedule by correctly estimating time required, anticipate delays, evaluate risks and escalate concerns to the nodal officer.

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[16] State coordinators also perform the responsibilities of a city coordinators in the following instances: 1) Manage the coordination of those cities where the State Coordinators are located and 2) States where only one city is under assessment, no city coordinators are appointed. They will be managed completely by State Coordinators

[17] Nodal officer could be smart city coordinator or someone else. However, the person identified as nodal officer for liveability Index should be a senior person who is vested with authority, commands respect, flair for implementing new initiatives, relevant exposure to ULB functioning and ability to resolve issues quickly (a problem solver).

In summary, the city coordinator will adopt the following steps:

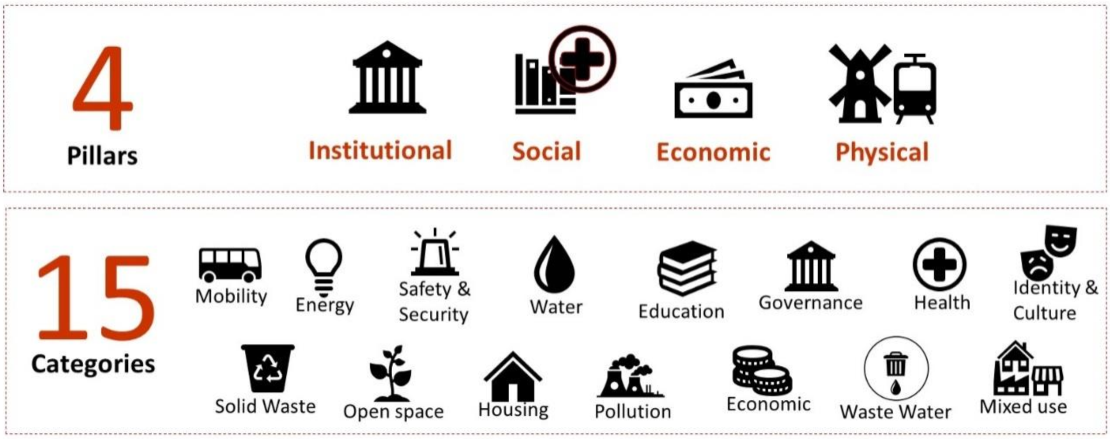
1. Partner and pair up with nodal officer
2. Map indicators and questions to
    a. Owners of the data
    b. departments involved,
    c. data sources,
    d. process required (manual to digital; compilation of daily, weekly or monthly data; validation of data obtained and documentation of steps for future implementation),
    e. contacts details of key department officials and staff
    f. mapping of gaps in availability of data
    g. engaging with ULB and other stakeholders to identify strategies for addressing the gap
3. Develop detail city specific plan to contact departments, data collection, validation, sequence and time frame
4. Review progress on a daily basis and fine tune implementation to complete the tasks in time

Weekly meetings will also be scheduled with the State Nodal Officer and other representatives to guide the city officials with sourcing of data from available publications, reports, policy documents and statistical documents; trouble shoot on questions/ clarifications and support the cities to complete data collection in a timely manner.

Chapter 6: Analysis and Dissemination

6.1 Index Development

The Methodology for Collection and Computation of Liveability Standards in Cities developed by MoHUA outlines four pillars on which the cities will be assessed. These include 'Institutional', 'Social', 'Economic' and 'Physical'. Within each broad pillar, there are 'categories' that capture different facets of the pillar. For instance, the 'social' pillar includes four categories capturing facets like identity and culture, education, health, and safety and security. There are 15 such categories spread across the four pillars. Within each category, there are multiple indicators that measure specific aspects of the category. There are 79 such indicators spread across the 15 categories.


4
Pillars
Institutional
Social
Economic
Physical
15
Categories
Mobility
Energy
Safety & Security
Water
Education
Governance
Health
Identity & Culture
Solid Waste
Open space
Housing
Pollution
Economic
Waste Water
Mixed use

Indicators are classified into 'core' and 'supporting' indicators. The scores that a city receives on these will be averaged respectively (i.e., an average score for the core indicators within a category, and an average score for all the supporting indicators within a category). The overall score for the category will be calculated by adding these two averages, such that the average for the core indicators gets a weight of 0.7 and that for the supporting indicators gets a score of 0.3.

Approach for Category Index Computation = (Average score for core indicators* 0.7) + (Average score for supporting standards* 0.3)

For example, the category for 'Identity and Culture' has three core and two supporting indicators. A city's overall performance in this category will be measured by summing up the average score it receives on the three core indicators with the average score it receives on the two supporting indicators, with the former receiving a weight of 0.7 in the sum, and the latter receiving a weight of 0.3.

The important question here, is to ascertain how the score within for a specific indicator will be awarded.

6.1.1 Ranking Methodology

Performance on a specific indicator will be encapsulated by a single summary score. Note that within each category, there are 'core' and 'supporting' indicators.

The first step in this is to calculate the value of the indicator for all cities, most commonly represented by a ratio. For example, Indicator 3.3 refers to the primary education student-teacher ratio. The numerator refers to the total number of students in primary grades and the denominator refers to the total number of teachers available for the same classes, for both private and public schools put together. As evident, lower this ratio, better is the performance of the city. Hence, City A with say a pupil teacher ratio of 50 does better than City B with a pupil teacher ratio of 70. Similarly, Indicator 12.2 measures the per capita supply of water (in lpcd). A higher ratio implies better performance of the city. So, City A with a per capita water supply of 80 lpcd may be doing worse than City B with a per capita water supply of 150 lpcd.

However, it is not feasible to conclusively say, without any further computation, which city performs better overall, based on the value of these indicators recorded by the two cities. One has a lower pupil teacher ratio, the other supplies more water in per capita terms to its citizens. These are not comparable indicators. This would be resolved if we could quantify the magnitude by which City A outperforms City B on pupil teacher ratio and compare that to the magnitude by which City B outperforms City A on per capita water supply. This can be done by comparing the performance of a city on a specific indicator, either to an external benchmark (representing an 'ideal' measure) or to the performance of all cities (representing 'average' performance). For instance, if the ideal or average pupil teacher ratio were 30, City B would be a poorer performer than if the ideal or average were 60. This comparison is the underlying principle of 'normalisation'. It translates indicator values into magnitudes of better or worse performance, allowing comparability across indicators.

Additionally, normalisation can ensure that a lower score is awarded to a worse performance and a higher score to a better performance. For example, currently a lower pupil-teacher ratio and a higher per capita supply of water indicate better performance. Normalisation allows us to correct for this, ensuring that there is a single direction of improvement, across indicators.

Refer to Annexure 7 for a list of indicators, corresponding external benchmark, and direction of improvement.

The MoHUA methodology document currently highlights three possible methods for this normalisation:

Dimensional Index Methodology

Indicator score for a city i, for indicator j, I*ij* =

$$\frac{Calculated\ value\ of\ indicator\ for\ given\ city - Minimum\ ('worst')\ value\ of\ indicator\ seen\ across\ cities}{Maximum\ (best) value\ of\ indicator\ seen\ across\ cities - Minimum\ ('worst')\ value\ of\ indicator\ seen\ across\ cities}$$

Here, the per capita supply of water of City A will be compared to the best and worst performing cities to calculate its score on this indicator. If City C has the best pupil-teacher ratio (say 30), and City B is the worst (70), the above computation for City A will be,

$\frac{50-70}{30-70} = \frac{-20}{-40} = 0.5$

In comparison, the best city (City C) gets a score of 1, and the worst city (City B) gets a score of zero. All others lie in the interval [0,1].

In case there is an external benchmark, the same can be incorporated into the computation as the 'best' (maximum) value. For example, the per capita water supply has been set a service level benchmark of 135 lpcd. Let's say the corresponding figure for City C (the worst performer) is 60 lpcd.

Hence, the indicator score for City A in this case would be –

$\frac{80-60}{135-60} = \frac{20}{75} = 0.26$

The indicator score for the 'best performer' (City B in this case) would still be 1. It is assumes that all cities performing better than the benchmark (regardless of the magnitude by which they out-perform the benchmark) can be treated at par.

Clearly this is an intuitive normalisation procedure, easy to explain to all stakeholders. However, as seen above, in the absence of external benchmarks, the maximum and minimum values would come from the data reported by cities. This entails the risk that outliers can affect scores of other cities, particularly when the outlier is because of inaccurate data. For instance, indicator 1.8 on percentage of population under Ward Committees/ Area Sabhas, has no benchmarks, and the maximum and minimum values are to come from the data submitted by cities themselves. In this case, a city reporting 100% coverage, while most others centre around (say) the 50-60% mark, will depress the score received by the latter. This is not a problem when the 100% figure is accurate. However, if it's a incorrect figure – for instance, the ward committees are in name only and there have been no meetings of the same in the assessment year – this would unnecessarily penalise the 'average' cities (albeit only in terms of score, not rank).

To address this particular concern, a detailed audit involving document review and physical is being implemented to check incorrect reporting. For example, cities are mandated to submit minutes of the ward committee meetings. The validation techniques helps to resolves this issue to a certain extent.

Deciles

As per this methodology, the value of indicators is calculated based on the data received from each city is arranged in descending order and divided into 10 equal deciles from the highest to the lowest decile. The cities in the best performing decile receive the highest score, the cities in the next decile receive the second highest score and so on. These scores can then be added up across indicators to reveal the city summary index score.

Deciles are easy to understand and can automatically handle (best performing) outliers by treating them at par with the remaining top 10% of the cities on a given indicator. However, they are likely to be unpopular among the better performing cities within a certain decile, who narrowly miss out on a better score. For instance, every city in the eighth decile gets a standard score. But those towards the top of the decile (say in the 89th percentile) may be dissatisfied with being given the same score as a city towards the beginning of the decile (say the 81st percentile).

Z scores

Z scores presents a way to measure the performance of a city relative to the performance of the other cities. The 'performance of other cities' can be summarised through two measures – the arithmetic mean or average (a measure of central tendency) and standard deviation (a measure of dispersion around the mean).

Indicator score for a city i, for indicator j, Iij =

$$\frac{Calculated\ value\ of\ indicator\ for\ given\ city - Average\ value\ of\ indicator\ seen\ across\ cities}{Standard\ deviation\ of\ indicator\ seen\ across\ cities}$$

This indicator score/ z score lies on the standard normal curve which has a mean of zero, and standard deviation of 1. This means that a negative z score indicates worse performance, relative to the mean, and a positive score indicates better performance. Naturally, this also means that the score can lie between $(-\infty, \infty)$.

The z scores do not make a reference to external benchmarks if all cities perform worse than the benchmark. If a city out-performs the benchmark however, its performance is taken to be the same as the benchmark, and the average value of the indicator (across cities) calculated accordingly.

The z score solves the outlier issue, discussed under the 'Dimensional Index Methodology', to a certain extent. This is because it is calculated with reference to the mean that refers to the **entire distribution** of values registered by all cities with reference to a specific indicator, instead of the single extreme value.

However, the main drawback of the z-score approach arises in the case where there is no external benchmark. As the Methodology document recommends, in that case, the cities within the same population brackets should be compared. Some of these groupings have very few cities – for instance, there are only five cities with a population greater than 5 million, and seven cities with a population less than 50,000. In this case, fitting a standard curve based on these few observations is not recommended.

The pros and cons of the three approaches are summarised in the table below.

Exhibit 38: Pros and Cons of the Three Index Methodology

Attribute	Dimensional index methodology	Decile approach	Z score
Intuitive meaning	Yes	Yes	No
Affected by extreme values	Yes	No	Yes, to the extent that the mean is affected by the extreme values
Statistically valid for small sample size	Yes	Yes	No
If city A performs less well than city B on a certain indicator, it always gets a worse rank than city B on that indicator	Yes, if city A's performance is short of the benchmark	No, if both city A and B fall within the same decile.	Yes, if city A's performance is short of the benchmark

Overall, the Dimensional Index methodology has the most advantages and hence will be applied in the computation of the liveability index. To resolve the issue of being affected by extreme values, we can correct for outliers, through regular statistical tests.

It is important to note that the use of benchmarks from within the dataset (where external benchmarks are not available), as recommended by the MoHUA methodology document, precludes the possibility of the composite score for a city being comparable across years.

6.2 Dissemination

6.2.1 Designing the Liveability Index Hub

The Liveability Index Hub is an economist.com website that will house the completed policy briefs, one MoHUA branded article and an interactive digital Liveability Index data map of India.

The Liveability Index data map will have interactive dots for each of the 117 cities of the Liveability Index. Each dot will reveal key liveability data for that city, including the index score, the city's ranking, and the city's rankings for the four underlying liveability pillars. The MoHUA branded article will be a 750-word piece with interviews of two senior officials or policy makers from the Ministry. Necessary support from the Ministry, in identifying the officials concerned, and facilitating the interaction with them, will be required.

Activities to be conducted will include:

- **A kick of meeting/ call**, between the relevant members of the MoHUA and editorial staff from The Economist - this will establish the parameters of the hub, including any necessary branding guidelines, as well as the key contact points from MoHUA to liaise with, on an ongoing basis, as the hub, digital map and article are developed.
- **Establishment of timeline with key responsibilities clearly delineated** - This will ensure all team members coordinate to ensure that the content is completed in a timely manner.
- **Drafting of interview questions for staff members of MoHUA –** these will be circulated to the Ministry for their input and approval, before the interviews are conducted.
- **Conducting interviews with identified MoHUA staff and drafting of the article** - final approval will be taken from the Ministry before the article goes live on the hub.
- **Sharing of initial design ideas for the hub,** as well as the interactive Liveability Index map with the Ministry before finalization of design.
- **Design of map** and obtaining MoHUA approval of the same before the completion of the data collection exercise - once the data is finalised, the data will then be added to the map.
- **Design of the hub and obtaining MoHUA approval of the same.** Once completed, the hub will need three days for testing, and MoHUA will have final approval of the completed hub and content before it goes live.

As indicated above, the Economist Group will liaise with MoHUA through regular update calls regarding the development of the hub and content pieces and will seek input and feedback from MoHUA on the design and interactivity of the index map and hub, as well as final approval for the article.

6.2.2 Media Plan

The outcome of better performance in liveability index depends on engagement, satisfaction, participation, collaborative perspective, feeling safe, belongingness, wellness and overall happiness. Audience could be segmented in multiple ways, using demographic variables, income, education, media access, attitudes, knowledge, or values. There are number of existing segmentation frameworks, such as SEC classifications, psychographic or VALS. They are precision tools to push contents in the minds, directly or indirectly, to secure a wallet share for the brand in question. Such approaches used both in commercial and social marketing, selling the brands, products, services and concepts. Such media campaigns require media specialists, focussed, episodic and expensive.

A media intervention that engages general public to act in public interest to contribute to public good requires a multi-dimensional perspective. Improvement in liveability concerns everyone in a city at any moment, touches individuals / groups wherever they are, experienced in tangible and intangible forms, woven into variety of decisions (spatial and temporal) and find articulation and expressions in many different formats. It is all pervasive, omnipresent and continuous.

This being the case, media plan, has to recognise multiple dimensions of each audience set being targeted. An individual could be at any moment experience varying shades of being an user (hospital / parks / roads), enforcer (authority), influencer (blogger), provider (services), victim (sickness), or beneficiary (covered cycle path).

The media plan shall adopt a few aspects of social marketing. Provision of **information**, **educating** audiences on concepts, experiences, duties and responsibilities, choosing appropriate **communication** options - media, channels and formats, **demonstrating** appropriate attitude, responses and behaviours and carefully planned **reinforcement** to nudge everyone along a continuum of no awareness to a sustained collaborative interaction resulting in desired outcomes. The information, Education, Communication, Demonstration and Reinforcement (IECDR) framework is useful to reach out to diverse set of audiences, engaging them in space and time clusters, build trust, encourage collaboration, and own the responsibility for improving liveability quotient.

Branding is essential to create visibility, trust, participation, contribution and sustainability. Public service related issues are peripheral to an individual, family, group, business, administration, elected representatives and even media. Therefore, a much focus is required to build a credible brand around the concept of improving living standards to inspire city dwellers to take tangible actions.

Strategy proposed here is to build a mother brand over a period of time, by placing them appropriately in a variety of media, format, mode, timing and delivery. The brand will be discovered in a course of time, interpreted, owned and nurtured subsequently. Collective engagement underlies this strategy and will be emphasised across the spectrum of media strategy implementation. How to hasten this process are discussed below.

The strategy will shift the focus from administrators, regulators, service providers and politicians to urban dwellers. If this strategy is successful perception of government owning, managing, punishing and rationing services will give way to putting urban dwellers in the centre of existence of cities. The despair, distrust, disobedience, detachment, confusion, crime, gender related insecurity and conflict will give way to engagement, friendly disposition, lesser confusion and chaos, collaboration with civic authorities, participation, safer and secure public spaces, citizen initiatives and revival of cultural and performing arts.

The media plan will focus on creatively communicating emotions, skills, behaviours and experiences that will drive the outputs and outcomes. The focus will be on:

- **Attract Attention of Key Stakeholders:** Meaningful Emotions, Behaviours, Experiences and Outcomes. Create visibility for mother brand and the extensions: Governance, Social, Economic and Infrastructural. Impelling stakeholders seek details of Liveability Index. Dedicated interactive websites, apps, gamification of interactions, reinforcement using media mix surrounding stakeholders at multiple touch points.

- **Engaging Key Stakeholders:** Engaging government agencies involved in compiling, city users who will be benefitted, media to shape public opinion around importance of liveability index, moral responsibility of all stakeholders, demonstrating appropriate behaviours and reinforcement

- **Bonding:** Nurture meaningful experiences for all stakeholders, emphasizing inter-connectedness and encouraging appropriate expressions through improvement in performance in liveability index

– ULBs, Administration, Users (Individuals, Businesses, Governments and Associations) and Media. Improving performance in liveability is an expression of quality of ongoing relationships amongst various stakeholders.

To keep this in public imagination it is important to create, nurture and expand branding. A mother brand that identifies and contextualize central, state, and city agencies providing centre stage to the users. Governance, social, economic, and infrastructure, the four pillars will be treated as extensions of mother brand. Liveability Index, specifically performance on indicators, will be used to rally around various stakeholders to achieve primary goal of liveable cities essential for optimum performance in productivity, inclusiveness, sustainability, well-being and happiness, specifically of children.

Key Messages	**To shape values, perceptions, attitudes, skills and behaviours of key stakeholders**				
	State Government	**Urban Local Bodies- Elected Representatives**	**Administration – Officials, desk workers and field staff**	**City inhabitants – Individuals, Businesses and Associations**	**Media**
To improve Liveability in Cities, which is a desired future, focus is required now on diverse needs of users to improve productivity, Inclusiveness, well-being, happiness and sustainability	Importance of coherent policy, plan, and resource allocation	Need for city specific pro-active planning, allocating resources, and reflecting aspiration of city inhabitants	User focused execution, quality assurance, innovation, flexibility, documentation, reporting and performance improvement	Inhabitants' role in collaborating with planners, executives and elected representatives, affirmative actions to improve performance, advocacy and ownership	Promote positive public opinion, responsive reporting facilitating collaboration amongst various stakeholders and advocate for appropriate policies
Liveability, inclusiveness, happiness and sustainability are linked to productivity	City specific focus for development, support to cities for overcoming obstacles and improving enablers	Focus on well-being of individuals, households and communities; continuity of businesses, institutions and association; and ability to participate and contribute.	Realistic about obstacles and opportunities; implement tough It is necessary, therefore, to understand the different needs of diverse groups of people who live in our cities, and	Recognition that Cities are integral to economy, prosperity and well-being. Powerful roles individuals, businesses and associations in making the city liveable, productive,	Inform, educate, and inspire for engagement, participation, collaboration and contribution with human interest stories, shaping attitudes and

			how their needs may change over time.[18] measures, if required, diligently; deal with factors affecting near term and long-term productivity	inclusive and sustainable.	behaviours and impacting newer skills.
Liveability Index, directly and indirectly measures variables contributing to productivity, happiness, well-being and sustainability	Monitor, incentivize and build capacity of ULBs, Executives, Media and User Groups	Sensitive to adequately capturing performance, interpretation of results and use it for monthly, quarterly and annual reviews	Ensure indictor specific information is compiled diligently, analyzed and appropriate corrective actions.	Use Liveability Index outcome to improve performance through engagement, participation and contribution	Emphasis on vigilance, accountability, transparency and inclusive governance
The variables are inter-connected, requires continuous efforts and smart utilization of technology	Balanced allocation of resources and appropriate directives to cities to improve underperforming areas and improving or sustaining adequately performing areas	Monitor, advise and support administration and other departments to close the gaps in performance	Sustain stakeholder involved execution of interventions with appropriate planning, resource allocation, monitoring	Utilize smart digital technologies to monitor, demand and remain vigilant for accountability, transparency and inclusive governance	Link liveability, sustainability, and productivity to smart utilization of, contributions to, participation in city spaces, amenities and city systems
Being smart is essential for improving productivity, inclusiveness, happiness, well- being, sustainability and liveability.	Continuously encourage adoptions of smart systems in all the cities balancing with overall development to reduce	Push for anytime access to public goods, services and spaces to optimize productivity, liveability and sustainability	Set up, run and ensure 24x7 access to public goods, services and spaces; encourage utilization of improved facilities to	Individuals, businesses, organizations and governments to utilize smart systems to improve their well-being with	Capture lessons learnt, popularize life styles that reflect smart living and bring it up on popular discourse with

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[18] https://infrastructure.gov.au/infrastructure/pab/soac/files/2012_08_INFRA1360_MCU_SOAC_CHAPTER_5_WEB_FA.pdf

Cities are engines / drivers of overall growth and improving well-being.	increasing stress on the cities		humanize and optimize economy, society and environment.	emphasis on improving productivity, sustainability and livability	appropriate columns, programmes, blogs, videos, etc.
Our children require smart cities that facilitate liveability, inclusiveness, sustainability and productivity	Present and future focused. Focus on attributes that makes cities liveable, inclusive, sustainable, productive suitable for a fuller life for all segments, including children, women, elders, persons with disability, pets and green cover	Contribute to larger national, state and district vision aligning cities' priorities to provide for services and spaces and goods essential for all groups, including children.	Ensue collaboration, cooperation, participation, and contribution for sustaining achievements and realizing the goal of making the cities liveable, inclusive, productive and sustainable with focus on vulnerable segments with specific reference to children	A life style of respect, trust, authenticity, sharing, participation, contribution, participation, and pride in being an inhabitant of a city. A world view reflected in values, norms, and behaviours facilitating creativity, innovation and enterprising removing edge of rush, rage and waste	Encourage, celebrate and contribute to sustaining a positive world view – values, norms and behaviours – that sustain respect, trust, authenticity, sharing, participation and pride amongst everyone specifically vulnerable segments

Detailed media strategy is described in Annexure 5

Chapter 7: Quality Control and Project Management Structure

7.1 Project Management Team

As outlined in the proposal, a four-tier project planning, governance and execution team for timely completion of the overall project and sub-tasks thereof is deployed. Project Director, National Project Coordinators, and Senior members from the Support/Analytical Team constitute the Project Command Centre Team. The PCC coordinates and manages all activities for the Assessment of Liveability Indices and provide a central point of contact for both MoHUA and the Technical Team, State Specific teams. The PCC will **ensure compliance of with the working procedures and quality assurance measures that have been designed for the success of this project**.

Two national level project coordinators along with five regional coordinators and 30 state/UT level coordinators are fully engaged in managing information exchange across the core team, field team and support/analytics team. A 15 to 18 member support team comprising senior economists, policy expert, statisticians, data scientists, visualisation experts, senior analysts, urban planner, IT expert and content editor are also providing research, analytical and technical support to the core and field teams. Figure below presents our organisation and staff of key and non-key experts on this assignment. The Core Team, Project Director, Project Coordinators, and regional and functional teams illustrated in our team structure will be responsible for the overall design and delivery of the central tasks as well as monitoring quality on each. They are supported by an experienced senior director of the consortium

The PCC team is supported by 6 additional members- regional coordinators (3) and Senior Consultants (3) who are supporting all activities for the project for the states in their region.

A brief overview of the team’s core responsibilities is as below:

Regional Coordinators: The Regional Coordinators will support the State Facilitators in scheduling and conduct of state level workshops, support facilitation of city level kick-off meetings, oversee the translation of the questionnaire and other materials into the relevant languages, provide feedback on the pilot and oversee all data collection activities. They will contribute to the interim and technical reports and be responsible for reviewing and approving the datasets for the states and cities in their region.

State Coordinators: They are POC for State Mission Director’s office and allied departments. They will be supported by city specific teams for carrying out the tasks outlined such as scheduling and conduct of state level workshops (supported by Regional Coordinator) and PCC team, city reconnaissance studies, coordinating and facilitating submission of secondary data, training the city teams for primary validation, and HH surveys. Their specific roles and responsibilities are as below:

- Attend the Training of Trainers (ToT)
- Plan, schedule and deliver state level workshop
- Prepare and submit workshop report in prescribed template
- Identify, recruit, and on board the city coordinators for all cities (one per city) in the state
- Training of city coordinators on all components of data collection (Primary, Secondary & physical validation)
- Lead and deliver the tasks for assessment of the city/cities assigned
- Monitoring of progress –Completion and quality for all cities within the state as per plan agreed
- Provide online and offline support to city officials/ stakeholders as necessary to input data with support from centralized help desk
- Prepare city recon report in prescribed template provided by Ipsos
- Ensure 100% data submission on portal by prescribed date (16th April)
- Provide daily update as requested by Central team or Ministry

City Coordinator: They are the first point of contact for city officials and are stationed at the city starting 12th March / earlier until 16th April and will ensure facilitation and timely submission of the data. Specifically, their role is as below:

- Get oriented by state coordinator before the state level workshop
- To be stationed in the city responsible for during the entire periods of the assignment
- Mapping of stakeholders specific to the city
- Coordinate with department appointed nodal point of contact to facilitate online data entry by the cities
- Collect the secondary documents as outlined in audit protocols
- Complete the physical audit in the city for all indicators identified
- Plan, coordinate and deliver the primary survey as per the guidelines provided during the training
- Prepare and submit the city folder where they will compile all the secondary evidences collected from the study
- Provide daily update on data submission and challenges faced
- Liaison with stakeholders
- Escalate any city level issues that may impact the submission of the data by the cities
- Submit the city reconnaissance meeting report

Focal point at the Ministry: Two staff members have been deployed at the Ministry to facilitate coordination at MoHUA and state level teams and address any coordination issues. These team is reporting daily progress to the MoHUA team and seeks suggestions and intervention as needed to facilitate work at the state and city level. This is also a mechanism to anticipate risk and initiate mitigation to avoid delays and coordination challenges.

7.2 Project Reporting

7.1.1 Timeline

The status of all the tasks completed till date for each of the component of the study and also the planned dates for the tasks are presented in the exhibit below

Tasks	Current status	Start date	End date
Indicator Review and Finalisation	Completed	Fri, 19 Jan 18	Tue, 13 Feb 18
Pre inception meetings	Completed	Fri, 19 Jan 18	Fri, 19 Jan 18
National workshop delivery	Completed	Tue, 13 Feb 18	Tue, 13 Feb 18
Submission of workshop proceedings	Submitted	Mon, 19 Feb 18	Tue, 20 Feb 18
Media Plan	Submitted	Wed, 31 Jan 18	Wed, 07 Feb 18
1 State Coordinators Training			
Finalise the Training Agenda	Completed	Mon, 19 Feb 18	Tue, 20 Feb 18
Develop the ToT Material	Completed	Mon, 19 Feb 18	Fri, 23 Feb 18
Secondary data verification format and documents to be collected	Completed	Mon, 19 Feb 18	Fri, 23 Feb 18
Physical Audit protocols	Completed	Mon, 19 Feb 18	Fri, 23 Feb 18
Primary Survey data collection tools	Completed	Mon, 19 Feb 18	Fri, 23 Feb 18
City Reconnaissance Schedule	Completed	Mon, 19 Feb 18	Fri, 23 Feb 18
Review of training materials by team	Completed	Wed, 21 Feb 18	Fri, 23 Feb 18
Finalising logistics	Completed	Mon, 12 Feb 18	Fri, 23 Feb 18
Delivery of ToT	Completed	Mon, 26 Feb 18	Wed, 28 Feb 18
Filing of Training Report	Completed	Thu, 01 Mar 18	Wed, 07 Mar 18
2 Pilot test of data entry interface			
DEI- Final Version goes live	Completed	Fri, 02 Mar 18	Fri, 02 Mar 18
Finalising 5 cities -one from each category for pilot test	ongoing	Fri, 09 Mar 18	Mon, 19 Mar 18
Brief the State/City Coordinator for pilot test	ongoing	Fri, 09 Mar 18	Mon, 19 Mar 18
Facilitate data entry by 5 cities	ongoing	Fri, 09 Mar 18	Mon, 19 Mar 18
3 Project Monitoring and Analytical Dashboard			
Development of the dashboard (beta version)	Completed	Fri, 02 Mar 18	Fri, 09 Mar 18
Sharing the dashboard with MoHUA	Completed	Mon, 12 Mar 18	Mon, 12 Mar 18
Feedback incorporation and launch of dashboard	Completed	Thu, 15 Mar 18	Thu, 15 Mar 18
4 Inception Report			
Develop the ToC for Inception Report	Completed	Mon, 19 Feb 18	Tue, 20 Feb 18
Submission of Inception Report	Scheduled	Fri, 16 Mar 18	Fri, 16 Mar 18
5 Preparation of primary data collection and physical audit			
Develop sampling strategy document for HH and Slum Survey	Completed	Mon, 26 Feb 18	Thu, 15 Mar 18
Drafting detailed methodology for primary survey and physical audits including sampling	Completed	Mon, 19 Feb 18	Thu, 15 Mar 18
Briefing of Zonal Coordinators on components of citizen survey and physical audit (Schools, Hotels, and Hospitals)	Completed	Mon, 05 Mar 18	Thu, 15 Mar 18
6 Citizen Pulse- Tool finalisation			
Finalising the tool	ongoing	Tue, 20 Feb 18	Mon, 19 Mar 18
Scripting of tool	Yet to begin	Mon, 19 Mar 18	Wed, 21 Mar 18
Translation of citizen pulse tools in 11 languages	Yet to begin	Wed, 21 Mar 18	Fri, 23 Mar 18
Finalise script in 11 languages	Yet to begin	Mon, 26 Mar 18	Mon, 26 Mar 18
State level trainings for citizen pulse	Scheduled	Tue, 27 Mar 18	Wed, 28 Mar 18

Tasks	Current status	Start date	End date
7 Primary Survey and Physical Audit -non HH			
Develop the research instruments for primary survey	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Water Testing- CRM -confirm water testing protocols and reporting templated	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Noise Pollution-CRM- confirm noise pollution testing protocols and reporting template	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Integrated Command Centre-CRM- Audit and observation schedule and reporting template	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Surveillance System Audit-CRM	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Vendors formal space audit-CRM-confirm audit protocol and reporting template	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
PIS, Pedestrial crossing, universal accessbility- CRM- confirm audit protocol and reporting template	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
8 Primary Survey and Physical Audit -non HH			
Develop the research instruments for primary survey	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Hotel Occupancy- Ops- confirm audit protocols & reporting templates	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Digital Education-Ops-confirm audit protocols & reporting templates	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
EMRS-Ops-confirm audit protocols & reporting templates	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
Sign off on all final instruments	Completed	Fri, 02 Mar 18	Thu, 15 Mar 18
9 Data Collection- primary (CRMs, physical audit, and primary survey) **Primary Data collection- Operations**			
Screening and recruitment of field teams	Planned	Mon, 19 Mar 18	Tue, 27 Mar 18
Data collection	Planned	Thu, 29 Mar 18	Thu, 29 Mar 18
Online monitoring and upload of status	Planned	Wed, 21 Mar 18	Mon, 16 Apr 18
Field work completion	Planned	Mon, 30 Apr 18	Mon, 30 Apr 18
10 Primary Data collection- CRMs including physical audit indicators and Primary Survey **Set up Tasks**			
Training of City coordinators for physical audit and primary survey	Ongoing	Wed, 07 Mar 18	Mon, 19 Mar 18
Data collection	Planned	Mon, 02 Apr 18	Mon, 23 Apr 18
Field work completion	Planned	Mon, 23 Apr 18	Mon, 23 Apr 18
11 Secondary			
Online data entry interface (V1) linked and available on Smartnet	Completed	Fri, 02 Mar 18	Mon, 05 Mar 18
Log in ids created and informed to city officials	Completed	Fri, 02 Mar 18	Mon, 05 Mar 18
Data entry protocols including sources informed	Ongoing	Fri, 09 Mar 18	Sat, 24 Mar 18
Help desk set up and activated	Completed	Wed, 21 Feb 18	Fri, 02 Mar 18
Follow up to enable concurrent submission of data by cities	Ongoing	Thu, 22 Feb 18	Mon, 12 Mar 18
Review of data gaps and circulation of a report on the same to cities/State Nodal Officer (facilitated by the SC)	Ongoing	Fri, 09 Mar 18	Sat, 24 Mar 18
Data collation	Yet to begin	Thu, 15 Mar 18	Fri, 30 Mar 18
Data analysis, triangulation	Yet to begin	Mon, 02 Apr 18	Mon, 16 Apr 18
Sign off by MC on data submitted on the portal	Scheduled	Fri, 20 Apr 18	Fri, 20 Apr 18
City dossier with all secondary evidence compiled	Scheduled	Wed, 25 Apr 18	Wed, 25 Apr 18
12 State Workshop Set up and Delivery			
Procure a list of State Nodal Person (SNP) from MoHUA	Completed	Mon, 19 Feb 18	Tue, 20 Feb 18
Finalise concept note for state workshops	Completed	Mon, 19 Feb 18	Thu, 22 Feb 18
Sign off by MoHUA for state workshop agenda	Completed	Fri, 23 Feb 18	Fri, 23 Feb 18
Send letters to all State Stakeholders including concept note, potential list of participants and workshop logistics	Completed	Mon, 26 Feb 18	Mon, 05 Mar 18
Mobilisation of workshop participants	Ongoing	Thu, 01 Mar 18	Fri, 23 Mar 18
Preparation of an Orientation Deck for State Workshops - Indicators + People (City + SC/RC), Process (timeline, SoPs), Technology (DEI), + Nuanced caselets + Use case motivations + Quiz	Completed	Mon, 26 Feb 18	Fri, 09 Mar 18
Uploading of photo journals for the state workshop	Scheduled	Fri, 16 Mar 18	Fri, 30 Mar 18
State Workshop proceedings template developed	Planned	Mon, 12 Mar 18	Mon, 19 Mar 18
State workshop proceedings written	Planned	Tue, 20 Mar 18	Fri, 30 Mar 18
Review and Submission of state workshop reports	Planned	Tue, 20 Mar 18	Fri, 30 Mar 18

Tasks	Current status	Start date	End date
13 City Reconnaissance Meeting			
Entry level meetings with ULB officials and stakeholder officials	Ongoing	Mon, 05 Mar 18	Fri, 23 Mar 18
Collecting secondary evidence	Ongoing	Tue, 13 Mar 18	Mon, 16 Apr 18
Physical audit	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Data collection for primary survey- EMRS	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Data collection for water quality testing-HH	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Data collection for water public surface water bodies	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Data collection for noise pollution	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Data collection on Mode share	Yet to begin	Mon, 02 Apr 18	Fri, 20 Apr 18
Submission of bi weekly report on CRMs	Yet to begin	Mon, 12 Mar 18	Fri, 13 Apr 18
Submission of CRM completion report	Yet to begin	Fri, 13 Apr 18	Mon, 30 Apr 18
Task 14 A- Analysis and reporting			
Tabulation and Analysis	Yet to begin	Fri, 20 Apr 18	Wed, 25 Apr 18
Citizen based ranking of cities	Yet to begin	Thu, 26 Apr 18	Thu, 10 May 18
Task 14 B-Primary Survey			
QC of primary survey data collection (BC)	Yet to begin	Mon, 16 Apr 18	Mon, 30 Apr 18
Format for analysis agreed	Yet to begin	Tue, 03 Apr 18	Mon, 30 Apr 18
Reports submitted- Noise pollution	Yet to begin	Tue, 03 Apr 18	Fri, 20 Apr 18
Reports submitted - Water quality testing	Yet to begin	Tue, 03 Apr 18	Fri, 20 Apr 18
Mode share?	Yet to begin	Tue, 03 Apr 18	Fri, 20 Apr 18
Public water bodies?	Yet to begin	Tue, 03 Apr 18	Fri, 20 Apr 18
EMRS?	Yet to begin	Tue, 03 Apr 18	Fri, 20 Apr 18
Task 14 C- Physical Audit			
Protocol for reconciliation agreed and signed off	Yet to begin	Thu, 15 Mar 18	Mon, 16 Apr 18
Data comparison and reconciliation	Yet to begin	Mon, 16 Apr 18	Mon, 30 Apr 18
Task 14 D- Ranking of Cities			
Discussion on ranking methodology	Yet to begin	Mon, 05 Mar 18	Thu, 15 Mar 18
Sign off on ranking methodology by MoHUA	Scheduled	Mon, 26 Mar 18	Mon, 26 Mar 18
Ranking of cities	Yet to begin	Wed, 25 Apr 18	Mon, 14 May 18
Presenting the ranking to MoHUA	Yet to begin	Tue, 15 May 18	Tue, 15 May 18
Sign off on ranking by MoHUA	Scheduled	Tue, 15 May 18	Tue, 15 May 18
Task 15- City Assessment Report			
Finalise design and structure of city assessment report	Yet to begin	Tue, 01 May 18	Thu, 10 May 18
Draft city assessment reports (Version 1)	Yet to begin	Thu, 10 May 18	Wed, 30 May 18
Submission to MOHUA	Scheduled	Wed, 30 May 18	Wed, 30 May 18
Sharing of DARs with ULB/State Nodal Officers for validation	Planned	Wed, 30 May 18	Mon, 11 Jun 18
Task 16- Final City Assessment Report			
Incorporation of feedback from cities/state Nodal Officers	Planned	Fri, 01 Jun 18	Tue, 05 Jun 18
Final F-CARs	Planned	Fri, 01 Jun 18	Mon, 11 Jun 18
QC of F-CARs (external)	Planned	Mon, 11 Jun 18	Fri, 15 Jun 18
Submission to MOHUA	Scheduled	Fri, 15 Jun 18	Fri, 15 Jun 18
Task 17- Economis.Com Hub			
Preliminary discussion on objectives and outreach of the Hub	Yet to begin	Tue, 01 May 18	Fri, 04 May 18
Design and structure of the hub	Yet to begin	Tue, 08 May 18	Tue, 15 May 18
Sign-off by MoHUA	Yet to begin	Mon, 21 May 18	Mon, 21 May 18
Developing the hub	Yet to begin	Mon, 21 May 18	Wed, 30 May 18
Review and finalization	Yet to begin	Thu, 31 May 18	Mon, 04 Jun 18
Launch of the hub	Yet to begin	Tue, 05 Jun 18	Tue, 05 Jun 18
Task 18- City GDP Framework			
Preliminary discussion on feasiblity of city GDP	Yet to begin	Wed, 18 Apr 18	Wed, 25 Apr 18
Outline of City GDP framework	Yet to begin	Wed, 18 Apr 18	Wed, 25 Apr 18
Assessing data availability/gaps	Yet to begin	Thu, 26 Apr 18	Mon, 07 May 18
Revising Outline based on data availablity/gaps	Yet to begin	Thu, 26 Apr 18	Tue, 08 May 18
Submission of Outline to MOHUA for comments	Yet to begin	Tue, 08 May 18	Tue, 08 May 18
Selection of ONE city for piloting the City GDP Framework	Yet to begin	Tue, 08 May 18	Tue, 08 May 18
Application of City GDP framework on the identified city	Yet to begin	Wed, 09 May 18	Mon, 21 May 18
Presentation of findings and development of City GDP Assessment Framework	Yet to begin	Wed, 30 May 18	Wed, 30 May 18
Task 19- Data Interoperability Framework			
Preliminary discussion on data interoperability framework	Yet to begin	Fri, 04 May 18	Tue, 15 May 18
Submission of white paper with suggestions	Yet to begin	Wed, 30 May 18	Wed, 30 May 18
Other tasks completed			
Indicator Review and Finalisation	Completed	Fri, 19 Jan 18	Tue, 13 Feb 18
Pre inception meetings	Completed	Fri, 19 Jan 18	Fri, 19 Jan 18
National workshop delivery	Completed	Tue, 13 Feb 18	Tue, 13 Feb 18
Submission of workshop proceedings	Completed	Mon, 19 Feb 18	Tue, 20 Feb 18
Media Plan	Submitted	Wed, 31 Jan 18	Wed, 07 Feb 18

7.1.2 Project Monitoring Dashboard

A progress monitoring dashboard is a portal- specialised website that serves two main purpose:

- **Management Tool:** Allows for project monitoring by capturing near to real time updates on the overall timelines and the progress against each timeline
- **Communication Tool:** The dashboard is designed as a public interface which is open to all and provides an overview of the schedules, data collection instruments and information on participant list along with the state workshop reports

Promoting transparency and accountability, the tool will monitor the progress of 30 State/UT level workshops and City Reconnaissance Meetings and provide updates on the progress made by cities on secondary data submission. Associated documents such as workshop agenda, list of participants, discussion materials, workshop proceedings/minutes and photographs will also be made available through the dashboard.

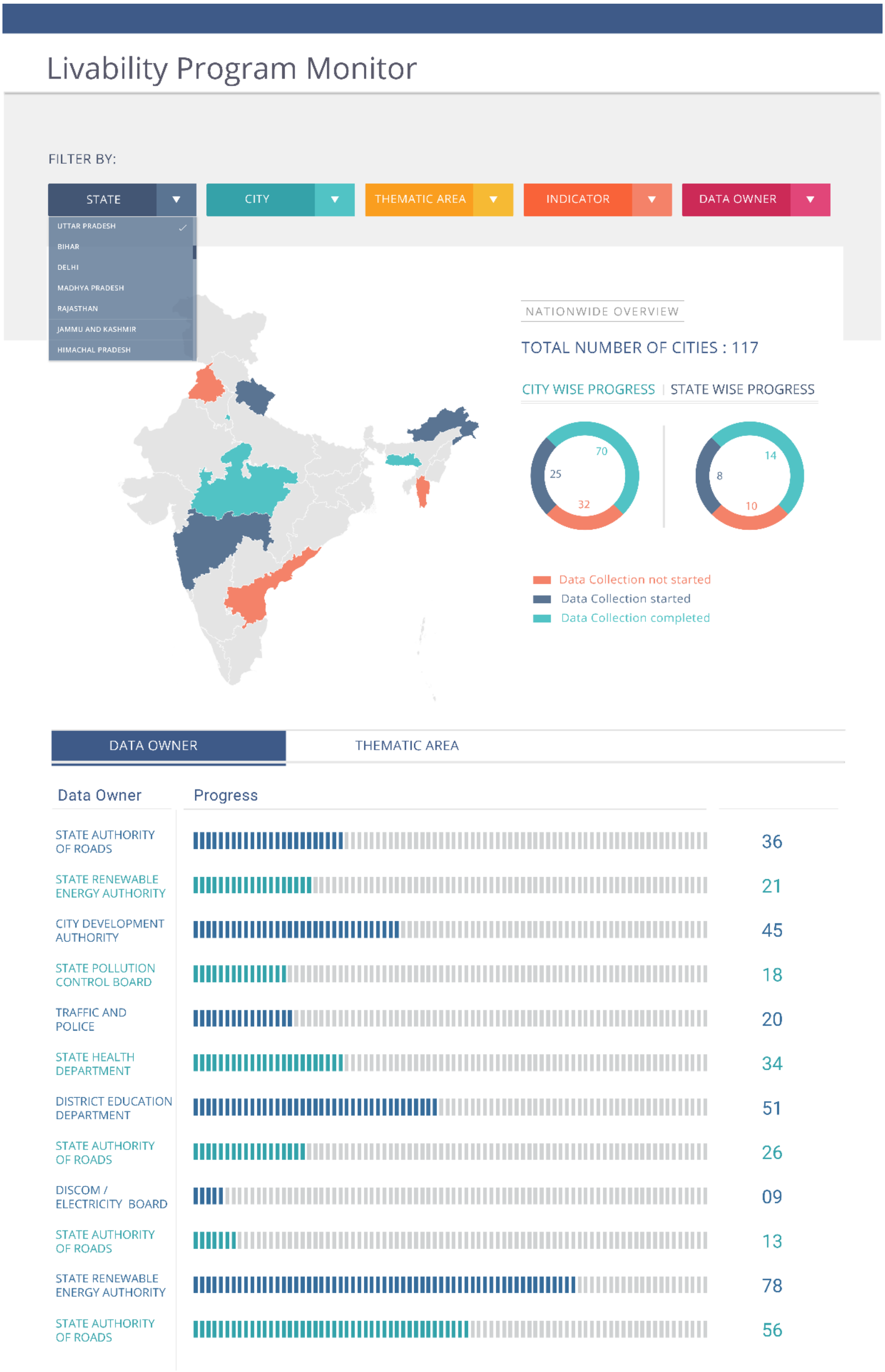
Using this interactive dashboard is intuitive and fairly easy; users can filter datasets and data is presented as pie charts, maps and progress bar. A list of functions with the user interface elements is presented in the table below:

Exhibit 39: List of Functions and UI Elements of the Dashboard

National level	• Number of states: data started (pie chart) • Number of states: data not started (pie chart) • Number of states: completed (pie chart) • Number of cities: data started (pie chart) • Number of cities: data not started (pie chart) • Number of cities: completed (pie chart) • List of states: data has started (map) • List of states: data has not started (map) • List of states: data has completed (map) • List of cities: data has started (map) • List of cities: data has not started (map) • List of cities: data has completed (map) • Percentage completion: each data owner (progress bars) • Percentage completion: each thematic area (progress bars) • Percentage completion: each indicator (progress bars)
State Filter	• Number of cities in the state • Number of cities in this state: data has started (pie chart) • Number of cities in this state: data has not started (pie chart)

	• Number of cities in this state: data has completed (pie chart) • List of cities in this state: data has started (map) • List of cities in this state: data has not started (map) • List of cities in this state: data has completed (map) • Percentage completion: each data owner in this state (progress bars) • Percentage completion: each thematic area in this state (progress bars) • Percentage completion: each indicator (progress bars)
City filter	• Percentage completion: each data owner in this city (progress bars) • Percentage completion: each thematic area in this city (progress bars) • Percentage completion: each indicator (progress bars)
Thematic area filter	• Number of states: data started in this area (pie chart) • Number of states: data not started in this area (pie chart) • Number of states: completed in this area (pie chart) • Number of cities: data started in this area (pie chart) • Number of cities: data not started in this area (pie chart) • Number of cities: completed in this area (pie chart) • List of cities: percentage completion (progress bars)
Indicator filter	• Number of states: data started in this area (pie chart) • Number of states: data not started in this area (pie chart) • Number of states: completed in this area (pie chart) • Number of cities: data started in this area (pie chart) • Number of cities: data not started in this area (pie chart) • Number of cities: completed in this area (pie chart) • List of cities: percentage completion (progress bars)
Data owner filter	• Number of states: data started in this area (pie chart) • Number of states: data not started in this area (pie chart) • Number of states: completed in this area (pie chart) • Number of cities: data started in this area (pie chart) • Number of cities: data not started in this area (pie chart) • Number of cities: completed in this area (pie chart) • List of cities: percentage completion (progress bars)

Exhibit 40: Illustration of the Project Monitoring Dashboard


Livability Program Monitor
FILTER BY:
STATE
CITY
THEMATIC AREA
INDICATOR
DATA OWNER
UTTAR PRADESH
BIHAR
DELHI
MADHYA PRADESH
RAJASTHAN
JAMMU AND KASHMIR
HIMACHAL PRADESH
NATIONWIDE OVERVIEW
CITY WISE PROGRESS
STATE WISE PROGRESS
70
25
32
14
8
10
DATA OWNER
THEMATIC AREA

TOTAL NUMBER OF CITIES : 117

🟥 Data Collection not started
🟦 Data Collection started
🟩 Data Collection completed

Data Owner	Progress
STATE AUTHORITY OF ROADS	36
STATE RENEWABLE ENERGY AUTHORITY	21
CITY DEVELOPMENT AUTHORITY	45
STATE POLLUTION CONTROL BOARD	18
TRAFFIC AND POLICE	20
STATE HEALTH DEPARTMENT	34
DISTRICT EDUCATION DEPARTMENT	51
STATE AUTHORITY OF ROADS	26
DISCOM / ELECTRICITY BOARD	09
STATE AUTHORITY OF ROADS	13
STATE RENEWABLE ENERGY AUTHORITY	78
STATE AUTHORITY OF ROADS	56

The project monitoring dashboard went live on 13 March 2018 and can be accessed here at http://52.66.109.130/liveability/form/

7.2.2 Progress reporting to MoHUA

As an interim measure, the consortium relied on the data collection status report (excel format) to report on progress while developing the project monitoring tool with advanced functions and data visualisation capabilities. This tool allowed Ministry of Housing and Urban Affairs to track the extent to which the city officials are reporting the data and provides a status update. Reports were generated at the end of each day and presents updates on the commencement, progress and completion of assessment questionnaire which can tracked by states, cities as well as by data owners. Indicators that were tracked and reported as part of the data collection status report is provided below:

Summary Report	• **Total Number of cities logged in the portal** • **Total Number of cities that have started the assessment** • **Total Number of cities yet to commence the assessment** • **Total Number of cities that have completed the assessment** • **Total Number of States that have completed the assessment** • **Total Number of States yet to complete the assessment** • **National Progress Status Data Owner Wise**
City Wise Report	• Cities Logged in the Portal(Yes/No) • Total number of question answered (0/560) • Total Progress Status (in %) • Data collection progress report by data owners

Additionally, the monitoring tool also reported on the queries raised by the city officials either through the state coordinators or through the online portal as well as the responses provided.

The detailed reporting template is provided in Annexure 8.

Annexure 1: List of Changes made to the Indicator List

Indicator no.	Indicator name	Modifications
1.1	Percentage of citizen services available online	Relevant services and their aspects which would be beneficial for citizens to be accessed online were identified. These would determine the extent to which services are accessible online.
1.2	Percentage of services integrated through Command Centre	Refined the list of services which could be integrated to a command and control centre based on the proposals submitted by cities for setting up of ICCC. For instance, Smart Parking, provisioning of Citizen kiosks, smart strips, integration of ERP, etc. has been included. In case of absence of an integrated command and control centre (which is the case for majority of the cities), cities are requested to identify the services which have singular operations or an independent command and control centre.
1.7	Capital spending as percentage of total expenditure	This indicator was re-defined to include capital and revenue expenditure made by the ULB from its own income. This would remove any bias cities face because of amount received from central or state government dedicated to capital expenditure.
2.2	Percentage of ecologically important areas covered through projects for restoration	Ecologically sensitive areas were clearly defined so as to make it easier for cities to identify them. It was decided to include wildlife sanctuaries, national parks, habitats of migratory birds, endangered species (flora/fauna), forests, surface water bodies, watershed sites, coastlines, riverfronts, wetlands, uninhabited islands, origin of river sites, mangrove sites, etc. This was based on the guidelines by the Ministry of Environment, Forest and Climate Change
2.5	Number of cultural/sports events hosted by city	Number of cultural/ sports events considered has been broadened to include privately organised non-restrictive events.

3.5	Percentage of students completing primary education	Due to lack of availability of data, it was proposed that 'Apparent Cohort method' suggested by the Sarva Shiksha Abhiyan manual for planning and appraisal will be employed to calculate the survival rate.
3.6	Percentage of students completing secondary education	Due to lack of availability of data, it was proposed that 'Apparent Cohort method' suggested by the Sarva Shiksha Abhiyan manual for planning and appraisal will be employed to calculate the survival rate.
5.1	Number of streets, public places, junctions covered through surveillance systems	Instead of counting the number of streets or public places covered through CCTV cameras, the number of CCTV cameras installed per unit road length will be considered. The changed metric would help to capture the coverage density of the surveillance system.
7.2	Percentage of slum areas covered through basic services	This indicator has been re-defined as percentage of slums and percentage of slum household which are covered through basic services.
10.3	Average number of electrical interruptions per customer per year	This indicator was re-defined to include absolute number of electrical interruptions to eliminate the base effect
10.4	Average length of electrical interruptions per customer per year	This indicator was re-defined to include the absolute length of electrical interruptions to eliminate the base effect
11.	Geographical coverage of public transport	In case of non-availability of total route length network (especially for bus routes), number of stops will be used as a proxy.

Annexure 2: Detailed Questionnaire

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities								
Transport Authorities	Basic Information	Name of the nodal officer						
Transport Authorities	Basic Information	Phone number						Please provide the official contact number
Transport Authorities	Basic Information	Email ID						Please provide the official Email ID
Transport Authorities	Buses	Please provide the committed redressal period (in days) for bus service related grievances.	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency has committed to

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
								resolve any grievance registered with them.
Transport Authorities	Sub-Urban Rail Transport	Please provide the committed redressal period (in days) for sub-urban railways related grievances. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered with them.
Transport Authorities	Metro Rail Authority	Please provide the committed redressal period (in days) for metro-rail related grievances. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered with them.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Metro Rail Authority	Please provide the committed redressal period (in days) for mono-rail related grievances. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered with them.
Transport Authorities	Tramways	Please provide the committed redressal period (in days) for tramway related grievances. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered with them.
Transport Authorities	Marine Transport Authority	Please provide the committed redressal period (in days) for water transport (ferry	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Committed redressal period is the maximum time the ULB/concerned government agency

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		service) related grievances. (if applicable)						has committed to resolve any grievance registered with them.
Transport Authorities	Buses	Please specify the average time taken (in days) to redress bus service related grievances registered online for the period from 1st January, 2017 to 31st December, 2017. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Buses	Please specify the average time taken (in days) to redress bus service related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Sub-Urban Rail Transport	Please specify the average time taken (in days) to redress sub-urban railways related grievances	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		registered online for the period from 1st January, 2017 to 31st December, 2017. (if applicable)						for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Sub-Urban Rail Transport	Please specify the average time taken (in days) to redress sub-urban railways related grievances registered through offline methods like phone call or physical registration, for the period from	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		1st January, 2017 to 31st December, 2017. (if applicable)						should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Metro Rail Authority	Please specify the average time taken (in days) to redress metro rail related grievances registered online for the period from 1st January, 2017 to 31st December, 2017. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Metro Rail Authority	Please specify the average time taken (in days) to redress metro rail related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Metro Rail Authority	Please specify the average time taken (in days) to redress mono rail related grievances registered online	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		for the period from 1st January, 2017 to 31st December, 2017. (if applicable)						for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Metro Rail Authority	Please specify the average time taken (in days) to redress mono rail related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		to 31st December, 2017. (if applicable)						should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Tramways	Please specify the average time taken (in days) to redress tramways related grievances registered online for the period from 1st January, 2017 to 31st December, 2017. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Tramways	Please specify the average time taken (in days) to redress tramways related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017. (if applicable)	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Marine Transport Authority	Please specify the average time taken (in days) to redress water transport (ferry service) related	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from online records) divided by the number of complaints registered

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		grievances registered online for the period from 1st January, 2017 to 31st December, 2017. (if applicable)						for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Marine Transport Authority	Please specify the average time taken (in days) to redress metro rail related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017	Days	Grievance register	Secondary	URL/ Physical log	State Transport Authority	Time taken to resolve registered complaints/ grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., If 100 complaints were registered regarding irregular transport services, then this

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		to 31st December, 2017. (if applicable)						should be calculated as sum of time taken to resolve each complain divided by 100.
Transport Authorities	Buses	Please specify the total number of stops for bus services (including stops served by both public and private bus services) in the city (as per the latest available data).	Number	Route map	Secondary	Route map	State Transport Authority	Number of bus stops within city boundaries can be obtained from the transport operator (private and public) records.
Transport Authorities	Marine Transport Authority	Please specify the total number of stops for water transport (ferry services, if applicable) in the city (as per the	Number	Route map	Secondary	Route map	state transport/marine transport authority	Number of stops for water transport within city boundaries can be obtained from the Surface Water Transport Authority.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		latest available data).						
Transport Authorities	Metro Rail Authority	Please specify the total number of stops for metro rail (if applicable) in the city (as per the latest available data).	Number	Route map	Secondary	Route map	Metro Rail Authority	Number of stops for metro rail within city boundaries can be obtained from DMRCL/Metro Authority website.
Transport Authorities	Metro Rail Authority	Please specify the total number of stops for mono rail (if applicable) in the city (as per the latest available data).	Number	Route map	Secondary	Route map	Mono Rail authority/Railway Authority	Number of stops for mono rail within city boundaries can be obtained from the transport operator (private and public) records.
Transport Authorities	Tramways	Please specify the total number of stops for tramway (if applicable) in	Number	Route map	Secondary	Route map	Calcutta Tram Company/Transport Authority	Number of stops in tramway within city boundaries can be obtained from the

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		the city (as per the latest available data).						transport operator (private and public) records.
Transport Authorities	Sub-Urban Rail Transport	Please specify the total number of stops for suburban rail transport (if applicable) within city limits (as per the latest available data).	Number	Route map	Secondary	Route map	Railway authority	Number of stops in sub-urban railways lying within city boundaries can be obtained from the transport operator (private and public) records.
Transport Authorities	Buses	Please specify the total route length for bus services in the city (including public and private bus services, as per the latest available data).	Kilometre	Route map	Secondary	Route map	State Transport Authority/RTO	Length of bus network within city boundaries can be obtained from the respective transport authorities. Only those routes on which the service frequency is one hour or less should be considered. Each route should be counted only

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
								once regardless of the number of services operating on that route.
Transport Authorities	Marine Transport Authority	Please specify the total route length for water transport (ferry services, if applicable) in the city (as per the latest available data).	Kilometre	Route map	Secondary	Route map	Surface water/marine transport authority	Length of water transport network within city boundaries can be obtained from the respective transport authorities. Only those routes on which the service frequency is one hour or less should be considered.
Transport Authorities	Metro Rail Authority	Please specify the total route length for metro rail (if applicable) in the city (as per the	Kilometre	Route map	Secondary	Route map/ Website of Metro Authority	Metro Railway authority	Length of metro rail network within city boundaries can be obtained from the respective transport authorities. Only those routes on which the

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		latest available data).						service frequency is one hour or less should be considered.
Transport Authorities	Metro Rail Authority	Please specify the total route length for mono rail (if applicable) in the city (as per the latest available data).	Kilometre	Route map	Secondary	Route map from Comprehensive Mobility Plan/Transport Study	Mono Rail/Railway authority/Development Authority	Length of mono rail network within city boundaries can be obtained from the respective transport authorities. Only those routes on which the service frequency is one hour or less should be considered.
Transport Authorities	Tramways	Please specify the total route length for tramway (if applicable) in the city (as per the latest available data).	Kilometre	Route map	Secondary	Route map	Tramway authority	Length of tramway networks within city boundaries can be obtained from the respective transport authorities. Only those routes on which the service frequency is one

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
								hour or less should be considered.
Transport Authorities	Sub-Urban Rail Transport	Please specify the total route length for suburban rail transport (if applicable) within city limits (as per the latest available data).	Kilometre	Route map	Secondary	Route map	Railway authority/ Google Map/ Comprehensive Mobility Plan/ Transport Study	Length of sub-urban rail networks within city boundaries can be obtained from the respective transport authorities. Only those routes on which the service frequency is one hour or less should be considered.
Transport Authorities	Buses	Please specify the total number of operational buses under STU operating within city limits (as per the latest available data).	Number	Operator records	Secondary	Operator records	State Transport Authority/RTO	List of total number of operational buses are to be summarized from relevant operators. Please make sure that it is the operational list.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Buses	Please specify the total number of operational buses under the SPV (if applicable) operating within city limits (as per the latest available data).	Number	Operator records	Secondary	Operator records	State Transport Authority/RTO	List of total number of operational buses are to be summarized from relevant operators. Please make sure that it is the operational list.
Transport Authorities	Buses	Please specify the total number of operational buses under the private service providers within city limits (as per the latest available data).	Number	Private Operator records	Secondary	Private Operator records	State Transport Authority/RTO	List of total number of operational buses are to be summarized from relevant operators. Please make sure that it is the operational list.
Transport Authorities	Registered Vehicles	Please specify the total number of agricultural tractors registered in the city in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Registered Vehicles	Please specify the total number of Light Motor Vehicles (Goods) registered in the city in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of buses registered in the city in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of taxis registered in the city in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of Light Motor Vehicles (Passenger)	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		registered in the city in FY 2016-17.						
Transport Authorities	Registered Vehicles	Please specify the total number of motor cycles on Hire in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of two-wheelers in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of cars in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of jeeps in the city	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		registered in FY 2016-17.						
Transport Authorities	Registered Vehicles	Please specify the total number of omni buses in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of tractors in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of trailers in the city registered in FY 2016-17.	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the state Transport authority/RTO.
Transport Authorities	Registered Vehicles	Please specify the total number of other vehicles not	Number	Vehicle registration records	Secondary	Vehicle registration records	State Transport Authority/RTO	Vehicle registration data will be available with the

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		covered in the previous questions in the city registered in FY 2016-17.						state Transport authority/RTO.
Transport Authorities	Metro Rail Authority	Please specify the total number of operational coaches available in metro rail (if applicable) in the city (as per the latest available data).	Number	Metro records	Secondary	Metro records	State Transport Authority/Metro	List of total number of operational coaches are to be summarized from the metro rail authorities.
Transport Authorities	Sub-Urban Rail Transport	Please specify the total number of operational coaches available in sub-urban rail network (if applicable) in the city (as per the latest available data).	Number	Railway records	Secondary	Railway records	Railway Authority	List of total number of operational coaches are to be summarized from the sub-urban railway authorities.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Buses	Please specify the number of bus depots within city limits with cycle parking facilities within a radius of 250m (as per the latest available data).	Number	Parking records	Secondary	Parking records	State Transport Authority	State the number of bus depots with bicycle parking facilities within a distance of 250 metres from the aforementioned interchange facility.
Transport Authorities	Metro Rail Authority	Please specify the number of Metro rail stations within city limits (if applicable) with cycle parking facilities within a radius of 250m (as per the latest available data).	Number	Parking records	Secondary	Parking records	State Transport Authority	State the number of metro railway stations, with bicycle parking facilities within a distance of 250 metres from the aforementioned interchange facilities.
Transport Authorities	Mono Rail Authority	Please specify the number of Mono rail stations within	Number	Parking records	Secondary	Parking records	State Transport Authority	State the number of monorail stations, with bicycle parking facilities

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		city limits (if applicable) with cycle parking facilities within a radius of 250m (as per the latest available data).						within a distance of 250 metres from the aforementioned interchange facilities.
Transport Authorities	Sub-Urban Rail Transport	Please specify the number of sub-urban railway stations within city limits (if applicable) with cycle parking facilities within a radius of 250m (as per the latest available data).	Number	Parking records	Secondary	Parking records	State Transport Authority	State the number of sub-urban railway stations, with bicycle parking facilities within a distance of 250 metres from the aforementioned interchange facilities.
Transport Authorities	Marine Transport Authority	Please specify the number of Ferry Terminals within city limits (if applicable) with cycle parking	Number	Parking records	Secondary	Parking records	State Transport Authority	State the number of ferry terminals, with bicycle parking facilities within a distance of 250 metres

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		facilities within a radius of 250m (as per the latest available data).						from the aforementioned interchange facilities.
Transport Authorities	Buses	Please specify the total number of bus depots/ terminals within city limits (as per the latest available data).	Number	Transport department records	Secondary	Transport department records	State Transport Authority	Total number of bus depots may be compiled from relevant operators.
Transport Authorities	Marine Transport Authority	Please specify the total number of ferry terminals within city limits (if applicable) (as per the latest available data).	Number	Transport department records	Secondary	Route map	Surface water/Marine transport authority	Total number of ferry terminals may be compiled from the marine transport authority.
Transport Authorities	Buses	Total number of bus stops within city limits with Public Information Systems (as per the	Number	Transport department records	Physical	Random sample survey	State Transport Authority	The number of interchanges with operational signages and

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
		latest available data).						audio systems to aide passenger information.
Transport Authorities	Sub-Urban Rail Transport	Total number of sub-urban railway stations within city limits (if applicable) with Public Information Systems (as per the latest available data).	Number	Transport department records	Physical	Random sample survey	Railway Authority	The number of interchanges with operational signages and audio systems to aide passenger information.
Transport Authorities	Marine Transport Authority	Please specify the total number of ferry terminals within city limits (if applicable) with Public Information Systems (as per the latest available data).	Number	Transport department records	Secondary	Route map	Surface water/Marine transport authority	The number of interchanges with operational signages and audio systems to aide passenger information.

Main Category	Sub Category	Questions	Unit	Data Source	Audit Method	Audit Source	Data Source Department	Hint
Transport Authorities	Metro Rail Authority	Total number of metro stations within city limits (if applicable) with Public Information Systems (as per the latest available data).	Number	Transport department records	Physical	Random sample survey	Metro Rail Authority	The number of interchanges with operational signages and audio systems to aide passenger information.

Central/State Pollution Control Board								
Central/State Pollution Control Board	Basic Information	Name of the nodal officer						
Central/State Pollution Control Board	Basic Information	Phone number						Please provide the official contact number.
Central/State Pollution Control Board	Basic Information	Email ID						Please provide the official Email ID.
Central/State Pollution Control Board	Air Quality	Please specify the annual mean concentration of SO2 in the city for the period from 1st January, 2017 to 31st December, 2017.	µg/metre cube	NAMP report, Central Pollution Control Board/state Pollution Control Board	Secondary	NAMP report, Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board is executing a nation-wide programme of ambient air quality monitoring known as National Air Quality Monitoring Programme (NAMP). The network consists of Six hundred and Eighty Three (683)

								operating stations covering Three Hundred (300) cities/towns in twenty six (29) states and four (6) Union Territories of the country. Year wise data since 2013 is available at http://cpcb.nic.in/namp-data/. Please report the data for 2016-17. As per CPCB guidelines, annual mean concentration range (μg/m3) of SO2 is calculated as an annual arithmetic mean of minimum 104 measurements in a year taken twice a week. Air samples should be tested at various points in the city. Measurements may be carried out as per the guidelines for manual sampling and analysis provided by the CPCB (Guidelines for the Measurement of

								Ambient Air Pollutants Volume-I, 2011). Guidelines on choosing monitoring locations is also given by CPCB (Guidelines for Ambient Air Quality Monitoring, 2003).
Central/State Pollution Control Board	Air Quality	Please specify the annual mean concentration of NO2 in the city for the period from 1st January, 2017 to 31st December, 2017.	µg/metre cube	NAMP report, Central Pollution Control Board/state Pollution Control Board	Secondary	NAMP report, Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board is executing a nation-wide programme of ambient air quality monitoring known as National Air Quality Monitoring Programme (NAMP). The network consists of Six hundred and Eighty Three (683) operating stations covering Three Hundred (300) cities/towns in twenty six (29) states and four (6) Union Territories of the country. Year wise data since 2013 is available at http://cpcb.nic.in/namp-

								data/. Please report the data for 2016-17. As per the CPCB guidelines, annual mean concentration range (µg/m3) of NO2 is calculated as an annual arithmetic mean of minimum 104 measurements in a year taken twice a week. Air samples should be tested at various points in the city. Measurements may be carried out as per the guidelines for manual sampling and analysis provided by the CPCB (Guidelines for the Measurement of Ambient Air Pollutants Volume-I, 2011). Guidelines on choosing monitoring locations is also given by CPCB (Guidelines for Ambient Air Quality Monitoring, 2003).

Central/State Pollution Control Board	Air Quality	Please specify the annual mean concentration of PM10 in the city for the period from 1st January, 2017 to 31st December, 2017.	µg/metre cube	NAMP report, Central Pollution Control Board/state Pollution Control Board	Secondary	NAMP report, Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board is executing a nation-wide programme of ambient air quality monitoring known as National Air Quality Monitoring Programme (NAMP). The network consists of Six hundred and Eighty Three (683) operating stations covering Three Hundred (300) cities/towns in twenty six (29) states and four (6) Union Territories of the country. Year wise data since 2013 is available at http://cpcb.nic.in/namp-data/ As per the CPCB guidelines, annual mean concentration range (µg/m3) of PM10 is calculated as an annual arithmetic mean of minimum 104 measurements in a year

								taken twice a week. Air samples should be tested at various points in the city. Measurements may be carried out as per the guidelines for manual sampling and analysis provided by the CPCB (Guidelines for the Measurement of Ambient Air Pollutants Volume-I, 2011). Guidelines on choosing monitoring locations is also given by CPCB (Guidelines for Ambient Air Quality Monitoring, 2003).
Central/State Pollution Control Board	Noise Pollution	Please specify the total number of samples collected and tested for the period from 1st January, 2017 to 31st December, 2017, for assessing	Number	Central Pollution Control Board/state Pollution Control Board	Secondary	Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	This indicator captures the level of noise pollution in a city. Data on total number of noise samples collected as per CPCB norms can be collected from different measures/programmes taken by CPCB/SPCB and

		noise levels in the city.						local government to regulate noise pollution as per the provisions of the Noise Pollution (Regulation and Control) Rules, 2000. Please refer http://cpcb.nic.in/noise-pollution/for details.
Central/State Pollution Control Board	Noise Pollution	Please specify the total number of noise samples from the city which met Central Pollution Control Board norms for the period from 1st January, 2017 to 31st December, 2017.	Number	Central Pollution Control Board/state Pollution Control Board	Secondary	Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	This refers to the total number of samples tested by the CPCB/SPCB/Local Government for ascertaining noise pollution levels in the city and that met the prescribed CPCB norms. Please refer to http://cpcb.nic.in/noise-pollution/for norms prescribed by CPCB for noise pollution regulation. Please report the data for 2016-17.

Central/State Pollution Control Board	Water Quality	Please specify the total number of samples tested in the city for assessment of water quality in public surface water bodies as per CPCB norms for the period from 1st January, 2017 to 31st December, 2017..	Number	National Water Monitoring Programme report, Central Pollution Control Board/state Pollution Control Board	Secondary	National Water Monitoring Programme report, Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	Data on total number of samples tested can be collected from CPCB's National Water Monitoring Programme or concerned SPCB. The programme captures minimum, maximum and mean values of water quality parameters like Temperature, Dissolved Oxygen(D.O.), pH, Conductivity, Biochemical Oxygen Demand(B.O.D), Nitrate-N and Nitrite-N, Faecal Coliform and Total Coliform. Previous data collected by CPCB or respective state Pollution Control Boards (SPCBs) during the same year can be used to additionally obtain information for different times of the year. For reference, please refer to http://cpcb.nic.in/nwmp-

								monitoring-network/Please report the data for 2016-17.
Central/State Pollution Control Board	Water Quality	Please specify the total number of samples from the city that met Central Pollution Control Board norms for assessment of water quality in public surface water bodies for the period from 1st January, 2017 to 31st December, 2017.	Number	National Water Monitoring Programme report, Central Pollution Control Board/state Pollution Control Board	Secondary	National Water Monitoring Programme report, Central Pollution Control Board/state Pollution Control Board	Central Pollution Control Board/state Pollution Control Board	Data on total number of samples that met CPCB norms can be collected from CPCB's National Water Monitoring Programme (NWMP) or concerned SPCB. The NWMP captures minimum, maximum and mean values of water quality parameters like Temperature, Dissolved Oxygen (D.O.), pH, Conductivity, Biochemical Oxygen Demand(B.O.D), Nitrate-N and Nitrite-N, Faecal Coliform and Total Coliform. Previous data collected by CPCB or respective state Pollution Control Boards (SPCBs) during the same year can be used to additionally

								obtain information for different times of the year. For reference, please refer to http://cpcb.nic.in/nwmp-monitoring-network/Please report the data for 2016-17.

Development Authority								
Development Authority	Basic Information	Name of the nodal officer						
Development Authority	Basic Information	Phone number						Please provide the official contact number.
Development Authority	Basic Information	Email ID						Please provide the official Email ID.
Development Authority	Online Citizen Services	Can registration for building plan sanctions be done online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online registrations for obtaining building plan sanctions can be made through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Development Authority	Online Citizen Services	Can registration for commencement certificate be obtained online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online registrations for obtaining commencement certificate (or any other

								certificate issued by the concerned authority that allows commencement of construction activities) can be made through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Development Authority	Online Citizen Services	Can registration for occupancy certificate be done online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online registrations for obtaining occupancy certificate (or any other certificate issued by the concerned authority that allows occupancy or mark completion of construction) can be made through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.

Development Authority	Online Citizen Services	Can payment for building plan sanctions be made online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online payment of fee for building plan sanctions can be made through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres was enabled.
Development Authority	Online Citizen Services	Can payment for commencement certificate be made online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online payment of fee for commencement certificates can be made through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Development Authority	Online Citizen Services	Can payment for occupancy certificate be made online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if online payment of fee for occupancy certificates can be made through ICT-enabled platforms such as ULB web portal,

								mobile application, e-kiosks and/or common services centres.
Development Authority	Online Citizen Services	Can the status of planned sanctions be tracked online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if the status of applications for building plan sanctions be tracked online through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Development Authority	Online Citizen Services	Can the status of commencement certificate application be tracked online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if the status of applications for commencement certificate be tracked online through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.

Development Authority	Online Citizen Services	Can the status of occupancy certificate application be tracked online?	Yes/No	IT Department	Secondary	URL of the service providing agency	City development authority/ULB	Please indicate if the status of applications for occupancy certificate be tracked online through ICT-enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Development Authority	Building Plan Approval	Please specify the total number of applications received for development/ redevelopment approvals in the city in FY 2016-17.	Number	Building plan approvals register	Secondary	Building plan approvals register	ULB/Development Authority	Please specify the total number of building plan applications for new constructions and redevelopment received both online and offline by the concerned agency for FY 2016-17.
Development Authority	Construction Permits	Please specify the total built-up area of the buildings/properties issued occupancy certificates in the period from 1st January, 2017 to	Sq. m.	Occupancy Certificate records	Secondary	Occupancy Certificate records	City Development authority/ULB	An occupancy certificate is issued by the ULB certifying a building's compliance with applicable building codes and other laws, and indicating it to be in a condition suitable for occupancy. It may be

		31st December, 2017.						termed differently in different jurisdictions like completion certificate, occupancy cum completion certificate, etc. For every property either provisional or final certificate whichever is applicable may be included.
Development Authority	Construction Permits	Please specify the total built-up area of the buildings/properties issued occupancy certificates in the period from 1st January, 2016 to 31st December, 2016.	Number	Occupancy Certificate records	Secondary	Occupancy Certificate records	City Development authority/ULB	An occupancy certificate is issued by the ULB certifying a building's compliance with applicable building codes and other laws, and indicating it to be in a condition suitable for occupancy. It may be termed differently in different jurisdictions like completion certificate, occupancy cum completion certificate, etc. For every property either

								provisional or final certificate whichever is applicable may be included.
Development Authority	Construction Permits	Please specify the total number of Building Plan Approvals issued for the period from 1st January, 2017 to 31st December, 2017.	Number	Occupancy Certificate records	Secondary	Occupancy Certificate records	City Development authority/ULB	Please indicate the total number of buildings/properties issued with occupancy certificates for the period from 1st January, 2017 to 31st December, 2017. An occupancy certificate is issued by the ULB certifying a building's compliance with applicable building codes and other laws, and indicating it to be in a condition suitable for occupancy. It may be termed differently in different jurisdictions like completion certificate, occupancy cum completion certificate, etc. For every property either

								provisional or final certificate whichever is applicable may be included.
Development Authority	Construction Permits	Please specify the total number of Building Plan Approvals issued for the period from 1st January, 2016 to 31st December, 2016.	Number	Occupancy Certificate records	Secondary	Occupancy Certificate records	City Development authority/ULB	Please indicate the total number of buildings/properties issued with occupancy certificates for the period from 1st January, 2017 to 31st December, 2017. An occupancy certificate is issued by the ULB certifying a building's compliance with applicable building codes and other laws, and indicating it to be in a condition suitable for occupancy. It may be termed differently in different jurisdictions like completion certificate, occupancy cum completion certificate, etc. For every property either

								provisional or final certificate whichever is applicable may be included.
Development Authority	Green Building	Please specify the total built-up area of buildings that were issued occupancy certificates in the period from 1st January, 2017 to 31st December, 2017 and received green ratings from green building rating/certification agencies.	Sq. m.	Rating agencies (LEEDS/GRIHA/ Indian Green Building Council etc.)	Secondary		City Development authority/ULB	The principal features of a green building include valuable use of soil and landscapes, resourceful utilization of water, usage of energy efficient and Eco-friendly apparatus, operational control & building management systems, use of renewable energy, use of recycled or recyclable materials and most significantly, better indoor air quality and air circulation for health and comfort. List of certified (approved) buildings/projects can be retrieved from GBCI

								(please refer to: http://www.gbci.org/#certification) and GRIHA (please refer to: http://www.grihaindia.org/?&t=library#&Library)
Development Authority	Universal Design Principles	Please provide the total number of government buildings in the city constructed as per **universal design principles**.	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. It includes central/state/local government buildings. (please refer to: Page 10, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India%20Campaign_Broc

								hure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)
Development Authority	Universal Design Principles	Please provide the total number of subways (if applicable) in the city constructed as per **universal design principles**.	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. (please refer to: Page 10, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India%20Campaign_Brochure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/f

								iles/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)
Development Authority	Universal Design Principles	Please specify the total number of foot-over-bridges (FOB) constructed (if applicable) in the city as per **universal design principles**.	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. (please refer to: Page 10, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India %20Campaign_Brochure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)

Development Authority	Universal Design Principles	Please specify the total number of roads with footpaths constructed in the city as per **universal design principles**.	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. (please refer to: Page 10, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India%20Campaign_Brochure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)
Development Authority	Universal Design Principles	Please specify the total number of malls constructed in the city as per	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be

		universal design principles.						undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. (please refer to: Page 10, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India %20Campaign_Brochure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)
Development Authority	Universal Design Principles	Please specify the total number of public toilets (public convenience) constructed as per **universal design principles** in the city.	Number	Planning permission records	Physical	Random sample survey	City Development authority/ULB	An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities. (please refer to: Page 10,

								http://disabilityaffairs.gov.in/upload/uploadfiles/files/Accessible%20India%20Campaign_Brochure.pdf) (please refer to: chapter 5, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Harmonised%20guidelinesd%20released%20on%2023rd%20March%202016_compressed.pdf)
Development Authority	Rainwater Harvesting	Does the state/city has norms (law/by-laws/guidelines) for rainwater harvesting in the city?		By-laws/norms/guidelines document	Secondary	Planning permission records	City Development authority/ULB	Please specify if the state Government has formulated norms for making rainwater harvesting mandatory. These norms could form part of building byelaws (as in the case of Arunachal Pradesh, Assam) , water management (as in the case of Bihar), municipal rules (e.g., West Bengal), Development Control

								Rules (e.g., Dadra Nagar Haveli) or any other law.
Development Authority	Rainwater Harvesting	Are the norms notified?		state Gazette	Secondary	Planning permission records	City Development authority/ULB	If a state or city has a by-law for setting up of rainwater harvesting systems in the properties and the same have been published in the state Gazette, then it is considered to be notified.
Development Authority	Rainwater Harvesting	Is rainwater harvesting mandatory for all properties in the city?		Planning permission records	Secondary	Planning permission records	City Development authority/ULB	Do the norms require all properties to install rain water harvesting irrespective of size or topology of the plot
Development Authority	Rainwater Harvesting	Please specify the number of properties to which technical support for installation of rainwater harvesting facilities was provided by the ULB.	Number	Rainwater Harvesting Cell Records	Secondary	Planning permission records	City Development authority/ULB	Technical support provided by the ULB may include provision of design specification for RWH systems to households/commercial establishments/institutions and/or having a

								dedicated technical cell for RWH.
Development Authority	Rainwater Harvesting	Please specify the number of properties to which financial support for installation of rainwater harvesting facilities was provided by the ULB.	Number	Rainwater Harvesting Cell Records	Secondary	Planning permission records	City Development authority/ULB	Financial assistance may include provision of a subsidy under a scheme or rebate on property tax to those who have installed RWH systems in their premises.
Development Authority	Rainwater Harvesting	Please specify the number of properties to which both technical and financial support for installation of rainwater harvesting facilities was provided by the ULB.	Number	Rainwater Harvesting Cell Records	Secondary	Planning permission records	City Development authority/ULB	Technical support provided by the ULB may include provision of design specification for RWH systems to households/commercial establishments/institutions and/or having a dedicated technical cell for RWH. Financial assistance may include provision of a subsidy under a scheme or rebate on property tax to those who have installed RWH

								systems in their premises. In this regard, please specify the total number of technical/financial support provided by the ULB.
Development Authority	Rainwater Harvesting	Please specify the number of citizens to whom general information for installation of rainwater harvesting facilities was provided by the ULB.	Number	Rainwater Harvesting Cell Records	Secondary	Planning permission records	City Development authority/ULB	General information involve providing citizens about the concept of rain water harvesting, available municipal by-law or guidelines, technical and/or financial support provided by the ULB or any other agency.
Development Authority	Building Infrastructure	Please specify the total number of new and redeveloped residential buildings in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	

Development Authority	Building Infrastructure	Please specify the total number of new and redeveloped commercial buildings in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	
Development Authority	Building Infrastructure	Please specify the total number of new and redeveloped government buildings in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	
Development Authority	Building Infrastructure	Please specify the total number of new and redeveloped institutional buildings in the city for the period from 1st January, 2017 to	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	

		31st December, 2017.						
Development Authority	Rainwater Harvesting	Please specify the number of new and redeveloped residential properties (of plot size equal to or greater than 300 sq. m) that have installed rainwater harvesting facilities for the period from 1st January, 2017 to 31st December, 2017.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	This refers to the total number of commercial properties that installed rainwater harvesting in their premises in 2016-17 in the city. Data can be collected from the Rainwater Harvesting Cell or Department of the ULB.
Development Authority	Rainwater Harvesting	Please specify the number of new and redeveloped commercial properties (of plot size equal to or greater than 300 sq. m) that have installed rainwater harvesting facilities	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	This refers to the total number of redeveloped commercial properties that installed rainwater harvesting systems in their premises in 2016-17. Data can be collected from the Rainwater

		for the period from 1st January, 2017 to 31st December, 2017.						Harvesting Cell or Department of the ULB.
Development Authority	Rainwater Harvesting	Please specify the number of institutions (of plot size equal to or greater than 300 sq. m) that have installed rainwater harvesting facilities as for the period from 1st January, 2017 to 31st December, 2017.	Number	Planning permission records	Secondary			This refers to the total number of institutions (e.g., schools, colleges, etc.) that installed rainwater harvesting systems in 2016-17 in the city. Data can be collected from the Rainwater Harvesting Cell or Department of the ULB.
Development Authority	Rainwater Harvesting	Please specify the number of government buildings (new and redeveloped) in the city with installed rainwater harvesting facilities as for the period from 1st January,	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	This refers to the total number of government buildings (central/state/local) that installed rainwater harvesting systems in 2016-17 in the city. Data can be collected from the Rainwater Harvesting Cell

		2017 to 31st December, 2017.						or Department of the ULB.
Development Authority	Rainwater Harvesting	Please specify the number of properties that were inspected for availability of rainwater harvesting facilities for the period from 1st January, 2017 to 31st December, 2017.	Number	RWH Inspection Records	Secondary	Planning permission records	City Development authority/ULB	Wherever ULB authorities e.g., rainwater harvesting department or cell inspects properties for installation of rainwater harvesting systems and issues notices for non-compliance, the total number of such properties that were inspected should be indicated. Data can be collected from the Rainwater Harvesting Cell or Department of the ULB.

Discoms/Electricity Board								
Discoms/Electricity Board	Basic Information	Name of the nodal officer						
Discoms/Electricity Board	Basic Information	Phone number						Please provide the official contact number
Discoms/Electricity Board	Basic Information	Email ID						Please provide the official Email ID
Discoms/Electricity Board	Online Services	Please specify if citizens can apply for electricity connection online.	Yes/No	IT Department	Secondary	URL	DISCOM/Electricity board	Please indicate if citizens can apply for a electricity connection through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Discoms/Electricity Board	Online Services	Please specify if citizens can pay electricity bill online.	Yes/No	IT Department	Secondary	URL	DISCOM/Electricity board	Please indicate if citizens can make payment for electricity bill through ICT enabled platforms such as ULB web portal, mobile application, e-

								kiosks and/or common services centres.
Discoms/Electricity Board	Online Services	Please provide the total number of unique hits (bi-monthly average) received on the online portal for electricity related services for the period from 1st January, 2017 to 31st December, 2017.	Hits	IT Department	Secondary	URL	DISCOM/Electricity board	To obtain this information, data on total number of unique user logins for each of the bimonthly periods for the FY 2016-17 for electricity related services should be collected. It includes logins through different platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID in a two month period should be counted only once irrespective of platform used to login. Once this data is obtained for each of the two month periods in the FY 2016-17, take the average (sum of number of users in each of the

								two month period/6) and indicate here.
Discoms/Electricity Board	Grievance Redressal	Please specify the committed redressal period for electricity related grievances.	Days	Grievance register	Secondary	URL/Physical log	DISCOM/Electricity board	Committed redressal period is the maximum time the DISCOM/Electricity Board has committed to resolve any grievance registered by citizens.
Discoms/Electricity Board	Grievance Redressal	Please provide the average of the actual redressal period (in days) for electricity related grievances registered online for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	DISCOM/Electricity board	Total number of days taken to resolve registered complaints/grievances (from both online/physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.

Discoms/Electricity Board	Grievance Redressal	Please provide the average of the actual redressal period (in days) for electricity related grievances registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	DISCOM/Electricity board	Total number of days taken to resolve registered complaints/grievances (from both online/physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Discoms/Electricity Board	Electricity Connections	Please specify the total number of authorized electrical connections in the city for residential/ domestic use.	Number	Electricity connection records	Secondary	Electricity connection records	DISCOM/Electricity board	Only authorized or metered electrical connections should be considered. City boundary may be defined as per the list of PIN codes provided by the ULB.

Discoms/Electricity Board	Electricity Connections	Please specify the total number of electrical connections (including residential, commercial, industrial, institutional and government electrical connections) with smart meters in the city.	Number	Metered connection records	Secondary	Metered connection records	DISCOM/Electricity board	A smart meter enables, real time data collection of electricity consumption, eliminating the need for manual meter reading. City boundary may be defined as per the list of PIN codes provided by the ULB. The number of connections covered through smart meters would be recorded by the DISCOMs/the electricity board.
Discoms/Electricity Board	Electricity Connections	Please specify the total number of authorized electrical connections (including residential, commercial, industrial, institutional and government	Number	Metered connection records	Secondary	Metered connection records	DISCOM/Electricity board	Only authorized or metered electrical connections should be considered. City boundary may be defined as per the list of PIN codes provided by the ULB.

		electrical connections).						
Discoms/Electricity Board	Power Supply Interruptions	Please specify the total number of sustained (> 5 minutes), scheduled electrical interruptions in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Reports submitted to electricity regulatory authority and sub-station log books, IPDS Dashboard	Secondary	Reports submitted to electricity regulatory authority	DISCOM/Electricity board	DISCOMs report data on frequency of electrical interruptions at 11kV feeder level to the state Electricity Regulatory Commissions (SERCs). City boundaries may be defined as per the list of PIN Codes provided by the ULB.
Discoms/Electricity Board	Power Supply Interruptions	Please specify the number of sustained (> 5 minutes), unscheduled electrical interruptions in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Reports submitted to electricity regulatory authority and sub-station log books, IPDS Dashboard	Secondary	Reports submitted to electricity regulatory authority	DISCOM/Electricity board	DISCOMs report data on frequency of electrical interruptions at 11kV feeder level to the state Electricity Regulatory Commissions (SERCs). City boundaries may be defined as per the list of PIN Codes provided by the ULB.

Discoms/Electricity Board	Power Supply Interruptions	Please specify the total duration of sustained (> 5 minutes), unscheduled electrical interruptions in the city for the period from 1st January, 2017 to 31st December, 2017.	Minutes	Reports submitted to electricity regulatory authority and sub-station log books, IPDS Dashboard	Secondary	Reports submitted to electricity regulatory authority	DISCOM/Electricity board	Sum of the monthly data on duration of sustained, unscheduled electrical interruptions reported at 11kV feeder level by the DISCOMs/state Electricity boards to the state Electricity Regulatory Commissions (SERCs).
Discoms/Electricity Board	Energy Consumption	Please specify the total electricity supplied to the city (including domestic and non-domestic connections) by DISCOMs/ electricity board in the/ for the period from 1st January, 2017 to 31st December, 2017.	kWh	DISCOM/Electricity Board records	Secondary	DISCOM/Electricity board records	DISCOM/Electricity board	The total electricity consumption by residential, commercial and industrial users should be aggregated. Data on total electricity supplied to the city can be collected from the DISCOMs/Electricity Board.

Discoms/Electricity Board	Energy Consumption	Please specify the total capacity of generator sets installed by the city (including domestic and non-domestic users) for the period from 1st January, 2017 to 31st December, 2017.	kWh	DISCOM/Electricity Board records	Secondary	DISCOM/Electricity board records	DISCOM/Electricity board	The total installed capacity by residential, commercial and industrial users should be aggregated.
State Disaster Management Authority								
State Disaster Management Authority	Basic Information	Name of the nodal officer						
State Disaster Management Authority	Basic Information	Phone number						Please provide the official contact number.
State Disaster Management Authority	Basic Information	Email ID						Please provide the official email ID.

State Education Department								
State Education Department	Basic Information	Name of the nodal officer						
State Education Department	Basic Information	Phone number						Please provide the official contact number.
State Education Department	Basic Information	Email ID						Please provide the official email ID.
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 1 in the city in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included.

								Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 2 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same.

								Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 3 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-

								2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 4 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf

State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 5 inthe period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 6 inthe period	Number	Unified District Information	Secondary	Unified District Information	District education department	The District Information System for Education database has enrolment data at individual school

		from 1st October to 31st September, 2017.		System for Education		System for Education		level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 7 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using

								the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 8 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need

								to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 1 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17

								data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 2 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Docume

								nts/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 3 inthe period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf

State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 4 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 5	Number	Unified District Information	Secondary	Unified District Information	District education department	The District Information System for Education database has enrolment data at individual school

		in the period from 1st October to 31st September, 2017.		System for Education		System for Education		level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 6 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using

								the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 7 in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need

								to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of female students enrolled in grade 8 inthe period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17

								data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Teachers	Please specify the total number of teachers for grades 1 to grade 5 in (both private and public schools) in the city in the period from 1st October to 31st September, 2017.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	Teachers include classroom teachers and other instructional staff (e.g., teachers' aides, guidance counsellors). This shall not include administrators or other non-teaching staff or kindergarten or pre-school teachers and staff. The District Information System for Education database has data on teachers for all schools, which could be queried to obtain the city level data. City level data may be obtained using the list of PIN codes provided. Teachers from all private

								and public schools need to be included. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of schools in the city.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. Please refer to http://udise.in/dise.html
State Education Department	Digital Education Infrastructure	Please state the number of schools accessing content through National Knowledge Network (NKN) or any other digital content or	Number	Unified District Information System for Education	Physical	Random sample survey	District education department	National Knowledge Network is a knowledge sharing platform facilitated by the Government of India. For details, please refer to http://nkn.gov.in/

		knowledge sharing network.						
State Education Department	Digital Education Infrastructure	Please specify the total number of schools having at least one computer lab with at least ten functional computers as on 31st September, 2017.	Number	Unified District Information System for Education	Physical	Random sample survey	District education department	The District Information System for Education database has information on this which could be queried for city-level data. Please refer to http://udise.in/dise.html
State Education Department	Digital Education Infrastructure	Please specify the total number of schools having functional audio-visual facilities in the computer lab (e.g., projector, sound systems, loud speakers) as on 31st September, 2017.	Number	Unified District Information System for Education	Physical	Random sample survey	District education department	The District Information System for Education database has information on this which could be queried for city-level data. Please refer to http://udise.in/dise.html
State Education Department	Digital Education Infrastructure	Please specify the total number of schools having internet connection	Number	Unified District Information	Physical	Random sample survey	District education department	The District Information System for Education database has enrolment data at individual school

		as on 31st September, 2017.		System for Education				level which could be queried to obtain city level data. Please refer to http://udise.in/dise.html
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 1 in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-

								2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 2 in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf

State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 3 in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 4 in the city in	Number	Unified District Information	Secondary	Unified District Information	District education department	The District Information System for Education database has enrolment data at individual school

		the period from 1st October to 31st September, 2016.		System for Education		System for Education		level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 5 in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using

								the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 6 in the city in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need

								to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 7 in the city in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17

								data is the same. Please refer to http://udise.in/Downloads/Publications/Documents/Flash_Statistics-2015-16_(Elementary).pdf
State Education Department	Schools and Enrolment	Please specify the total number of students enrolled in grade 8 in the city in the city in the period from 1st October to 31st September, 2016.	Number	Unified District Information System for Education	Secondary	Unified District Information System for Education	District education department	The District Information System for Education database has enrolment data at individual school level which could be queried to obtain city level data. City level data may be obtained using the list of PIN codes provided by the ULB. Students from all private and public schools need to be included. Please ensure that the school base is common for 2015-16 and 2016-17 data is the same. Please refer to http://udise.in/Downloads/Publications/Docume

								nts/Flash_Statistics-2015-16_(Elementary).pdf

State Health Department								
State Health Department	Basic Information	Name of the nodal officer						
State Health Department	Basic Information	Phone number						Please provide the official contact number.
State Health Department	Basic Information	Email ID						Please provide the official email ID.
State Health Department	Citizen Services	Please provide the unique number of complaints (monthly average) received on the online portal for health related services in the city for the period from 1st January, 2017 to 31st December, 2017.	Hits		Secondary	URL	state health department/ULB	To obtain this information, collect the data on number of unique user logins for registration and tracking of complaints for each month. This would include logins across different media including- websites, phone based apps, kiosks, etc. Several logins from the same User ID in a month should be counted only once irrespective of

								media used to login. Once this data is obtained for each of the months in the year 2016-17, take the average (sum of number of users in each month/12).
State Health Department	Citizen Services	Please provide the committed redressal period (in days) for public health (vector control) related services for the year 2016-17.	Days	Grievance register	Secondary	URL/Physical log	state health department/ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
State Health Department	Citizen Services	Please specify the average redressal period (in days) for public health (vector control) related services for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	state health department/ULB	Total number of days taken to resolve registered complaints/grievances (from both online/physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding

								dengue outbreaks, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
State Health Department	Health Infrastructure	Please specify the total number of in-patient hospital beds available in public hospitals in the city including CHCs (community health centres).	Number	NHM/Health Department records	Secondary	NHM/Health Department records	state health department/ULB	Such records may be obtained from state Health service records which report the same to the Central Bureau of Health Intelligence. This data is also reported to the National Health Mission.
State Health Department	Health Infrastructure	Please specify the total number of in-patient hospital beds available in private hospitals in the city.	Number	NHM/Health Department records	Secondary	NHM/Health Department records	state health department/ULB	National Health Mission or the ULB Health Department should have a record of this data.
State Health Department	Healthcare Professionals	Please specify the total number of qualified allopathic	Number	NHM/Health Department	Secondary	NHM/Health Department records	state health department/ULB	Doctors (allopathic): medical graduates who hold either an MBBS (Bachelors degree in

		doctors practicing in the city.		records/Medical council data				Medicine and Surgery) degree alone or an MBBS degree with a specialist degree or diploma. Education is imparted in Medical Colleges. The Medical Council of India is acknowledged as the regulatory body for institutions granting these degrees. Such records may be obtained from state Health service records which report the same to the Central Bureau of Health Intelligence. This data is also reported to the National Health Mission. This data will also be available with the Indian Medical Council.
State Health Department	Healthcare Professionals	Please specify the total number of qualified AYUSH doctors in the city.	Number	NHM/Health Department records	Secondary	NHM/Health Department records	state health department/ULB	AYUSH doctors include ayurvedic, homeopathic, and unani doctors and hold bachelors or post graduate degrees in one

								of the above systems of traditional medicine. The regulatory body is the Central Council for Indian Medicine or the Central Council for Homeopathy. Such records may be obtained from the Ministry of AYUSH. This data is also reported to the National Health Mission.
State Health Department	Healthcare Professionals	Please specify the total number of qualified trained nurses in the city.	Number	NHM/Health Department records/Indian nursing council.	Secondary	NHM/Health Department records	state health department/ULB	Nurses: Nursing qualifications include a three and a half year diploma in General Nursing and Midwifery (GNM) or a four year bachelors degree (B.Sc) which may be followed by a two to three year post graduate degree (M.Sc) registered with the Nursing Council of India. Data with the ULB Health Department (if available)

								may be presented. In its absence, such records could be obtained from the Indian Nursing Council. This data is also reported to the National Health Mission.
State Health Department	Healthcare Professionals	Please specify the total number of qualified dentists in the city.	Number	NHM/Health Department records/Indian Dental council.	Secondary	NHM/Health Department records	state health department/ULB	Dentists: The basic bachelors degree (BDS) which may be followed by post-graduate training in the form of a Masters degree (MDS). The regulatory body is the Dental Council of India. Data with the ULB Health Department (if available) may be presented. In its absence, records could be obtained from the Indian Dental Council. This data is also reported to the National Health Mission.

State Health Department	Healthcare Professionals	Please specify the total number of qualified Pharmacists in the city.	Number	NHM/Health Department records/Pharmacy council	Secondary	NHM/Health Department records	state health department/ULB	Pharmacists: with a bachelors or masters degree in pharmacy ancillary health professionals includes laboratory technicians, opticians, dieticians and others. Data with the ULB Health Department (if available) may be presented. In its absence, records could be obtained from the Pharmacy Council. This data is also reported to the National Health Mission.
State Health Department	Healthcare Professionals	Please specify the total number of qualified Auxiliary Nurse Midwives (ANMs) in the city.	Number	NHM/Health Department records/Indian nursing council.	Secondary	NHM/Health Department records	state health department/ULB	Auxiliary Nurses and Midwives: This group receives a two year diploma in auxiliary nursing and midwifery. Community Health Workers: This group consists of individuals who have undergone at least ten years of formal

								education. They receive 23 days of training to perform this function. The broad group of Community Health Workers includes cadres such as Health Assistants and Health Educators. Accredited Social Health Activists (ASHAs): this is a cadre of health volunteers set up under the NRHM. They are resident in the village that they work in, have a minimum of eight years of formal education and are usually women in the age range of 25-45 years. Data with the ULB Health Department (if available) may be presented. In its absence, records could be obtained from the Indian Nursing Council. This data is also reported to the National Health Mission.

State Health Department	Health Infrastructure	Do you have an EMRS operational in the city?	Yes/No					An Emergency Response System (ERS) is a system comprising of either calls, SMSs and online chat which could be used to make distress calls during an emergency. Response time is the time elapsed from receiving the initial call to arrival on-site of emergency personnel and equipment. Records maintained by government services such as 108/102 National Ambulance Service operated under the National Health Mission can also be used.
State Health Department	Citizen Services	Please specify the total number of medical emergencies responded to in the city for the period from 1st January,	Number	Health Department records	Secondary	Health Department records	state health department/ULB	Response time is the time taken to reach the site on receiving an emergency call. The average response time can be calculated as: (Sum of all recorded response time for all

		2017 to 31st December, 2017.						distress calls)/(Total number of distress calls)
State Health Department	Citizen Services	Please specify the total response time for health related distress calls received in the city for the period from 1st January, 2017 to 31st December, 2017.	Minutes	Health Department records	Secondary	Health Department records	state health department/ULB	Response time is the time taken to reach the site on receiving an emergency call. The average response time can be calculated as: (Sum of all recorded response time for all distress calls)/ (Total number of distress calls).
State Health Department	Disease Prevalence	Please specify the total number of reported cases of diarrhoeal diseases/dysentery in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records/Integrated Disease Surveillance Programme	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for Diarrhoeal Diseases is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.

State Health Department	Disease Prevalence	Please specify the total number of reported cases of enteric fever (typhoid) in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records/Integrated Disease Surveillance Programme	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for Typhoid is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of viral hepatitis A and E in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records/Integrated Disease Surveillance Programme	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for viral hepatitis is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of cholera in the city for the period from 1st January, 2017 to	Number	Health Department records/Integrated Disease Surveillance Programme	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for Cholera is collected by the ULB Health Department, and also reported to the Ministry

		31st December, 2017.						of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of Acute Encephalitis Syndrome (AES) in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records/Integrated Disease Surveillance Programme	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for AES is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of Malaria in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for malaria is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of dengue in the city for the period from	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for dengue is by the ULB Health Department, and also reported to the

		1st January, 2017 to 31st December, 2017.						Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of filaria in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for filaria is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of black fever (kala-azar) in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for black fever (kala-azar) is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of Japanese Encephalitis in the	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for Japanese Encephalitis is collected by the ULB Health Department, and

		city for the period from 1st January, 2017 to 31st December, 2017.						also reported to the Ministry of Health and Family Welfare.
State Health Department	Disease Prevalence	Please specify the total number of reported cases of chikungunya in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Health Department records	Secondary	Health Department records	state health department/ULB	The data for number of cases registered for chikungunya is collected by the ULB Health Department, and also reported to the Ministry of Health and Family Welfare.

State Renewable Energy Development Agency								
State Renewable Energy Development Agency	Basic Information	Name of the nodal officer						
State Renewable Energy Development Agency	Basic Information	Phone number						
State Renewable Energy Development Agency	Basic Information	Email ID						
State Renewable Energy Development Agency	Renewable Energy	Please specify the total installed capacity of solar roof tops (including residential, commercial, industrial,	kWh	DISCOMs/Electricity Board/Subsidy register of Renewable Energy Development	Secondary	DISCOMs/Electricity Board/Subsidy register of Renewable Energy Development	Renewable Energy Department	This includes all central government, state government or ULB buildings installed with roof top solar panels.

		institutional and government installations) in the city (as per the latest available data).		Agency at the state/City level		Agency at the state/City level		
State Renewable Energy Development Agency	Renewable Energy	Please specify the total installed capacity of non-solar renewable energy generation (including residential, commercial, industrial, institutional and government installations) in the city (as per the latest available data).	kWh	DISCOM/Electricity board	Secondary	DISCOM/Electricity board	Renewable Energy Department	This could include renewable energy generation from any source except solar, e.g. wind, bio-mass, tidal, waste to energy, etc.

State Sales/Commercial Taxes Department								
State Sales/Commercial Taxes Department	Basic Information	Name of the nodal officer						
State Sales/Commercial Taxes Department	Basic Information	Phone number						Please provide the official contact number.
State Sales/Commercial Taxes Department	Basic Information	Email ID						Please provide the official email ID.
State Sales/Commercial Taxes Department	VAT	Please specify the total Value Added Tax (VAT) collected from the city for FY 2016-17.	INR Lakh	Periodic revenue report (Monthly/Quarterly/Annual)	Secondary	Periodic revenue report (Monthly/Quarterly/Annual)	Commercial taxes department	The state Sales/Commercial Tax Department records VAT collection data periodically; the same can be provided at the city level based on the address of the establishment where the sale was conducted. The

								city level data may be extracted based on the list of PIN codes provided by the ULB.
State Sales/Commercial Taxes Department	VAT	Please specify the total Value Added Tax (VAT) collected from the city for FY 2015-16.	INR Lakh	Periodic revenue report (Monthly/Quarterly/Annual)	Secondary	Periodic revenue report (Monthly/Quarterly/Annual)	Commercial taxes department	The state Sales/Commercial Tax Department records VAT collection data periodically; the same can be provided at the city level based on the address of the establishment where the sale was conducted. The city level data may be extracted based on the list of PIN codes provided by the ULB.

Town and Country Planning Department								
Town and Country Planning Department	Basic Information	Name of the nodal officer						
Town and Country Planning Department	Basic Information	Phone number						Please provide the official contact number.
Town and Country Planning Department	Basic Information	Email ID						Please provide the official email ID.
Town and Country Planning Department	Land-use	Does the city have a masterplan/land-use plan?	Yes/No		Secondary	Land-use/Masterplan	Town and country planning department/City Development authority/ULB	Please specify if the city has a master plan and/or land-use plan that covers the city boundary as on 2016-17.
Town and Country	Land-use	Please specify the year in which the master plan/land-use plan for the city	Year	Land-use/Masterplan	Secondary	Land-use/Masterplan	Town and country planning department/City	Please specify the year in which the master plan and/or land use plan was first prepared. Additional

Planning Department		was developed. (if applicable)					Development authority/ULB	information on the year in which last amendment was made can also be provided.
Town and Country Planning Department	Land-use	Does the master plan/land-use plan clearly demarcate the area designated for mixed land-use? (if applicable)	Yes/No	Land-use/Masterplan	Secondary	Land-use/Masterplan	Town and country planning department/City Development authority/ULB	Mixed Industrial Use (M1 zone): Activities falling within non-polluting industry/service industry (dominant land use) categories can coexist with maximum up to 20-30% of commercial, institutional, recreational and residential land use. Mixed Residential Use (M2 zone): All activities falling within permitted residential land use (dominant land use) shall be minimum 60% and to coexist with commercial, institutional, recreational. Mixed Commercial Use (M3 zone): All activities

								falling within permitted commercial, institutional land use (dominant land use) shall be minimum 60% and to coexist with residential, recreational and non- polluting and household industry.
Town and Country Planning Department	Land-use	Please specify the total area of the city under mixed land-use as on the date of development of city land-use plan. (if applicable)	Sq. m.	Land-use/Masterplan	Secondary	Land-use/Masterplan	Town and country planning department/City Development authority/ULB	Mixed Industrial Use (M1 zone): Activities falling within non-polluting industry/service industry (dominant land use) categories can coexist with maximum up to 20-30% of commercial, institutional, recreational and residential land use. Mixed Residential Use (M2 zone): All activities falling within permitted residential land use (dominant land use) shall be minimum 60% and to coexist with commercial, institutional,

								recreational. Mixed Commercial Use (M3 zone): All activities falling within permitted commercial, institutional land use (dominant land use) shall be minimum 60% and to coexist with residential, recreational and non- polluting and household industry.
Town and Country Planning Department	Land-use	Please specify the total area demarcated for mixed land-use in the city. (if applicable)	Sq. m.	Land-use/Masterplan/ GIS map	Secondary	Land-use/Masterplan	Town and country planning department/City Development authority/ULB	Mixed Industrial Use (M1 zone): Activities falling within non-polluting industry/service industry (dominant land use) categories can coexist with maximum up to 20-30% of commercial, institutional, recreational and residential land use. Mixed Residential Use (M2 zone): All activities falling within permitted residential land use

								(dominant land use) shall be minimum 60% and to coexist with commercial, institutional, recreational. Mixed Commercial Use (M3 zone): All activities falling within permitted commercial, institutional land use (dominant land use) shall be minimum 60% and to coexist with residential, recreational and non- polluting and household industry.
Town and Country Planning Department	Land-use	Please specify the total area allocated for residential use in the city.	Sq. m.	Land-use/Masterplan	Secondary	Land-use/Masterplan	Town and country planning department/City Development authority/ULB	The residential use area can be obtained from the land use/masterplan of the city. Total area allocated for residential use should include residential land use including residential pockets within mixed use areas.

Traffic and Police Department								
Traffic and Police Department	Basic Information	Name of the nodal officer						
Traffic and Police Department	Basic Information	Phone number						Please provide the official contact number.
Traffic and Police Department	Basic Information	Email ID						Please provide the official email ID.
Traffic and Police Department	Fatalities	Please specify the total number of fatalities recorded due to railway accidents within the city bounds for the period from 1st January, 2017 to 31st December, 2017.	Number	Accident reports	Secondary	Accident reports	Railway authority/Traffic and Police Departments	The details on number of fatalities due to railway crossing accidents can be furnished by the Railway Authorities or the Police Department. This includes incidents of: a) falling from trains; b) collision with people on the track; c) persons coming under trains; and d) other causes due to mechanical defects, and

								sabotage by extremists/ terrorists/ others.
Traffic and Police Department	Fatalities	Please specify the total number of fatalities recorded due to sub-urban railway accidents within the city bounds for the period from 1st January, 2017 to 31st December, 2017. (if applicable).	Number	Accident reports	Secondary	Accident reports	Railway authority	The details on number of fatalities due to railway accidents can be furnished by the Railway Authorities or the Police Department.
Traffic and Police Department	CCTV	Please specify the total number of operational CCTV cameras installed by the city authority in the city (as per the latest available data).	Number	City Traffic and Police Departments	Physical	Random sample survey	City Traffic and Police Departments	Only those installed CCTV cameras which are functional should be included. A physical audit will be conducted to verify the presence of the camera installations.
Traffic and Police Department	CCTV	Please specify the total number of operational CCTV cameras installed in	Number	City Traffic and Police Departments	Physical	Random sample survey	City Traffic and Police Departments	Only those installed CCTV cameras which are functional should be included.

		the city by the Traffic Police Department (as per the latest available data).						A physical audit will be conducted to verify the presence of the camera installations.
Traffic and Police Department	CCTV	Please specify the total number of operational CCTV cameras installed in the city by the Police Department (as per the latest available data).	Number	City Traffic and Police Departments	Physical	Random sample survey	City Traffic and Police Departments	Only those installed CCTV cameras which are functional should be included. A physical audit will be conducted to verify the presence of the camera installations.
Traffic and Police Department	CCTV	Please specify the total number of privately owned operational CCTV cameras installed which are integrated to the command centres/other public surveillance systems in the city (as per	Number	City Traffic and Police Departments	Physical	Random sample survey	City Traffic and Police Departments	Only those privately owned CCTV cameras which are operational and which the authorities can monitor should be included.

		the latest available data).						
Traffic and Police Department	Personnel	Please specify the total strength of the city police force.	Number	City Traffic and Police Department records	Secondary	City Traffic and Police Department records	Traffic and Police	
Traffic and Police Department	Personnel	Please specify the total strength of female police personnel in the city police force.	Number	City Traffic and Police Department records	Secondary	City Traffic and Police Department records	Traffic and Police	
Traffic and Police Department	Crime	Please specify the total number of crimes recorded (FIRs) with the City Police Department in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Police department records/National Crime Records Bureau	Secondary	Police department records/National Crime Records Bureau	Traffic and Police	Includes all crimes recorded under the Indian Penal Code (IPC) and the Special and Local Law (SLL). This data may be obtained from FIRs lodged by the City Police Department, or from the NCRB database.

Traffic and Police Department	Crime	Please specify the total number of crimes recorded (FIRs) with the City Police Department in the city for crime against children for the period from 1st January, 2017 to 31st December, 2017.	Number	Police department records/National Crime Records Bureau	Secondary	Police department records/National Crime Records Bureau	Traffic and Police	Offence committed on a victim under the age of 18 years is considered as a crime against children; The list of offences considered to be crime against children can be looked up in Crimes in India report of NCRB Please refer to http://ncrb.gov.in/StatPublications/CII/CII2016/pdfs/NEWPDFs/Crime%20in%20India%20-%202016%20Complete%20PDF%20291117.pdf
Traffic and Police Department	Crime	Please specify the total number of crimes recorded (FIRs) with the City Police Department in the city for crime against women for the period from 1st January, 2017 to	Number	Police department records/National Crime Records Bureau	Secondary	Police department records/National Crime Records Bureau	Traffic and Police	This data could be obtained from FIRs lodged by the City Police Department, or the NCRB database. Please refer to http://ncrb.gov.in/StatPublications/CII/CII2016/pdfs/NEWPDFs/Crime%20in%20India%20-

		31st December, 2017.						%202016%20Complete%20PDF%20291117.pdf
Traffic and Police Department	Crime	Please specify the total number of crimes recorded (FIRs) with the City Police Department for crime against senior citizens in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Police department records/National Crime Records Bureau	Secondary	Police department records/National Crime Records Bureau	Traffic and Police	Offences committed against a victim who has attained the age of 60 years or above, are considered to be crimes against senior citizens. This data could be obtained from FIRs lodged by the City Police Department, or the NCRB database. The list of offences considered to be crimes against senior citizens can be checked from the Crimes in India report of NCRB. Please refer to http://ncrb.gov.in/StatPublications/CII/CII2016/pdfs/NEWPDFs/Crime%20in%20India%20-%202016%20Complete%20PDF%20291117.pdf

Traffic and Police Department	Fatalities	Please specify the total number of fatalities recorded due to road accidents in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Accident reports	Secondary	Accident reports	Traffic and Police	The NCRB database records the number of fatalities due to passenger boat capsize. The city Police Department can also facilitate this record. Please refer to http://ncrb.gov.in/StatPublications/ADSI/ADSI2014/chapter-1%20accidents.pdf
Traffic and Police Department	Fatalities	Please specify the total number of fatalities recorded due to metro rail accidents in the city (if applicable) for the period from 1st January, 2017 to 31st December, 2017.	Number	Accident reports	Secondary	Accident reports	Traffic and Police Metro Rail Authorities	The city Police Department or the Metro Rail authorities can provide this record.
Traffic and Police Department	Fatalities	Please specify the total number of fatalities recorded due to in-land water	Number	Accident reports	Secondary	Accident reports	Police/Marine authority	The NCRB database records the number of fatalities due to water-ways accidents. The city

		transport accidents in the city (if applicable) for the period from 1st January, 2017 to 31st December, 2017.						Police/Marine authorities can also facilitate this record. Please refer to http://ncrb.gov.in/StatPublications/ADSI/ADSI2014/chapter-1%20accidents.pdf
Traffic and Police Department	Signals	Please specify the total number of signalised intersections in the city (as per the latest available data).	Number	Records maintained by Traffic Department	Secondary	Records maintained by Traffic Department	Traffic and Police	
Traffic and Police Department	Signals	Please specify the total number of signalised intersections synchronised with at least one more signalised intersection in the city (as per the	Number	Records maintained by Traffic Department	Secondary	Records maintained by Traffic Department	Traffic and Police	Traffic Signal Synchronization is a traffic engineering technique of matching the green light times for a series of intersections to enable the maximum number of vehicles to pass through, thereby reducing stops and delays experienced by

		latest available data).						motorists. Synchronizing traffic signals ensures a better flow of traffic and minimizes gas consumption and pollutant emissions. In order for the traffic signals to be synchronized, a group of signals must all be set to run on the same cycle length (the amount of time it takes for the signal to go from green to yellow to red; and back to green again) - after the cross street has been serviced.

Urban Local Body								
Urban Local Body	Basic Information	Name of the ULB Commissioner/Secretary/ CEO						
Urban Local Body	Basic Information	Phone number						Please provide the official contact number
Urban Local Body	Basic Information	Email ID						Please provide the official Email ID
Urban Local Body	Roads	Please specify the total length of arterial and sub-arterial road network in the city (as per the latest available data).	Kilometre	Road network map	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Study/City Development Plan/City Transport and Traffic Plan	ULB/State Transport Authority/Development Authority	All arterial, sub-arterial roads with Right of Way equal to or more than 30 metres (minimum width for sub-arterial roads IRC:86-1983) should be taken into account. Total length of road network data is available with the State Transport Department and PWD. This data can also be obtained from Comprehensive Mobility Plans/City Development

								Plans (CDP) prepared for the cities.
Urban Local Body	Roads	Please specify the total length of road network in the city (as per the latest available data).	Kilometre	Road network map	Secondary	Comprehensive Mobility Plan/City Development Plans (CDP)	State Transport Authority	Total length of road network data is available with the state Transport Department and PWD. This data can also be obtained from Comprehensive Mobility Plans/City Development Plans (CDP) prepared for the cities.
Urban Local Body	Basic Information	Please specify the total population of the city as on 31st March, 2017.	Number		Secondary	Census Data	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census
Urban Local Body	Basic Information	Please specify the total geographical area of the city (as per the latest available data).	Sq. Km.		Secondary	City Master Plan		As reported in the city master plan

Urban Local Body	Basic Information	Please specify the total number of wards in the city (as per the latest available data).	Number		Secondary	City ward map		This data can be collected from the ward list provided by ULBs.
Urban Local Body	Basic Information	Please specify the total number of households in the city (as per the latest available data).	Number		Secondary	Census Data	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.
Urban Local Body	Housing	Please specify the number of slums as on 17th June, 2015.	Number	Census, PMAY records	Secondary	Census Data, PMAY records	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.
Urban Local Body	Housing	Please specify the number of slum households as on 17th June, 2015.	Number	Census, PMAY records	Secondary	Census Data, PMAY records	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.
Urban Local Body	Basic Information	Please specify the total number of	Number		Secondary	Census Data	Slum Upgradation/Reh	Any compact settlement with a collection of poorly

		notified slums in the city (as per the latest available data).					abilitation Department/Slum Clearance Board	built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, provided at least 20 households lived there, is considered as a slum. Such a settlement, if notified, is called a notified slum. Data for this can be collected from slum upgradation/rehabilitation department or the slum clearance board.
Urban Local Body	Basic Information	Please specify the total number of households in notified slums in the city (as per the latest available data).	Number		Secondary	Census Data	Slum Upgradation/Rehabilitation Department/Slum Clearance Board	Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions,

								provided at least 20 households lived there, is considered as a slum. Such a settlement, if notified, is called a notified slum. Data for this can be collected from slum upgradation/rehabilitation department or the slum clearance board.
Urban Local Body	Basic Information	Please specify the total population residing in notified slums in the city (as per the latest available data).	Number		Secondary	Census Data	Slum Upgradation/Rehabilitation Department/Slum Clearance Board	Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, provided at least 20 households lived there, is considered as a slum. Such a settlement, if notified, is called a notified slum. Data for this can be

								collected from slum upgradation/rehabilitation department or the slum clearance board.
Urban Local Body	Basic Information	Please specify the total number of non-notified slums in the city (as per the latest available data).	Number		Secondary	Census data on recognised/identified slums	Slum Upgradation/Rehabilitation Department/Slum Clearance Board	Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, provided at least 20 households lived there, is considered as a slum. Such a settlement, if not a notified slum, is called a non-notified slum. Data for this can be collected from slum upgradation/rehabilitation department or the slum clearance board.

Urban Local Body	Basic Information	Please specify the total population of non-notified slums in the city (as per the latest available data).	Number		Secondary	Census data on recognised/identified slums	Slum Upgradation/Rehabilitation Department/Slum Clearance Board	Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, provided at least 20 households lived there, is considered as a slum. Such a settlement, if not a notified slum, is called a non-notified slum. Data for this can be collected from slum upgradation/rehabilitation department or the slum clearance board.
Urban Local Body	Basic Information	Please specify the total number of households in non-notified slums in the city (as per the	Number		Secondary	Census data on recognised/identified slums	Slum Upgradation/Rehabilitation Department/Slum Clearance Board	Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking

		latest available data).						water facilities in unhygienic conditions, provided at least 20 households lived there, is considered as a slum. Such a settlement, if not a notified slum, is called a non-notified slum. Data for this can be collected from slum upgradation/rehabilitation department or the slum clearance board.
Urban Local Body	Basic Information	Please specify the total population in the age group of 6-14 years in the city as on 31st March, 2017.	Number		Secondary	Census Data	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.
Urban Local Body	Basic Information	Please specify the total female population in the age group of 6-14 years in the city as	Number		Secondary	Census Data	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.

		on 31st March, 2017.						
Urban Local Body	Basic Information	Please specify the total number of people above the age of 65 residing in the city as on 31st March, 2017.	Number		Secondary	Census Data	ULB	To be projected based on the 2011 Census adjusted to any expansion in the city boundaries post census.
Urban Local Body	Basic Information	Total number of industries within city boundary as on 31st March, 2017.	Number		Secondary	State/District Industrial Profile		Industries Guidance Bureau prepares industrial profiles at district/state level which can be used to determine the number of industries within city boundary.
Urban Local Body	Basic Information	Total number of commercial establishments in the city as on 31st March, 2017.	Number		Secondary	Property tax register		Property tax register categorises different types of properties such as residential, commercial, industrial which can be used to estimate the total number of commercial

								establishments within city boundary.
Urban Local Body	Basic Information	Total number of star and heritage category hotels in the city (as per the latest available data).	Number		Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism		List of hotels can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities.
Urban Local Body	Basic Information	Total number of primary and secondary schools (public & private) in the city (as per the latest available data).	Number	U-DISE data	Secondary	U-DISE data		The District Information System for Education database has data for each of the schools, which could be queried to obtain the city level data
Urban Local Body	Basic Information	Total number of primary and secondary schools owned and run by the city (as per the latest available data).	Number		Secondary	U-DISE data		The District Information System for Education database has data for each of the schools, which could be queried to obtain the city level data

Urban Local Body	Accounts	Please specify the total value of tax collected under property tax for the FY 2016-17 for which the demand was raised in FY 2016-17.	INR Lakh	Tax register/ Income and expenditure statement	Secondary	Tax register	ULB	This indicator covers total value of tax collected for property tax
Urban Local Body	Accounts	Please specify the total value of Professional tax (EC) collected for FY 2016-17 for which the demand was raised in FY 2016-17.	INR Lakh	Income expenditure statement/Periodic Revenue Report	Secondary	Income expenditure statement/Periodic Revenue Report	ULB/state Commercial Taxes Department	Every person engaged in any profession, trade, calling or employment, falling under the categories defined by the respective state law, is liable to pay to the state a Profession tax or Professional tax (henceforth Professional tax) at the rates prescribed. Businesses have two types of certificates - Registration Certificate (RC) and Enrolment Certificate (EC) that make them liable to pay Profession tax under two heads. RC

								allows the employer to deduct and deposit Profession tax to and from the salary of her employees, while the EC allows the employer to pay the tax for the company and herself. Often this tax is assigned to ULBs. Hence, the tax collection for 2016-17 may either be found in the ULB documents (relevant Income-Expenditure statement/Budget) or the state Commercial Tax department.
Urban Local Body	Accounts	Please specify the total value of Professional Tax (RC) collected for FY 2016-17 for which the demand was raised in FY 2016-17.	INR Lakh	Income expenditure statement/Periodic Revenue Report	Secondary	Income expenditure statement/Periodic Revenue Report	ULB/state Commercial Taxes Department	Every person engaged in any profession, trade, calling or employment, falling under the categories defined by the respective state law, is liable to pay to the state a Profession tax or Professional tax

								(henceforth Professional tax) at the rates prescribed. Businesses have two types of certificates - Registration Certificate (RC) and Enrolment Certificate (EC) that make them liable to pay Profession tax under two heads. RC allows the employer to deduct and deposit Profession tax to and from the salary of her employees, while the EC allows the employer to pay the tax for the company and herself. Often this tax is assigned to ULBs. Hence, the tax collection for 2016-17 may either be found in the ULB documents (relevant Income-Expenditure statement/Budget) or the state Commercial Tax department.

Urban Local Body	Accounts	Please specify the total value of annual tax-demand for Property Tax in FY 2016-17.	INR Lakh	Tax register/Income and expenditure statement	Secondary	Tax register	ULB	This covers the value of property tax demand/estimate obtained by assessing all registered properties. Tax demand raised under litigation should **not** be included.
Urban Local Body	Accounts	Please specify the total value of annual tax-demand for Professional Tax (EC) in FY 2016-17.	INR Lakh	Tax register/Income and expenditure statement	Secondary	Tax register	ULB	This covers the tax demand/estimate obtained for profession tax (EC) assessed for commercial and industrial establishments. Tax demand raised under litigation should **not** be included.
Urban Local Body	Accounts	Please specify the total value of annual tax-demand for Professional Tax (RC) in FY 2016-17.	INR Lakh	Tax register/Income and expenditure statement	Secondary	Tax register	ULB	This covers the tax demand/estimate obtained for profession tax (RC) assessed for commercial and industrial establishments. Tax demand raised under

								litigation should **not** be included.
Urban Local Body	Accounts	Please specify the total value of Professional tax (EC) collected for FY 2015-16 for which the demand was raised in FY 2015-16.	INR Lakh	Income expenditure statement/Periodic Revenue Report	Secondary	Income expenditure statement/Periodic Revenue Report	ULB/state Commercial Taxes Department	Every person engaged in any profession, trade, calling or employment, falling under the categories defined by the respective state law, is liable to pay to the state a Profession tax or Professional tax (henceforth Professional tax) at the rates prescribed. Businesses have two types of certificates - Registration Certificate (RC) and Enrolment Certificate (EC) that make them liable to pay Profession tax under two heads. RC allows the employer to deduct and deposit Profession tax to and from the salary of her employees, while the EC allows the employer to

								pay the tax for the company and herself. Often this tax is assigned to ULBs. Hence, the tax collection for 2016-17 may either be found in the ULB documents (relevant Income-Expenditure statement/Budget) or the state Commercial Tax department.
Urban Local Body	Accounts	Please specify the total value of Professional tax (RC) collected for FY 2015-16 for which the demand was raised in FY 2015-16.	INR Lakh	Income expenditure statement/Periodic Revenue Report	Secondary	Income expenditure statement/Periodic Revenue Report	ULB/state Commercial Taxes Department	Every person engaged in any profession, trade, calling or employment, falling under the categories defined by the respective state law, is liable to pay to the state a Profession tax or Professional tax (henceforth Professional tax) at the rates prescribed. Businesses have two types of certificates - Registration Certificate (RC) and

								Enrolment Certificate (EC) that make them liable to pay Profession tax under two heads. RC allows the employer to deduct and deposit Profession tax to and from the salary of her employees, while the EC allows the employer to pay the tax for the company and herself. Often this tax is assigned to ULBs. Hence, the tax collection for 2016-17 may either be found in the ULB documents (relevant Income-Expenditure statement/Budget) or the state Commercial Tax department.
Urban Local Body	Accounts	Please specify the total capital expenditure incurred by the ULB in the FY 2014-15.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2014-15 from all sources.

								Please refer to-https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total capital expenditure incurred by the ULB in FY 2015-16.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2015-16 from all sources. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total capital expenditure incurred by the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2016-17 from all sources. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Acc

								ounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total central government grants received as capital receipts by the ULB in FY 2014-15.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	All grants can be categorised as General or Specific grants. Capital grants/transfers (General and Specific) shall be obtained from the balance sheet and Revenue Grants/transfers (General and Specific) shall be obtained from the Income- Expenditure statement. Please refer to- https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the central government grants received as capital receipts by	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	All grants can be categorised as General or Specific grants. Capital grants/transfers (General and Specific) shall be

		the ULB in FY 2015-16.						obtained from the balance sheet and Revenue Grants/transfers (General and Specific) shall be obtained from the Income- Expenditure statement. Please refer to- https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the central government grants received as capital receipts by the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	All grants can be categorised as General or Specific grants. Capital grants/transfers (General and Specific) shall be obtained from the balance sheet and Revenue Grants/transfers (General and Specific) shall be obtained from the Income- Expenditure statement.

								Please refer to-https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total amount of loans taken by the ULB for the FY 2016-17.	INR Lakh	Balance Sheet	Secondary	Balance Sheet	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2014-15 from central government transfers. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total amount of loans taken by the ULB for the FY 2015-16.	INR Lakh	Balance Sheet	Secondary	Balance Sheet	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2014-15 from central government transfers. Please refer to https://www.suratmunic

								ipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total amount of loans taken by the ULB for the FY 2014-15.	INR Lakh	Balance Sheet	Secondary	Balance Sheet	ULB	Please note that this includes the total capital expenditure made by the ULB for the year 2014-15 from central government transfers. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total revenue expenditure incurred by the ULB in FY 2014-15.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	The total operational expenditure incurred by the ULB is summarised in the Income- Expenditure statement. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Acc

								ounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total revenue expenditure incurred by the ULB in FY 2015-16.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	The total operational expenditure incurred by the ULB is summarised in the Income- Expenditure statement. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total revenue expenditure incurred by the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	The total operational expenditure incurred by the ULB is summarised in the Income- Expenditure statement. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf

Urban Local Body	Accounts	Please specify the state grants to the ULB received as capital receipts in FY 2014-15.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital grants/transfers (General/specific) shall be obtained from the balance sheet, Revenue Grants/transfers shall be obtained from Income expenditure statements
Urban Local Body	Accounts	Please specify the state grants to the ULB received as capital receipts in FY 2015-16.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital grants/transfers (General/specific) shall be obtained from the balance sheet, Revenue Grants/transfers shall be obtained from Income expenditure statements
Urban Local Body	Accounts	Please specify the state grants to the ULB received as capital receipts in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital grants/transfers (General/specific) shall be obtained from the balance sheet, Revenue Grants/transfers shall be obtained from Income expenditure statements
Urban Local Body	Accounts	Please specify the total revenue from State Finance Commission	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital revenue shall be obtained from the Balance Sheet. Revenue income shall be obtained

		devolution in FY 2014-15.						from Income-Expenditure statement. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total revenue from State Finance Commission devolution in FY 2015-16.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital revenue shall be obtained from the Balance Sheet. Revenue income shall be obtained from Income-Expenditure statement. Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total revenue from State Finance Commission	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Capital revenue shall be obtained from the Balance Sheet. Revenue income shall be obtained from Income-Expenditure statement.

		devolution in FY 2016-17.						Please refer to https://www.suratmunicipal.gov.in/Content/Documents/Departments/Accounts/BalanceSheet_05_06.pdf
Urban Local Body	Accounts	Please specify the total own revenue income of the ULB in FY 2014-15.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Own revenue includes all tax, non-tax revenues, user-charges and fees raised/ imposed by the ULB on its own. Please refer to http://mcjalandhar.in/wp-content/uploads/2017/05/Income-2016-171.pdf
Urban Local Body	Accounts	Please specify the total own revenue income of the ULB in FY 2015-16.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Own revenue includes all tax, non-tax revenues, user-charges and fees raised/ imposed by the ULB on its own. Please refer to http://mcjalandhar.in/wp-

								content/uploads/2017/05/Income-2016-171.pdf
Urban Local Body	Accounts	Please specify the total own revenue income of the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Own revenue includes all tax, non-tax revenues, user-charges and fees raised/ imposed by the ULB on its own. Please refer to http://mcjalandhar.in/wp-content/uploads/2017/05/Income-2016-171.pdf
Urban Local Body	Accounts	Please specify the actual revenue expenditure on arts & cultural events by the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Please enter the audited actual revenue expenditure incurred, available in the Income-Expenditure statement of 2016-17 or the Budget Sheet of 2018-19. Please refer to http://www.chennaicorporation.gov.in/budget/Budget_2017-18/Department%20Wise%20Expenditure.pdf

Urban Local Body	Accounts	Please specify the actual revenue expenditure on sports related events by the ULB in FY 2016-17.	INR Lakh	Income and expenditure statement	Secondary	Income and expenditure statement	ULB	Please enter the audited actual revenue expenditure incurred, available in the Income-Expenditure statement of 2016-17 or the Budget Sheet of 2018-19. Sports activities will include local/state/national tournaments, short duration training camps, promotional events etc. Please refer to http://www.chennaicorporation.gov.in/budget/Budget_2017-18/Department%20Wise%20Expenditure.pdf
Urban Local Body	Accounts	Please specify the actual capital expenditure on arts & cultural events by the ULB in FY 2016-17.	INR Lakh	Balance sheet	Secondary	Balance sheet	ULB	Please enter the audited actual capital expenditure incurred, available in the Income-Expenditure statement of 2016-17 or the Budget sheet of 2018-19. Cultural activities

								includes various music and dance performances, art exhibitions, expositions and exhibitions, literary events, film screenings and festivals etc. Please refer to http://www.chennaicorporation.gov.in/budget/Budget_2017-18/Department%20Wise%20Expenditure.pdf
Urban Local Body	Accounts	Please specify the actual capital expenditure on sports related events in FY 2016-17.	INR Lakh	Balance sheet	Secondary	Balance sheet	ULB	Please enter the audited actual capital expenditure incurred, available in the Income-Expenditure statement of 2016-17 or the Budget sheet of 2018-19. Sports activities will include local/state/national tournaments, short duration training camps, promotional events etc. Please refer to

								http://www.chennaicorporation.gov.in/budget/Budget_2017-18/Department%20Wise%20Expenditure.pdf
Urban Local Body	Parks & Recreation	Please specify the total number of sports and cultural events hosted/co-hosted by the ULB (financially and/or non-financially) for the period from 1st January, 2017 to 31st December, 2017.	Number	ULB records/Police records	Secondary	ULB records/Media articles	ULB General administrative department	Cultural and sports events supported, co-sponsored and conducted by ULBs need to be listed. (For example: https://www.suratmunicipal.gov.in/Departments/CulturalEvents)
Urban Local Body	Parks & Recreation	Please specify the total number of sports and cultural events hosted/co-hosted jointly by other government agencies (financially and/or non-financially) for the period from 1st	Number	ULB records/Police records	Secondary	ULB records/Media articles	ULB	Cultural and sports events supported, co-sponsored and conducted by other government agencies need to be listed. These do not include events co-hosted with the local ULB. (For example: https://www.suratmunic

		January, 2017 to 31st December, 2017.						ipal.gov.in/Departments/CulturalEvents)
Urban Local Body	Parks & Recreation	Please specify the total number of cultural and sports related events hosted by the private sector in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	ULB records/Police records	Secondary	ULB records/Media articles	ULB	Total number of community or public events hosted by the private sector need to be listed.
Urban Local Body	Water Supply & Drainage	Please specify the total amount of user charges collected for water supply in FY 2016-17.	INR Lakh	Water supply demand register/ULB Logbook	Secondary	Water supply demand register/ULB Logbook	ULB	The user charges collected for water supply can be obtained from the function-wise income expenditure statement or the summary statement of bills raised, prepared by the water supply department.

Urban Local Body	Water Supply & Drainage	Please specify the total value of cost incurred for operations and maintenance of water supply in FY 2016-17.	INR Lakh	Water supply payment register/ULB Logbook	Secondary	Water supply payment register/ULB Logbook	ULB	The operations and maintenance charges incurred for water supply can be obtained from the function-wise Income-Expenditure statement. These include the following cost heads-Electricity charges, payment to state water supply department, maintenance costs, cost for water supply through private lorries, repair costs and salaries.
Urban Local Body	Energy Consumption	Please specify the quantum of energy consumed for pumping water for water supply and sewerage in the FY 2016-17.	kWh	CC charges register	Secondary	CC charges register	ULB/Utility	The total quantum of energy covers energy consumed towards pumping water to distribution grid, booster pumping, booster pumping, distribution to end users, piping of sewage, wastewater treatment and disposal. It also includes support function of utility such as

								lighting system, HVAC etc. The record is maintained in the expenditure statement of the ULB under the Operations and Maintenance expenses as Water pumping charges.
Urban Local Body	Water Supply & Drainage	Please specify the total number of domestic households with direct water supply connection in the city as on 31st March, 2017.	Number	Household service connection register/SLIPS	Secondary	Household service connection register/SLIPS	ULB/Utility	Household level water supply connection i.e. direct piped connection, is the minimum acceptable standard for water supply service. Water provision through public stand posts or tankers is not considered as an acceptable long-term service provision standard This will include households which receive municipal water supply at one common point (bulk connections), from where it is stored

								and distributed for all households (e.g., as in apartment complexes). Households supplied water through public stand posts or tankers should be excluded. Households completely dependent on other water sources such as bore wells, open wells, etc. should not be included. Cities can refer to the document submitted under Swatch Bharat Mission and/or AMRUT. It is to be noted that it includes all households (slum, EWS) in the city.
Urban Local Body	Water Supply & Drainage	Please specify the total number of slum households (notified & non-notified slums) with water supply connection in the	Number	Household service connection register/SLIPS	Secondary	Household service connection register/SLIPS	ULB/Utility	

		city (as per the latest available data).						
Urban Local Body	Water Supply & Drainage	Please specify the total number of domestic (residential) water supply connections in the city (as per the latest available data).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	The total number of domestic (residential) water connections in the city will include all direct service connections and total number of public stand posts, both metered and unmetered. Domestic water supply connections to all types of households should be included.
Urban Local Body	Water Supply & Drainage	Please specify the total number of commercial water supply connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	

Urban Local Body	Water Supply & Drainage	Please specify the total number of institutional water supply connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	
Urban Local Body	Water Supply & Drainage	Please specify the total number of industrial water supply connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	
Urban Local Body	Water Supply & Drainage	Please specify the average quantity of water supplied into the distribution system per day in FY 2016-17.	MLD	Water utility records	Secondary	Water utility records	ULB/Utility	Data on average quantum of treated water supplied into the distribution system on a daily basis, obtained on the basis of measurement by bulk flow meters at the outlet of treatment plants and/or bulk production points, can be obtained from the records of

								ULB/Water Utility or PHED, as applicable. If water is distributed from multiple points, aggregate of that quantity should be considered as total quantity of water supplied into the distribution system. However, the quantum should exclude all bulk transmission losses, as measured through water audit data available with ULBs
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 1 (as per the latest available data).	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided by the ULB/Water Utility. This data will be available with the ULB/Water Utility by number of

								connections for each type of ferrule or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 2(as per the latest available data).	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided by the ULB/Water Utility. This data will be available with the ULB/Water Utility by number of connections for each type of ferrule or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 3 (as per the latest available data).	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided by the ULB/Water Utility. This data will be available

								with the ULB/Water Utility by number of connections for each type of ferrule or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 4 (as per the latest available data).	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided by the ULB/Water Utility. This data will be available with the ULB/Water Utility by number of connections for each type of ferrule or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 5 (as per	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided

		the latest available data).						by the ULB/Water Utility. This data will be available with the ULB/Water Utility by number of connections for each type of ferrule or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the total number of authorised connections by different bore size - Ferrul size 6 (as per the latest available data).	Number	Water utility records	Secondary	Water utility records	ULB/Utility	Water supply connections can vary based on connection type - domestic, industrial, commercial and accordingly different size of ferrule can be provided by the ULB/Water Utility. This data will be available with the ULB/Water Utility by number of connections for each type of ferrul or bore size.
Urban Local Body	Water Supply & Drainage	Please specify the average number of hours of water supply per day in	Number	Water utility records	Secondary	Water utility records	ULB/Utility	This refers to the average number of hours in a day for which water is supplied by the Water Utility/ULB to the city.

		the city in FY 2016-17.						
Urban Local Body	Water Supply & Drainage	Please specify the frequency (number of times/day) of water supply in the city in FY 2016-17.	Number	Water utility records	Secondary	Water utility records	ULB/Utility	This refers to the total number of times water is supplied in a day to the city.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantity of water sold in the city in FY 2016-17.	MLD	Water utility records	Secondary	Water utility records	ULB/Utility	This includes only the quantity of water supplied through the water distribution system which is charged for by the Water Utilities or the ULB.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantity of water supplied which is priced volumetrically (bulk connections to commercial, apartments etc.) in FY 2016-17.	MLD	Water utility records	Secondary	Water utility records	ULB/Utility	Water Utilities/ULB provide bulk water connection to commercial, apartments etc. That are metered and hence can used to calculate the total quantity of water supplied to such entities.

Urban Local Body	Water Supply & Drainage	Please specify the total number of domestic metered water connections in the city (as per the latest available data).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	Total number of domestic (residential) metered connections will include metered direct service connections, as well as metered public stand posts.
Urban Local Body	Water Supply & Drainage	Please specify the total number of commercial metered water connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	
Urban Local Body	Water Supply & Drainage	Please specify the total number of institutional metered water connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	

Urban Local Body	Water Supply & Drainage	Please specify the total number of industrial metered water connections in the city (as per the latest available data) (if applicable).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	
Urban Local Body	Water Supply & Drainage	Please specify the total number of metered water connections in the city (as per the latest available data).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	The total number of water connections in the city will include all direct service connections and total number of public stand posts.
Urban Local Body	Water Supply & Drainage	Please specify the total number of water connections in the city (as per the latest available data).	Number	Water service connection register/AMRUT /SLIPS/Smart City Proposal	Secondary	Water service connection register/AMRUT /SLIPS/Smart City Proposal	ULB/Utility	The total number of water connections in the city will include all direct service connections and total number of public stand posts.
Urban Local Body	Water Supply & Drainage	Please specify the total number of households with access to individual toilets in the city (as	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline.

		per the latest available data).						
Urban Local Body	Water Supply & Drainage	Please specify the total number of commercial establishments with access to toilets in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline.
Urban Local Body	Water Supply & Drainage	Please specify the total number of institutional buildings with access to toilets in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline
Urban Local Body	Water Supply & Drainage	Please specify the total number of industrial buildings with access to toilets in the city (as	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline

		per the latest available data).						
Urban Local Body	Water Supply & Drainage	Please specify the total number of households in the city with access to community toilets in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	With reference to the total number of households residing in the city, please specify number of such households accessing community toilets. Community toilet: 'It is used, owned and maintained by community members or local governments. A community toilet may also have other utilities such as a bathing facility or a place for washing clothes, depending upon the needs of the community. It is mostly located within the community, where people reside' . (For definition please refer to: http://sac.ap.gov.in/sac/ UserInterface/Downlaod

								s/13-8-2015%20Guidlines%20on%20CT_PT%20.pdf)
Urban Local Body	Water Supply & Drainage	Please specify the total number of properties connected to septic tank in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline
Urban Local Body	Water Supply & Drainage	Please specify the total number of properties connected to single pit latrine in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline
Urban Local Body	Water Supply & Drainage	Please specify the total number of properties connected to twin pit latrine in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline

Urban Local Body	Water Supply & Drainage	Please specify the number of properties connected to shallow bore sewerage network in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB	This data can be obtained from the Swachh Bharat Mission baseline
Urban Local Body	Water Supply & Drainage	Please specify the number of properties connected to underground sewerage system (UGSS) in the city (as per the latest available data).	Number	SLIPS/Swachh sarvekshan/Census	Secondary	SLIPS/Swachh sarvekshan/Census data	ULB/Utility	This data can be obtained from the Swachh Bharat Mission baseline
Urban Local Body	Water Supply & Drainage	Please provide the daily average quantum of waste water treated by STPs in the city in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	List waste water collected/treated per day in the city. Total waste water generated in the city is assumed to be 80% of the total water consumed in MLD.

Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water generated in the city in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	Waste water generated in a city is assumed to be 80% of the total water consumed in MLD. This data should be based on the water supplied to the distribution system after treatment, less physical losses of water due to transmission and distribution losses as available with the ULB/Water and Sewerage Utility. Where other sources are also used such as sourcing water from deep bore wells or tanker supply, the same should be included.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water collected through the sewerage network	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	Waste water collected should be estimated on the basis of measurements taken at the inlet of centralised sewage treatment plants and decentralised waste

		in the city in FY 2016-17.						water treatment systems (DEWATS).
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water used for irrigation purposes (agriculture, forestry and landscaping) in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	This refers to the total quantity of treated waste water from centralised or decentralised STPs released for irrigation purposes by the ULB/Water Utility. Irrigation purposes includes agriculture, forestry and landscaping activities.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water used for irrigation purposes (fish-farming) in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	This refers to the total quantity of treated waste water from centralised or decentralised STPs released for fish-farming by the ULB/Water Utility. Please note that a record stating that the treated water was released towards fish-farming purpose should be presented.

Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water used by industries in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	This refers to the total quantity of treated waste water from centralised or decentralised STPs released for industrial use by the ULB/Water Utility. Please note that a record stating that the treated water was released towards industrial use should be presented.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water used for non-potable domestic use in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	This refers to the total quantity of treated waste water from centralised or decentralised STPs released for non-potable domestic use by the ULB/Water Utility. Please note that a record stating that the treated water was released towards industry should be presented.

Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water discharged (without any specific reuse) in compliance with environmental standards in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	This refers to the total quantum of waste water discharged from centralised and decentralised STPs in specified channels in compliance with environmental standards.
Urban Local Body	Water Supply & Drainage	Please specify the daily average quantum of waste water received at the treatment plants per day in FY 2016-17.	MLD	STP logbook/SLIPS	Secondary	STP logbook/SLIPS	ULB/Utility	Please present the total quantity of waste water collected/treated per day at STPs in the city. Waste water recycled per day is to be estimated based on the flow measurement from outlet of recycled water (at the treatment plant). Both centralised and decentralised treatment plants should be considered. Data regarding the waste water received at treatment plants and supplied for reuse can be

								obtained from the records of the ULB/Water and Sewerage Utility, as applicable.
Urban Local Body	Water Supply & Drainage	Please specify the total length of covered storm water drains (pucca construction) in the city (as per the latest available data).	Kilometre	Asset register/SLIPs	Secondary	Asset register/SLIPs	ULB	Please list the total length (kms) of storms water drains in the city with pucca construction. Please consider only those drains that are constructed in roads having a carriageway of 3.5 metres or more. It includes primary, secondary and tertiary categories of storm water drains.
Urban Local Body	Solid Waste Management	Please specify the total number of households covered through door-to-door collection of solid waste (as per the latest available data).	Number	Sanitary inspector logbook/Vehicle logbook/trip sheets	Secondary	Sanitary inspector logbook/Vehicle logbook/trip sheets	ULB	Please list number of households including slum households in the city that are covered through door-to-door collection of solid waste. In addition to services provided by the ULB or designated service

								providers, households covered through Resident Welfare Associations or Traders' Associations should also be included.
Urban Local Body	Solid Waste Management	Please specify the total number of commercial establishments covered through door-to-door collection of solid waste (as per the latest available data).	Number	Sanitary inspector logbook/Vehicle logbook/trip sheets	Secondary	Sanitary inspector logbook/Vehicle logbook/trip sheets	ULB	Please list number of commercial establishments such as hotels, restaurants, shops etc. in the city that are covered through door-to-door collection of solid waste. In addition to services provided by the ULB or designated service providers, establishments covered through Resident Welfare Associations or Traders' Associations should also be included.

Urban Local Body	Solid Waste Management	Please specify the daily average quantity of municipal solid waste generated in the city for the period from 1st January, 2017 to 31st December, 2017.	Tonnes/day	Weighbridge receipts/sanitary inspector logbook	Secondary	Weighbridge receipts/sanitary inspector logbook	ULB	Waste generation estimates can be based on a sample survey of a statistically relevant proportion of households and establishments. Where such a survey has been carried out earlier, the per capita generation data from such studies can be used. Alternatively, waste generation can be calculated on the basis of empirical standards per capita available for different city sizes. Central Pollution Control Board (CPCB) indicates that the per capita generation of wastes in Class I cities is 0.376 kg/person/day, and in Class II cities it is 0.152 kg/person/day.

Urban Local Body	Solid Waste Management	Please specify the daily average quantity of municipal solid waste collected by the ULB/private operators in the city for the period from 1st January, 2017 to 31st December, 2017.	Tonnes/day	Weighbridge receipts/sanitary inspector logbook	Secondary	Weighbridge receipts/sanitary inspector logbook	ULB	Data on waste collected from households, commercial establishments and common collection points based on actual weighment as recorded by the ULB. This refers to the quantum of waste recorded at weighbridges located at transfer stations and landfill sites in the city. Weighbridge receipts and logbooks of public or private operators can be referred to present this information.
Urban Local Body	Solid Waste Management	Please specify the monthly average quantity of municipal solid waste generated in the city for the period from 1st January, 2017 to	Tonnes/month	Weighbridge receipts/sanitary inspector logbook	Secondary	Weighbridge receipts/sanitary inspector logbook	ULB	Waste generation estimates can be based on a sample survey of a statistically relevant proportion of households and establishments. Where such a survey has been carried out earlier,

		31st December, 2017.						the per capita generation data from such studies can be used. Alternatively, waste generation can be calculated on the basis of empirical standards per capita available for different city sizes. Central Pollution Control Board (CPCB) indicates that the per capita generation of wastes in Class I cities is 0.376 kg/person/day, and in Class II cities it is 0.152 kg/person/day.
Urban Local Body	Solid Waste Management	Please specify the monthly average quantity of waste recycled at composting yards managed by the ULB or private partner designated by the ULBfor the period from 1st January,	Tonnes/ month	Weighbridge receipts/sanitary inspector logbook	Secondary	Weighbridge receipts/sanitary inspector logbook	ULB	This refers to the total quantum of compost generated from composting facilities such as windrow, vermi-culture etc. under the ULB. Data on privately managed facilities if recorded by the ULB can also be presented.

		2017 to 31st December, 2017 (if applicable).						
Urban Local Body	Solid Waste Management	Please specify the monthly average quantity of waste recycled at Material Recovery Facility (MRF) managed by the ULB or private partner designated by the ULB for the period from 1st January, 2017 to 31st December, 2017 (if applicable).	Tonnes/ month		Secondary		ULB	The SWM Rules, 2016 defines "Materials Recovery Facility" (MRF) means a facility where non-compostable solid waste can be temporarily stored by the local body or any other entity mentioned in rule 2 or any person or agency authorised by any of them to facilitate segregation, sorting and recovery of recyclables from various components of waste by authorised informal sector of waste pickers, informal recyclers or any other work force engaged by the local body or entity mentioned in rule 2 for the purpose before the waste is

								delivered or taken up for its processing or disposal. For details refer to the SWM manual 2016-http://cpheeo.nic.in/WriteReadData/Cpheeo_SolidWasteManagement2016/Manual.pdf
Urban Local Body	Solid Waste Management	Please specify the monthly average quantity of waste recycled at energy plants managed by the ULB or private partner designated by the ULB for the period from 1st January, 2017 to 31st December, 2017 (if applicable).	Tonnes/ month		Secondary		ULB	Waste to energy plants include Bio-methanation, Refuse Derived Fuel (RDF), Pyrolysis, Gasification, Bioreactor Landfills and Incineration.
Urban Local Body	Solid Waste Management	Please specify the monthly average quantity of construction and demolition (C&D) waste recycled at	Tonnes/ month		Secondary		ULB	According to the rules, construction and demolition waste “means the waste comprising of building materials, debris and rubble resulting from

		C&D recycling plants managed by the ULB or private partner designated by the ULB for the period from 1st January, 2017 to 31st December, 2017 (if applicable).						construction, remodelling, repair and demolition of any civil structure. For details refer to the SWM manual 2016- http://cpheeo.nic.in/WriteReadData/Cpheeo_SolidWasteManagement2016/Manual.pdf
Urban Local Body	Others	Please specify the total number of people from the city registered with the district employment exchanges as on 31st March, 2016.	Number	District employment exchange records	Secondary	District employment exchange records	District employment exchange	The district level employment exchanges under the Department of Employment and Training, accepts applications from job seeking individuals. Cities are encouraged to approach the district employment exchanges for this data.
Urban Local Body	Others	Please specify the total number of people from the city registered with the district employment	Number	District employment exchange records	Secondary	District employment exchange records	District employment exchange	The district level employment exchanges under the Department of Employment and Training, accepts

		exchanges as on 31st March, 2017.						applications from job seeking individuals. Cities are encouraged to approach the district employment exchanges for this data.
Urban Local Body	Others	Please specify the total working age population in the city as on 31st March, 2016.	Number	Census	Secondary	Census data	ULB	This can be estimated based on Workforce Participation data available under the NSS 66th Round, MOSPI and NITI Aayog.
Urban Local Body	Others	Please specify the total working age population in the city as on 31st March, 2017.	Number	Census	Secondary	Census data	ULB	This can be estimated based on Workforce Participation data available under the NSS 66th Round, MOSPI and NITI Aayog.
Urban Local Body	Others	How many Town Vending Committees does the city have?	Number	ULB records	Secondary	ULB records	ULB	Protection of Livelihood and Regulation of Street Vending Act, 2014 stipulates the formation of Town Vending Committee.

Urban Local Body	Others	How many Town Vending Committees have completed street-vendor surveys?	Number	ULB records	Secondary	ULB records	ULB	Protection of Livelihood and Regulation of Street Vending Act, 2014 stipulates the formation of Town Vending Committees which undertake survey of street vendors to identify them and provide formal vending spaces.
Urban Local Body	Others	How many Town Vending Committees/ULBs have identified vending zones in their area/city ?	Number	ULB records	Secondary	ULB records	ULB	Protection of Livelihood and Regulation of Street Vending Act, 2014 stipulates the formation of Town Vending Committees which undertake survey of street vendors to identify them and provide formal vending spaces.
Urban Local Body	Others	How many street vendors have been enumerated under the street-vendor surveys (as per the	Number	Street vendor surveys	Secondary	Street vendor surveys	ULB	A street vendors survey for enumeration of Street vendors is mandated by the Protection of Livelihood and Regulation of Street

		latest available data)?						Vending Act, the data from the same should be specified.
Urban Local Body	Others	Is there any other source of data on the total number of street vendors in your city undertaken between 2012 and 2017?	Yes/No	ULB records	Secondary	ULB records	ULB	Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) could be a potential alternative source. For more details, please refer to the following- https://nulm.gov.in/PDF/NULM_Mission/NULM-SUSV-Guidelines.pdf
Urban Local Body	Others	What is this source?	Name	ULB records	Secondary	ULB records	ULB	
Urban Local Body	Others	What is the year of this source?	Year	ULB records	Secondary	ULB records	ULB	
Urban Local Body	Others	What is the number of street vendors enumerated according to this source?	Number	ULB records	Secondary	ULB records	ULB	

Urban Local Body	Others	How many vending certificates with allocated vending space has the ULB provided to street-vendors under the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014?	Number	ULB records	Physical	Random sample survey	ULB	
Urban Local Body	Others	How many vending certificates/licenses has the ULB provided to Street Vendors prior to the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014, that are currently valid?	Number	ULB records	Physical	Random sample survey	ULB	
Urban Local Body	Others	Which agency/authority has provided the	Name	ULB records	Secondary	ULB records	ULB	

		license/vending certificate prior to the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 ?						
Urban Local Body	Housing	Please specify the total no. of Economically Weaker Section (EWS) households requiring housing under Beneficiary led Construction (BLC), Credit Linked Subsidy Scheme (CLSS) and Affordable Housing in Partnership schemes, as per the demand survey conducted under PMAY.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	EWS category will be defined as prescribed in the PMAY scheme of the Government of India which is households with an annual income < INR 3 Lakhs, or as redefined by the various state Governments in consultation with the Centre. EWS includes Below Poverty Level (BPL) households. Under the PMAY scheme, demand surveys are conducted by ULB which can be used to present this data. The following link can be

								referred for guidelines related to PMAY survey-https://pmaymis.gov.in/PDF/HFA_Guidelines/hfa_Guidelines.pdf
Urban Local Body	Housing	Please specify the number of slums that have been denotified due to in-situ rehabilitation since 17th June, 2015.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	In-situ rehabilitation involves slum redevelopment without relocating the slum households. In case there is a delay in official denotification, but allotment letters have been provided for formal housing in the rehabilitated slum, the number of allotment letters provided may be entered here.
Urban Local Body	Housing	Please specify the number of households in slums that have been denotified due to in-situ rehabilitation	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	In-situ rehabilitation involves slum redevelopment without relocating the slum households. In case there is a delay in official denotification, but

		since 17th June, 2015.						allotment letters have been provided for formal housing in the rehabilitated slum, the number of allotment letters provided may be entered here.
Urban Local Body	Housing	Please specify the number of applications approved for subsidy under the Credit linked subsidy scheme of the PMAY, since 17th June, 2015.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	Please indicate the total number of applications approved for CLSS. EWS category will be defined as prescribed in the PMAY scheme of the Government of India which is households with an annual income < INR 3 Lakhs, or as redefined by the various state Governments in consultation with the Centre. EWS includes Below Poverty Level (BPL) households. Under the PMAY scheme, demand surveys are conducted by ULB which

								can be used to present this data.
Urban Local Body	Housing	Please specify the number of beneficiary families provided with allotment letters for EWS homes built under the Affordable Housing in Partnership scheme, since 17th June, 2015.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	Please indicate the total number of applications approved for CLSS. EWS category will be defined as prescribed in the PMAY scheme of the Government of India which is households with an annual income < INR 3 Lakhs, or as redefined by the various state Governments in consultation with the Centre. EWS includes Below Poverty Level (BPL) households. Under the PMAY scheme, demand surveys are conducted by ULB which can be used to present this data.

Urban Local Body	Housing	Please specify the number of applications approved for monetary support/allotment letters provided for affordable housing built for EWS families under state led schemes since 17th June, 2015.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	This would include beneficiaries from any of the state led affordable housing schemes except PMAY.
Urban Local Body	Housing	Please specify the number of applications approved for subsidy under the Beneficiary led individual house construction or enhancement scheme of the PMAY, since 17th June, 2015.	Number	Census, PMAY records	Secondary	Census data, PMAY records	ULB	Please indicate the total number of applications approved for BLC. EWS category will be defined as prescribed in the PMAY scheme of the Government of India which is households with an annual income < INR 3 Lakhs, or as redefined by the various state Governments in consultation with the Centre. EWS includes Below

								Poverty Level (BPL) households. Under the PMAY scheme, demand surveys are conducted by ULB which can be used to present this data.
Urban Local Body	Basic Information	Please specify the total number of notified slum households in the city with community toilets (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in notified slums, please specify number of such households accessing community toilets. Community toilet: 'It is used, owned and maintained by community members or local governments. A community toilet may also have other utilities such as a bathing facility or a place for washing clothes, depending upon the needs of the community. It is mostly

								located within the community, where people reside' . (For definition please refer to: http://sac.ap.gov.in/sac/UserInterface/Downlaods/13-8-2015%20Guidlines%20on%20CT_PT%20.pdf)
Urban Local Body	Basic Information	Please specify the total number of non-notified slum households in the city with community toilets (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in non-notified slums, please specify number of such households accessing community toilets. Community toilet: 'It is used, owned and maintained by community members or local governments. A community toilet may also have other utilities such as a bathing facility or a place for washing clothes, depending upon the needs of the

								community. It is mostly located within the community, where people reside'. (For definition please refer to: http://sac.ap.gov.in/sac/UserInterface/Downlaods/13-8-2015%20Guidlines%20on%20CT_PT%20.pdf)
Urban Local Body	Solid Waste Management	Please specify number of notified slum households in the city that are covered by door-to-door waste collection (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in notified slums, please specify the number of such households covered through door-to-door waste collection system. (For sample dataset, please refer to: http://www.swachhbharaturban.in/Swachh Bharat Mission/home/#/Swachh Bharat Mission)

Urban Local Body	Solid Waste Management	Please specify number of non-notified slum households in the city that are covered by door-to-door waste collection (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in non-notified slums, please specify the number of such households covered through door-to-door waste collection system.
Urban Local Body	Water Supply & Drainage	Please specify number of notified slum households in the city that are covered by water supply connection - public borewells (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in notified slums, please specify number of such households with access to water supply through public borewell systems (For sample dataset, please refer to: http://opendata.punecorporation.org/Citizen/CitizenCategory/Category?departmentId=11)

Urban Local Body	Water Supply & Drainage	Please specify number of non-notified slum households in the city that are covered by water supply connection - public borewells (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in non-notified slums, please specify number of such households with access to water supply through public borewell systems (For sample dataset, please refer to: http://opendata.punecorporation.org/Citizen/CitizenCategory/Category?departmentId=11)
Urban Local Body	Water Supply & Drainage	Please specify number of notified slum households in the city that are covered by water supply connection - stand-posts (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in notified slums, please specify number of such households with access to water supply through stand-post systems (For sample dataset, please refer to: http://opendata.punecorporation.org/Citizen/Citiz

								enCategory/Category?departmentId=11)
Urban Local Body	Water Supply & Drainage	Please specify number of non-notified slum households in the city that are covered by water supply connection - stand-posts (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in non-notified slums, please specify the number of such households with access to water supply through stand-post systems (For sample dataset, please refer to: http://opendata.punecorporation.org/Citizen/CitizenCategory/Category?departmentId=11)
Urban Local Body	Water Supply & Drainage	Please specify number of notified slum households in the city that are covered by direct water supply connection network	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in notified slums, please specify the number of such households with access to water supply through network-connection (For sample

		(as per the latest available data).						dataset, please refer to: http://opendata.punecorporation.org/Citizen/CitizenCategory/Category?departmentId=11)
Urban Local Body	Water Supply & Drainage	Please specify number of non-notified slum households in the city that are covered by direct water supply connection network (as per the latest available data).	Number	SLIPS/Swachh sarvekshan	Secondary	SLIPS/Swachh sarvekshan	ULB	With reference to the total number of households residing in non-notified slums, please specify number of such households with access to water supply through network-connection (For sample dataset, please refer to: http://opendata.punecorporation.org/Citizen/CitizenCategory/Category?departmentId=11)
Urban Local Body	Transport	Is there a Comprehensive Mobility Plan (CMP) for the city? OR Is there a recent City Transport and	Yes/No					A Comprehensive Mobility Plan presents a long-term vision of desirable mobility patterns for a city and provides strategy and policy measures to

		Traffic Plan/Study (CTTP/CTTS)?						achieve this vision. It should follow the National Urban Transport Policy.
Urban Local Body	Transport	Please specify the year in which the Comprehensive Mobility Plan/City Transport and Traffic Study/City Transport and Traffic Plan was prepared?	Year	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	Please mention the year in which Comprehensive Mobility Plan was prepared.
Urban Local Body	Transport	Please specify the mode share of private transport in the city.	Percentage	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/City Development Plan	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	This data is reported in a Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study. Mode Share is the percentage of population undertaking private-based vehicular trips taken in your city. Population and trip data should be for the same

								year or extrapolated accordingly.
Urban Local Body	Transport	Please specify the mode share of public transport in the city.	Percentage	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/City Development Plan	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	This data is reported in a Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study. Mode share is the percentage of population undertaking public transport trips taken in your city. Population and trip data should be for the same year or extrapolated accordingly.
Urban Local Body	Transport	Please specify the per capita trip rate for private transport in the city.	Percentage	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/City Development Plan	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	This data is reported in a Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study. Population and trip data should be for the same year or extrapolated accordingly.

Urban Local Body	Transport	Please specify the per capita trip rate for public transport in the city.	Percentage	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/City Development Plan	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	This data is reported in a Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study. Population and trip data should be for the same year or extrapolated accordingly.
Urban Local Body	Transport	Please specify the total length of dedicated bicycle track in the city (as per the latest available data).	Kilometre	Bicycle Network Map	Secondary	Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study/CDP	ULB	List the length of road network with bicycle track in your city. In case of absence of a dedicated bicycle track please enter 0.
Urban Local Body	Transport	Please specify the per capita trip rates for non-motorised vehicles in the city.	Percentage	Comprehensive Mobility Plan	Secondary	Comprehensive Mobility Plan	ULB	Mode share -the percentage of population undertaking pedestrian based, bicycle, cycle-rickshaw and other non-motorised trips taken in your city. Comprehensive Mobility Plan/City

								Transport and Traffic Plan/City Transport and Traffic Study will have it. Population and trip data should be for the same year or extrapolated accordingly.
Urban Local Body	Transport	Please specify the per capita trip rates for motorised vehicles in the city.	Percentage	Comprehensive Mobility Plan	Secondary	Comprehensive Mobility Plan	ULB	Mode share -the percentage of population undertaking motorised trips in your city. Comprehensive Mobility Plan/City Transport and Traffic Plan/City Transport and Traffic Study will have it. Population and trip data should be for the same year or extrapolated accordingly.
Urban Local Body	Roads	Please specify the total number of paid parking spaces along all arterial and sub-arterial roads with Right of Way	Number	district employment exchange records	Secondary	Parking records	Urban Local Body/Development Authority/Police Department	List the number of paid-on-street parking facilities in your city. Only parking that is allowed on the streets, NOT multilevel parking

		(RoW) => 30m in the city.						facilities or off-site ones like parking lots.
Urban Local Body	Roads	Please specify total available parking spaces along all arterial and sub-arterial roads with Right of Way (RoW) => 30m in the city.	Number	Parking records	Secondary	Parking records	Urban Local Body/Development Authority/Police Department	List the number of on-street parking facilities available in your city. NOT multilevel parking facilities or off-site ones like parking lots.
Urban Local Body	Roads	Please specify the total length of footpath (wider than 1.2 metres) in the city along the street network.	Kilometre	Roads/Works Department of ULB and Traffic Department	Secondary	Footpath network records, Road Department, ULB	ULB/PWD/City roads division, state Highways Department	List the total length of footpaths along the road network wider than 1.2 metres in the city.
Urban Local Body	Roads	Please specify the total number of intersections/junctions with zebra crossings along roads with Right of Way >= 20 metres in the city.	Number	Pedestrian facilities record	Physical	Random sample survey	Roads and Public Works Department of ULB/Traffic Department	state the total number of intersections with zebra crossings along roads with Right of Way >= 20 metres.

Urban Local Body	Roads	Please specify the total number of intersections/junctions with pedestrian signals along roads with Right of Way >= 20 metres in the city.	Number	Pedestrian facilities record	Physical	Random sample survey	Roads and Public Works Department of ULB/Traffic Department	state the total number of intersections with pedestrian signals along roads with Right of Way >= 20 metres.
Urban Local Body	Roads	Please specify the total number of intersections/junctions with grade separators (subways and Foot-overbridges) along roads with Right of Way >= 20 metres in the city.	Number	Pedestrian facilities record	Physical	Random sample survey	Roads and Public Works Department of ULB/Traffic Department	state the total number of intersections with grade separators to ensure safe passage to pedestrians along roads with Right of Way >= 20 metres.
Urban Local Body	Roads	Please specify the number of road intersections/ junctions in the city along roads with Right of way >= 20 metres.	Number	Roads and Public Works Department of ULB/Traffic Department records	Secondary	Roads and Public Works Department of ULB/Traffic Department records	Roads and Public Works Department of ULB/Traffic Department	state the total number of intersections along roads with Right of Way >= 20 metres.

Urban Local Body	Basic Information	Please specify the total number of operational street lights in the city.	Number	Street light register	Secondary	Street light register	ULB	The number of operational street lights installed by the ULB
Urban Local Body	Heritage	Please state the total number of heritage sites in the city.	Number	List of all the heritage site notified by any of the following agencies: ASI/ULB/UNESCO/INTACH	Secondary	ASI/ULB/UNESCO/INTACH website	ULB	List of all historic buildings that are maintained/restored/hosted by ASI or State Departments (such as PWD, state Archaeological Department). The Indian National Trust for Art and Cultural Heritage (INTACH) also carries out conservation and preservation work and city authorities are encouraged to contact (INTACH) for any city level list of historic sites identified and/or maintained by them. (please refer to: Chapter 10 &16, in Sites notified by UNESCO might also be considered

								http://cpwd.gov.in/Publication/ConservationHertBuildings.pdf)
Urban Local Body	Heritage	Of the list of the heritage sites identified, please specify the total number of heritage sites where improvements were implemented/ completed (as per the latest available data).	Number	ASI/ULB/UNESCO/INTACH website	Secondary	ASI/ULB/UNESCO/INTACH records	ULB	Improvements can mean “Conservation”, "Preservation" or "Restoration". "Conservation" means all the processes of preserving and maintaining a place so as to retain its historical or architectural or aesthetic or cultural significance. “Preservation” means and includes maintaining the form and fabric of a place in its existing state and checking deterioration. “Restoration” means and includes returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components

								without introducing new materials. Please refer to http://tcpomud.gov.in/Divisions/MUTP/Model_Heritage_Regulations.pdf
Urban Local Body	Ecological Sites	Please specify the total number of Ecologically sensitive areas recognised by the city.	Number	Commissioned studies/Detailed project reports/EIA etc.	Secondary	Commissioned studies/Detailed project reports/EIA etc.	ULB	Ecologically sensitive areas includes wildlife sanctuaries, national parks, habitats of migratory birds, endangered species (flora/fauna), forests, surface water bodies, watershed sites, coastlines, riverfronts, wetlands, uninhabited islands, origin of river sites, mangrove sites, etc. Listing of ecologically sensitive zones (ESZ) are developed by Ministry of Environment and Forestry (MoEF). These zones are meant to act as a 'shock absorber' for protected areas (like

								wildlife sanctuaries, forests etc.). They also act as a transition zone in between areas of high protection and areas requiring lesser protection. (please refer to: http://www.moef.gov.in/sites/default/files/1%20Guidelines%20for%20Eco-Sensitive%20Zones%20around%20Protected%20Areas.pdf). Furthermore, listings can also be retrieved from commissioned studies for environmental projects, environmental impact assessments etc. (please refer to: Annexure I, http://assets.wwfindia.org/downloads/indias_notified_ecologicallysensitive_areas.pdf)

Urban Local Body	Ecological Sites	Please specify the total number of ecologically sensitive areas (identified above) for which conservation/improvement projects were completed (as per the latest available data).	Number	Commissioned studies/Detailed project reports/EIA etc.	Secondary	Commissioned studies/Detailed project reports/EIA etc	ULB	Area/site included in this list should have a documentation proof.
Urban Local Body	Hotels	Please specify the total number of 5-star hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the number of 4-star hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state

						report, Ministry of Tourism		Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the number of 3-star hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the number of 2-star hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities.

								Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the number of 1-star hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of heritage hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants

Urban Local Body	Hotels	Please specify the total number of non-star rated hotels in the city.	Number	Hotel Associations	Secondary	Property tax register/Category-state wise approved hotels report, Ministry of Tourism	ULB	Hotels registered as per the Local Shops and Establishments Act.
Urban Local Body	Hotels	Please specify the total number of rooms in 5-star hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of rooms in 4-star hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to

								http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of rooms in 3-star hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of rooms in 2-star hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants

Urban Local Body	Hotels	Please specify the total number of rooms in 1-star hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of rooms in heritage hotels in the city.	Number	Hotel Associations	Secondary	Category-state wise approved hotels report, Ministry of Tourism	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants
Urban Local Body	Hotels	Please specify the total number of rooms in non-star	Number	Hotel Associations	Secondary	Category-state wise approved hotels report,	ULB	Hotels registered as per the Local Shops and Establishments Act.

		rated hotels in the city.				Ministry of Tourism		
Urban Local Body	Hotels	Please specify the average occupancy rate for 5-star hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365
Urban Local Body	Hotels	Please specify the average occupancy rate for 4-star hotels in the city for the period from 1st January, 2017 to	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel

		31st December, 2017.						associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365
Urban Local Body	Hotels	Please specify the average occupancy rate for 3-star hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365

Urban Local Body	Hotels	Please specify the average occupancy rate for 2-star hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365
Urban Local Body	Hotels	Please specify the average occupancy rate for 1-star hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/ho

								tels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365
Urban Local Body	Hotels	Please specify the average occupancy rate for heritage hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	List of hotels and their respective capacity can be obtained from the Ministry of Tourism/state Tourism Department. Such listings will also be available with hotel associations in the cities. Please refer to http://tourism.gov.in/hotels-restaurants Average occupancy rate= [Sum of (total number of rooms occupied/number of rooms available in the hotel) for each day in FY 2016-17]/365

Urban Local Body	Hotels	Please specify the average occupancy rate for non-star rated hotels in the city for the period from 1st January, 2017 to 31st December, 2017.	Percentage	Hotel Associations/Police department	Physical	Random sample survey	ULB	Hotels registered as per the Local Shops and Establishments Act.
Urban Local Body	Others	Does the state/city have a by-law for setting up of Ward Committees/Area Sabhas?		By-law	Secondary	By-law	ULB	The 74th Constitutional amendment provided that Wards Committees be set up within the territorial area of a municipality with a population of three lakhs or more. These are meant to provide decentralised local governance. The state may make a law (Act) stipulating composition and manner of election to Ward committees, and the same is adopted by the ULB through a by-law or resolution. Please indicate here if the ULB

								has taken this step. Please refer to http://bbmp.gov.in/documents/10180/460906/14+of+1977+(E)%201976.pdf/7b2053a6-40c7-4026-b69a-9c91f6d5422a
Urban Local Body	Others	Is this by-law notified?		Gazette notification		Gazette notification		The adoption of the by-law/resolution on ward committees would require the same to be notified in the gazette. Please indicate here whether the Ward Committee by-law or rules (if adopted) have been thus notified.
Urban Local Body	Others	Please specify the number of wards with notified ward committees. (ULBs may furnish the list of wards with notified ward committees as a	Number	Gazette notification	Secondary	Gazette notification	ULB	All the wards where Ward Committee or Area Sabha has been set up should be listed.

		supporting document).						
Urban Local Body	Others	On an average, how many times in a month did the ward committees meet in the period from 1st January, 2017 to 31st December, 2017., across all the wards? (ULBs may furnish the list of wards with notified ward committees as a supporting document).	Number	Minutes of meeting	Secondary	Minutes of meeting	ULB	The number of meetings held by the notified Ward Committees and Area Sabhas would be recorded in the minutes of the meeting. The average number of meetings should be calculated as [(Total number of meetings held by all Ward committees and Area Sabhas in 2017)/(Total number of Ward Committees and Area Sabhas)]12
Urban Local Body	Others	How many people on an average attended the ward committee meetings in the period from 1st January, 2017 to	Number	Minutes of meeting				The number of people who attended the meeting would be recorded in the minutes of the meeting. The average attendance should be calculated as (Total attendance in all meetings of Ward

		31st December, 2017.?						committees and Area Sabhas)/(Total number of meetings of Ward Committees and Area Sabhas)
Urban Local Body	Online Services	Can birth certificate registration be done online?	Yes/No	IT Department (of the ULB)	Secondary	URL of the service providing agency	ULB	Please indicate if online registrations for obtaining birth certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can payment for birth certificate be made online?	Yes/No	IT Department (of the ULB)	Secondary	URL of the service providing agency	ULB	Please indicate if online payment of fee for birth certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.

Urban Local Body	Online Services	Can application status of birth certificate be tracked online?	Yes/No	IT Department (of the ULB)	Secondary	URL of the service providing agency	ULB	Please indicate if tracking of applications for birth certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can a copy (print) of birth certificate be received online?	Yes/No	IT Department	Secondary	URL of the service providing agency	ULB	Please indicate if downloading/printing of birth certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can death certificate registration be done online?	Yes/No	IT Department (of the ULB)	Secondary	URL of the service providing agency	ULB	Please indicate if online registrations for obtaining death certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks

								and/or common services centres.
Urban Local Body	Online Services	Can payment for death certificate be made online?	Yes/No	IT Department (of the ULB)	Secondary	URL	ULB	Please indicate if online payment of fee for death certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can application status of death certificate be tracked online?	Yes/No	IT Department (of the ULB)	Secondary	URL	ULB	Please indicate if tracking of applications for death certificate were enabled through ICT-enabled platforms such as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can a copy (print) of death certificate be received online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if downloading/printing of death certificate were enabled through ICT-enabled platforms such

								as ULB's web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can application for trade licence be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if application for a trade licence can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can payment for trade licence be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if payment of fee for trade licence can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can application status of trade	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if the status of trade licence application can be

		licence be tracked online?						tracked through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can a copy (print) of trade licence be received online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if a copy of trade licence can be downloaded and/or printed through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can request for provisioning of community bins be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if request for provisioning of community bins be made through any ICT enabled platform such as ULB web portal or mobile applications including WhatsApp etc.

Urban Local Body	Online Services	Can request for emptying of community bins be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if request for cleaning or emptying of community bins be made through any ICT enabled platform such as ULB web portal or mobile applications including WhatsApp etc.
Urban Local Body	Online Services	Can status of community bins provisioning request be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if online tracking of request for provisioning of community bins was enabled through any ICT enabled platform such as ULB web portal or mobile applications including WhatsApp etc.
Urban Local Body	Online Services	Can status of community bins emptying request be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if online tracking of request for emptying of community bins was enabled through any ICT enabled platform such as ULB web portal or mobile applications including WhatsApp etc.

Urban Local Body	Online Services	Can application for a water supply connection be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if registration for availing water supply connection be made online through any ICT enabled platform such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can status of application for water supply connection be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if status of application for water supply connection be tracked through any ICT enabled platform such as ULB web portal, mobile applications, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can payment of water supply bill be made online?	Yes/No	IT Department	Secondary	URL	ULB/Utility	Please indicate if payment for water supply bills be made online through any ICT enabled platforms such as ULB web portal, mobile applications, e-kiosks

								and/or common services centres.
Urban Local Body	Online Services	Can application for a sewerage/ drainage connection be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if registration for availing water supply connection be made online through any ICT enabled platform such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can status of application for a sewerage/ drainage connection be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if status of application for water supply connection be tracked through any ICT enabled platform such as ULB web portal, mobile applications, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can payment for a sewerage/ drainage connection be made online?	Yes/No	IT Department	Secondary	URL	ULB/Utility	Please indicate if payment for water supply bills be made online through any ICT enabled platforms such as ULB

								web portal, mobile applications, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can request for fogging services be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if request for fogging services against pests to eradicate vector borne diseases such as malaria, be made online through any ICT enabled platforms such as ULB web portal, mobile applications, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can the status of fogging service request be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if the status of requests made for fogging services against pests to eradicate vector borne diseases such as malaria, be tracked online through any ICT enabled platform such as ULB web portal, mobile applications, e-

								kiosks and/or common services centres.
Urban Local Body	Online Services	Can registration for property tax payment be done online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if registration for property tax payment can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres.
Urban Local Body	Online Services	Can assessment of property tax be done through an online self-assessment tool?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if calculation/estimation of property tax for different types of properties such as residential, non-residential, vacant land, etc. can be done through property online tax calculator. Please refer to the following link for a reference online property tax calculator https://bbmptax.karnata

								ka.gov.in/Forms/Calculator.aspx
Urban Local Body	Online Services	Can payment of property tax be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if property tax amount can be paid online through ICT enabled platforms such as web portal and/or mobile application of ULB, e-kiosks and common services centres.
Urban Local Body	Online Services	Can registration for professional tax certificate be done online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if registrations for professional tax certificates (Registration Certificate and Enrolment Certificate) can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres. Professional Tax registration Certificate (RC) allows the employer

								to deduct and deposit professional tax to and from the salary of its employees. Professional Tax Enrolment Certificate (EC) allows the company to pay the company's and their director's professional tax. Please note that the following categories should be covered- individuals, private establishments, salaried people (central and state government), company.
Urban Local Body	Online Services	Can self-assessment of professional tax amount be made online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if self-assessment of professional tax (Registration Certificate and Enrolment Certificate) can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks

								and/or common services centres. Professional Tax registration Certificate (RC) allows the employer to deduct and deposit professional tax to and from the salary of its employees. Professional Tax Enrolment Certificate (EC) allows the company to pay the company's and their director's professional tax. Please note that the following categories should be covered- individuals, private establishments, salaried people (central and state government), company.
Urban Local Body	Online Services	Can invoices for professional tax be generated online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if invoice for professional tax - (Registration Certificate and Enrolment Certificate) can be made

								through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres. Professional Tax registration Certificate (RC) allows the employer to deduct and deposit professional tax to and from the salary of its employees. Professional Tax Enrolment Certificate (EC) allows the company to pay the company's and their director's professional tax. Please note that the following categories should be covered- individuals, private establishments, salaried people (central and state government), company.

Urban Local Body	Online Services	Can citizens make payment of professional tax online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if payment for professional tax - (Registration Certificate and Enrolment Certificate) can be made through ICT enabled platforms such as ULB web portal, mobile application, e-kiosks and/or common services centres. Professional Tax registration Certificate (RC) allows the employer to deduct and deposit professional tax to and from the salary of its employees. Professional Tax Enrolment Certificate (EC) allows the company to pay the company's and their director's professional tax. Please note that the following categories should be covered-individuals, private

								establishments, salaried people (central and state government), company.
Urban Local Body	Online Services	Are information on all ULB services made available on ULB's web portal?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if information on various types of ULB services such as water supply, solid waste management, sewerage, vector control, tax assessment and payment etc. are available on ULB's web portal and/or mobile application.
Urban Local Body	Online Services	Are information on news and events related to ULB activities and public interest available on ULB's web portal?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if latest updates on various activities such as sports & cultural events, ward committee meetings, key decisions, etc. related to the ULB were made available on ULB's web portal or mobile application.

Urban Local Body	Online Services	Are information on employment opportunities with the ULB made available on ULB's web portal?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if ULB regularly provides information on job opportunities with the ULB or any other Government Agency including state Government, Smart City Corporation etc. on its web portal or mobile application.
Urban Local Body	Online Services	Are ULB resolutions made available online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if resolutions and/or key decisions taken by different ULB committees such as Standing Committee, Slum Improvement Committee, Water Committee etc. are made available on ULB's web portal or mobile application.

Urban Local Body	Online Services	Are ULB's budget documents available online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate is documents pertaining to ULB finances such as annual budget, Income and Expenditure statements etc. for FY 2015-16 and previous years were made available online.
Urban Local Body	Online Services	Can Right to Information (RTI) applications submitted to the ULB online through its web portal?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if citizens could submit an RTI application to ULB through the ULB's web portal or mobile application.
Urban Local Body	Online Services	Can status of RTI application made to the ULB be tracked online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if the status of RTI application submitted to ULB through the ULB's web portal or mobile application be tracked online.

Urban Local Body	Online Services	Please specify if the ULB publishes tenders online?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if the ULB regularly publishes tenders related to capital work, purchase of goods and materials, services, consulting services etc. on its web portal or mobile application.
Urban Local Body	Online Services	Is ULB's Citizen's Charter available on ULB's web portal for viewing?	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if the ULB's Citizens' Charter was made available to the public for viewing online or downloading through its web portal or mobile application.
Urban Local Body	Online Services	Please specify if the organisational structure of the ULB is available on the ULB's web portal.	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if details about different departments of the ULB along with human resource structure is available on its web portal or mobile application.

Urban Local Body	Online Services	Please specify if contact details of the ULB officials are made available on the ULB's web portal.	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if contact details such as office landline, officials cell phone number, email ID etc. of key ULB officials (including zone and ward level officials) is made available on ULB's web portal.
Urban Local Body	Online Services	Please specify if acts pertaining to ULB, its by-laws and guidelines are made available for viewing on the ULB's web portal.	Yes/No	IT Department	Secondary	URL	ULB	by-laws and guidelines can include rainwater harvesting by-law, sanitation by-law, model building by-law etc. that have been formulated by the local body.
Urban Local Body	Online Services	Please specify if the list of ULB specific holidays are made available on the ULB's web portal.	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if information about all public holidays on which the ULB office is closed for citizen services are made available on ULB's web portal in advance.

Urban Local Body	Online Services	Please specify if information related to complaint redressal system such as helpline numbers, email address or postal address of the concerned authority are available online.	Yes/No	IT Department	Secondary	URL	ULB	Please indicate if citizens can view contact details of concerned authorities responsible for registering complaints at various levels and areas.
Urban Local Body	Online Services	Can registration of complaints be made online.	Yes/No	IT Department	Secondary	URL	ULB	Online registration of complaints involves availability of a dedicated section or web page on the ULB's web portal or mobile application where the citizen can post a complaint citizens. Registration of complaints can happen by different service categories e.g., solid waste management, roads and footpath etc and by different component of services. For instance, it may allow

								users intending to register complaints related to solid waste management to select 'waste collection', street cleaning', and document their complaint.
Urban Local Body	IT Services	Is there an integrated Command and Control Centre (ICCC) at the city level?	Yes/No	IT Department	Physical	Random sample survey	ULB	An integrated CCC is a single source of information for all civic functions, which ensures information sharing with stakeholders to predict outcomes better, and also helps in emergency and disaster management. ICCC are being set up under Smart City Mission. For details, please refer to http://smartcities.gov.in/upload/uploadfiles/files/ICCC.pdf
Urban Local Body	IT Services	Which of the following services have been		IT Department	Physical	Random sample survey	ULB	Services are considered to be integrated through command and control

		integrated into the integrated command and control centre (ICCC)? (if applicable) City WIFI City Surveillance City Bus transport/Public transport Street Lighting/Poles/Intelligent Poles ICT enabled Solid Waste Management Smart water/waste water Smart Traffic/ITS Smart Parking Smart health Environmental sensors Citizen services/Kiosks Smart Strip ERP Public Announcement						centre (CCC) if data on that service is collected (and aggregated along with others), analysed and utilised through an ICT enabled platform for better planning of the city's development. It is expected that there is one single centre from where all integrated services are managed.

		system Smart Billboard/VMD E-Governance Electronic Vehicle Charging Emergency Response System Electricity Optical Fibre Cable (OFC) GIS						
Urban Local Body	IT Services	Which of the following services are provided as a singular command and control operation? City WIFI City Surveillance City Bus transport/Public transport Street Lighting/Poles/Intelligent Poles ICT enabled Solid		IT Department	Physical	Random sample survey	ULB	It is possible that different Government agencies e.g., ULB, DISCOM, Traffic and Police Department, may have their command centres that are operating independently (in silos) and not virtually connected to a central command and control centre. Please select such command centres here.

		Waste Management Smart water/waste water Smart Traffic/ITS Smart Parking Smart health Environmental sensors Citizen services/Kiosks Smart Strip ERP Public Announcement system Smart Billboard/VMD E-Governance Electronic Vehicle Charging Emergency Response System Electricity Optical Fibre Cable (OFC) GIS							

Urban Local Body	Water Supply & Drainage	Please provide the committed grievance redressal period (in days) for water supply service.	Days	Grievance register	Secondary	URL/Physical log	ULB/Utility	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Solid Waste Management	Please provide the committed grievance redressal period (in days) for complaints registered online for Solid waste management related service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Solid Waste Management	Please provide the committed grievance redressal period (in days) for Solid waste management service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.

Urban Local Body	Others	Please provide the committed grievance redressal period (in days) for street lights service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Water Supply & Drainage	Please provide the committed grievance redressal period (in days) for sewerage service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Accounts	Please provide the committed grievance redressal period (in days) for property tax service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Accounts	Please provide the committed grievance redressal period (in days) for	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has

		professional tax service.						committed to resolve any grievance registered by citizens.
Urban Local Body	Parks & Recreation	Please provide the committed grievance redressal period (in days) for parks/gardens service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Building Plan Approval	Please provide the committed grievance redressal period (in days) for building plan approval service.	Days	Grievance register	Secondary	URL/Physical log	ULB	Committed redressal period is the maximum time the ULB/concerned government agency has committed to resolve any grievance registered by citizens.
Urban Local Body	Water Supply & Drainage	Please provide the average of the actual redressal period (in days) for grievances registered online regarding water supply service for	Days	Grievance register	Secondary	URL/Physical log	ULB/Utility	Total number of days taken to resolve registered complaints/grievances (only from online records) divided by the number of complaints registered for each of the

		the period from 1st January, 2017 to 31st December, 2017.						services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Water Supply & Drainage	Please provide the average of the actual redressal period (in days) for grievances regarding water supply service registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB/Utility	Total number of days taken to resolve registered complaints/grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.

Urban Local Body	Solid Waste Management	Please provide the average of the actual redressal period (in days) for grievances registered online regarding solid waste management service for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Solid Waste Management	Please provide the average of the actual redressal period (in days) for grievances regarding solid waste management service registered through offline methods like phone call or physical	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding

		registration, for the period from 1st January, 2017 to 31st December, 2017.						water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Others	Please provide the average of the actual redressal period (in days) for grievances registered online regarding street lights for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Others	Please provide the average of the actual redressal period (in days) for grievances	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from physical

		regarding street lights registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.						records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Water Supply & Drainage	Please provide the average of the actual redressal period (in days) for grievances registered online regarding sewerage services for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.

Urban Local Body	Water Supply & Drainage	Please provide the average of the actual redressal period (in days) for grievances regarding sewerage services registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Accounts	Please provide the average of the actual redressal period (in days) for grievances registered online regarding profession tax for the period from 1st January, 2017 to	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from online records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding

		31st December, 2017.						water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Accounts	Please provide the average of the actual redressal period (in days) for grievances regarding profession tax registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Parks & Recreation	Please provide the average of the actual redressal period (in days) for grievances	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from online

		registered online regarding parks and recreational spaces for the period from 1st January, 2017 to 31st December, 2017.						records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Parks & Recreation	Please provide the average of the actual redressal period (in days) for grievances regarding parks and recreational spaces registered through offline methods like phone call or physical registration, for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (only from physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.

Urban Local Body	Building Plan Approval	Please provide the average of the actual redressal period (in days) for grievances registered online regarding building plan approvals for the period from 1st January, 2017 to 31st December, 2017.	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (from both online/physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Building Plan Approval	Please provide the average of the actual redressal period (in days) for grievances regarding building plan approvals registered through offline methods like phone call or physical	Days	Grievance register	Secondary	URL/Physical log	ULB	Total number of days taken to resolve registered complaints/grievances (from both online/physical records) divided by the number of complaints registered for each of the services. E.g., if 100 complaints were registered regarding

		registration, for the period from 1st January, 2017 to 31st December, 2017.						water supply, then this ratio should be calculated as the sum of days taken to resolve each complaint divided by 100.
Urban Local Body	Others	Please specify the total open space reservation (OSR) area allocated for the city (if applicable).	Sq. m.	Land use plan of Master plan/development plan	Secondary	Master Plan/Development Plan	City Development authority/Town and Country Planning Authority/ULB	Please specify the total area under OSR with the ULB. It includes urban greens and open spaces such as recreational spaces, organized greens and common spaces like flood plains, forest cover, vacant lands etc. (for dataset, please refer to: City Masterplan/Land use and/or by-laws).
Urban Local Body	Others	Please specify the percentage of OSR in the city converted into parks or green spaces (if applicable).	Percentage	Land use plan of Master plan/development plan	Secondary	Master Plan/Development Plan	City Development authority/Town and Country Planning Authority/ULB	Total area of green space should include organized green which comprises of Housing Area Park (HAP), Neighbourhood Park (NP), Community Park (CP), District Park (DP), and Sub-City Park (SCP) and forte cover (if any)

								(for definition of green space and organized green, please refer to: http://amrut.gov.in/writereaddata/03Template_SLIP_Format_Parks_V6_(14Aug2015).pdf).
Urban Local Body	Others	Pleases specify the total area covered by green spaces in the city.	Sq. m.	Land use plan of Master plan/development plan	Secondary	Master Plan/Development Plan	City Development authority/Town and Country Planning Authority/ULB	Total area of green space should include organized green which comprises of Housing Area Park (HAP), Neighbourhood Park (NP), Community Park (CP), District Park (DP), and Sub-City Park (SCP) and forte cover (if any). (For definition of green space and organized green, please refer to: http://amrut.gov.in/writereaddata/03Template_SLIP_Format_Parks_V6_(14Aug2015).pdf)
Urban Local Body	IT Services	Please provide the total number of unique hits received	Hits	IT Department records-	Secondary	URL	Town and country planning department/City	To obtain this information, data on total number of unique

		on the online portal for Building Plan Approval for the period from 1st January, 2017 to 31st December, 2017.		ULB/Development Authority			Development authority/ULB	user logins for building plan approval should be collected for FY 2016-17. It includes logins through different platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID should be counted only once irrespective of platform used to login.
Urban Local Body	Basic Information	Please specify the total number of properties in the city.	Number	Property register	Secondary	Property register	ULB/Development Authority	This refers to the total number of properties registered with the ULB including those exempted as per local applicable laws.
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for birth/death certificates for the period from 1st January, 2017 to	Hits	IT Department records-ULB/Development Authority	Secondary	URL	ULB	To obtain this information, data on total number of unique user logins for birth/death certificate should be collected for FY 2016-17. It includes logins through different

		31st December, 2017.						platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID should be counted only once irrespective of platform used to login.
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for trade licences for the period from 1st January, 2017 to 31st December, 2017.	Hits	IT Department records-ULB/Development Authority	Secondary	URL	ULB	To obtain this information, data on total number of unique user logins for trade licence should be collected for FY 2016-17. It includes logins through different platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID should be counted only once irrespective of platform used to login.
Urban Local Body	IT Services	Please provide the unique number of hits (bi-monthly	Hits	IT Department records-	Secondary	URL	ULB/Utility	To obtain this information, data on total number of unique

		average) received on the online portal for water supply related services for the period from 1st January, 2017 to 31st December, 2017.		ULB/Development Authority				user logins for each of the bimonthly periods for the FY 2016-17 for water supply should be collected. It includes logins through different platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID in a two-month period should be counted only once irrespective of platform used to login. Once this data is obtained for each of the two-month periods in the FY 2016-17, take the average (sum of number of users in each of the two-month period/6) and indicate here.
Urban Local Body	IT Services	Please provide the unique number of hits (monthly average) received	Hits	IT Department records-ULB/Development Authority	Secondary	URL	ULB/Utility	To obtain this information, collect the data on number of unique user logins for

		on the online portal for solid waste management related services for the period from 1st January, 2017 to 31st December, 2017.						Solid waste management services, for each month. This would include logins across different medias including- websites, phone based apps, kiosks, etc. Several logins from the same User ID in a month should be counted only once irrespective of media used to login. Once this data is obtained for each of the months in the FY 2016-17, take the average (sum of number of users in each of the two month period/12) and indicate here.
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for property tax for the period from 1st January, 2017 to	Hits	IT Department records- ULB/Development Authority	Secondary	URL	ULB/Utility	To obtain this information, data on total number of unique user logins for property tax should be collected for FY 2016-17. It includes logins through different platforms such as web

		31st December, 2017.						portal, phone based apps, e-kiosks, etc. Several logins from the same User ID should be counted only once irrespective of platform used to login.
Urban Local Body	Accounts	Please provide the total number of assesses for professional tax (RC) in the FY 2016-17.	Number	Tax register/Income and expenditure statement	Secondary	Tax register/Income and expenditure statement	ULB	This will be the number of registered establishments, i.e. establishments holding Registration Certificate, eligible to pay professional tax. Please note that the following categories should be covered- individuals, private establishments, salaried people (central and state government), company.
Urban Local Body	Accounts	Please provide the total number of assesses for	Number	Tax register/Income and expenditure statement	Secondary	Tax register/Income and expenditure statement	ULB	This will be the number of registered establishments, i.e. establishments holding Enrolment Certificate,

		professional tax (EC) in the FY 2016-17.						eligible to pay professional tax. Please note that the following categories should be covered- individuals, private establishments, salaried people (central and state government), company.
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for professional tax (RC) related services for the period from 1st January, 2017 to 31st December, 2017.	Hits	ULB IT Department records	Secondary	URL	ULB/Utility	To obtain this information, collect the data on number of unique user logins for Professional tax (RC) related services (e.g. registration, self-assessment, payment, etc.) for the FY 2016-17. This would include logins across different media including- websites, phone based apps, kiosks, etc. Several logins from the same User ID in a year should be counted only

								once irrespective of media used to login.
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for professional tax (EC) related services for the period from 1st January, 2017 to 31st December, 2017.	Hits	ULB IT Department records	Secondary	URL	ULB/Utility	To obtain this information, collect the data on number of unique user logins for Professional tax (EC) related services (e.g. registration, self-assessment, payment, etc.) for the FY 2016-17. This would include logins across different media including- websites, phone based apps, kiosks, etc. Several logins from the same User ID in a year should be counted only once irrespective of media used to login.
Urban Local Body	Grievance Redressal	Please provide the total number of complaints/grievances registered in the city for the period	Number	Grievance register	Secondary	Grievance register	ULB	

		from 1st January, 2017 to 31st December, 2017.						
Urban Local Body	IT Services	Please provide the total number of unique hits received on the online portal for Unique IDs, to register or track complaints for the period from 1st January, 2017 to 31st December, 2017.	Hits	ULB IT Department records	Secondary	URL	ULB/Utility	To obtain this information, data on total number of unique user logins for registration and tracking of complaints should be collected for FY 2016-17. It includes logins through different platforms such as web portal, phone based apps, e-kiosks, etc. Several logins from the same User ID should be counted only once irrespective of platform used to login. Add all
Urban Local Body	IT Services	Please provide the unique number of hits (monthly average) received on the online portal to obtain/download information for the	Hits	ULB IT Department records	Secondary	URL	ULB/Utility	To obtain this information, collect the data on number of unique user logins to obtain/download information or documents related to the

		period from 1st January, 2017 to 31st December, 2017.						Corporation in each month of 2016-17. This would include logins across different media including- websites, phone based apps, kiosks, etc. Several logins from the same User ID in a month should be counted only once irrespective of media used to login. Once this data is obtained for each of the months in the year 2016-17, take the average (sum of number of users in each month/12).
Urban Local Body	Water Quality	Please specify the total number of samples tested for potable water quality in the city for the period from 1st January, 2017 to 31st December, 2017.	Number	Water quality monitoring report	Secondary	Water quality monitoring report	ULB/Water Board	If the ULB conducts tests of quality of water supply, the data will be available with the ULB/Water Board, e.g., the Hydraulics Department of Surat Municipal Corporation collects and tests potable

								water on a daily basis. (https://www.suratmunicipal.gov.in/Departments/HydraulicWaterQuality) CPHEEO norms can be referred through the following link- http://www.mdws.gov.in/sites/default/files/Manual_on_Water_Supply_and_Treatment_CPHEEO_MoUD_1999_1.pdf
Urban Local Body	Water Quality	Please specify the number of samples that met or exceeded specified potable water standards as per the Central Public Health and Environmental Engineering Organization (CPHEEO) norms.	Number	Water quality monitoring report	Secondary	Water quality monitoring report	ULB/Water Board	If the ULB conducts tests of quality of water supply, the data will be available with the ULB/Water Board, e.g., the Hydraulics Department of Surat Municipal Corporation collects and tests potable water on a daily basis. (https://www.suratmunicipal.gov.in/Departments/HydraulicWaterQuality) CPHEEO norms can be referred through the

								following link- http://www.mdws.gov.in/sites/default/files/Manual_on_Water_Supply_and_Treatment_CPHEEO_MoUD_1999_1.pdf
Urban Local Body	Energy Consumption	Please specify the total energy consumed by all the street lights in the city in FY 2016-17.	kWh	Street light register/Current consumption charges register	Secondary	Street light register/Current consumption charges register	ULB	Data on energy consumption for street lighting and lighting in plazas, squares, parks etc. should be captured.
Urban Local Body	Accounts	Please specify the total area of **residential** properties assessed for property tax (as per the latest available data).	Sq. m.	Property tax register	Secondary	Property tax register	ULB	Please include all properties assessed under the category of residential use, including those exempted from payment of property tax.
Urban Local Body	Basic Information	Please specify the total area under slums in the city.	Sq. m.	Slum records	Secondary	Slum records	ULB/Slum board	
Urban Local Body	Roads	Please specify the total number of	Number	Pedestrian facilities record	Secondary	Pedestrian facilities record	ULB/PWD/City roads division,	

		roads with footpaths.					state Highways Department	
Urban Local Body	Basic Information	Please provide the total number of government buildings in the city.	Number	Property tax register	Secondary	Property tax register	Revenue/Accounts Department, ULB	
Urban Local Body	Roads	Please provide the total number of subways in the city.	Number	Pedestrian facilities record	Secondary		Roads/Works Department of ULB and Traffic Department	
Urban Local Body	Roads	Please specify the total number of foot-over-bridges (FOB) in the city.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	
Urban Local Body	Parks & Recreation	Please specify the total number of malls in the city.	Number	Planning permission records	Secondary	Planning permission records	ULB/City Development authority	
Urban Local Body	Water Supply & Drainage	Please specify the total number of public toilets (public convenience) in the city.	Number	Planning permission records	Secondary	Planning permission records	City Development authority/ULB	

Urban Local Body	Public Spaces	Please specify the total area covered by playgrounds in the city.	Sq. m.	ULB records/state Sports Authority records	Secondary	ULB records/state Sports Authority records	ULB/state Sports Authority	This refers to the total number and corresponding area under playgrounds in the city. Data can be collected from the EState Department of the ULB. Please specify the area in sq.m.
Urban Local Body	Public Spaces	Please specify the total area covered by stadiums (indoor and outdoor) in the city.	Sq. m.	ULB records/state Sports Authority records	Secondary	ULB records/state Sports Authority records	ULB/state Sports Authority	Please provide the area in sq.m. Stadiums under Central/state/local governments should be included.
Urban Local Body	Public Spaces	Please specify the total area covered by sports complexes in the city.	Sq. m.	ULB records/state Sports Authority records	Secondary	ULB records/state Sports Authority records	ULB/state Sports Authority	Please provide the area in sq.m. Sport complexes under Central/state/local governments should be included. Reference year is 2016-17.
Urban Local Body	Public Spaces	Please specify total area covered by clubs and swimming pools in the city.	Sq. m.	ULB records/state sports authority	Secondary	ULB records/state Sports Authority records	ULB/state Sports Authority	Clubs and swimming pools under the state/local government should be included. Privately owned clubs

								and swimming pools are not to be included. Please provide the area in sq.m. Reference year is 2016-17.
Urban Local Body	Public Spaces	Please specify the total area covered by city and district parks in the city.	Sq. m.	Park/Gardens Department, ULB records	Secondary	Park/Gardens Department, ULB records	Park/Gardens Department, ULB	Please provide the area in sq.m. This data may be readily available in SLIP document. Data may also be collected from park/garden department/Horticulture department of the local body/ (District Park (DP) should be within the URDPFI area standard of 50,000 – 2,50,000 sq.m.) (For reference: http://amrut.gov.in/writereaddata/03Template_SLIP_Format_Parks_V6_(14Aug2015).pdf)
Urban Local Body	Public Spaces	Please specify the total area covered	Sq. m.	Park/Gardens Department, ULB records	Secondary	Park/Gardens Department, ULB records	Park/Gardens Department, ULB	Please provide the area in sq.m. This data may be readily available in SLIP document. Data may also

		by neighbourhood parks in the city.						be collected from park/garden department/Horticulture department of the local body(Neighbourhood Park (NP) should be within the URDPFI area standard of 5,000 -10,000 sq.m.) (For reference: http://amrut.gov.in/writereaddata/03Template_SLIP_Format_Parks_V6_(14Aug2015).pdf)
Urban Local Body	Public Spaces	Please specify the total area covered by botanical gardens in the city (if applicable).	Sq. m.	State Department of Environment and Forest records/ULB records	Secondary	State Department of Environment and Forest records/ULB records	State Department of Environment and Forest/ULB	Please provide the area in sq.m. This data may be collected from the State Department of Environment and Forest. The Central Zoo Authority also provides Zoo level information on area that can be accessed at http://www.cza.nic.in/zooinfo.html. Reference year is 2016-17.

Urban Local Body	Public Spaces	Please specify the total area covered by zoological/botanical gardens in the city (if applicable).	Sq. m.	State Zoo Authority records	Secondary	State Zoo Authority records	State Zoo Authority/ULB	Please provide the area in sq.m. This data may be collected from the State Department of Environment and Forest. The Central Zoo Authority also provides Zoo level information on area that can be accessed at http://www.cza.nic.in/zooinfo.html. Reference year is 2016-17.
Urban Local Body	Public Spaces	Please specify the total area covered by bird sanctuaries in the city (if applicable).	Sq. m.	State Department of Environment and Forest records/ULB records	Secondary	State Department of Environment and Forest records/ULB records	State Department of Environment and Forest/ULB	Please provide the area in sq.m. The ENVIS Centre on Wildlife & Protected Areas has data on national parks, wildlife sanctuaries and reserves among other bio-diversity areas. This list can be accessed at http://www.wiienvis.nic.in/Database/wls_8230.aspx. Also refer to http://www.soeatlas.org

								/EnvironmentalSensitiveZones.aspx
Urban Local Body	Public Spaces	Please specify the total area covered by beach fronts in the city (if applicable).	Sq. m.	Masterplan/Coastal Regulation Zone (CRZ) records	Secondary	Masterplan/Coastal Regulation Zone (CRZ) records	Coastal Zone Management Authorities/ULB	Please provide the area in sq.m. Data on beach area can be collected from Development Authority of the city and can be estimated from development plans. state Coastal Zone Management Authorities also prepare Coastal Zone Management Authorities and the same can be used to estimate area under beaches, wherever available. For reference, please refer to http://keralaczma.gov.in/sub/tvm.php
Urban Local Body	Public Spaces	Please specify the total area covered by waterfronts in the city (if applicable).	Sq. m.	Masterplan/Coastal Regulation Zone (CRZ) records	Secondary	Masterplan/Coastal Regulation Zone (CRZ) records	Coastal Zone Management Authorities/ULB	Please provide the area in sq.m. Data on waterfront area can be collected from Development Authority of the city and can be estimated from

								development plans. Include publicly accessible waterfronts, which are used for activities such as recreation, bathing, religious ceremonies. This may be along sea coasts or rivers or lakes.
Urban Local Body	Public Spaces	Please specify the total area covered by promenades in the city (if applicable).	Sq. m.	ULB records	Secondary	ULB records	ULB	Please provide the area in sq.m. This includes areas in the city having public walkways/walking space for pedestrians. It could be along seafronts, rivers, large lakefronts or inside the city along a commercial street/bazaar street.
Urban Local Body	Public Spaces	Please specify the total area covered by public squares in the city (if applicable).	Sq. m.	ULB records	Secondary	ULB records	ULB	Please provide the area in sq.m. Neighbourhood spaces must be at least 1/6 acre (0.067 hectare) in area as per LEEDS standards for neighbourhoods.

								Further, spaces less than 1 acre (0.4 hectare) must have a proportion no narrower than 1 unit of width to 4 units of length. Public squares include chowks, public gathering places. Refer to example at https://en.wikipedia.org/wiki/Public_squares_in_Goa OR https://en.wikipedia.org/wiki/Manek_Chowk_(Ahmedabad)

Annexure 3: Summary of the National Orientation Workshop

Proceeding of National Orientation Workshop on
'Assessment of Liveability Indices for 116 Cities in India'

Date of Workshop: 13th February 2018

Time: 10:00 AM to 5:00 PM

Venue: Vigyan Bhawan, New Delhi

Workshop Background:

The Liveability Index is a landmark initiative by the Ministry of Housing and Urban Affairs (MoHUA) to evaluate how 'liveable' Indian cities are for its citizens. The exercise attempts to assess the performance of 116 cities identified under the Smart City Mission on 79 indicator areas cutting across 15 dimensions/categories including governance, identity and culture and economy and employment.

The national workshop captured and presented the relevance of this initiative to the cities: the ranking methodology, data that is expected to be collected, and the overall timelines and technical resources that will be made available for the task.

The workshop constituted four key sessions as below:

1. Inaugural and Context Setting.
2. Round 1: 'Liveability Indicators, Data Sources and Collection Strategies'.
3. Round 2: 'Liveability Indicators, Data Sources and Collection Strategies'.
4. Final session: 'State Workshop Schedules, Key Milestones and Coordination Protocols'

Summary of Sessions:

Session 1: The purpose of session-1 was to set the context for the vision behind the Liveability Index programme and how to tie into some of the ongoing and upcoming initiatives under the Smart City Mission.

Honourable Minister for Housing and Urban Affairs (MoHUA) Sh. Hardeep S. Puri inaugurated the workshop and addressed the participants. He emphasized the need of analysing problems of cities clinically and adhere to the methodologies of World Bank to ensure better liveability condition of Indian cities. He quoted "democracy and human freedom can never be allowed to be used as a pretext for cluttering and dirtying the environment." Honourable Minister also talked about the duties of municipal authorities and ministry to design overall ecosystem. He suggested rectification in our business and construction technology in order to safeguard liveability standards of cities.

Specifically, Honourable Minister stressed to look at 79 indicators of liveability standard in context of three major flagship programmes of Prime minister namely Swachha Bharat, Pradhan Mantri Awas Yojana (Affordable Housing) and Smart City programme.

Joint Secretary Mr. J.S. Meena welcomed all participants and requested their full participating in the following discussion. Dr. Sameer Sharma, Additional Secretary, Ministry of Housing & Urban Affairs briefed about the expectation from the workshop. He highlighted the issues of getting data in India cities and asked to discuss the indicators and sources to derive data regarding city's GDP and unemployment.

Session 2 and 3: These two sessions focused on introducing and explaining the 79 metrics, helping acquaint the city with the definition of the metrics and provide information on potential data sources. Ministry leadership along with consultants facilitated this discussion. An interactive audience polling device was used to engage participants and ensure that sessions on these critical aspects are interactive.

For select indicators, polling was done to seek feedback from audience on the city's level of comfort in terms of definitional clarity and on the availability of data to support the metric.

The findings of the poll are presented in the following table

Sl No.	Indicators	Whether understood		Opinion on Data availability		
		Yes	No	Readily available	Can be collected	Not Available
1	1.1 Percentage of citizen services available online	86%	14%	24%	76%	0%
2	1.2 Percentage of services integrated through Command Centre	73%	27%	100%	0%	0%
3	1.3 Percentage of citizens using online services	86%	14%	14%	79%	7%
4	1.7 Capital spending as percentage of total expenditure	80%	20%	56%	44%	0%

5	2.1 Restoration and reuse of historic buildings	79%	21%	24%	71%	4%
6	2.2 Percentage of ecologically important areas covered through projects for restoration	90%	10%	14%	82%	4%
7	2.3 Hotel occupancy	100%	0%	100%	0%	0%
8	2.5 Number of cultural/sports events hosted by city	96%	4%	24%	72%	4%
9	3.1 Percentage of school-aged population enrolled in schools	92%	8%	41%	59%	0%
10	3.4 Percentage of schools with access to digital education	[redacted]	[redacted]	6%	94%	0%
11	4.3 Average response time in case of health emergencies	88%	12%	5%	86%	9%
12	5.1 Number of streets, public places, junctions covered through surveillance systems	93%	7%	16%	77%	7%
13	7.1 Percentage of Slum/EWS households covered through formal/affordable housing	96%	4%	33%	65%	2%
14	8.2 Per capita availability of public and recreational places	94%	6%	46%	50%	4%
15	9.1 Share of mixed land use area in overall city land use	96%	4%	42%	52%	6%
16	9.2 Net Density	97%	3%	[redacted]	[redacted]	[redacted]

17	10.2 Percentage of electrical connections covered through smart meters	96%	4%	16%	82%	2%
18	10.5 Percentage of total energy derived from renewable sources	91%	9%	6%	86%	8%
19	10.8 Percentage of new and redeveloped buildings following green building norms	77%	23%	20%	58%	22%
21	11.1 Geographical coverage of public transport	98%	2%	33%	62%	4%
22	11.2 Availability of public transport					
23	11.3 Mode share of public transport	100%	0%	60%	40%	0%
24	11.11 Percentage of traffic intersections with pedestrian crossing facilities	98%	2%	50%	50%	0%
26	12.6 Percentage of plots with rainwater harvesting facility	94%	6%	33%	50%	17%

Other summary of discussion and suggestions from the participants is summarised below:

Governance

Average delay in grievance redressal

- It was suggested that committed redressal period can be based on city's citizen charter
- In calculation, shorter committed redressal periods can be considered to have higher weightage

Capital spending as percentage of total expenditure

- It was clarified that ULB's contribution to Central Government schemes from own sources is included in the metric.

Identity and culture

Restoration and reuse of historic buildings

- Cities to provide proof of project commissioned and amount spent for restoration

Percentage of ecologically important areas covered through projects for restoration

- Participants requested to clarify the authorities that identify or declare environment/ ecologically important sites in the country
- It was clarified that Strip forests along highways are already delineated and ecologically sensitive and hence are to be included.
- It was suggested that the Department of Environment and Forest should provide this data.
- Any area which is included in this list should have a documentation proof.

Number of cultural/sports events hosted by city

- The participants informed that State Govt supports: ISL matches/ private events for which ULBs provide support in terms of sanitation, water supply etc. These are mostly non-financial contribution. It was suggested that a separate metric can be considered to capture such contribution by the ULBs.
- Additionally, it was suggested to include privately hosted event and provide separate weightage.
- Audit mechanism can include media clippings/ social network posts.

Education

- It was requested that it will be useful to capture outcomes of skill initiatives by the Government along the lines of primary/secondary education. In this regard participants suggested that placement records of skill programmes may be useful indicator. This data is currently being captured by the MIS of the Skill Development Ministry.
- It was suggested to include the total number of candidates who are provided skill training in the previous year (Only Govt.) upon total workforce as a sub-metric.
- It was clarified that collation of city level data from U-DISE needs to be done by ULBs

Percentage of schools with access to digital education

- Submissions to be made by public/ private schools to ULB. More metrics like connectivity to internet, projector/ screens can be added.

Health

Average response time in case of health emergencies

- It was suggested to explore data available with the NRES and 108 services
- Participants expressed concern over data pertaining to physical infrastructure and response duration of health emergencies.

Safety and security

Number of streets, public places, junctions covered through surveillance systems

- It was agreed to include actual number of functional private CCTV cameras that can be accessed by the Police Department under this indicator

Economy and employment

- Increase in trade license can be used as an alternative for VAT.

- Percentage of individuals who received skill training and were placed. To capture this indicator, it was suggested to explore LMIS (Skill Exchange) Data and other employment generation programmes such as PMKY to measure job creation.

Increase in issuance of Construction permits

- Participants suggested that only the number of occupancy certificates and total area under such properties (and not sanction or commencement certificates) issued by the concerned authority should be considered for this indicator.

Unemployment rate

- One suggestion made by the participants was to consider capturing the data from ESIC cards which covers both formal and informal sectors. It was informed that as per a Supreme Court Judgement ESIC cards are linked to AADHAR that can help track city level status. However, portability of the ESIC cards could be an issue for accurate estimation.
- Therefore, total number of individuals registered under ESIC for FY 2015-16 and 2016-17 can be considered as a sub-metric.

Percentage of vendors registered and provided formal spaces

- Participants expressed concern about estimating the denominator due to fluctuation in the number of street vendors in the city.
- However, it was agreed to use the estimates vendor surveys undertaken by ULBs as per the 2013 guidelines

Housing and inclusiveness

Percentage of Slum/EWS households covered through formal/affordable housing

- It was suggested to include number of households that have been given property rights

Public open spaces

Per capita availability of public and recreational places

- It was informed that data on this indicator is available in the JNNURM Asset Records

Mixed land use and compactness

Share of mixed land use area in overall city land use

- It was clarified that only the area within city boundary is considered for computation of this indicator
- Participants suggested that village areas falling under city boundaries and non-development areas can be included

Net Density

- It was clarified that only the area within city boundary is considered for computation of this indicator
- Participants request for more clarification on estimation of residential area falling under green belts

Power supply

Percentage of electrical connections covered through smart meters

- Participants enquired if smarts meters are being used in the cities and the same was clarified that few cities have already piloted smart meters. DISCOMs can provide this data.

Average number of electrical interruptions per customer per year

- It was suggested to collect downtime data from log-books: available with the sub-stations

Average length of electrical interruptions per customer per year

- It was informed that most of the unscheduled interruptions happen downstream at transformer and line levels for which data is not available
- However, percentage of DT damages readily available which can be used.
- Additionally, data available with the call centres of (Electricity Boards/ DISCOMS) can be explored

Percentage of total energy derived from renewable sources

- Participants submitted that RPOs of DISCOMs do not state generation capacity hence it may not be a reliable indicator
- It was suggested that the number of establishments, institutions, and government buildings having rooftop solar facilities can be considered

Percentage of new and redeveloped buildings following green building norms

- It was suggested to consider property tax data for the past three years to capture the increase in built up area of new/ redeveloped area.

Transport and mobility

Geographical coverage of public transport

- Participants requested clarity on the denominator – total area of the city (sq. km)

Availability of public transport

- It was suggested to include an indicator on vehicular congestion

Mode share of public transport

- It was informed that data for this indicator can be obtained from CMP/CTIS
- In the absence of CMP, an alternative proxy measure can be explored

Percentage of traffic intersections with pedestrian crossing facilities

- Hill towns have access way of 3.75 metre. Therefore, NMT provisions (like footpaths etc.) may not be feasible

Extent to which universal accessibility is incorporated in public rights-of-way

- It was suggested to add public convenience (public and community toilet) to the list of existing categories

Water Supply

Assured water supply

- Data from Service Level Improvement Plans (SLIPs) can be used. Cities can share updated SLIPs that can be considered.

Percentage of plots with rainwater harvesting facility

- It was suggested to capture this data through random sample surveys.
- Participants enquired if even cities with high ground water tables are required to have rain water harvesting facilities
- Rain water harvesting in hill towns may not be feasible due to 1m-1.5m of top soil (RW harvesting may end up eroding the surface)

Reduced pollution

- It was suggested to assess quality of water and level of noise pollution through sample surveys by the consortium.

Session 4: In this session the key expectations from the states and cities were summarized and a detailed schedule for the state orientation workshops, citizen surveys, city reconnaissance visits and physical audits was shared. The consortia team with guidance and support from the Ministry facilitated this session.

Some of the key summary:

1. All city officials present start reviewing and familiarising themselves with the excel sheet provided in pen drive
2. Ensure completion of all data in excel available with ULB

Conclusion:

The workshop concluded by thanking all cities for being present and participating in the workshop actively.

Agenda -

National Orientation Workshop

on

Assessment of Liveability Indices for 116 Cities in India

Date: 13th February, 2018

Venue: Vigyan Bhawan, New Delhi

Inaugural and Context Setting		
Time	**Session**	
10:00-10:30	Inaugural Session	Inauguration by Sh. Hardeep S. Puri, Minister for Housing & Urban Affairs (MoHUA)
10:30- 10.45	Liveability Index – Vision and Action	Sh. Durga Shanker Mishra Secretary, Ministry of Housing & Urban Affairs
10:45- 11:00	Expectations from the Workshop	Dr. Sameer Sharma and Sh. Shiv Das Meena, MoHUA
11:00- 11: 20	Liveability Rankings: Global Best Practices and implications on City Planning and Management	Trisha Suresh, Senior Economist, Economist Intelligence Unit
11:20- 11: 40	How are Cities going to be ranked? – An overview of the approach and framework for ranking	Deepa Karthykeyan, Director, Athena Infonomics
Tea Break (11:40- 12:00)		
Round 1 on 'Liveability Indicators, data sources and collection strategies'		
12:00- 13:00	Round 1 on 'Liveability Indicators data sources and collection strategies'	Sh. Shiv Das Meena, MoHUA assisted by Consortium

	(Facilitated through audience response system)	
13:00- 13:30	Q&A session	Dr. Sameer Sharma, Sh. Shiv Das Meena and Sh. Sanjay Kumar, MoHUA assisted by Consortium
Lunch Break (13:30- 14:30)		
Round 2 on 'Liveability Indicators, data sources and collection strategies'		
14:30-15:30	Round 2 on 'Liveability Indicators data sources and collection strategies' (Facilitated through audience response system)	Sh. Sanjay Kumar, MoHUA assisted by Consortium
15:30- 16:00	Q&A session	Dr. Sameer Sharma, Sh. Shiv Das Meena and Sh. Sanjay Kumar, MOHUA assisted by Consortium
Tea Break (16:00- 16:20)		
Workshop Schedules, Key Milestones and Coordination Protocols		
16:20 – 17:00	Summing up: • State workshop schedules • Key milestones, tools and coordination protocols • Vote of Thanks	Dr. Sameer Sharma, Sh. Shiv Das Meena and Sh. Sanjay Kumar, MoHUA assisted by Consortium

Annexure -2

National Orientation Workshop

on

Assessment of Liveability Indices for 116 Cities in India

Date: 13th February, 2018

Venue: Vigyan Bhawan, New Delhi

Context

The Liveability Index is a landmark initiative by the Ministry of Housing and Urban Affairs (MoHUA) to evaluate how 'liveable' Indian cities are for its citizens. The exercise seeks to assess the performance of 116 cities identified under the Smart City Mission on 79 indicator areas cutting across 15 dimensions/categories including governance, identity and culture and economy and employment.

As part of the formal commencement of the Liveability Index, MoHUA seeks to formally orient all 116 cities on the initiative through a National Workshop on 13th February.

The national workshop will capture and present the relevance of this initiative to the cities: the ranking methodology, data that is expected to be collected, and the overall timelines and technical resources that will be made available for the task.

Workshop Structure

The workshop will commence at 10am and close at 5pm, and will have 4 key sessions:

5. Inaugural and Context Setting.
6. Round 1: 'Liveability Indicators, Data Sources and Collection Strategies'.
7. Round 2: 'Liveability Indicators, Data Sources and Collection Strategies'.
8. Final session: 'State Workshop Schedules, Key Milestones and Coordination Protocols'.

The key takeaways from each session is summarized below:

Session 1: Inaugural and Context Setting

The purpose of this session is to set the context for the vision behind the Liveability Index programme and how this is expected to tie into some of the ongoing and upcoming initiatives under the Smart City Mission. This segment will be led by the Senior Leadership at the Ministry. This will be followed by two key presentations.:

A. Ms. Trisha Suresh, Senior Consultant at the Economist Intelligence Unit will present EIU's experience in undertaking liveability rankings globally and specifically outline how this has been leveraged by cities for planning and management.

B. Ms. Deepa Karthykeyan, Director, Athena Infonomics will present the approach for the liveability assessment of the 116 Indian cities. She will explain the key categories of the indicators, the associated weightages and the formula for calculating the rankings (Ex: relative vs absolute benchmarks, city categories based on population, core vs supporting indicators etc.).

Key takeaways

- How is this programme linked to current and upcoming initiatives under the Smart City Mission?
- How can cities use/benefit from the programme: what are the global best practices?
- How are cities going to be ranked?

Session 2 and 3: Liveability Indicators, Data Sources and Collection Strategies

These two sessions will focus on delving into every one of the 79 metrics, helping acquaint the city with the definition of the metrics and provide information on potential data sources. Immediate feedback will be sought on each metric through an audience response system on the availability of data to support the metric and on the city's level of comfort in terms of definitional clarity. The presentation will also focus on the role that citizen perception and primary surveys is likely to play in informing the index calculation and the audit protocols associated with every data input provided by the city.

The discussion on round 1 and round 2 will be facilitated by Mr. Praveen Ravi and Mr. Ankit Chatri from Athena Infonomics with support and guidance from the Ministry leadership.

A copy of the presentation, along with a copy of the assessment questionnaire, will be made available to the cities at the workshop. The cities will be requested to furnish a summary report on the data availability/estimation challenges/audit protocols within 1 week of sharing the questionnaire.

Key takeaways

- Data inputs to be provided by cities.
- List of Non-ULB data owners – Other key departments/organizations (public/private) who must participate in the exercise for the city to perform well.
- List of data sources from where the city can procure information.
- Role of citizen surveys in the city's ranking.
- Audit protocols for the data provided by the city.
- City's feedback on data availability and clarity on the overall metrics.

Session 4: Workshop Schedules, Key Milestones and Co-ordination Protocols

This session will be facilitated by Ms. Tripti Sharma, Associate Director, IPSOS Public Affairs with guidance and support from the Ministry.

This session will seek to summarize the key expectations from the states and the cities and the associated timelines. A detailed schedule for the state capacity building workshops, citizen surveys, city reconnaissance visits and physical audits will be shared.

This session will also cover the type of technical support and co-ordination the consortium is going to provide to the cities in helping them collate and submit the data. A sample illustration of the data entry interface that is likely to be made available to the city for data submission will also be presented.

Key takeaways

- Timelines for state capacity building workshops, citizen surveys, city reconnaissance visits and physical audits.
- Protocols for data entry and submission and timelines for the same.
- Information on the state and national help-desks and the co-ordination/troubleshooting protocols.

Annexure 4: Training of the Trainer (TOT) Workshop for State coordinators on Assessment of Liveability Indices

Background of the Training

The Ministry of Housing and Urban Affairs (MoHUA) has developed a set of 'Liveability Standards in Cities' which acts as a guiding framework for cities to chart their pathway towards liveability and systematic improvement in the quality of life of citizens in Indian cities. The Liveability Index is a landmark initiative by the Ministry of Housing and Urban Affairs (MoHUA) to evaluate how 'liveable' Indian cities are for its citizens. The exercise seeks to assess the performance of 116 cities identified under the Smart City Mission on 79 indicator areas cutting across 15 dimensions/categories including governance, identity and culture and economy and employment.

MoHUA has commissioned a consortium led by Ipsos in partnership with Athena Infonomics and Economist Intelligent Unit (EIU) for carrying out this assessment. The objectives of the assignment are to:

- Compile reliable and high- quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document; and
- Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis

The consortium has proposed a three tier team structure constituting of regional coordinators, state coordinators and city coordinators to facilitate secondary data collection. The team of State and city coordinators will be primarily responsible for organising and leading the State Orientation Workshop, conduct city reconnaissance meetings and follow ups, ensuring timely collection and submission of data by extending necessary support to the city officials for coordination and collation of data, trouble shoot on questions/ clarifications and support on the data audit.

Given the above context, Ipsos-Athena consortia conducted a three-day training session for the state coordinators. The training covered roles and responsibilities, secondary data collection interface/application, data formats including reporting period, reporting units, data collection process, escalation protocols, and ethical considerations, and the overall timelines and technical resources that will be made available for the task.

Facilitators of the Training

The training of the state coordinators were organized by Ipsos and jointly led by Athena Informatics Pvt. Ltd. and Ipsos Research Pvt. Ltd. The profile of key facilitators who leveraged their expertise and shared their understanding about the indicators with the state coordinators is given below:

Sujaya Rathi: Sujaya Rathi is an urban specialist with more than 2 decades of experience in this sector (India and USA). Until recently, she was Principal Research Scientist at the Center for Study of Science, Technology and Policy (CSTEP), Bangalore, India.

Her experience includes development of decision support tools, policy studies for sustainable urban transport interventions, technology choices, development of land use and transport strategies, integrated approach to the sanitation investment planning process, gender inclusive planning processes and capacity building. She has also been involved in building toolkits for sustainable planning, as part of the Capacity Building for Sustainable Urban Transport Planning Program- India, DFID-World Bank, Ministry of Urban Development, and Government of India. Further, she is part of the Faecal Sludge Management Toolbox team (supported by Bill and Melinda Gates Foundation). She has also worked with the Planning Commission (for the 12th Plan)/NITI Aayog to develop a systems analysis of the forces shaping development scenarios for India and developed a smart and sustainable city development reference framework. She has worked with various urban local bodies, state governments, and the Ministry of Urban Development in India, and also worked with the US federal government, the State Department of Transportation (different states) and numerous cities, private developers in the US.

Currently, as part of the National Faecal Sludge and Septage Management (NFSSM) Alliance, she also represents technology and gender taskforces. She is also a member, American Institute of Certified Planners (AICP), and Life Member, Institute of Urban Transport, Ministry of Urban Development, Government of India. She has a Masters in Community and Regional Planning from Iowa State University, USA and Masters in Economics from Jadavpur University, India.

Sujaya Rathi is the Team Leader for the liveability assessment programme.

Brinda Shastry: Brinda holds a Masters' Degree in Architecture (Urban Design) from the University of Oregon, USA, and a Diploma in Architecture from the School of Architecture, CEPT, Ahmedabad. She has over 20 years of experience working as an architect, urban designer and city planner in the private and public sectors in India and abroad. In the private sector, she has worked as a consultant to provide technical inputs into Master plan projects. She has also been involved closely with spatial planning in cities including Bengaluru where worked on the redesign of Gandhi Bazaar street market. She has also worked to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. For the city of Portland, she worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of liveability.

Brinda is the Urban management specialist for the Liveability Assessment project

Ankit Chatri: Ankit is a Lead Consultant at Athena with more than six years of experience in urban infrastructure, policy research and data ecosystems. He also served as a Teaching Assistant at IIT Bombay. He has co-authored Public Private Partnerships in Urban Water Supply and Municipal Solid Waste Management: Potential and Strategies. Ankit has also contributed to papers and articles for international conferences and economic journals, including the International Academy of Business and Public Administration Disciplines (IABPAD) Conference (Oct. 2012) and the International Journal of Applied Economics and Econometrics (2014). He also holds a master's degree in Economics from the University of Hyderabad in addition to an M. Phil in Planning and Development from IIT Bombay.

Ankit is the National Project Coordinator for this liveability assessment project.

Devkanya Chakravarty: Devkanya is a Consultant at Athena. She previously worked with PricewaterhouseCoopers in the Government Reforms and Infrastructure Division (GRID). Her projects there involved facilitating financial stability for the Central Banks of developing economies in Asia. She has also worked with Multilateral agencies like the World Bank and Asian Development Bank. She holds a master's degree in Economics from the Delhi School of Economics and a bachelor's degree in Economics from Hindu College, University of Delhi.

Aditi Gupta: Aditi Gupta is a Research Associate at Athena. She holds a Master's Degree in Economics from National University of Singapore (NUS), and wrote her thesis on the implications of informal risk sharing within caste groups in rural India. Aditi also worked as a part time Research Assistant at Lee Kuan Yew School of Public Policy, NUS. In addition to this, she obtained her undergraduate degree in Economics from the University of Delhi.

Kasirajan Mahalingam: Kasirajan Mahalingam is a Research Associate at Athena. Previously, he worked as a Researcher and Geo-Information Systems Specialist in a SME, in Den Haag (Hague). He has also researched informal settlements, focusing upon spatial heterogeneity of these habitats. He also studied resilient infrastructure in flood prone areas. Kasirajan completed his bachelor's degree in Urban Planning from the School of Planning and Architecture (MHRD, Govt. of India), Vijayawada. He also completed his master's degree in Geo-information Science and Earth Observation from Faculty of ITC, University of Twente, The Netherlands.

Tripti Sharma: Tripti is an international development professional specialising in research and evaluation. She has led and managed projects in South East Asia region mainly India, Bangladesh, Pakistan. She has worked largely on range of SDG themes and programmes focusing on Public Health, Livelihood, Education, Gender, Humanitarian Assistance, and others. Technical Assistance and Stakeholder capacity building for monitoring, evaluation, and impact assessments has been her core area of work. She has extensive experience of working with central, state, and district administration on national flagships programmes across more than

15 states. She has a MA degree in Social Work from Tata Institute of Social Sciences (TISS), Mumbai and has two decades of experience in social research and development sector.

Tripti is the National Project Coordinator for this liveability assessment project.

Participants of the Training

A total of 28 state coordinators attended the training session. The training was held in Hotel Abu Sarovar Portico, Chennai from 26th to 28th February 2018.

The representatives from Ipsos and Athena organized and facilitated the training. The list of participants who attended the workshop is presented below:

Name	State	Name	State
J.B Chakraborthy	Andhra Pradesh	Chitra Khanna	Madhya Pradesh
Bandu Baburao Chaktawar	Arunachal Pradesh	Arindam Ghosh	Maharashtra
Syeda Jolly Kazi	Assam	Latashori	Manipur/Sikkim
Gopal N	Bengaluru	Shuranjoy Khaidem Singh	Meghalaya
Surya Prakash Rai	Bihar	Albert Lalzikpuia Ralte	Mizoram
Sanjay Singh	Delhi	Ranjit Kumar Sahoo	Odisha
Sucheta Bedi	Delhi	Suriti Sachdeva	Punjab/Chandigarh
Dipti Kashalkar	Goa/Maharashtra	Padma Parthasarathy	Tamil Nadu
Sunil Saxena	Goa/Maharashtra	P C Kasinath	Telengana
Shilpa Pramod Maniar	Gujarat	Manidip Bandopadhya	Tripura
Tsewang Dorji	Himachal Pradesh	Akilesh Awasthi	Uttar Pradesh
Pramod Bhatt	Haryana	SVP Pankaj	Uttar Pradesh
Anupa Sharma	Jammu & Kashmir	Alok Thapliyal	Uttarakhand
Subhra Mukhopadhyay	Jharkhand	Rajat Kumar Das	West Bengal[19]

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[19] Additional participants were trained to account for any drop outs or those unable to grasp the project requirements. The State Coordinators for Jharkhand and West Bengal are not continuing due to health reasons. For Maharashtra and Uttar Pradesh, additional people participated and SCs have been finalized based on their comprehension and understanding.

Bhagvandas M.	Karnataka		
Satheesh Chandran R	Kerala		

Organizer/Facilitator

S.No	Name	Organisation	Name	Organisation
1	Aditi Gupta	Athena	Asif Kunwar	Ipsos
2	Ankit Chatri	Athena	Deepak Garkhel	Ipsos
3	Brinda Sastry	Athena	Gangotri Dash	Ipsos
4	Devkanya	Athena	Imlilemla Pongen	Ipsos
5	Sujaya Rathi	Athena	Parijat Chakraborty	Ipsos
6			Sachin Singhal	Ipsos
7			Sutapa Ray	Ipsos
8			Tripti Sharma	Ipsos

Objective and Agenda of the Workshop

The workshop offered a balanced combination of interactive lectures, group assignments and discussions which was designed to build a common understanding about the assessment and chart out a detailed course of action. The three-day training workshop was conducted as per the agenda presented below:

Assessment of Liveability Indices of 116 Cities

Training of Trainers Workshop Schedule

Venue: Chennai, Date: 26-28th February, 2018

26th Feb, 2018	27th Feb, 2018	28th Feb, 2018
10:00 – 10:15: Self Introduction and Expectation Setting Exercise Sujaya Rathi	09:30 – 09:45: Learnings from Day 1 Tripti Sharma	Learnings from Day 2: 09:30 – 09:45 Sujaya Rathi
10:00 – 10:30: Project overview, components, timelines and ground covered so far… Tripti Sharma	09:45 – 11:15: INDICATOR CATEGORIES 8-10 (Number of indicators covered = 13) **[48/79]**	Secondary data collection – audit protocols: 09:45 – 10:45 Tripti Sharma
10:30 – 11:20: Roles and Responsibilities, Data Entry Portal and Work Shop Schedule Tripti Sharma and Ankit Chatri		Project Monitoring Dashboard: 10:45 – 1:15 Ankit Chatri
11:20– 11:30: Breathing space ☺	11:15– 11:30: Breathing space ☺	11:15– 11:30: Breathing space ☺
11:30 – 12:45: INDICATOR CATEGORIES 1-2 (Number of indicators covered = 13) **[13/79]**	11:30 – 13:00: INDICATORS CATEGORY 11-12 (Number of indicators covered = 18) **[66/79]**	Protocols for Reporting and Coordinating: 11:30 – 12:45 Tripti Sharma
12:45 – 13:00: Quick INDICATOR BITES (Q&A)	13:00 – 13:15: Quick INDICATOR BITES (Q&A)	Quick BITES (Q&A): 12:45 – 13:00

26th Feb, 2018	27th Feb, 2018	28th Feb, 2018
13:00 – 14:00: Lunch Break 🍽	13:15 – 14:00: Lunch Break 🍽	13:00 – 14:00: Lunch Break 🍽
14:00 – 14:05: Energizer (Avalanche) Ankit Chatri	14:00 – 14:05: Energizer (The flood is coming) Ankit Chatri	Team Exercise (two): Situational Assessment 14:00 – 15:00
14:05 – 15:15: INDICATOR CATEGORIES 3-5 (Number of indicators covered = 15) **[28/79]** Tripti Sharma	14:05 – 15:00: INDICATOR CATEGORIES 13-15 (Number of indicators covered = 13) **[79/79]**	Data hunt: 15:00 -16:00 (Individual exercise)
15:15 – 15:30: Quick INDICATOR BITES (Q&A)	15:00 – 15:15: Quick INDICATOR BITES (Q&A)	☺ Breathing space: 16:00 -16:15
15:30 – 16:15: Audit Protocols and Primary Data Collection Strategy (Relevant Indicators)	15:15 – 16:15: INDICATOR POT LUCK (Chit based draw of indicators followed by presentation by lucky master trainers)	Open Forum: 16:15 – 17:00
16:15 -16:30: Breathing space ☺	16:15 - 16:30: Breathing space ☺	RECAP of Day 3 and close: 17:00 – 17:30 Tripti Sharma
16:30 – 17:15: INDICATOR CATEGORIES 6-7 (Number of indicators covered = 7) **[35/79]**	16:30 – 17:30: Audit Protocols and Primary Data Collection Strategy (Relevant Indicators)	
17:15 – 18:00: INDICATOR POT LUCK	17:30 – 18:15: Quiz (Covering indicators, audit protocols, R&R etc.)	

26th Feb, 2018	27th Feb, 2018	28th Feb, 2018
(Chit based draw of indicators followed by presentation by lucky master trainers)		
18: 00 – 18:15 RECAP of Day 1 and close Brinda Sastry	18:15 – 18:30: RECAP of Day 2 and close Tripti Sharma	

Proceedings of the Training

Introduction to the Training Workshop and Participants

The workshop was opened by Ms. Tripti Sharma who briefly discussed the project and the objective of the TOT workshop. The workshop agenda as well as the expected outcome was presented to the participants. The participants' expectation from the workshop was also discussed during the session.

This was followed by a round of peer introduction as an ice breaker where the group was organised into pairs and the participants were asked to introduce themselves to one another highlighting their backgrounds, their experience in Urban Sector and conducting surveys and other data collection exercise. Each participant then introduced his/her partner to the entire group.

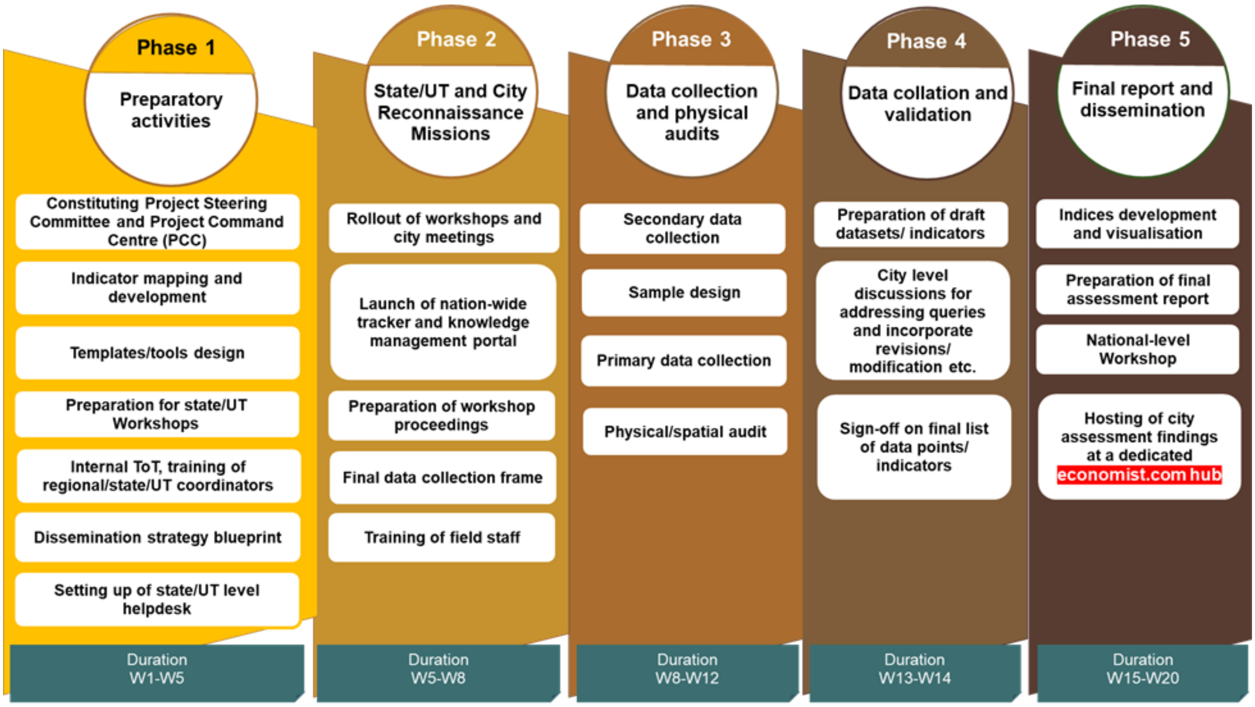
Context setting

The purpose of this session was to present the context and vision behind the Liveability Index programme and introduce them to the concept of liveability; discuss convergence of liveability assessment programme with other central government initiatives including the Smart City Mission, AMRUT, SBM among others; and elaborate on the linkages between SDG and Liveability assessment. This session also included discussions on the potential benefits and outcomes that city government can derive by participating in the liveability assessment. This would help each state and city coordinators to motivate nodal persons in the ULBs and other state agencies to enter the required data.

Technical sessions

Session 1: Overall Approach and Methodology

The session started with briefing on the background of project, coverage of cities, various components of the study as well as the overall design and approach. The five phases of the assessment were also explained to the state coordinators. The figure below illustrates the same.


Phase 1
Preparatory activities
Constituting Project Steering Committee and Project Command Centre (PCC)
Indicator mapping and development
Templates/tools design
Preparation for state/UT Workshops
Internal ToT, training of regional/state/UT coordinators
Dissemination strategy blueprint
Setting up of state/UT level helpdesk
Duration W1-W5
Phase 2
State/UT and City Reconnaissance Missions
Rollout of workshops and city meetings
Launch of nation-wide tracker and knowledge management portal
Preparation of workshop proceedings
Final data collection frame
Training of field staff
Duration W5-W8
Phase 3
Data collection and physical audits
Secondary data collection
Sample design
Primary data collection
Physical/spatial audit
Duration W8-W12
Phase 4
Data collation and validation
Preparation of draft datasets/ indicators
City level discussions for addressing queries and incorporate revisions/ modification etc.
Sign-off on final list of data points/ indicators
Duration W13-W14
Phase 5
Final report and dissemination
Indices development and visualisation
Preparation of final assessment report
National-level Workshop
Hosting of city assessment findings at a dedicated economist.com hub
Duration W15-W20

Session 2: Deep Dive into the Indicators and Liveability Assessment Framework

The next phase of discussion focused on Liveability Indicators, Data Sources and Collection Strategies. The sessions focused on understanding every one of the 79 metrics, the definition of the metrics and provide information on potential data sources, data proxies, data owners and collection strategy. The presentation also discussed the primary surveys that will be conducted for 5 out of the 79 indicators and the facilitating role that the state coordinators will have to extend for the completion of the primary data collection. The audit protocols associated with every data input provided by the city were also discussed and the physical audit protocol for 8 out of the 79 indicators were presented.

INDICATOR CATEGORY: GOVERNANCE
INDICATOR CATEGORY: IDENTITY & CULTURE
INDICATOR CATEGORY: EDUCATION
INDICATOR CATEGORY: HEALTH
INDICATOR CATEGORY: SECURITY & SAFETY
INDICATOR CATEGORY: ECONOMY & EMPLOYMENT
INDICATOR CATEGORY: HOUSING & INCLUSIVENESS
INDICATOR CATEGORY: PULIC OPEN SPACES
INDICATOR CATEGORY: MIXED LAND USE & COMPACTNESS
INDICATOR CATEGORY: POWER SUPPLY
INDICATOR CATEGORY: TRANSPORT & MOBILITY
INDICATOR CATEGORY: ASSURED WATER SUPPLY
INDICATOR CATEGORY: WASTE WATER MANAGEMENT
INDICATOR CATEGORY: SOLID WASTE MANAGEMENT
INDICATOR CATEGORY: REDUCED POLLUTION

Day 1 and Day 2 was focused on covering all 79 indicators under 15 categories. A participatory and interactive approach was adopted to deliver these sessions encouraging participants to discuss definitional issues (for e.g., is the data of scheduled interruption available at feeder level or sub-station level), potential data collection challenges and coordination requirements. After covering the entire set of indicators and the associated questions, activities were conducted to engage the participants through group discussions and game-based activities.

This involved the following activities –

1. Division of all state coordinators into groups to discuss each indicator and related questions in detail. During this exercise, they had to evaluate the various indicators and questions on parameters such as conceptual clarity, likely availability of data in their city/state, possible source of data etc. This helped them identify potential gaps and challenges of the data points under each indicator as well as in general data collection. It also provided an opportunity for peer learning, and participative problem solving to tackle the anticipated challenges.

2. A team quiz was conducted at the end of day two to gauge whether the state coordinators were up to the task of addressing queries from city officials when the liveability assessment went live. Questions asked were conceptual rather than memory based, providing an opportunity to further streamline understanding of indicators.
3. An exercise was also conducted to assess whether the state coordinators understood the 'Data owners'. To this end, several questions were posted on the screen, and coordinators were asked to map the appropriate entity who would be able to answer each question.
4. An 'indicator potluck' was organised on both days. In this, state coordinators were randomly assigned different indicators which they had to present to the rest of the group. This was meant to be a mock exercise, to help prepare them to address questions at the state workshops as well as on an ongoing basis during the course of the assessment. Others in the audience evaluated the presenter based on communication style, conceptual clarity and the like.

Roles of State Coordinator and City Coordinators

After providing a briefing on the project components and methodology, the facilitators explained the roles and responsibilities of State Coordinators – activities that would be undertaken by them during the data collection process as well as pre and post data collection. They were also briefed about the roles of city coordinators separately.

Administrative session

The session was led by Ipsos finance team. The session focused discussing finance and account related protocol of the consortium. The team informed the state coordinators about the regulations to be followed, travel policies to be adhered to, norms to be maintained while raising invoice, submitting expenses, claiming reimbursements or requesting advance. The financial formats have also been shared with the state coordinators.

Planning for State level workshop

This session started with a discussion on the tentative schedule of the state level workshops for the respective states.

This interactive session was designed to encourage the state coordinators to detail out all possible tasks and sub tasks required for planning and facilitating the State Workshops and come up with a tentative work-plan for the State Workshops. Potential challenges in rolling out the workshop schedule were also discussed. This session also covered the type of technical support and co-ordination the consortium will extend to conduct the workshop.

Standards of Conduct

A summary of Do's and Don'ts that was discussed during the workshop is presented below:

Do's

- SCs are familiar with all stakeholders in the city, who would be responsible for any of the data to be provided as part of the liveability assessment.
- SCs are aware of all concepts used in the questionnaire so that they can train the city coordinators to serve as first point of contact of the city stakeholders.
- SCs are aware of all protocols – for instance, need for agencies to nominate nodal persons, need for follow up and coordination in case of data gaps, need to inform the central team in advance in case a data point is not likely to be available etc.
- SCs are aware of how to operate the data entry portal to address the simpler non-technical queries city officials might have.
- All the CCs are trained well in all aspects related to the Liveability Assessment
- Presence of Technical team representative from IPSOS in State Workshop
- Always follow the procedures / protocols / guideline issued by the central team
- SCs and CCs make themselves available as per the time specified by the officials
- All phone calls / mails from the officials are responded to appropriately, and promptly
- Timely financial flow from IPSOS (wherever required)
- Cordial relationship with officials and in constant touch with all stakeholders
- Routine update to central team are provided on status and all challenges are flagged.
- Central team is contacted in case of any confusion

Don’t

- Have arguments with stakeholders
- Get emotionally attached to officials, to the extent that this would affect the veracity of the data
- Break protocols set by the Central team
- Entertain any data entry/fudging request from ULBs
- Taken individual and independent decisions on indicators/ questions which are out of our purview.
- Assuming / interpret data related question. Always consult the central team in case of any confusion.
- Question the integrity of data / officials
- Get into financial transactions with stakeholders
- Make any promises to stakeholders

Feedback session

At the end of the training program, participants shared general feedback of the training.

Major outcome of ToT

After completion of the 3 day- training, the major outcomes are as following

- Mapping of state specific stakeholders who will be the data owner

- Plan for delivery of state workshop ready with state coordinators
- Agreement on deliverables expected from the state coordinators during the course of the assessment
- Agreement with the state coordinators on overall coordination protocol and escalation mechanism for addressing any technical/ administrative query
- Developed detailed project plan including key tasks and sub tasks for the period of two months

List of State and City Coordinators

Sl. No.	Name of State	Name of City	Names	Designation	Contact Number
	South Region		P C Kasinath	Regional Coordinator	9440609395
	North East		Sushil Huidrom	Regional Coordinator	9862584011
	North East		Dr. Latashori	Regional Coordinator	8131912781
	North/East/West		Yadavendra Singh	Regional Coordinator	9910026990
	North/East/West		Navneet Singh Tewatia	Regional Coordinator	7011994721
	West		Sucheta Bedi	Regional Coordinator	9818001551
	Andaman Nicobar	Portblair	Sushma Pandey	City Coordinator	9531826330
	Andhra Pradesh	Amaravati	JBR Chakravarthy	State Coordinator	7013593412
	Andhra Pradesh	Vijayawada	SK Abdul Sattar	City Coordinator	9949825302
	Andhra Pradesh	Visakhapatnam	S. Sam Kumar	City Coordinator	9885765115
	Andhra Pradesh	Kakinada	K. Anand Kumar	City Coordinator	9494045775
	Andhra Pradesh	Tirupati	G. Murali	City Coordinator	9848871887
	Arunachal Pradesh	Itanagar	Bandhu Baburao Chakrawar	State Coordinator	9423325509/7304576011
	Arunachal Pradesh	Pasighat	Rina Nongle	City Coordinator	9436234839
	Assam	Guwahati	Syeda Jolly Kazi	State Coordinator	8638010398
	Bihar	Bihar	Surya Prakash Rai	State Coordinator	9801764664
	Bihar	Bhagalpur	Chandan Kumar	City Coordinator	9431432053
	Bihar	Biharsharif	Santwana Bharti	City Coordinator	9334129615
	Bihar	Muzaffarpur	Baiju Shankar Giri	City Coordinator	9572749727
	Bihar	Patna	Sonal Sinha	City Coordinator	8002355111/9835048436
	Chandigarh	Chandigarh	Gurjot Kaur	City Coordinator	8352039725
	Chhattisgarh	Chhattisgarh	Chitra Khanna	State Coordinator	9425600726

	Chhattisgarh	Raipur	Shesh Narayan Sahu	City Coordinator	98271-08235, 94242-25865
	Dadar & Nagar Haveli	Silvassa	Janakbhai Prajapati	City Coordinator	9925037947/8735039602
	Daman & Diu	Diu	Vinod Jethva	City Coordinator	7069161968
	Gujarat	Vadodara	Shilpa Maniar	State Coordinator	9898320401
	Gujarat	Rajkot	Yogeshgiri Meghnathi	City Coordinator	997481872, 8200679270
	Gujarat	Surat	Nidhi Tailor	City Coordinator	6351969832
	Gujarat	Ahmadabad	Minaxiben Shukla	City Coordinator	9426703321
	Gujarat	Dahod	Ishwerbhai Yogi	City Coordinator	9426362537/9081632496/7016584603
	Gujarat	Gandhinagar	Minaxiben Shukla	City Coordinator	9426703321
	Haryana	Gurgaon	Sourabh Midha	State Coordinator	9999271111
	Haryana	Karnal	Sourabh Midha	State Coordinator	9999271111
	Himachal Pradesh	Dharamshala	Tsewang Dorjee	State Coordinator	9003081576/8219354945
	Himachal Pradesh	Shimla	Karma Sonam	City Coordinator	9816130026
	Jammu & Kashmir	Jammu	Anupa Sharma	State Coordinator	9419728234
	Jammu & Kashmir	Srinagar	Shazia Sadaf	City Coordinator	9797858498
	Jharkhand	Ranchi	Sumantra Mukherjee	State Coordinator	8969511998/ 9471700420
	Jharkhand	Dhanbad	Vijay Kumar	City Coordinator	8969687692
	Karnataka	Karnataka	Bhagavandas. M	State Coordinator	09448048613/8861280398
	Karnataka	Hubbali-Dharwad	Ashok Yaragatti	City Coordinator	9480171243 / 8497849113
	Karnataka	Bangalore	Gopal Naikapu	City Coordinator	9449566715
	Karnataka	Belagavi	Devenrappa Kattimani	City Coordinator	9845873208
	Karnataka	Davanagere	Vijayakumar Bolwar	City Coordinator	9448865911
	Karnataka	Mangaluru	Veeresh Jambalagi	City Coordinator	9880545615
	Karnataka	Shivamogga	Vijaya Prasad	City Coordinator	9886181414 / 9448171414

	Karnataka	Tumkur	Kanmani Saravana	City Coordinator	9449655144
	Kerala	Kerala	Satheesh Chandran	State Coordinator	9447043414
	Kerala	Kochi	Princy Jacob	City Coordinator	9544099150
	Kerala	Thiruvananthapuram	John Cyril	City Coordinator	9847227391
	Lakshadweep	Kavaratti	Satheesh Chandran N	State Coordinator	9447043414
	Madhya Pradesh	Madhya Pradesh	Chitra Khanna	State Coordinator	9425600726
	Madhya Pradesh	Bhopal	Rajkumar Meena	City Coordinator	9425687228
	Madhya Pradesh	Gwalior	Ashish Tripathi	City Coordinator	08770279051/09993477997
	Madhya Pradesh	Indore	Rachna Patidar	City Coordinator	9685105353
	Madhya Pradesh	Ujjain	Sapna Rathore	City Coordinator	9584852356
	Madhya Pradesh	Sagar	Anita Shrivastava	City Coordinator	9754744378
	Madhya Pradesh	Satna	Ramnath Satpute	City Coordinator	9575211490
	Maharashtra	Pune	Arindam Ghosh	State Coordinator	9049881199
	Maharashtra	Aurangabad	Jaydeep Machindra Shete	City Coordinator	9420611059
	Maharashtra	Kalyan-Dombivali	Sharifa Yasin Bale	City Coordinator	9850195276
	Maharashtra	Nagpur	Shymal Navgare	City Coordinator	9099543869
	Maharashtra	Nashik	Nikam Jaideep	City Coordinator	9422170150
	Maharashtra	Pimpri Chinchwad	Shivaji Nimbalkar	City Coordinator	9422033970, +91 9822044226
	Maharashtra	Amravati	Amol Buddha	City Coordinator	7219271379
	Maharashtra	Solapur	Mayur Ramdasi	City Coordinator	9960429111
	Maharashtra	Navi Mumbai	Sunil Saxena	City Coordinator	9820526613
	Maharashtra	Thane	Sumit Pawar	City Coordinator	
	Manipur	Imphal	Dr. Latashori	Regional Coordinator	8131912781
	Mizoram	Aizawl	Albert Lalzikpuia Ralte	State Coordinator	7005562258
	Nagaland	Kohima	Surunthung Enny	State Coordinator	7005659160

	NCT of Delhi	NDMC	Sujit Kumar Singh	City Coordinator	9811402671
	NCT of Delhi	NDC	Nalini Kant Nayak	City Coordinator	9818688971 / 7982170110
	NCT of Delhi	New Delhi	Kumar Manish	City Coordinator	9650931193
	Odisha	Bhubaneswar	Ranjit K Sahoo	State Coordinator	9437383446
	Odisha	Rourkela	Manmath K Bhanjadeo	City Coordinator	9437092302
	Puducherry	Puducherry	M.Senthil Kumaran	City Coordinator	9739753074
	Punjab	Punjab	Suriti Sachdeva	State Coordinator	7838274376
	Punjab	Ludhiana	Rajinder Kumar	City Coordinator	8360654985/9316924210
	Rajasthan	Jaipur	Devjyoti Chakraborty	State Coordinator	9174642502
	Rajasthan	Jodhpur	Rajshree Tak Samaddar	City Coordinator	7023796925
	Rajasthan	Kota	Dr. Kulwant Gaur Kota	City Coordinator	8386900102
	Rajasthan	Ajmer	Deepti Singh	City Coordinator	9928427785
	Rajasthan	Udaipur	Beena Chittora	City Coordinator	9672776000
	Sikkim	Gangtok	Dr. Latashori	Regional Coordinator	8131912781
	Sikkim	Gangtok	Sushmitra Chettri	City Coordinator	8145886504
	Sikkim	Namchi	Sushma Pradhan	City Coordinator	9593265046
	Tamil Nadu	Chennai	P. Padma	State Coordinator	9445564805
	Tamil Nadu	Chennai	Uma Ravi Kumar	State Coordinator	9444069686
	Tamil Nadu	Coimbatore	K. R. Srinivasan	City Coordinator	9364463636
	Tamil Nadu	Madurai	S. Prathiban	City Coordinator	9787776601
	Tamil Nadu	Salem	R. Ravindran	City Coordinator	8122316554
	Tamil Nadu	Tiruchirappalli	R. Sridhar	City Coordinator	7598266692
	Tamil Nadu	Dindigul	D Chitra Sivakumar	City Coordinator	9842144899
	Tamil Nadu	Erode	M. Sachithanandam	City Coordinator	7305955855
	Tamil Nadu	Thanjavur	S. Jayaseelan	City Coordinator	9486542225

	Tamil Nadu	Thoothukkudi	P Sridhar	City Coordinator	9003428887
	Tamil Nadu	Tirunelveli	C V Suresh Kumar	City Coordinator	9362251529/9843855884
	Tamil Nadu	Tiruppur	D. Siva Kumar	City Coordinator	9994783417
	Tamil Nadu	Vellore	S Ramamurthy	City Coordinator	9843326013
	Telangana	Telangana	P C Kasinath	State Coordinator	9440609395
	Telangana	Warangal	Ravindra VN	City Coordinator	9052399691
	Telangana	Hyderabad	Padmarao Narayan	City Coordinator	9492483675
	Telangana	Karim Nagar	Anil Kumar S	City Coordinator	9492912701
	Tripura	Agartala	Manidip Bandyopadhyay	State Coordinator	8974879606
	Uttar Pradesh	Uttar Pradesh	Surya Vikram Prakash Pankaj	State Coordinator	9599318693
	Uttar Pradesh	Kanpur	Meenakshi Dixit	City Coordinator	8318170183
	Uttar Pradesh	Aligarh	Ramavtar Singh	City Coordinator	9012012510
	Uttar Pradesh	Bareilly	Dimple Gaur	City Coordinator	9219742015
	Uttar Pradesh	Moradabad	Veereah Kumar	City Coordinator	9219722776
	Uttar Pradesh	Saharanpur	Dhananjay Saxena	City Coordinator	9795758782
	Uttar Pradesh	Rampur	Rajesh Kumar	City Coordinator	9412185623
	Uttar Pradesh	Jhansi	Ajay Singh	City Coordinator	9415033356
	Uttar Pradesh	Varanasi	Ragini Singh	City Coordinator	7007907773
	Uttar Pradesh	Agra	Yogendra Singh	City Coordinator	9425351947, 9826615066
	Uttar Pradesh	Allahabad	Amir Rasheed	City Coordinator	9140800652
	Uttar Pradesh	Ghaziabad	Akilesh Srivastava	City Coordinator	8077682032
	Uttar Pradesh	Lucknow	Akilesh Awasthi	City Coordinator	9415394381, 9648907996
	Uttar Pradesh	Meerut	Rakesh Bhatt	City Coordinator	9044594538/7905075294
	Uttar Pradesh	Rae Bareli	Shubha Shukla	City Coordinator	9415173694
	Uttarakhand	Dehradun	Alok Thapliyal	State Coordinator	9690023194

	West Bengal	Howrah	Uditendu Dutt-Mazumdar	State Coordinator	9830093771
	West Bengal	Kolkata	Sonali Guha	City Coordinator	9433092567
	West Bengal	Durgapur	Joseph Dinabandhu Das	City Coordinator	8334080028

Annexure 5: Communication Plan

Communication Campaign Plan

Liveability Index Assessment in 116 Cities Across India

Background

An overarching goal of the various missions and schemes is to make indian cities more 'Liveable'. the Ministry of Urban Development (MoUD) has developed a set of 'Liveability standards in Cities' to generate a Liveability index and rate cities.

Scope

Initially in 116 cities. Eventually across all the cities. The cities include smart cities.

Key contributing factors for performance of Liveability Index

The outcome of better performance in liveability index depends on engagement, satisfaction, participation, collaborative perspective, feeling safe, belongingness, wellness and overall happiness. Audience could be segmented in multiple ways, using demographic variables, income, education, media access, attitudes, knowledge, or values. There are number of existing segmentation frameworks, such as SEC classifications, psychographic or VALS. They are precision tools to push contents in the minds, directly or indirectly, to secure a wallet share for the brand in question. Such approaches used both in commercial and social marketing, selling the brands, products, services and concepts. Such media campaigns require media specialists, focussed, episodic and expensive.

Public Goods, Services and Spaces

The Liveability Index is a blend of private and public goods. For example, healthcare, education, transportation, tax, etc., have the characteristics of private good. Public services such as waster, sanitation, waste management, tax collection, developing public spaces, policing, electricity, etc., is meant to be available to all. Public spaces such as roads (mobility), parks (recreation), heritage spaces (cultural), public utilities, etc., are accessible to anyone, with or without any regulated access. Density, technology, quality, spatial and perception safety and security may alter the way these spaces and services are utilised or consumed.

Much of the public services are under the domain of local bodies, government agencies or quasi-government entities. Therefore, these government bodies are key to provision of such services, perception of services offered by city dwellers, extent of utilisation and experiences that translate into good living standards. The multiple touch points – government agencies, point of service provision, and public spaces – assume significance in planning an effective media plan.

Context

Multi-Dimensional: A media intervention that engage general public to act in public interest to contribute to public good requires a multi-dimensional perspective. Improvement in liveability concerns everyone in a city at any moment, touches individuals / groups wherever they are, experienced in tangible and intangible forms, woven into variety of decisions (spatial and temporal) and find articulation and expressions in many different formats. It is all pervasive, omnipresent and continuous.

This being the case, media plan, has to recognise multiple dimensions of each audience set being targeted. An individual could be at any moment experience varying shades of being an user (hospital / parks / roads), enforcer (authority), influencer (blogger), provider (services), victim (sickness), or beneficiary (covered cycle path).

Being in public space, sharing services, interface with strangers and adequacy / inadequacy of public facilities brings about mixed emotions. Behaviours, moderated by norms, rules and perceived laws, though predictable, mostly are circumspect. Vulnerable groups will have added concerns of safety, security and trust.

User satisfaction, which has location specific enablers and constraints, arise out of positive experiences, higher satisfaction, ability to participate, free engagement options, authenticity, trust, safety and wellness.

Smaller screens are assuming importance, specifically among youth and smarphone users, which has increased phenomenally in cities. Smaller screens require more attention to content, while larger screens need to connect more emotionally with audiences.

Diversity: India is defined by diversity. Urbanisation, modernisation and media are contributing to the complexity. Cities in the forefront, in the narrative of development, attracting thousands of aspirants to large cities. The 116 chosen cities for liveability index improvement thrust includes, classified based on population, Megapolis, Metropolitan Cities, Large Towns, Medium Towns and Small Towns. The cities are spread across all the states and union territories.

The city neighbourhoods are characterised by a great range of incomes, livelihoods, lifestyles, social, cultural, religious, linguistic and educational backgrounds. Therefore, each city / town is characterised by unique combination of socio, cultural, linguistic, economic, political, administrative, institutional development and resource attributes.

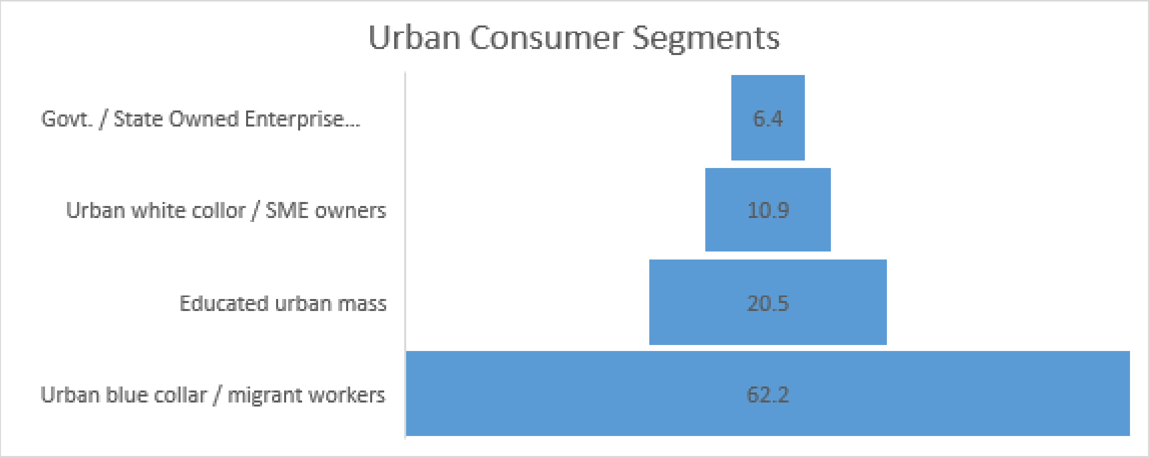
Large cities in general, specifically megapolis, metropolitan cities and large cities have large proportion of migrants, from different states, speaking different languages and considerable expat population. Wealthy neighbourhoods, slums, administrative blocks / offices, educational institutions, entertainment, heritage / cultural / tourist locations, traders, merchants, industries (large and small), transit locations, etc., co-exist with varying demand on city resources. Large movement of people is a reality with about 50% of the population living in a city moving within and into on a daily basis.

World View: Cities in India have unique combination of tradition and modernisation. It is a place of stark inequality. he city dwellers world view and expectations are largely shaped by experiences in using various city services provided by authorities, living environ created by extent and quality of services provided, type of industry / business the city has attracted, access to modern, convenient and clean facilities, mobility options, type of professional engagement, facilities at work and dwelling places, etc. The resultant chaos, resource constraints, ignorance, misgivings, and bureaucratic ways has led to certain level of apathy, indifference, tolerance and mistrust. Alienation is evident seen in individualistic focus. in the cities.

Level of preparedness: The cities likely to be at varying level of preparedness in terms of collation, compiling and reporting. Data sources may not be mature, nor the systems currently in use for data capturing, nor level of understanding in various departments nor importance associated with provision of data. The communication should be realistic in addressing diverse situations and facilitating matching of expectation for compiling liveability index, level of efforts required at various departments, motivating collaboration and sustaining the interest.

Audience segments

Majority of urban dwellers are likely to be labourers, petty service providers or migrant workers, about 60%. Urban educated mas is likely to be about 20%. Government employees could be in the range of 6% to 10%. The remaining will be SME owners or while collar work. Experience of these in utilising various spaces, services and amenities will differ. So, are the media consumption patterns – type of media, forms, format, and language. Social, economic, cultural and environment perceptions differ and therefore, interactions with others and usage patterns.



Source: India Consumer Closeup, 2016. Goldman Sachs. Equity Research

The Liveability Index rely on information captured through governmental portal and compiled by various departments. Citizen survey tries to capture experience of users at household level, with a specific slant on vulnerable segments in slum areas. In this sense, ULB and government departments, city inhabitants and vulnerable segments in slums are the key stakeholders. However, performance in Liveability Index, depends, not just on these segments: it requires active engagement of businesses, traders, property owners, visitors, etc. Media plan will have to be comprehensive as well as specific to key stakeholders.

Dewey concept of "multiple publics"—groups that share similar values and interests with respect to a given social or political issue (Dewey & Rogers, 2012)is useful.

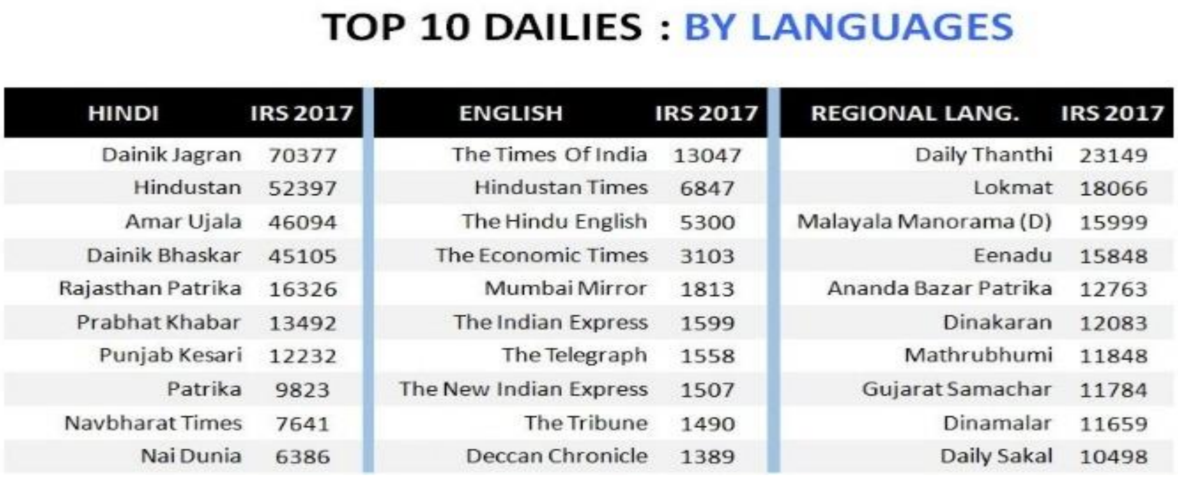
Media Access and Consumption

Social marketing: The media plan shall adopt a few aspects of social marketing. Provision of **information**, **educating** audiences on concepts, experiences, duties and responsibilities, choosing appropriate **communication** options - media, channels and formats, **demonstrating** appropriate attitude, responses and behaviours and carefully planned **reinforcement** to nudge everyone along a continuum of no awareness to a sustained collaborative interaction resulting in desired outcomes. The information, Education, Communication, Demonstration and Reinforcement (IECDR) framework is useful to reach out to diverse set of audiences, engaging them in space and time clusters, build trust, encourage collaboration, and own the responsibility for improving liveability quotient.

Access to media: In general people in the cities have access to consume both traditional and modern media. These include information, entertainment and games. Cable, satellite and internet are becoming near universal in cities. With exponential increase in smartphones, reliable access to internet, small screens share is increasing indicating personalised preferences. However, traditional media, such as TV, print and Radio continue to be relevant, specifically TV, which will remain relevant in the coming years.

Print media: IRS 2017 claims that 39% Indians reads newspapers. Print media continues to be relevant specifically in urban areas. The recent IRS 2017 report has shown an overall increase in readership. Through there is a decline in Hindi Newspaper reading, regional newspapers have gained or maintained annual increase in readership. Notable among them are Oriya and Bengali Language print magazines. Another trend there is substantial viewing of online version of newspapers and magazines. Increase in literacy, online access and mobility are contributing to this trend.

The media planning shall use IRS data to plan effectively the media bursts to create and sustain buzz around Liveability Index.



TOP 10 DAILIES : BY LANGUAGES

HINDI	IRS 2017	ENGLISH	IRS 2017	REGIONAL LANG.	IRS 2017
Dainik Jagran	70377	The Times Of India	13047	Daily Thanthi	23149
Hindustan	52397	Hindustan Times	6847	Lokmat	18066
Amar Ujala	46094	The Hindu English	5300	Malayala Manorama (D)	15999
Dainik Bhaskar	45105	The Economic Times	3103	Eenadu	15848
Rajasthan Patrika	16326	Mumbai Mirror	1813	Ananda Bazar Patrika	12763
Prabhat Khabar	13492	The Indian Express	1599	Dinakaran	12083
Punjab Kesari	12232	The Telegraph	1558	Mathrubhumi	11848
Patrika	9823	The New Indian Express	1507	Gujarat Samachar	11784
Navbharat Times	7641	The Tribune	1490	Dinamalar	11659
Nai Dunia	6386	Deccan Chronicle	1389	Daily Sakal	10498

Source: http://www.printweek.in/news/-indians-read-newspapers-irs-2017-report-27836

Communicating to Base of the Pyramid: With cities typically having a majority in bottom of economic pyramid, sound strategies are required to reach to this segment. Television, radio (FM), videos (big and small screens) and print, mostly in local vernacular language, are effective way reaching out to this segment. TV, as mentioned, elsewhere, remains a dominant media channel.

Social Media: It is well established fact that social media is assuming centre stage creating interactive options engaging individuals, groups and across demographic categories. Social Media has enhanced engagement, created e-celebrities, interest groups, learning and adaptation of values and behaviors. Therefore, communicators are increasingly focusing on presence in social media, specifically small screens, to reach out customers, 24x7 in an interactive way.

Much of the users on social media have potential to influence as well. Influencers are creating content to keep their followers engaged. Smart phones have expanded access time for media content, thereby transcending space, providing anywhere access. Smartphones, broad band access on phones and wifi have increased video content and streaming options. Currently much of the social media engages urban dwellers. Specifically, millennial, youth and even children have taken to social media and exposed to social media contents.

Content Consumption:

Audio and video contents, popularity of games, are increasing. Audiences are exposed to diverse set of viewing, reading and listening experiences. On demand content is increasing and suits viewing on mobile phones or desktops or even TVs.

Social media, such as youtube, facebook and recently WA have contributed to personal consumption of content and sharing. All these, on the one hand increases the touch points, on the other hand content providers have to device ingenious ways of getting attention in small screens, TVs, outside homes and in the offices. Attention span, especially of viewers has shrunk and is as low as 17 to 20 seconds. And recently, 8 seconds of attention span is more appropriate.

Time clusters – media consumption: Consumption of media is spread across the day and into the night, including at work places. Below is a pattern of accessing media for content, devices used and timing. This will be factored in media and content planning.

Patterns of consumption of content: TV continues to be a dominant content, entertainment, news and information, to majority in India and in the cities. TV viewing is across the time 24-hour time span. Mostly watched during the prime time in the evening and weekends and during the day. Newspapers, particularly, vernacular newspapers continue to be relevant mostly read during the breakfast. People also read newspapers during lunch and evening. Smartphone has assumed an omnipotent media device, even sharing the bed space, usage peaks during commute and lunch. Smartphone is sharing space used in the morning, breakfast, evening, bedtime and at work. Tablets, though fewer in numbers compared to phones, used on breakfast table and on the sofa in the evening. Desktops, though their utilization is declining, it remains a dominant source during work and in the evening[20].

Spatial significance of media consumption: Relevance of media, content and uptake will vary depending on locations in a city. Type of locations, residential, work areas, administrative or governments, shopping / commercial locations, etc., are importance be it traditional, digital or social media. Cities have also seen malls, multiplexes, digital and innovative displays expanding reach of media and consumption of content, opening opportunities out of home.

Approach

Considering the diversity, a one size fits all approach, might be effective. Context, preparedness of city, resources, inequality, migrants, prevailing media and content consumptions should be factored, while implementing media. Ignorance, indifference, dissatisfaction, distrust, etc., will required sustained efforts to move audiences in various stages of information, knowledge, adoption, practice and sustenance, be it attitude, perception of behavior. Various models of behavior changes could be adopted with some modifications, for example, *Pre-contemplation* (not planning to change - awareness), *Contemplation* (intending to change - Knowledge), *Preparation* (intending to change soon and preparing for change – perception, attitudes and behaviour skills), *Action* (currently going through the change process), and *Maintenance* (sustaining change)[21].

It is also an established fact that mass media (ATL) is reliable for creating awareness, developing interest and increase content consumption. Interactive media and inter-personnel communications are more effective for knowledge acquisition and trying appropriate behaviours. BTL communication, in this case, at various touch points in public spaces, will be useful for sensitising the service providers and educating the users. Social Media will specifically focus youth, influencers and to some extent, migrants.

Therefore, media strategy shall focus on location, context and audience composition to role out branding and specific communications and use a mixed media strategy with elements of reinforcement.

Situation and Communication Needs Assessment:

Identify the obstacles that prevent Audiences from recognising, respecting and fulfilling their duties. In a public issue campaign such as these stakeholders often lack moral, legal or customary sanction to act. A quick situation and communication needs assessment can be used to layout obstacles that need to be tackled programmatically to aid better reception, retention and action based on key messages communicated.

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[20] Future of Digital Content in India, 2016. Ernst Young. http://www.ey.com/Publication/vwLUAssets/ey-future-of-digital-january-2016/$FILE/ey-future-of-digital-january-2016.pdf

[21] Adopted from Transtheoretical Model. Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. American Psychologist, 47(9), 1102–1114

A national level consultation (2/3 days) could be used to identify the following aspects and validate media activation plan proposed.

- **Obligation:** The moral, customary or legal duty to act. Perception and recognition of what responsible person / authority do to improve living standards in their neighbourhood, in their place of work, market area or common spaces. What moral, customary or legal standards define that obligation? What standards are missing?
- **Motivation:** The will to act. Why is the responsible person / authority failing to fulfil the obligations? What or who can hold them accountable? Identify audience specific motivators, influencers and role models, who could demonstrate the will to act and positive consequences.
- **Authority:** The power to act. Does the responsible person / authority have the power to carry out their obligations? Is action by the responsible person / authority socially or legally acceptable? What are the boundaries, dos, don'ts, escalation mechanism and redressal?
- **Resources:** the people, infrastructure, and money to activate the media plan. Does the responsible stakeholders, individuals, groups and authorities, have the necessary human, organizational, financial and media resources to meet the obligation? What is missing or needed?
- **Appropriateness:** Establishing effectiveness. Validating appropriateness of identified audience segments, key messages, channels, formats, and sequence. What needs to be modified, missing or dropped to improved effectiveness in the long terms and resource efficiency.

Branding

Branding is essential to create visibility, trust, participation, contribution and sustainability. Public service related issues are peripheral to an individual, family, group, business, administration, elected representatives and even media. Therefore, a much focus is required to build a credible brand around the concept of improving living standards to inspire city dwellers to take tangible actions.

Strategy proposed here is to build a mother brand over a period of time, by placing them appropriately in a variety of media, format, mode, timing and delivery. The brand will be discovered in a course of time, interpreted, owned and nurtured subsequently. Collective engagement underlies this strategy and will be emphasised across the spectrum of media strategy implementation. How to hasten this process are discussed below.

The strategy will shift the focus from administrators, regulators, service providers and politicians to urban dwellers. If this strategy is successful perception of government owning, managing, punishing and rationing services will give way to putting urban dwellers in the centre of existence of cities. The despair, distrust, disobedience, detachment, confusion, crime, gender related insecurity and conflict will give way to engagement, friendly disposition, lesser confusion and chaos, collaboration with civic authorities, participation, safer and secure public spaces, citizen initiatives and revival of cultural and performing arts.

Mother brand promotion strategy, this being supported by complex supporting pillars (extensions of mother brand), which are though interconnected are distinct, may not benefit from halo effect. Rather, these extensions, will contribute to building the character of mother brand. It is in this sense, on ground performance of each these pillars assume importance. Continuous lag will be detrimental in the long run, both implementation and branding point of view.

The mother brand will align emotions, mobilisations, collaborations, aspirations, trustworthiness, enhance belief and faith in realising the concept of city dweller decribed above, extensions will focus on tangibles building blocks of experiences that validate and contributes to overall process.

The city inhabitants, be it individual, household, business, administration, visitors or others will utilise liveability index as a tool to measure impact of collective efforts. Improvement, small or big, will be celebrated to inspire sustained engagement.

It is an attempt to aid a transformation supported by appropriate physical, governance, economic and social realities experienced by city inhabitants irrespective of their social, economic or political status.

Media Activation Plan

Objective: Educating, engaging, and involving city dwellers to demand, collaborate, and act appropriately to improve liveability index for the city they live.

Goals: Measurable outcomes on liveability index on a quarterly basis, with a sustained engagement process leading to:

- ownership across various stakeholders including inhabitants, city administrators, local media, businesses, traders, professional / business bodies, educational institutions, property owners, tenants, healthcare providers, builders, informal traders / vendors, and visitors.
- increase visibility for liveability indicators, what contributes to improvement, responsible agencies, duties of inhabprocesses, outcomes and improvement
- sustain the campaign context and relevance by informing progress, dispelling myths and misperceptions and avoid generalisation

Challenges: Liveability Index being a top down push approach a process is required to buy in ownership through a systematic engagement process. Ensuring collaboration, cooperation and contribution across stakeholders to converge on issues affecting the city is key to success. Indicators, developed by specialists, needs to be broken down into actionable attributes aligning appropriate emotional, rational and implementable activities. It is these small steps taken by every individual will add up to measurable changes in the indicators identified. Decoding these unknowns, blending these into day to day routines, sustaining the motivations, creating a favourable public opinion and discipline to adhere to rules will have to be taken up by media.

Changing existing attitude, behaviours, propensity to flute rules, corruption, lack of transparency and governance that has lost human focus required coordinated activities among media push, specific projects to bring about changes and mobilisation of resources. Specifically, disrespect, corruption, and outdated rules have created a fathom resulting in distrust, avoidance, fear and confusion. As administration, government machinery, various agencies and elected representatives will be in charge of implementation, they should be sensitive to these challenges and bring about a fundamental change in their approach to city dwellers.

Human focus or in marketing terminology customer focus, is essential to ensure acceptance, willingness to use / buy and build brand value. Currently brand attributes of government machinery, particularly their extension interfacing with city dwellers and the touch points, are far from desirable. The brand strategy shall take this into account and therefore, media strategy will address providers, users and mediators.

Diversity in terms of income, language, education, ethnicity, orientation, purpose and administrative mechanism will pose certain challenges. Specifically, historical allocation of the resources, services available, density, leisure spaces, transportation, etc., likely to vary between administered areas, extended areas and larger functional areas. The latter two will be under multiple local body administration and spills over neighbouring districts. The governance, social, economic and physical issues and inhabitants' exposure, experience and difficulties in extended and functional areas likely to be different from city administered areas. As much of those from extended and functional areas spend time in central city for work, education, health, entertainment and for other services, it is pertinent to create an inclusive process.

Strategy: Diversity, both among the cities and within a city requires empathy for others, respect for collective efforts, willingness to participate and set aside mind space and time for engagement. **Coordinate Above The Line (ATL) and Below The Line (BTL): Above The Line (ATL) shall focus on building the mother brand that emotionally connects stakeholders, city inhabitants and travellers in cities to create visibility, build trust, promote collaboration and ensure ownership. The Below The Line (BTL), focusing on specifics, impelling actions and collaborative activities, shall be taken up by respective departments, businesses, institutions, association and interest groups.**

These two will be supported by social media campaigns, media advocacy, and celebrations around important events / activities. Aim of the strategy is to capture imagination of various stakeholders in a city, facilitate their understanding activities, outputs and outcomes that improve liveability indicators, internalise these in their day to day agenda, inspire them to act, and sustain the interest.

Much of it being in the domain of unknown, be it perceptions, behaviours, outcomes or impact, audiences will have to be educated, behaviours demonstrated (docu-drama formats), nudged to practice collectively, incentivises / rewarded, and supported with on the ground activation of facilities. Sustaining these will depend genuine investment in facilities that rewrites the world view of city dwellers, altering the context, and experiences, reinforcing the newly formed perceptions, expectations and behaviours. This will in course of time will bring about norms that are collectively enforced with appropriate interventions from governing authorities to regulate deviances, thereby strengthening mother brand.

Audience Segments: All users of city spaces, services and public goods in a city will be targeted with appropriate communication. The users may be broadly classified as follows. Further segmentation may be required improve effectiveness. Media agencies implementing this media campaign should be actively collaborate with implementing agency and technical support agencies to improve effectiveness. An iterative process is required to fine tune media mix, forms, formats, delivery and sequencing. Independent monitoring should be used to assess effectiveness, specific to target audiences.

Audiences are:

1. Government
    a. Elected Representatives
    b. Executives – Officers, Desk Staff and Field Staff
    c. Staff of Judiciary, Quasi Judiciary and Regulatory bodies
2. Users city spaces, services and public goods
    a. Individuals
    b. Businesses
    c. Institutions
    d. Governments

3. Media
    a. Print
    b. Open and paid TV
    c. Telecom and Internet service providers
    d. Social Media
    e. Local celebrities and influencers (including e-celebrities)

Key Messages: Jan Gehel has articulated essence of liveability in cities. Gehel transformed cities focusing on 'better urban quality' through 'greater focus on the needs of the people who use cities'. Everyone's active collaboration, participation and contribution is required. Government and City administration sensitive to this reality can contribute significantly by creating systems, process and engagement options for all the users. In this sense, the performance in Liveability Index is an outcome and a key monitoring output to continuously align efforts, resources and commitment. Therefore, it is important not only to understand the different needs of diverse groups of people who live in the cities and how their needs may change over time, continuously plan, execute and monitor for improvement to reach optimum levels of productivity, inclusiveness and sustainability[22]

Thus, the media plan will focus on creatively communicating emotions, skills, behaviours and experiences that will drive the outputs and outcomes. The focus will be on:

- **Attract Attention of Key Stakeholders:** Meaningful Emotions, Behaviours, Experiences and Outcomes. Create visibility for mother brand and the extensions: Governance, Social, Economic and Infrastructural. Impelling stakeholders seek details of Liveability Index. Dedicated interactive websites, apps, gamification of interactions, reinforcement using media mix surrounding stakeholders at multiple touch points.
- **Engaging Key Stakeholders:** Engaging government agencies involved in compiling, city users who will be benefitted, media to shape public opinion around importance of liveability index, moral responsibility of all stakeholders, demonstrating appropriate behaviours and reinforcement
- **Bonding:** Nurture meaningful experiences for all stakeholders, emphasizing inter-connectedness and encouraging appropriate expressions through improvement in performance in livability index – ULBs, Administration, Users (Individuals, Businesses, Governments and Associations) and Media. Improving performance in liveability is an expression of quality of ongoing relationships amongst various stakeholders.

To keep this in public imagination it is important to create, nurture and expand branding. A mother brand that identifies and contextualize central, state, and city agencies providing centre stage to the users. Governance, social, economic, and infrastructure, the four pillars will be treated as extensions of mother brand. Livability Index, specifically performance on indicators, will be used to rally around various stakeholders to achieve primary goal of livable cities essential for optimum performance in productivity, inclusiveness, sustainability, well being and happiness, specifically of children.

The mother brand shall promote a concept of a happy, satisfied, responsible and pro-active city dweller mindful of contributing towards improving living standards continuously. It is positive predisposition, moving away from despair, fear, silence and apathy to sensitised and sensible city dwellers valuing individual contribution in the form of performing once duties, owning the responsibility, participation, collaboration and affirmative demands.

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[22] https://infrastructure.gov.au/infrastructure/pab/soac/files/2012_08_INFRA1360_MCU_SOAC_CHAPTER_5_WEB_FA.pdf

Each extensions (The pillars) catering to specific set of audiences shall utilise key messages using mixed media to communicate the concept, relevant for each set of audiences. These communications will focus on tangible information / tips for inculcating appropriate values, promoting actions and changing attitudes and behaviours.

Annexure 1 has a framework for key messages. The media agency / team shall, based on communication needs assessment, shall identify appropriate key messages for the communication campaign. Same shall be approved for appropriateness by Core Coordination group.

Content Creation: Creating appropriate content at national level adopted at city level is a requirement.

- Use a content calendar – important international / national / state specific events, festivals, activities and aligning with calendar of Livability Assessment
- Setup and manage a creative and responsive content creating process with talented and creative content writers, visualizers, translators and editors
- Omni-content across the platform, big screen (TVs and Movie Theatres) to small screen – PCs, Laptops, Tablets, Phones (Smart and Feature) and Smart Watches.
- Unicast content to groups like kids, youth, professionals, migrants, tourists, tenants, shop keepers / owners, traders, vendors, etc. for individual content
- Push content to educate BoP, youth, women and children on liveability index to encourage location based collaboration using democratized spaces.
- Provide contents for community based activities such as sports, wellness, music, dance, biking, automobiles, motherhood, running, etc.
- Tie up with Google (Local Guide, updating amenities, rating civic places such as parks, bus station, garbage, roads, sewage, weekly cleaning drive, uploading of videos, etc.).
- Engage e-celebrities. Most of them have regional fan following. A city specific list to be prepared. Provide content to include in their programmes[23].
- Explore Facebook, Hashtags and Tagging with physical spaces that get prominent attention

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[23] Popular E-celebrities in Hindi Belt. A state specific list is required to be prepared and used to push content. The E-celebrities popular among hindi speaking audiences are Vir Das (Comedian), Gaurev Gera Official (reality webisodes), Lilly Singh, Tanmay Bhat (Comedian - All India Bakchod (AIB) AIB has over 2 million subscribers now and continues to make viral and funny videos regularly), Sahil Khattar, Sanjay Thumma (Vah Chef), Manjula's Kitchen (Manjula Jain – Vegetarian Recipies), Kabita Singh (Kabita's Kitchen), Nisha Madhulika, Gaurav Chaudhry ((Technical Guruiji – Rajasthan)), Sandeep Maheswari (Creative Entreprenuer – Free life changing Seminars and SEssions), Rohan Chopra (Gujarat), Abhish Mathew (Comedian), Aditya Mittal (Comedian), Nisha Madhulika (Recipies), Sanam Puri (Music along with Samar, Venkat Subramaniyam and Keshav Dhanraj), Shruti Anand (Styling), Kanan Gill (Comedian), Ranjit Kumar (GeekyRanjit - Gadgets), Vikram Yadav (Medicine), Bhuvan Ram (Satirical – New Delhi), Wilbur Sargunaraj (Simple Superstar), Nisha Madhulika (Food Blog), RAghav Pande (Xell Fitness), Sonal Sagaraya (makeup and beauty tips), Suresh Menon (Comedian – Arnab Frankly speaking), Abish Mathew (stand up comedy, musical comedy, sketch comedy, a monthly news roundup and so on.), Sahil Bedi (Likable Pranks), Paras Tomar (ToI Journalist), Malishka Unleashed), Chai with Laxmi (People and Ideas that is positively shaping india's future), Shraddha Sharma (Musician – Dehradun), Scherezade Shroff (Fashion Vlogger), Sahil Khattar (Being Indian), Pooja Luthra (Herbal and Naturopathy Expert), Varun Paruthi (Brining Humanity in the lives of underprivileged), Carry Minati, etc.

- Celebration of public spaces blending tradition, history, and meeting people together – onsite and online
- Street Corner Places, Malls, Parks. Not just for political parties. Encourage mixture of cultural, tradition, modern, digital, using natural lighting and sound options
- Celebrate location based achievements
- Enroll journalists, media celebrities and influencers and advocate for including the bytes about improving livability index specific to the cities: Journalists to include print, media, journalism students, media, photographers, and other interested persons
- **Use, both** ongoing (drumbeat) or are responsive (in reaction to current events). Both have their place and they can and should work together. Content strategy often is the starting point before getting into the nuts and bolts activities which support it, like While
- **Set up** newsrooms and war rooms – national, state and city specific – to oversee content creation, disbursement, and monitoring.
- Adopt continuous and sustained push of content (drum beat) and responsive content, spiked around events, both planned and emerging.

Media Advocacy: Media advocacy is key to create an all-round buzz in print, TV, Radio and Social Media. Enlisting local media, regional and national media is essential to create visibility for mother brand, set the agenda, create the context and straddle emotional, informational, behavioural and collaborative push required to sustain the interest, recognition, and action leading to improvement in liveability index scores. Media Advocacy is essential to focus public attention and keep liveability index on public agenda.

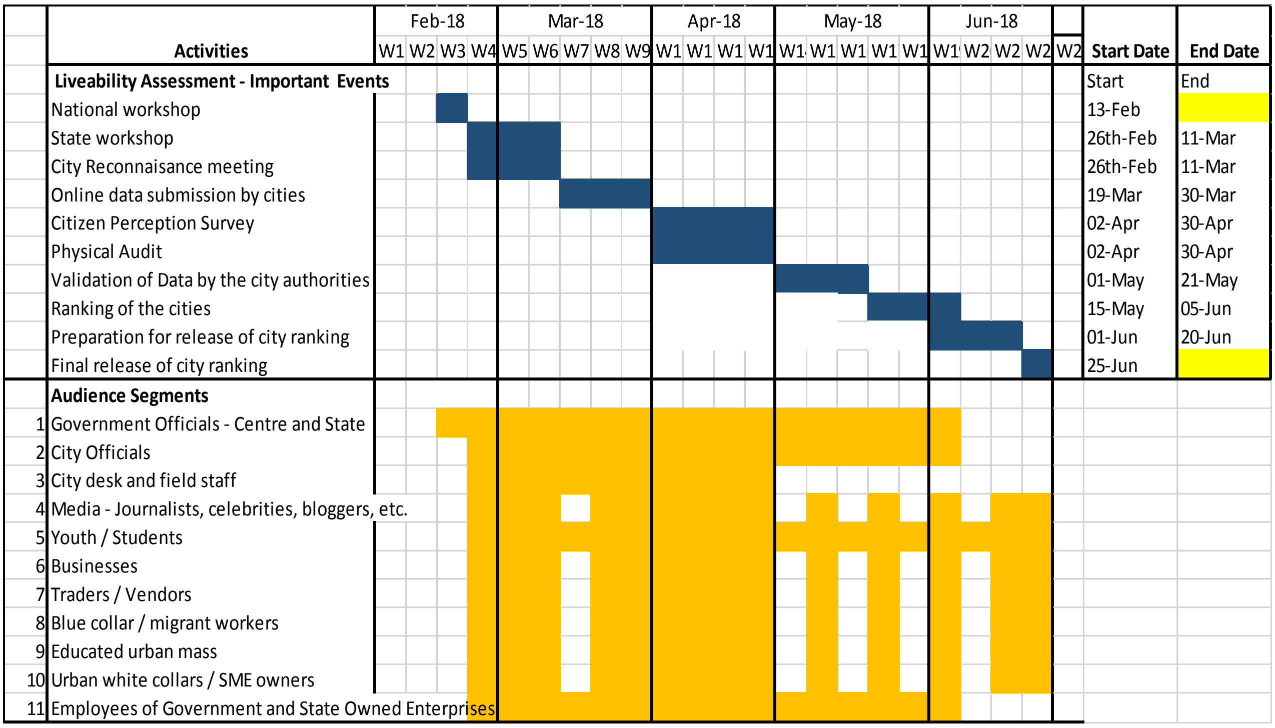
Media Advocacy will adopt the process:

1. Sensitise media to push improving living conditions of city on public agenda
2. "Frame" the governance, social, economic and physical issues (and the attributes) and fix primary responsibility for addressing these issues
3. Develop and disseminate content for media – print, TV / Radio, online publications, social networking and mobile media
4. Advance by keeping the spot light on policy, administrative, business, neighbourhood, institutional, group and individual initiatives to improve living conditions
5. Report, celebrate, critique and discourse such initiatives to engage all stakeholders
6. Get buy in for a collaborative effort to activate a media mix strategy sequenced for reinforcement, contribution and participation
7. Remain relevant scanning feedback, stakeholder engagement and iterating through campaign cyclic process
8. Keep track of waxing and waning of media attention to liveability index and generate interest with feeding newsworthy inputs
9. Participate in neighbourhood activities – political, cultural, religious,

Implementation Plan: Elaborated below is activities identified in media plan. The specific activities shall be sequenced month wise, specific to audiences, type of media used, tracking methods and iteration responsibilities, completing the loop.

The following approaches will be adopted across various agencies to engage all stakeholders at street level. The process is perpetuating, played out at neighbourhood level, and areas (wards).

Liveability Assessment and Audience Segments:



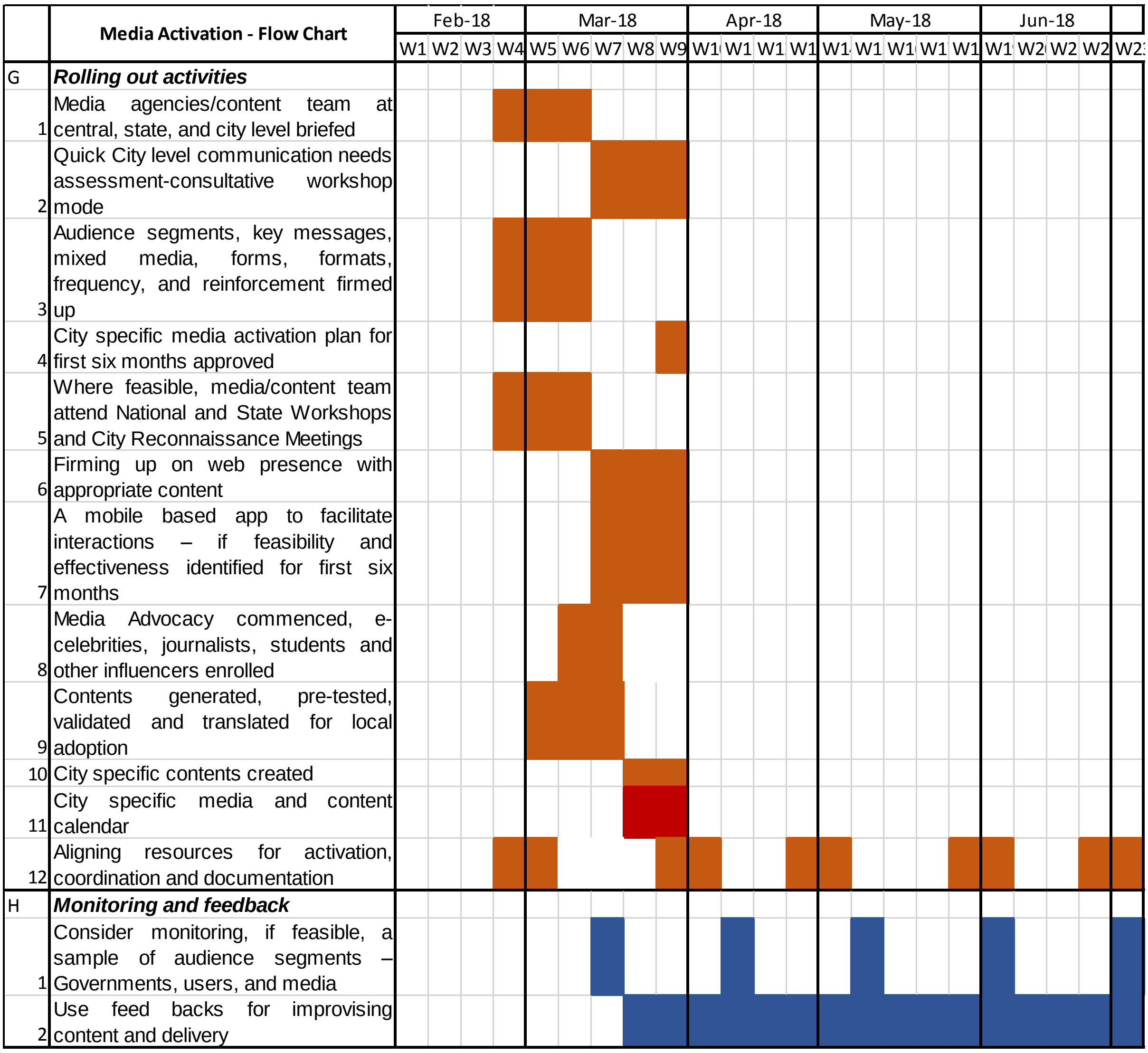
		Feb-18				Mar-18					Apr-18				May-18					Jun-18					
	Activities	W1	W2	W3	W4	W5	W6	W7	W8	W9	W1	W1	W1	W1	W1	W1	W1	W1	W1	W1	W2	W2	W2	W2	**Start Date**	**End Date**
	Liveability Assessment - Important Events																								Start	End
	National workshop			■																					13-Feb	🟨
	State workshop				■	■	■																		26th-Feb	11-Mar
	City Reconnaisance meeting				■	■	■																		26th-Feb	11-Mar
	Online data submission by cities							■	■	■															19-Mar	30-Mar
	Citizen Perception Survey										■	■	■	■											02-Apr	30-Apr
	Physical Audit										■	■	■	■											02-Apr	30-Apr
	Validation of Data by the city authorities														■	■	■								01-May	21-May
	Ranking of the cities																	■	■	■					15-May	05-Jun
	Preparation for release of city ranking																			■	■	■			01-Jun	20-Jun
	Final release of city ranking																						■		25-Jun	🟨
	Audience Segments																									
1	Government Officials - Centre and State			🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨						
2	City Officials				🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨						
3	City desk and field staff				🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨												
4	Media - Journalists, celebrities, bloggers, etc.				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
5	Youth / Students				🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨			
6	Businesses				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
7	Traders / Vendors				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
8	Blue collar / migrant workers				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
9	Educated urban mass				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
10	Urban white collars / SME owners				🟨	🟨	🟨		🟨	🟨	🟨	🟨	🟨	🟨		🟨		🟨		🟨		🟨	🟨			
11	Employees of Government and State Owned Enterprises				🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨						

Media Activation – Flow Chart

Given below is a flow chart that could be adopted by a media agency and content team to roll out mixed media communication campaign.

	Media Activation - Flow Chart	Feb-18				Mar-18					Apr-18				May-18					Jun-18				
A	***Preparatory work - Core Coordinating Group***	W1	W2	W3	W4	W5	W6	W7	W8	W9	W1	W1	W1	W1	W1	W1	W1	W1	W1	W1	W2	W2	W2	W2
1	Constitute the coordination group																							
2	Finalise the draft media activation plan		🟩																					
3	Issue the brief for media agency and Content Development Agency			🟩																				
4	Contract a media agency				🟩																			
5	Contract a content development agency				🟩																			
6	Review and monitor progress and					🟩		🟩		🟩		🟩		🟩		🟩		🟩		🟩		🟩		🟩
7	Develop a mechanism for coordination with consortia implementing the liveability assessment			🟩	🟩																			
B	***Branding***																							
1	Identify mother brand promoting Ministry, State's involvement, Citi's role in economic growth		🟦	🟦	🟦																			
2	Firm up a concept of a happy, satisfied, responsible and pro-active city dweller mindful of contributing towards improving living standards continuously.				🟦	🟦																		
3	Logo, mascot, jingles and other visuals that could be adopted across media platform					🟦																		
4	Promotion of pro-active positive predisposition, moving away from despair, fear, silence and apathy to sensitised and sensible city dwellers						🟦	🟦	🟦															
5	Valuing individual contribution in the form of performing once duties, owning the responsibility, participation, collaboration and affirmative demands.								🟦	🟦	🟦													
6	Visuals and audios that integrate this persona in four pillars of liveability index – governance, social, economic and infrastructure								🟦	🟦	🟦	🟦	🟦											
7	Appropriate importance to compiling liveability index to correctly communicate current standards and future expectations.									🟦	🟦	🟦	🟦											
C	***Dedicated multi-domain team at State and City Level- system for Command, Control, and Communication focusing on engagement, collaboration, sharing and rapid deployment***																							
1	Core Coordinating group to brief the State Nodal Office/ Focal point on communication campaign			🟦																				
2	Decide on constitution of state and city level groups for coordination and monitoring of communication				🟦	🟦	🟦																	
3	Ensure coordination between liveability assessment consortium, media agency, various departments and media agency				🟦		🟦		🟦		🟦		🟦		🟦		🟦		🟦		🟦		🟦	

	Media Activation - Flow Chart	Feb-18				Mar-18					Apr-18				May-18					Jun-18				
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W1	W1	W1	W1	W1	W1	W1	W1	W1	W1	W2	W2	W2	W2
D	***A dedicated team to prepare content***																							
1	Central level team hired/constituted to prepare content				■																			
2	Familiarisation on liveability assessment methodology and implementation plan in view of the media plan				■	■	■																	
3	Develop key messages with emphasis on context				■	■	■		■		■		■		■		■		■		■		■	
4	Develop and disseminate content for media – print, TV / Radio, online publications, social networking and mobile media				■	■																		
5	State/City level adaptation of messages and roll out plan						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
6	Track and Monitor																							
E	**Social Media (Content Development Team)**																							
1	Set up appropriate social media forums - National					■	■																	
2	Set up city specific forums for users - governments, businesses, students, media and other interest groups					■	■																	
3	Track social media								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4	Use feed backs for improvising content and delivery								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
F	***Media Advocacy***																							
1	Sensitise media to push improving living conditions of city on public agenda			■																				
2	“Frame” the governance, social, economic and physical issues (and the attributes) and fix primary responsibility for addressing these issues				■	■	■																	
3	Get buy in for a collaborative effort to activate a media mix strategy sequenced for reinforcement, contribution and participation				■	■	■																	
4	Advance by keeping the spot light on policy, administrative, business, neighbourhood, institutional, group and individual initiatives to improve living conditions						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
5	Report, celebrate, critique and discourse such initiatives to engage all stakeholders						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
6	Remain relevant scanning feedback, stakeholder engagement and iterating through campaign cyclic process								■		■		■		■		■		■		■		■	
7	Keep track of waxing and waning of media attention to liveability index and generate interest with feeding newsworthy inputs							■		■		■		■		■		■		■		■		
8	Participate in neighbourhood activities – political, cultural, religious,						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	



	Media Activation - Flow Chart	Feb-18				Mar-18					Apr-18				May-18					Jun-18				
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W1	W1	W1	W1	W1	W1	W1	W1	W1	W1	W2	W2	W2	W2
G	***Rolling out activities***																							
1	Media agencies/content team at central, state, and city level briefed				🟧	🟧	🟧																	
2	Quick City level communication needs assessment-consultative workshop mode							🟧	🟧	🟧														
3	Audience segments, key messages, mixed media, forms, formats, frequency, and reinforcement firmed up				🟧	🟧	🟧																	
4	City specific media activation plan for first six months approved									🟧														
5	Where feasible, media/content team attend National and State Workshops and City Reconnaissance Meetings				🟧	🟧	🟧																	
6	Firming up on web presence with appropriate content							🟧	🟧	🟧														
7	A mobile based app to facilitate interactions – if feasibility and effectiveness identified for first six months							🟧	🟧	🟧														
8	Media Advocacy commenced, e-celebrities, journalists, students and other influencers enrolled						🟧	🟧																
9	Contents generated, pre-tested, validated and translated for local adoption					🟧	🟧	🟧																
10	City specific contents created								🟧	🟧														
11	City specific media and content calendar								🟥	🟥														
12	Aligning resources for activation, coordination and documentation				🟧	🟧				🟧	🟧			🟧	🟧				🟧	🟧			🟧	🟧
H	***Monitoring and feedback***																							
1	Consider monitoring, if feasible, a sample of audience segments – Governments, users, and media							🟦				🟦				🟦				🟦				🟦
2	Use feed backs for improvising content and delivery								🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦

	Media Activation - Flow Chart	Feb-18				Mar-18					Apr-18				May-18					Jun-18				
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W1	W1	W1	W1	W1	W1	W1	W1	W1	W1	W2	W2	W2	W2
I	***Strengthen the engagement - Media Agency***																							
1	Use advocacy with media, governments and user associations and groups to promote ownership leading to a continuous buzz in media for improving liveability contributing to productivity, inclusiveness, happiness, well being and sustainability								🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨
2	Use media campaign to promote values, attitudes, skills and behaviours that contributes to improvement in liveability in cities								🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	
3	Sustained campaign to encourage collaboration, cooperation, participation, contribution and sharing among user segments								🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	
4	Moral pressure on various stakeholders obtained through appropriate public opinion leading to transparency, accountability and engagement								🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	🟨	
5	Elicit support of private sector, youth, and children							🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨		
6	Facilitate participation of poor, migrants and other marginalised segments							🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨		
7	Address challenges and emerging unknowns								🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨	
8	Expect challenges, obstacles, inadequacies and capacity issues								🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨	
9	Diverse set of audiences, priorities, changing needs, indifferent attitudes, lack of skills, and doubtful behavioural attributes could through up challenges								🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨	
10	Continuously monitor for emerging unknows, which may profoundly affect effectiveness of media campaign							🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨		
11	Use feedback, anticipation and ingenuity to conduct a public goods' communication campaign								🟨		🟨		🟨		🟨		🟨		🟨		🟨		🟨	
J	***Institutionalise the process***																							
1	Use documentation, feedback and changes effected to institutionalise the process at city, state and national level																🟦		🟦		🟦		🟦	
2	Identify systems, procedures, protocols, standard operating procedures to use media effectively garnering collaboration, participation, contribution and ownership for continuous improvement in performance										🟦		🟦		🟦		🟦							
3	Emphasize projecting importance of Investment in infrastructure that support improvement in liveability standards				🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦											
4	Media campaign to focus attention on funds required to create, maintain and sustain amenities and spaces							🟦		🟦		🟦		🟦		🟦		🟦		🟦		🟦		🟦

Annexure 1: Key messages framework

Given below are suggested key messages that can be creatively communicated, reinforced and monitored to popularize importance of Liveability Indicators. The media campaign shall emphasize, why it is important to improve the scores, how these indicators contribute to improving productivity, sustainability, and inclusiveness, thereby influencing livability and roles and responsibilities of each stakeholders and importance of collaboration, participation and contribution. Key messages shall shape emotions, rationale decisions, attitudes and behaviours, engagement and ownership.

Key Messages	**To shape values, perceptions, attitudes, skills and behavours of key stakeholders**				
	State Government	**Urban Local Bodies- Elected Representatives**	**Administration – Officials, desk workers and field staff**	**City inhabitants – Individuals, Businesses and Associations**	**Media**
To improve Livability in Cities, which is a desired future, focus is required now on diverse needs of users to improve productivity, Inclusiveness, well-being, happiness and sustainability	Importance of coherent policy, plan, and resource allocation	Need for city specific pro-active planning, allocating resources, and reflecting aspiration of city inhabitants	User focused execution, quality assurance, innovation, flexibility, documentation, reporting and performance improvement	Inhabitants' role in collaborating with planners, executives and elected representatives, affirmative actions to improve performance, advocacy and ownership	Promote positive public opinion, responsive reporting facilitating collaboration amongst various stakeholders and advocate for appropriate policies
Livability, inclusiveness, happiness and sustainability are linked to productivity	City specific focus for development, support to cities for overcoming obstacles and improving enablers	Focus on well-being of individuals, households and communities; continuity of businesses, institutions and association; and ability to participate and contribute.	Realistic about obstacles and opportunities; implement tough It is necessary, therefore, to understand the different needs of diverse groups of people who live in our cities, and how their needs may change	Recognition that Cities are integral to economy, prosperity and well-being. Powerful roles individuals, businesses and associations in making the city liveable, productive, inclusive and sustainable.	Inform, educate, and inspire for engagement, participation, collaboration and contribution with human interest stories, shaping attitudes and behaviours and impacting newer skills.

			over time.[24] measures, if required, diligently; deal with factors affecting near term and long-term productivity		
Livability Index, directly and indirectly measures variables contributing to productivity, happiness, well-being and sustainability	Monitor, incentivize and build capacity of ULBs, Executives, Media and User Groups	Sensitive to adequately capturing performance, interpretation of results and use it for monthly, quarterly and annual reviews	Ensure indictor specific information is compiled diligently, analyzed and appropriate corrective actions.	Use Livability Index outcome to improve performance through engagement, participation and contribution	Emphasis on vigilance, accountability, transparency and inclusive governance
The variables are inter-connected, requires continuous efforts and smart utilization of technology	Balanced allocation of resources and appropriate directives to cities to improve underperforming areas and improving or sustaining adequately performing areas	Monitor, advise and support administration and other departments to close the gaps in performance	Sustain stakeholder involved execution of interventions with appropriate planning, resource allocation, monitoring	Utilize smart digital technologies to monitor, demand and remain vigilant for accountability, transparency and inclusive governance	Link liveability, sustainability, and productivity to smart utilization of, contributions to, participation in city spaces, amenities and city systems
Being smart is essential for improving productivity, inclusiveness, happiness, well- being, sustainability and livability. Cities are engines / drivers of overall growth	Continuously encourage adoptions of smart systems in all the cities balancing with overall development to reduce increasing stress on the cities	Push for anytime access to public goods, services and spaces to optimize productivity, livability and sustainability	Set up, run and ensure 24x7 access to public goods, services and spaces; encourage utilization of improved facilities to humanize and optimize economy,	Individuals, businesses, organizations and governments to utilize smart systems to improve their well-being with emphasis on improving productivity,	Capture lessons learnt, popularize life styles that reflect smart living and bring it up on popular discourse with appropriate columns, programmes,

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[24] https://infrastructure.gov.au/infrastructure/pab/soac/files/2012_08_INFRA1360_MCU_SOAC_CHAPTER_5_WEB_FA.pdf

and improving well-being.			society and environment.	sustainability and livability	blogs, videos, etc.
Our children require smart cities that facilitate livability, inclusiveness, sustainability and productivity	Present and future focused. Focus on attributes that makes cities livable, inclusive, sustainable, productive suitable for a fuller life for all segments, including children, women, elders, persons with disability, pets and green cover	Contribute to larger national, state and district vision aligning cities' priorities to provide for services and spaces and goods essential for all groups, including children.	Ensue collaboration, cooperation, participation, and contribution for sustaining achievements and realizing the goal of making the cities livable, inclusive, productive and sustainable with focus on vulnerable segments with specific reference to children	A life style of respect, trust, authenticity, sharing, participation, contribution, participation, and pride in being an inhabitant of a city. A world view reflected in values, norms, and behaviours facilitating creativity, innovation and enterprising removing edge of rush, rage and waste	Encourage, celebrate and contribute to sustaining a positive world view – values, norms and behaviours – that sustain respect, trust, authenticity, sharing, participation and pride amongst everyone specifically vulnerable segments

Annexure 2: The Four Pillars of Comprehensive Development – City Liveability Index Indicators

Given below are the four pillars the key messages will focus

The Four Pillars of Comprehensive Development, Number of Indicators and Weights assigned for each Pillar

Four Pillars of Comprehensive Development	**Category**	**Number of Indicators**			**Weights assigned to four pillars**
		Core	**Supporting**	**Total**	
Institutional: Governance Index	1. Governance	7	1	8	25%
Social	2. Identity and Culture	3	2	5	25%
	3. Education	4	2	6	
	4. Health	3	2	5	
	5. Safety and security	3	1	4	
Economic Index	6. Economy and employment	4	1	5	5%
Physical	7. Housing and inclusiveness	2	-	2	25%
	8. Public Open space	2	-	2	
	9. Mixed Land Use and Compactness	2	-	2	
	10. Power supply	4	5	9	
	11. transportation and Mobility	6	6	12	
	12. Assured Water supply	4	2	6	
	13. Waste Water Management	5	-	5	
	14. solid Waste Management	3	-	3	
	15. Reduced Pollution	5	-	5	
Total		57	22	79	100%

Annexure 6: Document archiving and transferring protocol

Procedures for storing both physical and system data

We have provided details of our procedures for storing and destroying data below. We will outline our requirements to all stakeholders as part of the project set-up, and as discussed in the main body, will comply with all applicable national, federal and state data protection/privacy laws in carrying out the study.

Storage on Ipsos servers and systems:

- Sample files containing personal data will be stored in the appropriate job directory, pass-phrase encryption protected
- Ipsos does not permit the storage or transfer of personal data or other sensitive data on any laptop or removable drive or device unless this is absolutely necessary for the provision of the services to the client concerned. Where use of laptops or other removable devices is necessary, this will be agreed with the client, the device will be protected by being fully encrypted. Ipsos will also maintain an audit trail of which laptops/drives/devices the personal data are held on. Please see "data encryption software used" section below for a summary of encryption methods used.

Security during processing:

- Processing of sensitive data is limited to that necessary for the provision of the service. It is limited to only the volume of records, and only those data items required for the specific process.
- Where possible, only anonymised datasets will be processed. For example, datasets of research results for analysis and product of final results will not contact respondent names etc.

Data back-up procedures

Automated Data Loss Prevention (DLP) controls are used with high risk teams, with further rollout of DLP under constant review.

Procedures for the destruction of physical and system data

Once a study is fully completed, formally accepted by the client, and formally closed internally, client supplied data files will be either returned to tor destroyed as required by the client.

Electronic data files are destroyed by either physical destruction of the storage media or secure deletion using appropriate electronic shredding software that meet Government standards. Any hard copy will be destroyed by cross-cut shredding and secure re-cycling of the resulting paper waste.

How data are protected & data encryption software used

Technological controls in place include:

- Access controls based on user accounts with access rights automatically controlled by "Active Directory" group security policy objects
- All users have their own unique accounts and authenticate using their own user ID and password, for all State Coordinators, City Coordinators dedicated ids hosted by a domain that's secure is created and only these ids will be used for exchange of any documents.
- Password policy is automatically enforced. The default policy is: Minimum length 8 characters; Mandatory minimum complexity (Upper and lower case plus numeric and/or special character); No reuse of the last 4 passwords; Account locked after 5 unsuccessful attempts to login.
- All users are required to change their password to something known only to them on first logging in, or following any password being re-set by authorised IT Staff. Users forced to change passwords every 90 days.
- Staff with higher privilege accounts (system administrators) required to adhere to higher password policy. Their individual privilege account is only used when required, using their normal account for all other tasks that do not require the higher rights.
- Our secure file servers are housed in server rooms/data centres with appropriate physical access controls and monitoring procedures.
- The network is protected by appropriate use of firewalls.
- Public facing servers are also appropriately protected and are based on a secure (minimum) two tier or, our general standard, three-tier architecture. Firewalls between internet and DMZ, and between DMZ and internal systems.
- Network and systems is actively monitored using Intrusion Detection Systems (IDS), with audit logs reviewed via a log correlation system, with both IDS and audit log monitoring systems having automated alerts in addition to regular manual reviews.
- Regular vulnerability scans of our systems, servers and desktops/laptops are carried out.

- We have in place a layered approach to malware protection. Third party filtering services at the gateway provide a first layer of content and malware filtering, with McAfee Enterprise Anti-Malware management system in place. McAfee clients are installed on all servers, desktops and laptops.

Ipsos uses a variety of data encryption software that meets the above minimum standard in support of varying client requirements.

Standard controls for the secure transfer of the personal data to us can include:

- Transfer of fully encrypted files as email attachments.
- Transfer of fully encrypted emails, encrypted using appropriate "public/private" key architecture agreed between client and Ipsos MORI
- Transfer of pass-phrase protected files by SECURE FTP. Ipsos MORI will not accept or send personal data via standard FTP.
- Transfer of fully encrypted files on CD/DVD sent by an appropriate delivery service offering a fully tracked service. For Royal Mail, special delivery (registered post) is the minimum level of service we will use.
- Hand collection of fully encrypted files on CD/DVD from the client's office by named, authorised member of the research team who will carry nationally recognised photo ID for authentication to client's staff. Media is hand carried on the person directly back to our nearest main office. The pass-phrase/decryption keys needed to decrypt the data will NOT be known by, or available to member of the research team.

Details of person/s responsible for data security

Responsibilities for specific areas of security are described below.

Organisational security:

- Operational management of information security and our integrated Business Excellence management system is the responsibility of our Head of Compliance and Data Security, Ian Barker, who leads our team of quality, data protection, information governance and information security specialists within our Compliance & Security department.
- Information security is further supported by our Business Excellence system, including information security requirements is continually measured and assessed via spot checks, comprehensive internal audits and annual external audits carried out by our certification body external auditors, SGS.

- Where we use third party sub-contractors, these are subject to appropriate quality, compliance and information security assessments by our Compliance & Information Security Department.

Human resources security

- Ipsos MORI carry out pre-employment checks of all new staff in accordance with the HMG Baseline Personnel Security Standard V1, however new staff engaged to work on projects for public and financial sector projects assessed to the latest version of that standard, with additional checks (e.g. financial sanctions checks) as required for the project.

- All staff sign contracts that include appropriate confidentiality clauses. Contracts also require all staff to comply with all relevant company policies and procedures, including those covering data protection and information security.

- Information security and acceptable use and/or deliberate misuse, disclosure, loss or destruction as misconduct with appropriate links to disciplinary procedures. Policies and procedures also include clear warnings that such actions may also lead to legal action against those involved.

Policies for dealing with unauthorised staff access or misuse of confidential/personal data

- Ipsos has in place an information security incident procedure that covers: Definitions. Reporting of potential, suspected and/or actual incidents. Incident Management, including risk assessment requirement. Root cause analysis. Recommendations for improvement/corrective action. Incident documentation.

- The procedure includes a formal requirement to notify any client affected by the incident. Notification would be made to the main contact within the client organisation for the study concerned, or in accordance with the client’s instructions. We would provide full details, copies of our incident documentation and fully cooperate with the client in the management, mitigation and resolution of the incident.

Policies for staff awareness and training of DPA

- Appropriate quality, compliance and information security briefings and material are provided to all staff

- General induction training, as well as role specific training provided includes training in quality, compliance and information security.

- Further role specific training, including appropriate external is also provided.

Physical security of premises

Physical security controls vary from site to site and are appropriate for the site concerned. Controls include:

- Reception and/or security staff in attendance in reception areas during working hours. Photo ID electronic access controls. Use of physical key and/or pin code locks. On-site security guards for out of hours cover. Alarm systems, CCTV.
- Sensitive areas are further protected by access rights assigned via electronic access controls. Additional physical key or pin code locks, or other appropriate controls to limit access to authorised staff only.

Annexure 7: Indicator Benchmarks

S No.	Pillar	Category	Indicator list	Type	Required	Benchmark
1	Institutional	Governance	**1.1 Percentage of citizen services available online**	Core	High	100%
2	Institutional	Governance	**1.2 Percentage of services integrated through Command Centre**	Supporting	High	100%
3	Institutional	Governance	**1.3 Percentage of citizens using online services**	Core	High	100%
4	Institutional	Governance	**1.4 Average delay in grievance redressal**	Core	Low	<7 days for all, other than specified for which it would < 1 month (Guidelines on National Mission Mode Project on e-Governance in Municipalities, MoUD
5	Institutional	Governance	**1.5 Tax collected as percentage of tax billed**	Core	High	90% (AMRUT, MoUD)
6	Institutional	Governance	**1.6 Extent of cost recovery (O&M) in water supply services**	Core	High	100%
7	Institutional	Governance	**1.7 Capital spending as percentage of total expenditure**	Core	High	City with the highest performance (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
8	Institutional	Governance	**1.8 Percentage of population covered under Ward Committees/ Area Sabhas**	Core	High	City with the highest performance (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark

9	Social	Identity and Culture	**2.1 Restoration and reuse of historic buildings**	Core	High	100% of listed buildings/sites should be restored/preserved and/or brought under adaptive reuse •
10	Social	Identity and Culture	**2.2 Percentage of ecologically important areas covered through projects for restoration**	Core	High	100%
11	Social	Identity and Culture	**2.3 Hotel Occupancy**	Core	High	City with the highest performance (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
12	Social	Identity and Culture	**2.4 Percentage of budget allocated towards cultural/sports activities**	Supporting	High	City with the highest budgetary allocation (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
13	Social	Identity and Culture	**2.5 Number of cultural/sports events hosted by city**	Supporting	High	City with the highest number of events (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
14	Social	Education	**3.1 Percentage of school-aged population enrolled in schools**	Core	High	100% (Right of Children to Free and Compulsory Education Act, 2009)
15	Social	Education	**3.2 Percentage of female school-aged population enrolled in schools**	Core	High	100% (Right of Children to Free and Compulsory Education Act, 2009)

16	Social	Education	**3.3 Primary education student-teacher ratio**	Core	High	1 teacher for every 30 students (Right of Children to Free and Compulsory Education Act, 2009)
17	Social	Education	**3.4 Percentage of schools with access to digital education**	Supporting	High	100%
18	Social	Education	**3.5 Percentage of students completing primary education**	Core	High	100%
19	Social	Education	**3.6 Percentage of students completing secondary education**	Supporting	High	100%
20	Social	Health	**4.1 Number of in-patient hospital beds per 10,000 population**	Core	High	25 beds per 10,000 population (Service Availability and Readiness Assessment, SARA, Reference Manual 2015, World Health Organization)
21	Social	Health	**4.2 Healthcare professionals per 10,000 population**	Supporting	High	23 per 10,000 population (Service Availability and Readiness Assessment, SARA, Reference Manual 2015, World Health Organization)
22	Social	Health	**4.3 Average response time in case of health emergencies**	Supporting	Low	8 minutes (Report of the Working Group on Emergency Care in India, Ministry of Road Transport and Highways)

23	Social	Health	**4.4 Period prevalence of water borne diseases**	Core	Low	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification as given in the Liveability Standards document) will be treated as a benchmark
24	Social	Health	**4.5 Period prevalence of vector borne diseases**	Core	Low	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification as given in the Liveability Standards document) will be treated as a benchmark
25	Social	Safety and Security	**5.1 Number of streets, public places, junctions covered through surveillance systems**	Core	High	100%
26	Social	Safety and Security	**5.2 Number of recorded crimes per lakh population**	Core	Low	City with the lowest crime rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
27	Social	Safety and Security	**5.3 Extent of crimes recorded against women, children and elderly per year**	Core	Low	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark

28	Social	Safety and Security	**5.4 Transport-related fatality per lakh population**	Supporting	Low	<=2 persons per lakh (Service Level Benchmarks for Urban Transport, Ministry of Urban Development)
29	Economic	Economy and Employment	**6.1 Increase in VAT/GST collection**	Core	High	City with the highest increase in collection (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
30	Economic	Economy and Employment	**6.2 Increase in collection of Professional Tax**	Core	High	City with the highest increase in collection (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
31	Economic	Economy and Employment	**6.3 Increase in issuance of Construction Permits**	Core	High	City with the highest increase in permits (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
32	Economic	Economy and Employment	**6.4 Unemployment Rate**	Core	Low	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
33	Economic	Economy and Employment	**6.5 Percentage of vendors registered and provided formal spaces**	Supporting	High	100%

34	Physical	Housing and Inclusiveness	**7.1 Percentage of Slum/EWS households covered through formal/ affordable housing**	Core	High	100%
35	Physical	Housing and Inclusiveness	**7.2 Percentage of slum areas covered through basic services**	Core	High	100%
36	Physical	Public Open Spaces	**8.1 Per capita availability of green spaces**	Core	High	10-12 sq.m. per capita (Urban and Regional Development Plans Formulation and Implementation Guidelines, 2014)
37	Physical	Public Open Spaces	**8.2 Per capita availability of public and recreational places**	Core	High	City with the highest per capita availability (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
38	Physical	Mixed Land Use and Compactness	**9.1 Share of mixed land use area in overall city land use**	Core	High	City with the highest percentage of mixed use (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
39	Physical	Mixed Land Use and Compactness	**9.2 Net Density**	Core	High	City with the highest net density (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark

40	Physical	Power Supply	**10.1 Percentage of city population with authorized electrical service**	Core	High	City with the highest per capita availability (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
41	Physical	Power Supply	**10.2 Percentage of electrical connections covered through smart meters**	Supporting	High	100%
42	Physical	Power Supply	**10.3 Average number of electrical interruptions per customer per year**	Core	Low	City with the lowest number of outages (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
43	Physical	Power Supply	**10.4 Average length of electrical interruptions per customer per year**	Supporting	Low	City with the lowest average length of outages (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
44	Physical	Power Supply	**10.5 Percentage of total energy derived from renewable sources**	Core	High	10% (Smart Cities Mission, MoUD)
45	Physical	Power Supply	**10.6 Energy consumption per unit - water supply and sewerage**	Supporting	Low	City with the lowest per unit consumption (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark

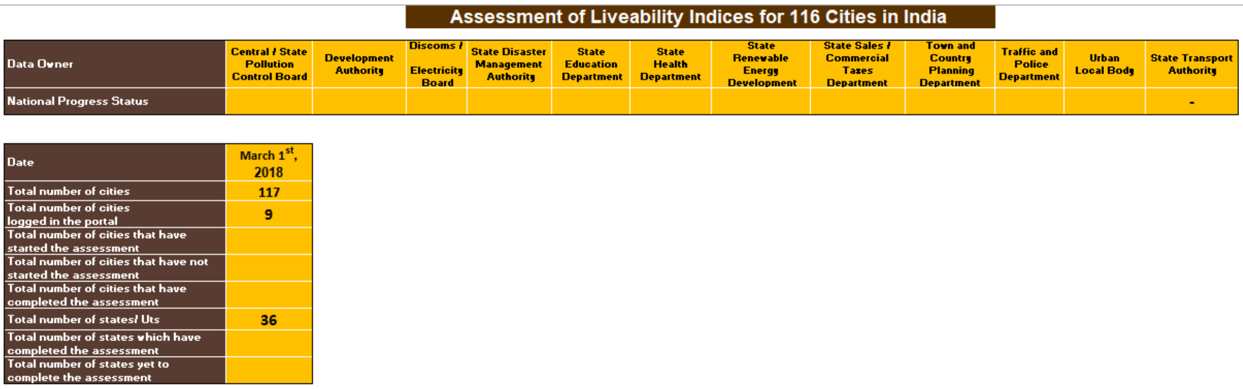
46	Physical	Power Supply	**10.7 Energy consumption per unit – street lighting**	Supporting	Low	City with the lowest per unit consumption (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
47	Physical	Power Supply	**10.8 Percentage of new and redeveloped buildings following green building norms**	Supporting	High	80% (Smart Cities Mission, MoUD)
48	Physical	Power Supply	**10.9 Total energy consumption per capita**	Core	Low	City with the lowest per capita consumption (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark
49	Physical	Transportation and Mobility	**11.1 Geographical coverage of public transport**	Core	High	>=1 (Service Level Benchmarks for Urban Transport, MoUD)
50	Physical	Transportation and Mobility	**11.2 Availability of public transport**	Supporting	High	>=0.6 (Service Level Benchmarks for Urban Transport, MoUD)
51	Physical	Transportation and Mobility	**11.3 Mode share of public transport**	Core		Page 46
52	Physical	Transportation and Mobility	**11.4 Percentage of road network with dedicated bicycle tracks**	Core	High	>=50 (Service Level Benchmarks for Urban Transport, MoUD)
53	Physical	Transportation and Mobility	**11.5 Percentage of interchanges with bicycle parking facilities**	Supporting	High	>=75 (Service Level Benchmarks for Urban Transport, MoUD)
54	Physical	Transportation and Mobility	**11.6 Mode share of non-motorised transport**	Core		Page 48

55	Physical	Transportation and Mobility	**11.7 Availability of Passenger Information System**	Supporting	High	>=75 (Service Level Benchmarks for Urban Transport, MoUD)
56	Physical	Transportation and Mobility	**11.8 Extent of signal synchronisation**	Supporting	High	>=75 (Service Level Benchmarks for Urban Transport, MoUD)
57	Physical	Transportation and Mobility	**11.9 Availability of paid parking spaces**	Core	High	>=75 (Service Level Benchmarks for Urban Transport, MoUD)
58	Physical	Transportation and Mobility	**11.10 Percentage coverage of footpaths – wider than 1.2m**	Core	High	>=75 (Service Level Benchmarks for Urban Transport, MoUD)
59	Physical	Transportation and Mobility	**11.11 Percentage of traffic intersections with pedestrian crossing facilities**	Supporting	High	100%
60	Physical	Transportation and Mobility	**11.12 Extent to which universal accessibility is incorporated in public rights-of- way**	Supporting	High	100%
61	Physical	Assured Water Supply	**12.1 Household level coverage of direct water supply connections**	Core	High	100% (Service Level Benchmarks, MoUD)
62	Physical	Assured Water Supply	**12.2 Per capita supply of water**	Core	High	135 lpcd (Service Level Benchmarks, MoUD)
63	Physical	Assured Water Supply	**12.3 Quality of water supplied**	Core	High	100% (Service Level Benchmarks, MoUD)
64	Physical	Assured Water Supply	**12.4 Level of non-revenue water – NRW**	Core	Low	Less than 15% (Service Level Benchmarks, MoUD)
65	Physical	Assured Water Supply	**12.5 Percentage of water connections covered through meters**	Supporting	High	100% (Service Level Benchmarks, MoUD)

66	Physical	Assured Water Supply	**12.6 Percentage of plots with rainwater harvesting facility**	Supporting	High	100% of all new developments/ redevelopments with minimum plot size of 300 sq.m., and all commercial and public buildings should have rainwater harvesting facilities (AMRUT Mission, MoUD)
67	Physical	Waste Water Management	**13.1 Coverage of toilets**	Core	High	100% (Service Level Benchmarks, MoUD)
68	Physical	Waste Water Management	**13.2 Coverage of sewerage network and/or septage**	Core	High	100% (Service Level Benchmarks, MoUD)
69	Physical	Waste Water Management	**13.3 Collection efficiency of sewerage network**	Core	High	100% (Service Level Benchmarks, MoUD)
70	Physical	Waste Water Management	**13.4 Extent of reuse and recycling of waste water**	Core	High	20% or more (Service Level Benchmarks, MoUD)
71	Physical	Waste Water Management	**13.5 Coverage of storm water drains**	Core	High	100% (Service Level Benchmarks, MoUD)
72	Physical	Solid Waste Management	**14.1 Household level coverage of municipal solid waste collection**	Core	High	100% door to door collection (Service Level Benchmarks, MoUD)
73	Physical	Solid Waste Management	**14.2 Efficiency of collection of municipal solid waste**	Core	High	100% (Service Level Benchmarks, MoUD)
74	Physical	Solid Waste Management	**14.3 Extent of municipal solid waste recovered through reuse**	Core	High	80% or more (Service Level Benchmarks, MoUD)
75	Physical	Reduced Pollution	**15.1 Concentration of SO2 - air pollution**	Core	Low	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3 (Central Pollution Control Board)

76	Physical	Reduced Pollution	**15.2 Concentration of NO2 - air pollution**	Core	Low	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3 (Central Pollution Control Board)
77	Physical	Reduced Pollution	**15.3 Concentration of PM10 - air pollution PHYSICAL**	Core	Low	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3 (Central Pollution Control Board)
78	Physical	Reduced Pollution	**15.4 Level of noise pollution**	Core	Low	As detailed in page 65 of methodology document
79	Physical	Reduced Pollution	**15.5 Quality of water in public surface water bodies**	Core	High	As detailed in page 66 of methodology document

Annexure 8: Progress Reporting Template for MoHUA



Assessment of Liveability Indices for 116 Cities in India

Data Owner	Central / State Pollution Control Board	Development Authority	Discoms / Electricity Board	State Disaster Management Authority	State Education Department	State Health Department	State Renewable Energy Development	State Sales / Commercial Taxes Department	Town and Country Planning Department	Traffic and Police Department	Urban Local Body	State Transport Authority
National Progress Status												-

Date	March 1st, 2018
Total number of cities	117
Total number of cities logged in the portal	9
Total number of cities that have started the assessment	
Total number of cities that have not started the assessment	
Total number of cities that have completed the assessment	
Total number of states/ Uts	36
Total number of states which have completed the assessment	
Total number of states yet to complete the assessment	

							Data collection progress report (by list of cities and by data owner typology)											
Sl. No.	State/UT	Cities	User name	Cities Logged in the Portal(Yes/No)	Total no.of question answered (0/560)	Total Progress Status	Central / State Pollution Control Board	Development Authority	Discoms / Electricity Board	State Disaster Management Authority	State Education Department	State Health Department	State Renewable Energy Development Agency	State Sales / Commercial Taxes Department	Town and Country Planning Department	Traffic and Police Department	State Transport Authority	Urban Local Body

1	Andaman and Nicobar	Portblair	IXZ_322	No														
2	Andhra Pradesh	Kakinada	COA_222	Yes														
3	Andhra Pradesh	Visakhapatnam	VKSP_208	No														
4	Andhra Pradesh	Tirupati	TPTY_354	No														
5	Andhra Pradesh	Amaravati	AMR_224	No														
6	Andhra Pradesh	Vijayawada	BZA_275	No														
7	Arunachal Pradesh	Itanagar	ITN_363	Yes														
8	Arunacha	Pasighat	PGT_320	No														

	l Pradesh																	
9	Assam	Guwahati	GHY_267	No														
10	Bihar	Bhagalpur	BGP_363	No														
…	…	….	…															
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…	…	….	…															
…	…	….	…															
…	…	….	…															
116	West Bengal	Howrah	HWR_312	No														
117	Haryana	Gurgaon	GUR_334	No														

Sl. No.	City/ULB	Questions	Response provided
1	Puducherry Municipality	Kindly clarify that the data required to be collected for Liveability index says the cities having population of more than 1 Million. Hence it is required to give the data for entire Puducherry region or only for Puducherry municipality where smart city is proposed.	The reference geography is Puducherry Municipality as per the following reference: http://pdymun.in/puducherry-municipality-details.php

File No.-K.14011/14/2018-AMRUT II
Government of India
Ministry of Housing and Urban Affairs
(AMRUT Division)

Subject: Project Implementation Committee on City Liveability Index-reg.

A meeting of the Project Implementation Committee on City Liveability Index was held under the Chairmanship of Shri Sajeesh Kumar N., Director (Smart City) on **21st March, 2018** in his chamber 340C at **12:00 PM**. The Inception Report submitted by IPSOS was presented and discussed. The progress of the work regarding Assessment of Liveability Standards was also reviewed.

2. The draft minutes of the meeting are placed below for kind approval.

Submitted please.

Reema Jain
21/03/2018.
(Reema Jain)
AD(AMRUT)
21.03.2018

Director(Smart City)

21/03/2018.

AD(AMRUT).

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Minutes of the Monitoring Committee "Liveability Index" held on 21st March 2018 under the Chairmanship of Sh. Sajeesh Kumar, Director (Smart Cities), MoHUA

A meeting of Monitoring Committee was held on 21st March 2018 under the Chairmanship of Sh. Sajeesh Kumar, Director (Smart Cities), MoHUA. The list of participants is annexed.

The Committee reviewed the progress of the Liveability Index assignment and Inception Report submitted by the Consulting firm.

Progress:

- A National level orientation workshop was conducted on 13th February, 2018 by the Ministry in which, the firm shared the methodology and work plan with the States.
- Data entry portal and progress monitoring dashboard has been developed and is functional. As on 20th March 2017, out of the total of 116 cities selected for Liveability Index, 112 cities have logged in the data entry portal, 35 cities (16 states) have started the assessment.
- A total of 30 State Level Workshops have been initially scheduled by the Consultant (9th March -24th March 2018). The workshops are completed in 26 states and the firm has committed to submit all MoMs by 10th April, 2018.The remaining states workshops are planned by 1st week of April as requested by the State governments.
- The city reconnaissance visits have started from 2nd March 2018 and will conclude on 16th April 2018. 99 city coordinators along with the State coordinators are responsible for data collection and support to city officials for coordination & collation of data.

The Committee also reviewed the Inception Report against the deliverables and scope of work as given in the ToR.

Keeping in view the overall progress of the assignment, the Committee recommends approval of the Inception Report.

The meeting was ended with vote of thanks to all.

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Annexure

List of Participants

1. Shri Sajeesh Kumar N. (Director, SC)...... In the Chair
2. Shri Umraw Singh (Director, NBO), MoHUA
3. Shri Y.S.Awana (DS, NULM), MoHUA
4. Shri G.Vijay Kumar (US, CBUD), MoHUA
5. Shri Ajit Kumar(US, SC-II), MoHUA
6. Ms Reema Jain (AD, AMRUT), MoHUA
7. Shri Manoj Jha, PMU(AMRUT)
8. Shri Rakesh Gujral, CBUD
9. Shri Sachin Singhal, IPSOS

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Payment for Liveability Index Study

Name of Contract	**Consulting Services for Assessment of Liveability Indices in 116 cities in India**
Contract Date	21 February, 2018
Name of Consortium :	IPSOS Research Private Limited in consortium with Athena Infonomics India Private Limited and The Economist Group Limited
Report / Deliverable (at this Stage):	Inception Report
Date of Bill Submission	**March, 2018**

On approval of the inception report by the competent authority, the invoice submitted by the consulting firm is recommended for further processing for payment. As per the Contract, Payment Schedule **(Clause 41.2 Special Conditions of Contract)** is given below:

S.NO	%OF PAYMENT	DELIVERABLE	DUE DATE	DATE OF PAYMENT	AMOUNT OF PAYMENT
1	Twenty (20%) percent of the Contract Price	Acceptance/ approval of Inception Report	Within 8 weeks from start	**Recommended**	2,18,85,640 + 39,39,415 GST
2	Fifty (50%) of the Contract Price.	Acceptance/ approval of Draft Final Report	Within 12 weeks from start		
3	Thirty (30%) of the Contract Price.	Acceptance/ approval of Final Report	Within 20 weeks from start		

Contractual Amount:	10,94,28,200 plus GST
Payments made till Date:	Nil
Payment Under Process Inception Report	2,18,85,640 + 39,39,415 GST
Amount due at this stage	2,58,25,055/-
Total Payment recommended:	2,18,85,640/-

The project implementation committee has recommended the approval of the report and same has been confirmed by JS (Amrut).

The Consultant/Consulting Firm has raised the invoices for **Rs. 2,58,25,055/- (Rupees Two Crore Fifty Eight Lakh Twenty Five Thousand Fifty Five only) (inclusive of GST)** against which payment of **Rs. 2,18,85,640/- (Rupees Two Crore Eighteen Lakh Eighty Five Thousand Six Hundred Forty only) (w/o GST)** is admissible as per contract condition. The consultant has not submitted a CA certificate confirming the payment of GST. Hence GST is not recommended.

	Umang	22/3/18
Team Leader/Sector Specialist CBUD (Rakesh Gujral)	Urban Management Specialist CBUD (Umang Handoo Raina)	Municipal Finance Specialist CBUD (Ketan Vora)

Ipsos Research Private Limited

INVOICE NO - 18270619

Payment Terms : 60 days
Due Date : 19/05/2018
Invoice Date : 19/03/2018
(1/1)

MINISTRY OF HOUSING AND URBAN AFFAIRS,
GOVERNMENT OF INDIA
202-C, NIRMAN BHAWAN, MAULANA AZAD ROAD,
New Delhi
India
07 Delhi

Company : Ipsos Research Pvt.Ltd [32002]
Income Tax PAN No. : AABCI3609K

End Client : 13920206
Sales Order : 18000499 S2
Accounting Contact : IpsosIndiaInvoice@ipsos.com

Purchase Order Number : NA
Client Contact : G. Vijay Kumar
Client Tel : 011 23063217
Client Email : g.vijaykumar@nic.in

JOB NUMBER	IPSOS SALES REF.	DESCRIPTION	TOTAL	
1709582501 32205	Sharma, Tripti Tel +44 (0) 20 7347 3813 Tripti.Sharma@ipsos.com	HSN code 9983 AssessmentofLiveabilityindices	21,885,640.00	INR

Initial invoice on Assessment of Liveability Indices for 116 cities in India

Total Budget Research	109,428,200.00
Already Billed	.00
Percentage Billed on this Invoice	20.00%

Invoice Subtotal	21,885,640.00	**INR**
IGST 18.000 %	3,939,415.20	**INR**
Total Amount Due	25,825,055.20	**INR**

Rupees TWO CRORE FIFTY EIGHT LAC TWENTY FIVE THOUSAND FIFTY FIVE AND PAISE TWENTY ONLY
Ipsos Billing Address:
1701, 17th Floor, F wing Lotus Corporate Park,
off western express highway,
Goregaon east Mumbai - 400 063
27 Maharashtra
India
GSTIN: 27AABCI3609K1ZJ

Remit Payment to

Ipsos Research Pvt.Ltd
Lotus Corporate Park,
1701, 17th Floor, F Wing,
Off Western Express Highway,
Goregoan East,
Mumbai 400 063
India

Payment Details

IFSC Code : HSBC0400002
Swift Code : HSBCINBBXXX
Account Number : 030-777080-001
Bank Name : HSBC Bank, Mumbai
Bank Address : Banking Corporation Ltd.
Mumbai/ Fort Branch
52/60, M G Road,
Mumbai 400001
India

DELHI
Dt. 20/3/18

- Please draw cheque in favour of
  "Ipsos Research Pvt. Ltd."
- Payment of this invoice, or correspondence regarding the same may please be forwarded to our **Mumbai Office.**
- Invoices not paid on or before due date will carry interest @ 3% per month.

Registered Office Address :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
CIN: U74130MH2004PTC14694
Phone: +91 22 66208000
Fax: +91 22 66208200
E-Mail: IpsosIndiaInvoice@ipsos.com
[illegible]

This file is signed using Digital Signature.

For Ipsos Research Pvt. Ltd.
Signed by : AMIT DIWAN
(Personal , CID - 5300122)
Date : 20/Mar/2018 16:02:26
Location :
Reason :
Amit Diwan
Senior Associate Director - Finance

Subject: Project Implementation Committee on City Liveability Index-reg.

A meeting of the Project Implementation Committee on City Liveability Index was held under the Chairmanship of Shri Sajeesh Kumar N., Director (Smart City) on **21st March, 2018** in his chamber 340C at **12:00 PM**. The Inception Report submitted by IPSOS was presented and discussed. The progress of the work regarding Assessment of Liveability Standards was also reviewed.

The minutes of the meeting have been approved by the Chairman, Shri Sajeesh Kumar N., Project Implementation Committee. Keeping in view the overall progress of the assignment, the **Committee recommended approval of the inception report.**(pg: 135-137).

Submitted for approval please.

22/03/2018 11:07 AM

REEMA JAIN
(AD (ECONOMIC))

Note # 14

22/03/2018 11:18 AM

SHIV DAS MEENA
(JS (AMRUT))

Note # 15

22/03/2018 11:47 AM

REEMA JAIN
(AD (ECONOMIC))

File No.-K.14011/14/2018-AMRUT II
Government of India
Ministry of Housing and Urban Affairs
(AMRUT Division)

Subject: Project Implementation Committee on City Liveability Index-reg.

A meeting of the Project Implementation Committee on City Liveability Index was held under the Chairmanship of Shri Sajeesh Kumar N., Director (Smart City) on **21st March, 2018** in his chamber 340C at **12:00 PM**. The Inception Report submitted by IPSOS was presented and discussed. The progress of the work regarding Assessment of Liveability Standards was also reviewed.

2. The draft minutes of the meeting are placed below for kind approval.

Submitted please.

Reema Jain
21/03/2018.
(Reema Jain)
AD(AMRUT)
21.03.2018

Director(Smart City)

Nayank
21/03/2018.

AD(AMRUT).

Minutes of the Monitoring Committee "Liveability Index" held on 21st March 2018 under the Chairmanship of Sh. Sajeesh Kumar, Director (Smart Cities), MoHUA

A meeting of Monitoring Committee was held on 21st March 2018 under the Chairmanship of Sh. Sajeesh Kumar, Director (Smart Cities), MoHUA. The list of participants is annexed.

The Committee reviewed the progress of the Liveability Index assignment and Inception Report submitted by the Consulting firm.

Progress:

- A National level orientation workshop was conducted on 13th February, 2018 by the Ministry in which, the firm shared the methodology and work plan with the States.
- Data entry portal and progress monitoring dashboard has been developed and is functional. As on 20th March 2017, out of the total of 116 cities selected for Liveability Index, 112 cities have logged in the data entry portal, 35 cities (16 states) have started the assessment.
- A total of 30 State Level Workshops have been initially scheduled by the Consultant (9th March -24th March 2018). The workshops are completed in 26 states and the firm has committed to submit all MoMs by 10th April, 2018.The remaining states workshops are planned by 1st week of April as requested by the State governments.
- The city reconnaissance visits have started from 2nd March 2018 and will conclude on 16th April 2018. 99 city coordinators along with the State coordinators are responsible for data collection and support to city officials for coordination & collation of data.

The Committee also reviewed the Inception Report against the deliverables and scope of work as given in the ToR.

Keeping in view the overall progress of the assignment, the Committee recommend approval of the Inception Report.

The meeting was ended with vote of thanks to all.

Scanned by CamScanner

Annexure

List of Participants

1. Shri Sajeesh Kumar N. (Director, SC)...... In the Chair
2. Shri Umraw Singh (Director, NBO), MoHUA
3. Shri Y.S.Awana (DS, NULM), MoHUA
4. Shri G.Vijay Kumar (US, CBUD), MoHUA
5. Shri Ajit Kumar(US, SC-II), MoHUA
6. Ms Reema Jain (AD, AMRUT), MoHUA
7. Shri Manoj Jha, PMU(AMRUT)
8. Shri Rakesh Gujral, CBUD
9. Shri Sachin Singhal, IPSOS

Scanned by CamScanner

Ipsos

28th March 2018

To
Shri G.Vijay Kumar,
Under Secretary (CBUD)
Ministry of Housing and Urban Affairs (MoHUA), GoI
202-C, Nirman Bhawan, Maulana Azad Road,
New Delhi.

Subject: Assessment of Liveability Indices for 116 cities (Contract Reference No. 1554254)

Dear Mr. Vijay Kumar,

This is with regards to submission of our inception report. We wish to inform you that the state workshops have been completed in 31 states covering 109 cities out of 116 cities (enclosed with letter). We further state that remainder of the 5 state workshops covering 9 cities have been re-scheduled due to unavoidable circumstances in the State and will be completed soon.

We have deployed all 116 city coordinators and they have been working closely with their respective ULBs / nodal officer for support and feedback. Out of the 116 cities, 113 cities have started the process of liveability assessment through national portal. The progress report is being shared with ministry on daily basis and the committee in the ministry has approved the inception report.

With this, we are submitting city wise inception report. As per contract, the inception report should consist following which has been provided in consolidated/city wise inception report:

a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.
b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments
c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA.

We therefore request you to please initiate the payment against our first invoice. Thanking you.

Yours sincerely,

IPSOS RESEARCH PVT. LTD.
DELHI
Dt..........

28/3/2018

Parijat Chakraborty
Executive Director and Head of Public Affairs

US(CBUD)

Ipsos Research Pvt. Ltd.
Registered Office :
Lotus Corporate Park
1701, 17th floor, F Wing
Off Western Express Highway
Goregaon East, Mumbai – 400063, India
Tel.: + 91 22 6620 8000

Branch Office:
801, 8th floor, Vipul Square
B-Block, Sushant Lok, Part – 1
Gurugram – 122003, Haryana, India
Tel.: + 91 0124 4692400

Details of the workshop completed as on date 27th March 2018

Sl No	State/UT Name	Venue for Workshop	Date	Status
1	Chhattisgarh	Hotel Babylon International VIP Road, Rajiv Gandhi Marg, Raipur, Chhattisgarh.	9-Mar-18	Workshop Done
2	Puducherry	Conference Hall, Smart city Development Limited, Puducherry	12-Mar-18	Workshop Done
3	Tamil Nadu	Hotel Crown Plaza, Adeyar Park, TTK road, Chennai	12-Mar-18	Workshop Done
4	Madhya Pradesh	EPCO Campus, Ekant Park, Char Imli, Bhopal	12-Mar-18	Workshop Done
5	Himachal Pradesh	K3 Banquet, Shimla Bypass, Kasumpti Colony, Panthaghati, Shimla	14-Mar-18	Workshop Done
6	Chandigarh	Municipal Bhavan, New Deluxe Building, Sector 17E, Chandigarh 160017.	14-Mar-18	Workshop Done
7	Odisha	Hotel Kalinga AshokGoutam Nagar, Bhubaneswar	15-Mar-18	Workshop Done
8	Bihar	Hotel Chanakya, Bir Chand Patel Marg, R Block, Patna	15-Mar-18	Workshop Done
9	NCT of Delhi	NDMC Convention Hall, Connaught Place, New Delhi	15-Mar-18	Workshop Done
10	Uttarakhand	Hotel Aketa", 113-1/2, Rajpur Road, Dehradun	15-Mar-18	Workshop Done
11	Jharkhand	Conference hall, 1st floor, Annex building Project Bhawan, Dhurwa, Ranchi 834004	16-Mar-18	Workshop Done
12	Gujarat	Ahmedabad Management Association, Dr. Vikram Sarabhai Marg, Bastrapur, Ahmadabad	16-Mar-18	Workshop Done
13	Daman & Diu	Ahmedabad Management Association, Dr. Vikram Sarabhai Marg, Bastrapur, Ahmadabad	16-Mar-18	Workshop Done
14	Dadar & Nagar Haveli	Ahmedabad Management Association, Dr. Vikram Sarabhai Marg, Bastrapur, Ahmadabad	16-Mar-18	Workshop Done
15	Mizoram	Conference hall, Secretariat, Aizawl	16-Mar-18	Workshop Done
16	Telangana	Mini Meeting Hall of Commissioner, GHMC, Hyderabad	16-Mar-18	Workshop Done
17	Haryana	Hotel Ramada, Gurgaon	17-Mar-18	Workshop Done
18	Maharashtra	Rangswar, Vijay Desai Chavan Center, General Jagannath Bhosale Marg, Mumbai	17-Mar-18	Workshop Done
19	Kerala	Hotel Masquat, Playam, antonment House Road, LMS Compound, PMG Trivandrum	19-Mar-18	Workshop Done

Sl No	State/UT Name	Venue for Workshop	Date	Status
20	Lakshadweep	Hotel Masquat, Playam, antonment House Road, LMS Compound, PMG Trivandrum	19-Mar-18	Workshop Done
21	Arunachal Pradesh	PYBSS Hotel. D-Sector, Near Civil Secretariat, Itanagar	19-Mar-18	Workshop Done
22	Punjab	Mayor Meeting Hall Muncipal Corporation Jalnadhar 1st Floor, Dr. B.R.Ambedkar Admin Complex, Jalandhar City (Punjab) India	19-Mar-18	Workshop Done
23	Meghalaya	Conference Hall of the Directorate of Urban Affairs, Raitong Building, Shillong, Meghalaya	19-Mar-18	Workshop Done
24	Goa	Vivanta by Taj, Off D. B. Bandodkar Road, St. Anne's Junction, Panaji, Goa 403001	20-Mar-18	Workshop Done
25	Sikkim	The Regal Hotel, Tadong, Gangtok, East Sikkim	20-Mar-18	Workshop Done
26	Andhra Pradesh	Hotel DV Manor, M G Road, Vijayawada, Andhra Pradesh 520010	20-Mar-18	Workshop Done
27	Rajasthan	Conference Hall, Directorate of Local Bodies, Jaipur	21-Mar-18	Workshop Done
28	Uttar Pradesh	Non Conventional Energy Development Agency, Lucknow	23-Mar-18	Workshop Done
29	Karnataka	Vikas Soudha, Bangalore	26-Mar-18	Workshop Done
30	Tripura	Pragya Bhawan, Hall No. 4, Gurkhabasti, Agartala, Tripura	27-Mar-18	Workshop Done
31	Andaman and Nicober	Confeence Hall at Directorate of Industries, Middle Point, Port blair	27-Mar-18	Workshop Done
32	Jammu & Kashmir	K C Residency, Residency Road, Jammu Tawi	28-Mar-18	Scheduled
33	West Bengal	The Stadel, Vivekananda Yuba Bharati Krirangan Gate No: 03 Salt Lake, Kolkata -700098	3-Apr-18	Scheduled
34	Assam	TBC	TBC	TBC
35	Manipur	TBC	TBC	TBC
36	Nagaland	TBC	TBC	TBC

NCT DELHI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	6th March 2018
Name of the State Coordinator	Sanjay Singh
Name of City Coordinator	Sujit Kumar Singh, Nalini Kant Nayak, Kumar Manish
Contact details of City Coordinator (Phone number and email ID)	981140267; 9818688971/;9650931193
Date of the State Workshop	15th March 2018
Name and designation of the Nodal Officer from the ULB	SMCD - R K Bhattacharya (Chief Engineer) NMCD – Rajesh Khanna (Superident Engineer (DEMS) EMCD – NR Das (MHO) NDMC – Khusboo Sharma, Asst. Manager Projects
Secondary data entry mode (online portal/offline through excel)	Both
Percentage of data entry completed	10%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	SMCD	Y	8	Y
2	NMCD	Y	9	Y
3	EMCD	Y	5	Y
4	NDMC	Y	5	Y
5	Delhi PS (UD)	Y	4	Y
6	Delhi Police	Y	2	Y
7	Delhi Traffic Police	Y	2	Y
8	DUSIB	Y	1	N
9	Delhi Jal Board	Y	1	N
10	Town Planning	Y	1	N
11	GSDL	Y	1	Y
12	Health Department	Y	2	Y
13	Dept. Of Power	Y	2	Y
14	Department of Environment	Y	1	Y

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Delhi Pollution control Board	Y	1	Y
2	Dept. of Education	Y	1	N
3	Transport Department	Y	2	Y
4	Sanitation	Y	6	Y
5	Delhi Disaster Management Authority	Y	1	N
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes. Yet to get response from department on this.
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes. Delhi Integrated Multi-Modal Transit System (DIMTS) Ltd is the agency. We are yet to make contact with this department.
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes. DJB and DPCC does this. We are is touch with both the departments for data
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes. DPCC collects data on NOISE pollution
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	DJB has responsibility of maintaining water in public surface water bodies along with ULBs. We have not yet received any confirmation from DJB on availability of data.

Port Blair

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Sushma Pandey
Name of City Coordinator	Sushma Pandey
Contact details of City Coordinator (Phone number and email ID)	Portblairliveability.index.co.in
Date of the State Workshop	27.03.2018
Name and designation of the Nodal Officer from the ULB	Shri. V. Jayakumar
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	Nil

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Directorate of Education Department	Y	1 only	Dr. Dheeraj Kumar
2	Directorate of Health Service	Y	1 only	Dr. Avijit Roy
3	APWD	Y	1 only	Shri. Srinivasan lalu
4	PBMC	Y	5 times	Shri V.Jay Kumar (Nodal officer)
5	PBMC	Y	1 time	A.K. Paul
6	Town & Country planning	Y	1 time	M. Balamurgan
7	Electricity Department	Y	1 time	Shri Ajith Kumar Bernard
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	YES
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

KAKINADA

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	14-03-2018
Name of the State Coordinator	JBR CHAKRAVARTHY
Name of City Coordinator	K ANAND KUMAR
Contact details of City Coordinator (Phone number and email ID)	9494045775
Date of the State Workshop	20-03-2018
Name and designation of the Nodal Officer from the ULB	Mr. SUJAY ARUN, CEO, KSCCPL
Secondary data entry mode (online portal/offline through excel)	YES
Percentage of data entry completed	9%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	KMC	Y	5	Nodal officer is Nominated
2	Office of District Medical and Health Officer	N		
3	Department of School Education	N		
4	CE- AP SOTHERN Power Distribution Com Ltd	N		
5	DM- NEDCAP	N		
6	Dept. of Forests & Environment	N		
7	EE- AP Pollution Control Board	N		
8	CP- AP Police Department	N		
9	Commissioner Disaster Management	N		
10	Commercial tax Dept	N		
11				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Dist Transport Officer	N		
2	Dist Town & Country Planning	N		
3	Addl Div Rly manager	N		
4	APSRTC	N		
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	YES
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	NO
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

GREATER VISAKHA (GVMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	14-03-2018
Name of the State Coordinator	JBR CHAKRAVARTHY
Name of City Coordinator	S SAMKUMAR
Contact details of City Coordinator (Phone number and email ID)	9885765115
Date of the State Workshop	20th March' 2018
Name and designation of the Nodal Officer from the ULB	Mr. G ANANDARAO, Manager, VSCCL
Secondary data entry mode (online portal/offline through excel)	Not Yet
Percentage of data entry completed	NA

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	VC - Visakhapatnam Urban Development Authority	Y		Nodal officer is Nominated
2	Visakhapatnam Port Trust	N		
3	Office of District Medical and Health Officer	N		
4	Department of School Education	N		
5	CE- AP Eastern Power Distribution Com Ltd	N		
6	DM- NEDCAP	N		
7	Dept. of Forests & Environment	N		
8	EE- AP Pollution Control Board	N		
9	CP- AP Police Department	N		
10	Commissioner Disaster Management	N		
11	Commercial tax Dept	N		
14				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	RTA, madhavadhara	N		
2	GVMC	Y		
3	Dist Town & Country Planning	Y		
4	Addl Div Rly manager	N		
5	Asst Traffic Man APSRTC	N		
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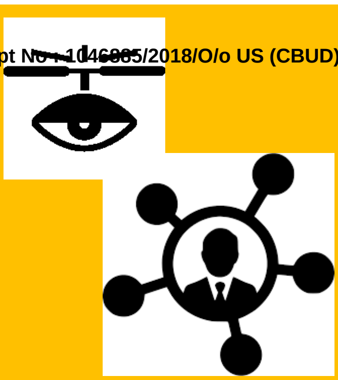
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	YES
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	YES
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES



Tirupati

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	14-03-2018
Name of the State Coordinator	JBR CHAKRAVARTHY
Name of City Coordinator	G MURALI
Contact details of City Coordinator (Phone number and email ID)	7396228572
Date of the State Workshop	20th March' 2018
Name and designation of the Nodal Officer from the ULB	Ms. M.Sridevi,Addl.Commissioner, MCT
Secondary data entry mode (online portal/offline through excel)	Not Yet
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	MCT	Y	7	Nodal officer is Nominated
2	Office of District Medical and Health Officer	N		
3	Department of School Education	N		
4	CE- AP SOTHERN Power Distribution Com Ltd	N		
5	DM- NEDCAP	N		
6	Dept. of Forests & Environment	N		
7	EE- AP Pollution Control Board	N		
8	CP- AP Police Department	N		
9	Commissioner Disaster Management	N		
10	Commercial tax Dept	N		
11				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Dist Transport Officer	N		
2	Dist Town & Country Planning	N		
3	Addl Div Rly manager	N		
4	APSRTC	N		
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	YES
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	YES
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

AMARAVATHI

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	10-03-2018
Name of the State Coordinator	JBR CHAKRAVARTHY
Name of City Coordinator	JBR CHAKRAVARTHY
Contact details of City Coordinator (Phone number and email ID)	7013593412
Date of the State Workshop	20th March' 2018
Name and designation of the Nodal Officer from the ULB	Ms. D.MRUNMAYI,Zone AO, AP CRDA
Secondary data entry mode (online portal/offline through excel)	Not Yet
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	APCRDA	Y	2	Nodal officer is Nominated
2	Office of District Medical and Health Officer	N		
3	Department of School Education	N		
4	CE- AP SOTHERN Power Distribution Com Ltd	N		
5	DM- NEDCAP	N		
6	Dept. of Forests & Environment	N		
7	EE- AP Pollution Control Board	N		
8	CP- AP Police Department	N		
9	Commissioner Disaster Management	N		
10	Commercial tax Dept	N		
11				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Dist Transport Officer	N		
2	Dist Town & Country Planning	N		
3	Addl Div Rly manager	N		
4	APSRTC	N		
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	NO
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	NO
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	NO
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	NO
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	NO

VIJAYAWADA

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	14-03-2018
Name of the State Coordinator	JBR CHAKRAVARTHY
Name of City Coordinator	Sk ABDUL SATTAR
Contact details of City Coordinator (Phone number and email ID)	9949825302
Date of the State Workshop	20th March’ 2018
Name and designation of the Nodal Officer from the ULB	Mr. JV RAMAKRISHNA, SE, VMC
Secondary data entry mode (online portal/offline through excel)	YES
Percentage of data entry completed	15%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	AP crda	Y	1	Nodal officer is Nominated
2	Office of District Medical and Health Officer	N		
3	Department of School Education	N		
4	CE- AP SOTHERN Power Distribution Com Ltd	Y	1	
5	DM- NEDCAP	Y	1	
6	Dept. of Forests & Environment	N		
7	EE- AP Pollution Control Board	Y	1	
8	CP- AP Police Department	Y	1	
9	Commissioner Disaster Management	N		
10	Commercial tax Dept	Y	1	
11				
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Dist Transport Officer	Y	1	
2	VMC	Y	6	
3	Dist Town & Country Planning	Y	1	
4	Addl Div Rly manager	N		
5	APSRTC	N		
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	YES
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	YES
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

MUNICIPAL COUNCIL ITANAGAR

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	08-03-2018
Name of the State Coordinator	Balaji (Bandu) Chakrawar
Name of City Coordinator	Balaji (Bandu) Chakrawar
Contact details of City Coordinator (Phone number and email ID)	9436234839
Date of the State Workshop	19th March 2018
Name and designation of the Nodal Officer from the ULB	Dr. Olik Taring (CMEO)
Secondary data entry mode (online portal/offline through excel)	Online & Offline
Percentage of data entry completed	3%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Education	Y	3	No
2	Disaster Management	Y	3	No
3	Renewable Energy (APEDA)	Y	2	Yes
4	Electricity (Power) Department	Y	4	Yes
5	Police & Traffic Department	Y	!	Yes
6	Municipal Council (ULB) Itanagar	Y	2	Yes
7	Health Department	Y	3	Yes
8	Town Planning & UD (Development Authority)	Y	2	Yes
9	State Polution Control Board	N		No
10	Transport Department	Y	4	No
11	State Sales / commercial Tax Department	N		
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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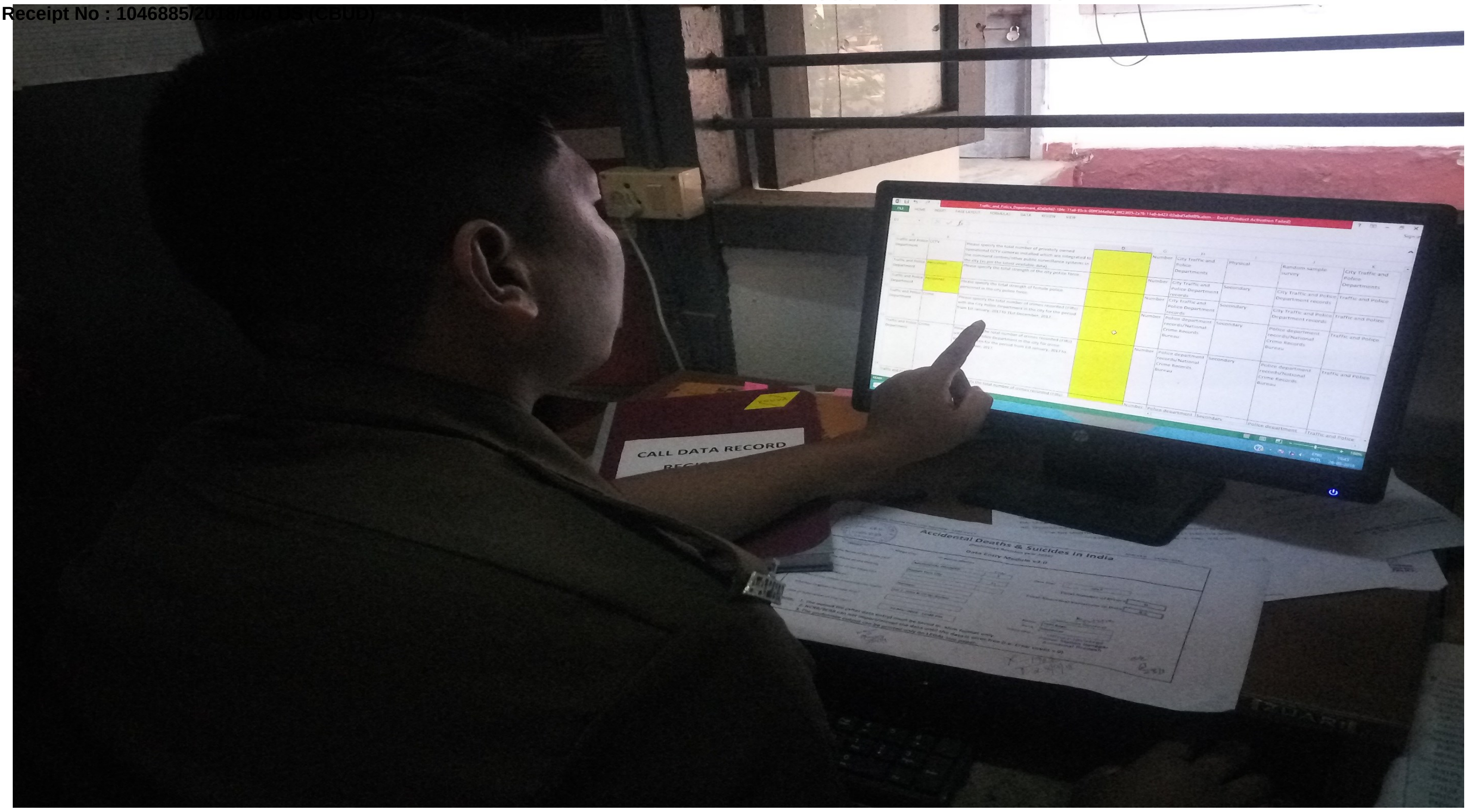
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Service not available
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Still Data entry not started by concern stakeholder
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Still Data entry not started by concern stakeholder Still Data entry not started by concern stakeholder Still Data entry not started by concern stakeholder


CALL DATA RECORD
Accidental Deaths & Suicides in India

MUNICIPAL COUNCIL PASIGHAT

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	28.03.2018
Name of the State Coordinator	Balaji (Bandu) Chakrawar
Name of City Coordinator	Rina Nongle
Contact details of City Coordinator (Phone number and email ID)	9436234839
Date of the State Workshop	19th March 2018
Name and designation of the Nodal Officer from the ULB	Not yet appointed
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Municipal Council	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Guawahati (GMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM: Guwahati	DATE 13.03.2018
Name of the State Coordinator :	SYEDA JOLLY KAZI
Name of City Coordinator:	None
Contact details of City Coordinator (Phone number and email ID):	7896732850, jollykazi@gmail.com
Date of the State Workshop: not yet confirmed	‘to be confirmed”
Name and designation of the Nodal Officer from the ULB:	None
Secondary data entry mode (online portal/offline through excel):	None
Percentage of data entry completed:	None

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Guwahati	y	8	
2	Planning Unit office	Y	4	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	yes

BHAGALPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	17.03.2018
Name of the State Coordinator	Surya Prakash Rai
Name of City Coordinator	Chandan Kumar
Contact details of City Coordinator (Phone number and email ID)	8709252633 bhagalpur@liveabilityindex.co.in; chandankup@yahoo.co.in
Date of the State Workshop	15.03.2018
Name and designation of the Nodal Officer from the ULB	Vinay Kumar, City Manager
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	10%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	Y	8	Yes
2	PDMC – IL & FS (Bhagalpur Smart City Mission)	Y	2	Yes
3	Sarva Shiksha Abhiyan, District Education Dept	Y	4	Yes
4	Bihar Renewable Energy Development Agency	Y	1	Yes
5	Health Department, District Health Society	Y	2	Yes
6	District Transport Office	Y	1	No
7	Traffic Police	Y	2	Yes
8	Bihar State Pollution Control Board	Y	1	Yes
9	District Electricity Office	Y	1	No
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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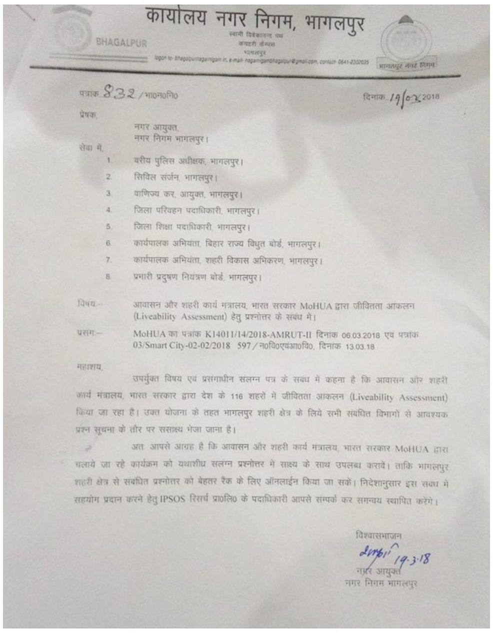
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	No
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	No
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) Yes b) No c) No

Insert photographs, if any



कार्यालय नगर निगम, भागलपुर
BHAGALPUR
स्वामी विवेकानन्द पथ
कचहरी कैम्पस
भागलपुर
logon to- bhagalpurnagarnigam.in, e-mail- nagarnigambhagalpur@gmail.com, contact- 0641-2302035
भागलपुर नगर निगम

पत्रांक 832 /भा०न०नि०

दिनांक 19/03 2018

प्रेषक,

नगर आयुक्त,
नगर निगम भागलपुर।

सेवा में,

1. वरीय पुलिस अधीक्षक, भागलपुर।
2. सिविल संर्जन, भागलपुर।
3. वाणिज्य कर, आयुक्त, भागलपुर।
4. जिला परिवहन पदाधिकारी, भागलपुर।
5. जिला शिक्षा पदाधिकारी, भागलपुर।
6. कार्यपालक अभियंता, बिहार राज्य विधुत बोर्ड, भागलपुर।
7. कार्यपालक अभियंता, शहरी विकास अभिकरण, भागलपुर।
8. प्रभारी प्रदुषण नियंत्रण बोर्ड, भागलपुर।

विषय:– आवासन और शहरी कार्य मंत्रालय, भारत सरकार MoHUA द्वारा जीवितता आंकलन (Liveability Assessment) हेतु प्रश्नोत्तर के संबंध में।

प्रसंग:– MoHUA का पत्रांक K14011/14/2018-AMRUT-II दिनांक 06.03.2018 एवं पत्रांक 03/Smart City-02-02/2018 597/न०वि०एवंआ०वि०, दिनांक 13.03.18

महाशय,

उपर्युक्त विषय एवं प्रसंगाधीन संलग्न पत्र के संबंध में कहना है कि आवासन और शहरी कार्य मंत्रालय, भारत सरकार द्वारा देश के 116 शहरों में जीवितता आंकलन (Liveability Assessment) किया जा रहा है। उक्त योजना के तहत भागलपुर शहरी क्षेत्र के लिये सभी संबंधित विभागों से आवश्यक प्रश्न सूचना के तौर पर ससाक्ष्य भेजा जाना है।

अतः आपसे आग्रह है कि आवासन और शहरी कार्य मंत्रालय, भारत सरकार MoHUA द्वारा चलाये जा रहे कार्यक्रम को यथाशीध्र सलंग्न प्रश्नोत्तर में साक्ष्य के साथ उपलब्ध करावें। ताकि भागलपुर शहरी क्षेत्र से संबधित प्रश्नोत्तर को बेहतर रैंक के लिए ऑनलाईन किया जा सकें। निदेशानुसार इस संबंध में सहयोग प्रदान करने हेतु IPSOS रिसर्च प्रा०लि० के पदाधिकारी आपसे सम्पर्क कर समन्वय स्थापित करेंगे।

विश्वासभाजन
19.3.18
नगर आयुक्त
नगर निगम भागलपुर

BIHARSHARIF

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	19.03.2018
Name of the State Coordinator	Surya Prakash Rai
Name of City Coordinator	Ravi Shankar
Contact details of City Coordinator (Phone number and email ID)	6202314020 biharsharif@liveabilityindex.co.in; ravishankar.shankar855@gmail.com
Date of the State Workshop	15.03.2018
Name and designation of the Nodal Officer from the ULB	Rajeev Kumar, City Manager
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	11%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	Y	8	Yes
2	Sarva Shiksha Abhiyan, District Education Dept	Y	2	Yes
3	Bihar Renewable Energy Development Agency	Y	1	Yes
4	Health Department, District Health Society	Y	2	Yes
5	District Transport Office	Y	2	Yes
6	Office of Superintendent of Police	Y	3	Yes
7	Bihar State Pollution Control Board	Y	1	Yes
8	District Electricity Board	Y	1	Yes
9	Commercial Tax Office	Y	1	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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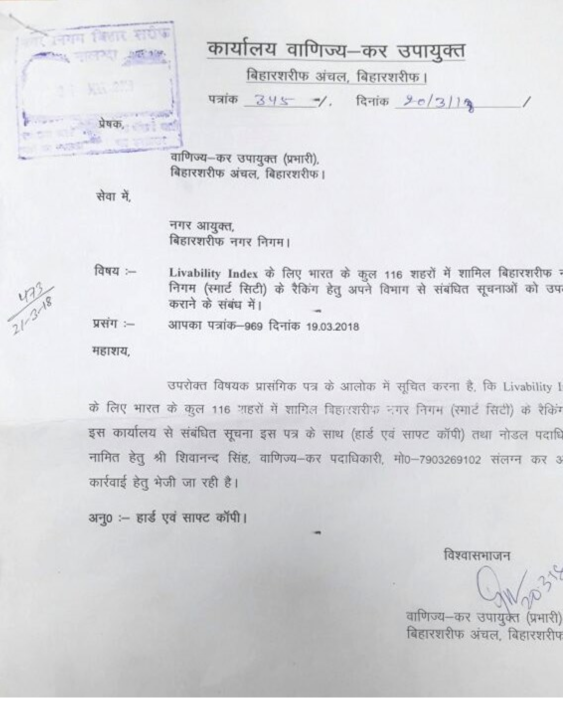
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	No
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	No
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	No
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) Yes b) No c) No

Insert photographs, if any



कार्यालय वाणिज्य–कर उपायुक्त

बिहारशरीफ अंचल, बिहारशरीफ।

पत्रांक 345 /. दिनांक 20/3/18 /

प्रेषक,

वाणिज्य–कर उपायुक्त (प्रभारी),
बिहारशरीफ अंचल, बिहारशरीफ।

सेवा में,

नगर आयुक्त,
बिहारशरीफ नगर निगम।

473
21-3-18

विषय :– Livability Index के लिए भारत के कुल 116 शहरों में शामिल बिहारशरीफ
निगम (स्मार्ट सिटी) के रैकिंग हेतु अपने विभाग से संबंधित सूचनाओं को
कराने के संबंध में।

प्रसंग :– आपका पत्रांक–969 दिनांक 19.03.2018

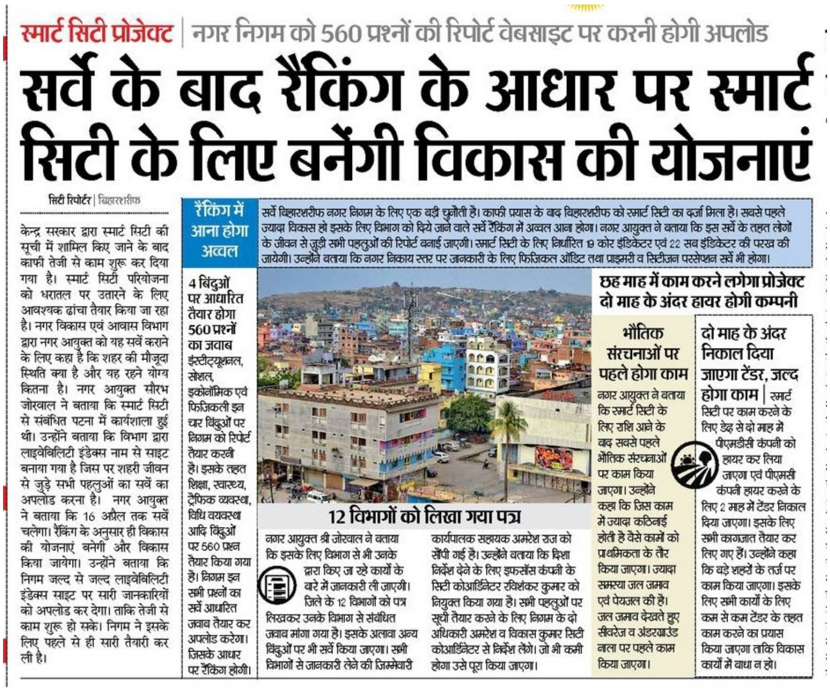
महाशय,

उपरोक्त विषयक प्रासंगिक पत्र के आलोक में सूचित करना है, कि Livability
के लिए भारत के कुल 116 शहरों में शामिल बिहारशरीफ नगर निगम (स्मार्ट सिटी) के रैकिंग
इस कार्यालय से संबंधित सूचना इस पत्र के साथ (हार्ड एवं साफ्ट कॉपी) तथा नोडल
नामित हेतु श्री शिवानन्द सिंह, वाणिज्य–कर पदाधिकारी, मो0–7903269102 संलग्न कर
कार्रवाई हेतु भेजी जा रही है।

अनु0 :– हार्ड एवं साफ्ट कॉपी।

विश्वासभाजन

वाणिज्य–कर उपायुक्त (प्रभारी)
बिहारशरीफ अंचल, बिहारशरीफ



स्मार्ट सिटी प्रोजेक्ट | नगर निगम को 560 प्रश्नों की रिपोर्ट वेबसाइट पर करनी होगी अपलोड

सर्वे के बाद रैंकिंग के आधार पर स्मार्ट सिटी के लिए बनेंगी विकास की योजनाएं

सिटी रिपोर्टर | बिहारशरीफ

केन्द्र सरकार द्वारा स्मार्ट सिटी की सूची में शामिल किए जाने के बाद काफी तेजी से काम शुरू कर दिया गया है। स्मार्ट सिटी परियोजना को धरातल पर उतारने के लिए आवश्यक ढांचा तैयार किया जा रहा है। नगर विकास एवं आवास विभाग द्वारा नगर आयुक्त को यह सर्वे कराने के लिए कहा है कि शहर की मौजूदा स्थिति क्या है और यह रहने योग्य कितना है। नगर आयुक्त सौरभ जोरवाल ने बताया कि स्मार्ट सिटी से संबंधित पटना में कार्यशाला हुई थी। उन्होंने बताया कि विभाग द्वारा लाइवेबिलिटी इंडेक्स नाम से साइट बनाया गया है जिस पर शहरी जीवन से जुड़े सभी पहलुओं का सर्वे का अपलोड करना है। नगर आयुक्त ने बताया कि 16 अप्रैल तक सर्वे चलेगा। रैंकिंग के अनुसार ही विकास की योजनाएं बनेंगी और विकास किया जायेगा। उन्होंने बताया कि निगम जल्द से जल्द लाइवेबिलिटी इंडेक्स साइट पर सारी जानकारियों को अपलोड कर देगा। ताकि तेजी से काम शुरू हो सके। निगम ने इसके लिए पहले से ही सारी तैयारी कर ली है।

रैंकिंग में आना होगा अव्वल

सर्वे बिहारशरीफ नगर निगम के लिए एक बड़ी चुनौती है। काफी प्रयास के बाद बिहारशरीफ को स्मार्ट सिटी का दर्जा मिला है। सबसे पहले ज्यादा विकास हो इसके लिए विभाग को दिये जाने वाले सर्वे रैंकिंग में अव्वल आना होगा। नगर आयुक्त ने बताया कि इस सर्वे के तहत लोगों के जीवन से जुड़ी सभी पहलुओं की रिपोर्ट बनाई जाएगी। स्मार्ट सिटी के लिए निर्धारित 19 कोर इंडिकेटर एवं 22 सब इंडिकेटर की परख की जायेगी। उन्होंने बताया कि नगर निकाय स्तर पर जानकारी के लिए फिजिकल ऑडिट तथा प्राइमरी व सिटीजन परसेप्शन सर्वे भी होगा।

4 बिंदुओं पर आधारित तैयार होगा 560 प्रश्नों का जवाब

इंस्टीट्यूशनल, सोशल, इकोनॉमिक एवं फिजिकली इन चार बिंदुओं पर निगम को रिपोर्ट तैयार करनी है। इसके तहत शिक्षा, स्वास्थ्य, ट्रैफिक व्यवस्था, विधि वयवस्था आदि बिंदुओं पर 560 प्रश्न तैयार किया गया है। निगम इन सभी प्रश्नों का सर्वे आधारित जवाब तैयार कर अपलोड करेगा। जिसके आधार पर रैंकिंग होगी।

12 विभागों को लिखा गया पत्र

नगर आयुक्त श्री जोरवाल ने बताया कि इसके लिए विभाग से भी उनके द्वारा किए जा रहे कार्यों के बारे में जानकारी ली जाएगी। जिले के 12 विभागों को पत्र लिखकर उनके विभाग से संबंधित जवाब मांगा गया है। इसके अलावा अन्य बिंदुओं पर भी सर्वे किया जाएगा। सभी विभागों से जानकारी लेने की जिम्मेवारी कार्यपालक सहायक अमरेश राज को सौंपी गई है। उन्होंने बताया कि दिशा निर्देश देने के लिए इफर्सोस कंपनी के सिटी कोआर्डिनेटर रविशंकर कुमार को नियुक्त किया गया है। सभी पहलुओं पर सूची तैयार करने के लिए निगम के दो अधिकारी अमरेश व विकास कुमार सिटी कोआर्डिनेटर से निर्देश लेंगे। जो भी कमी होगा उसे पूरा किया जाएगा।

छह माह में काम करने लगेगा प्रोजेक्ट दो माह के अंदर हायर होगी कम्पनी

भौतिक संरचनाओं पर पहले होगा काम

नगर आयुक्त ने बताया कि स्मार्ट सिटी के लिए राशि आने के बाद सबसे पहले भौतिक संरचनाओं पर काम किया जाएगा। उन्होंने कहा कि जिस काम में ज्यादा कठिनाई होती है वैसे कामों को प्राथमिकता के तौर किया जाएगा। ज्यादा समस्या जल जमाव एवं पेयजल की है। जल जमाव देखते हुए सीवरेज व अंडरग्राउंड नाला पर पहले काम किया जाएगा।

दो माह के अंदर निकाल दिया जाएगा टेंडर, जल्द होगा काम | स्मार्ट सिटी पर काम करने के लिए डेढ़ से दो माह में पीएमडीसी कंपनी को हायर कर लिया जाएगा एवं पीएमसी कंपनी हायर करने के लिए 2 माह में टेंडर निकाल दिया जाएगा। इसके लिए सभी कागजात तैयार कर लिए गए हैं। उन्होंने कहा कि बड़े शहरों के तर्ज पर काम किया जाएगा। इसके लिए सभी कार्यों के लिए कम से कम टेंडर के तहत काम करने का प्रयास किया जाएगा ताकि विकास कार्यों में बाधा न हो।

MUZAFFARPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16.03.2018
Name of the State Coordinator	Surya Prakash Rai
Name of City Coordinator	Dr. Shantwana Bharti
Contact details of City Coordinator (Phone number and email ID)	7004583245/ 9334129615 muzaffarpur@liveabilityindex.co.in; sbharti_raj@rediffmail.com
Date of the State Workshop	15.03.2018
Name and designation of the Nodal Officer from the ULB	Ashok Singh, Revenue Officer
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	15%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	Y	7	Yes
2	Sarva Shiksha Abhiyan, District Education Dept	Y	2	Yes
3	Bihar Renewable Energy Development Agency	Y	2	Yes
4	Health Department, District Health Society	Y	2	Yes
5	Bihar State Roadways Transport Corporation	Y	1	Yes
6	Superintendent of Police Office	Y	4	Yes
7	District Planning Office	Y	2	No
8	Bihar State Pollution Control Board	Y	1	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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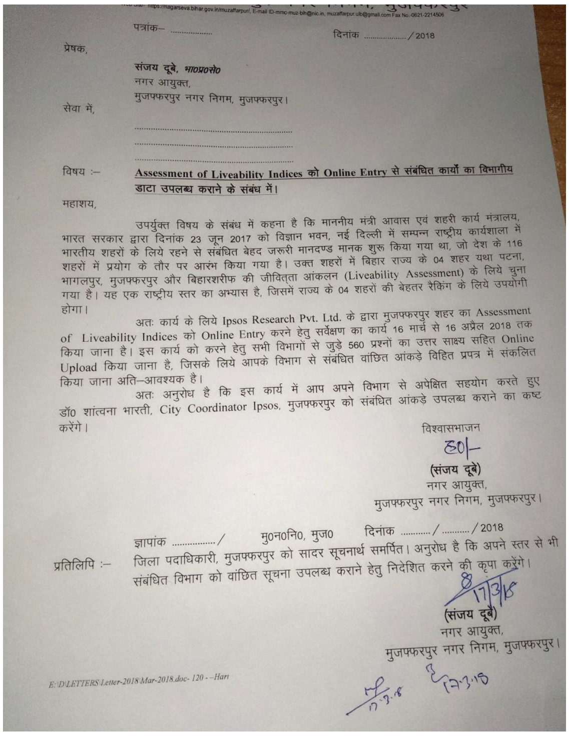
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) Yes b) No c) No

Insert photographs, if any



https://nagarseva.bihar.gov.in/muzaffarpur/, E-mail ID-mmc-muz-bih@nic.in, muzaffarpur.ulb@gmail.com Fax No.-0621-2214506

पत्रांक– .... दिनांक ..../2018

प्रेषक,

संजय दूबे, *भा0प्र0से0*
नगर आयुक्त,
मुजफ्फरपुर नगर निगम, मुजफ्फरपुर।

सेवा में,

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विषय :– **Assessment of Liveability Indices को Online Entry से संबंधित कार्यों का विभागीय डाटा उपलब्ध कराने के संबंध में।**

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि माननीय मंत्री आवास एवं शहरी कार्य मंत्रालय, भारत सरकार द्वारा दिनांक 23 जून 2017 को विज्ञान भवन, नई दिल्ली में सम्पन्न राष्ट्रीय कार्यशाला में भारतीय शहरों के लिये रहने से संबंधित बेहद जरूरी मानदण्ड मानक शुरू किया गया था, जो देश के 116 शहरों में प्रयोग के तौर पर आरंभ किया गया है। उक्त शहरों में बिहार राज्य के 04 शहर यथा पटना, भागलपुर, मुजफ्फरपुर और बिहारशरीफ की जीवित्ता आंकलन (Liveability Assessment) के लिये चुना गया है। यह एक राष्ट्रीय स्तर का अभ्यास है, जिसमें राज्य के 04 शहरों की बेहतर रैंकिंग के लिये उपयोगी होगा।

अतः कार्य के लिये Ipsos Research Pvt. Ltd. के द्वारा मुजफ्फरपुर शहर का Assessment of Liveability Indices को Online Entry करने हेतु सर्वेक्षण का कार्य 16 मार्च से 16 अप्रैल 2018 तक किया जाना है। इस कार्य को करने हेतु सभी विभागों से जुड़े 560 प्रश्नों का उत्तर साक्ष्य सहित Online Upload किया जाना है, जिसके लिये आपके विभाग से संबंधित वांछित आंकड़े विहित प्रपत्र में संकलित किया जाना अति–आवश्यक है।

अतः अनुरोध है कि इस कार्य में आप अपने विभाग से अपेक्षित सहयोग करते हुए डॉ0 शांत्वना भारती, City Coordinator Ipsos, मुजफ्फरपुर को संबंधित आंकड़े उपलब्ध कराने का कष्ट करेंगे।

विश्वासभाजन
ह0/-
(संजय दूबे)
नगर आयुक्त,
मुजफ्फरपुर नगर निगम, मुजफ्फरपुर।

ज्ञापांक ..../ मु0न0नि0, मुज0 दिनांक ..../.........../2018

प्रतिलिपि :– जिला पदाधिकारी, मुजफ्फरपुर को सादर सूचनार्थ समर्पित। अनुरोध है कि अपने स्तर से भी संबंधित विभाग को वांछित सूचना उपलब्ध कराने हेतु निदेशित करने की कृपा करेंगे।

17/3/18
(संजय दूबे)
नगर आयुक्त,
मुजफ्फरपुर नगर निगम, मुजफ्फरपुर।

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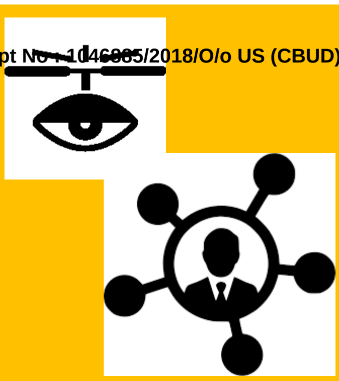
17.3.18 17.3.18



PATNA

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	17.03.2018
Name of the State Coordinator	Surya Prakash Rai
Name of City Coordinator	Sonal Sinha
Contact details of City Coordinator (Phone number and email ID)	7979085874/8002355111 patna@liveabilityindex.co.in; sonalranju@rediffmail.com
Date of the State Workshop	15.03.2018
Name and designation of the Nodal Officer from the ULB	Vishal Anand, Asst. Municipal Commissioner
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	8.4%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	Y	7	Yes
2	PDMC – EPTISA (Patna Smart City Mission)	Y	2	Yes
3	Sarva Shiksha Abhiyan, District Education Dept	Y	3	Yes
4	Bihar Renewable Energy Development Agency	Y	2	Yes
5	Health Department, State Health Society	Y	2	Yes
6	Bihar State Roadways Transport Corporation	Y	1	Yes
7	Traffic Police	Y	3	Yes
8	Bihar State Pollution Control Board	Y	2	Yes
9	South Bihar Power Distribution Corporation Limited	Y	1	No
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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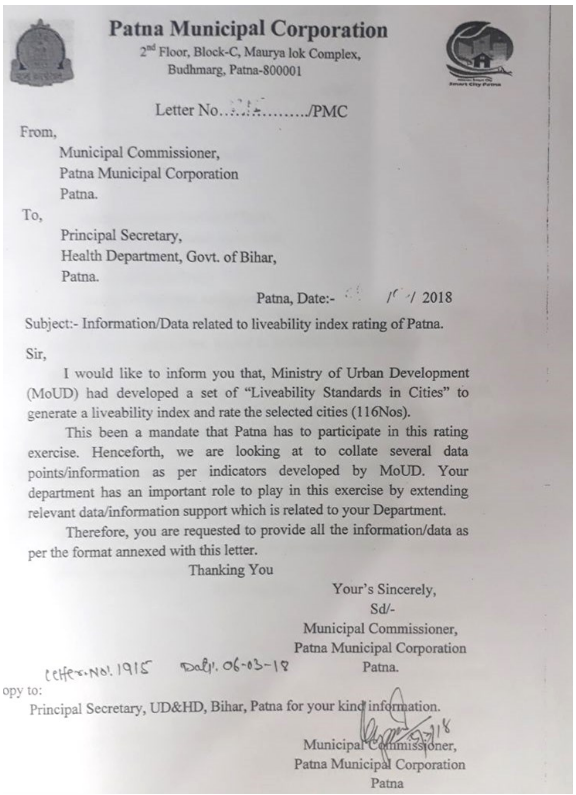
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	No
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) Yes b) No c) No

Insert photographs, if any



Patna Municipal Corporation
2nd Floor, Block-C, Maurya lok Complex,
Budhmarg, Patna-800001

Letter No……………/PMC

From,
Municipal Commissioner,
Patna Municipal Corporation
Patna.

To,
Principal Secretary,
Health Department, Govt. of Bihar,
Patna.

Patna, Date:- / / 2018

Subject:- Information/Data related to liveability index rating of Patna.

Sir,

I would like to inform you that, Ministry of Urban Development (MoUD) had developed a set of "Liveability Standards in Cities" to generate a liveability index and rate the selected cities (116Nos).

This been a mandate that Patna has to participate in this rating exercise. Henceforth, we are looking at to collate several data points/information as per indicators developed by MoUD. Your department has an important role to play in this exercise by extending relevant data/information support which is related to your Department.

Therefore, you are requested to provide all the information/data as per the format annexed with this letter.

Thanking You

Your's Sincerely,
Sd/-
Municipal Commissioner,
Patna Municipal Corporation
Patna.

Letter No. 1915 Date. 06-03-18

opy to:

Principal Secretary, UD&HD, Bihar, Patna for your kind information.

Municipal Commissioner,
Patna Municipal Corporation
Patna

Chandigarh

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	6th March 2018
Name of the State Coordinator	Suriti Sachdeva
Name of City Coordinator	Gurjot Kaur
Contact details of City Coordinator (Phone number and email ID)	981140267; 9818688971/;9650931193
Date of the State Workshop	14.03.2018
Name and designation of the Nodal Officer from the ULB	Vijay Kumar
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Population Department	Y	1	
2		Y	3	
3	Commercial Taxes	Y	1	
4	Pollution Control	Y	1	
5	RMC	Y	1	
6	Police department	Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

RAIPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Nikunj Sharma
Contact details of City Coordinator (Phone number and email ID)	
Date of the State Workshop	09.03.2018
Name and designation of the Nodal Officer from the ULB	To be officially designated today
Secondary data entry mode (online portal/offline through excel)	Online and offline
Percentage of data entry completed	55%

Receipt No : 1046885/2018/O/o US (CBUD)

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	SUDA	y	2	
2	RSCL	y	10	
3	Traffic department	y	2	
4	CMHO	y	2	
5	CSPDCL	y	2	
6	NAGAR NIGAM	y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Y
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Y
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Y
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Y
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	This information has to be confirmed from different agencies

BILASPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Ravi Arora
Contact details of City Coordinator (Phone number and email ID)	9407666577
Date of the State Workshop	9 March 2018
Name and designation of the Nodal Officer from the ULB	Will be officially designated today
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	36%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Health CMHO	Y	3	
2	Police	Y	3-4	
3	Education	Y	3-4	
4	environment	Y	2	
5	Town and country planning	Y	3	
6	Electricity	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	We will have to confirm with right agency

DADRA NAGAR HAVELI (DNH MC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Janak Prajapati
Contact details of City Coordinator (Phone number and email ID)	Mo. 9925037947, E mail: janakprajapati@yahoo.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Manish Bhatt
Secondary data entry mode (online portal/offline through excel)	Entry offline
Percentage of data entry completed	20% offline

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Planning development authority	Yes	2	P.P. Parmar
2	Electricity board	Yes	2	R.B.Chabal
3	State disaster management authority	Yes	2	Jayraj
4	Education	Yes	2	Pritesh Sukkalu
5	Health	Yes	2	V.K.Das
6	State renewable energy development agency	Yes	2	R.B.Chaubal
7	state sales/ commercial	Yes	2	Nilesh Gurav
8	Town and country planning department	Yes	2	A.K. purohit
9	Traffic and police department	Yes	2	Nitin Kurkutiya
10	Transport Authorities	Yes	2	Rakesh kumar
11	Urban Local body- SMC	Yes	2	Prasad patel, Jitubhai Rajput
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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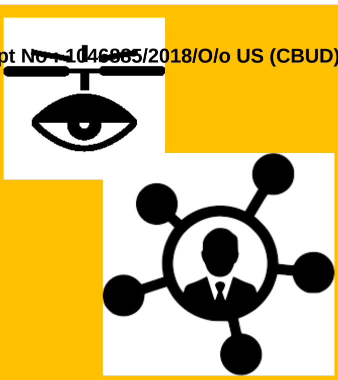
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	to be explored
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	to be explored
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored



DIU (DMC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Vinod jethva
Contact details of City Coordinator (Phone number and email ID)	Mo. 7069161968, E mail: vinodjethva78@gmail.com
Date of the State Workshop	16TH March 2018
Name and designation of the Nodal Officer from the ULB	C.O. Vandna rao, officer vipul jethva
Secondary data entry mode (online portal/offline through excel)	Off line
Percentage of data entry completed	Around 30%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Other departments data is ready ULB data collection work is continue vipulbhai will start work 2/4/18	yes	7-8	Vipul Jethva overall
2	ULB	yes	7,8	Vipul Jethva
3	Power	yes	2	Pareshbhai Solanki(data submitted to ULB)
4	Education	yes	2	Gajanan Dadbhai Bariya(Data Submitted to ULB)
5	Town planning	yes	2	Rameshbhai solanki(Data submitted to ULB)
6	health	yes	2	Ullasbhai solanki(Data submitted to ULB)
7	Disaster management	yes	2	Bharat chauhan, rahulbhai(complete data entered)
8	Police	yes	2	Mehulbhai modi(data in process)
9	RTO	yes	1	Sandipbhai Bariya(data in process)
10	Tax	yes		Vipul Jethva to handle

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	to be explored
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	to be explored
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

Panaji (CCP)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	23/03/2018
Name of the State Coordinator	
Name of City Coordinator	Esther Roe Torres
Contact details of City Coordinator (Phone number and email ID)	7774865652 estherroe@yahoo.com
Date of the State Workshop	20/03/2018
Name and designation of the Nodal Officer from the ULB	None
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	PWD	Y	1	
2	PDA	Y	1	
3	CCP	Y	1	
4	Directorate of Health Services	Y	1	
5	Goa State Pollution Control Board	Y	1	
6	TCPD	Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	YES
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	NO
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Only during festival season (Diwali & Ganesh Chaturthi)
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

AHEMEDABAD (AMC)

INCEPTION REPORT

Date: 8th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Ms Minaxi Shukla
Contact details of City Coordinator (Phone number and email ID)	Mo. 9426703321, E mail: minaxishukla2172gmail.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Prayag Langaliya
Secondary data entry mode (online portal/offline through excel)	Off line
Percentage of data entry completed	More than 50%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Almost 20 dep. ,Committee formed for linkage with other dep. Waiting for approval of commissioner AMC, online work start after 31st march			Nodal officer Prayag Langaliya has assigned the task to all in the committee. They will all enter the data and then forward to him. The data entry offline has been started
2	health	No	None	All through prayag langaliya (Dr. Bhavin solanki)
3	Education	No	None	All through prayag langaliya (L.D. Desai)
4	T.D.O. dep	No	none	All through prayag langaliya (Rajesh G. patel)
5	Fire	No	none	All through Prayag Langaliya (M.F. Dastur)
6	E governance	No	none	Prayag langaliya
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Under Process to collect data
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes available as officials said on 16th march 2018
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

DAHOD (DMC)

INCEPTION REPORT

Date: 8th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Mr Ishwar bhai Raval
Contact details of City Coordinator (Phone number and email ID)	Mo 9426362537 email iswar_yogi@yahoo.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Ashish Rana
Secondary data entry mode (online portal/offline through excel)	Off line
Percentage of data entry completed	40% yesterday C.O. informed to ishwerbhai

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Almost 20 dep. ,Committee formed for linkage with other dep. Dahod will start on line work from 1/4/18	yes	4-5	Visit state coordinator to hand holding support to Nagar Palika
2	Water	yes	1-2	Ashish rana
3	Auditor	yes	1	Mangalsingh V. Patel
4	Account	yes	1	Anil D. Parmar
5	Ancrochment	yes	1	Kirtansingh Labana
6	Inspector	yes	1	Kailash Jad
7	Sanitary	yes	1	Sunkabhai khapad
8	Light	yes	1	Mayur Vyas
9	Food	yes	1	Pinkal nagralawala
10	Malariya	yes	1	Dilip vyas
11	Surveyor Land	yes	1	Nilesh H. shah
12	Tax	yes	1	Ankur D. Desai

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	to be explored
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	to be explored
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

VADODRA (VMC)

INCEPTION REPORT

Date: 8th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Ms Shilpa Maniar
Contact details of City Coordinator (Phone number and email ID)	9898320401 email spmabad@yahoo.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Manish Bhatt IT Director
Secondary data entry mode (online portal/offline through excel)	on line
Percentage of data entry completed	48%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Road project	yes	2(question fully filled)	Jitesh trivedi
	Affordable housing	Yes	2	Navendu parikh
	Accounts	yes	2	Prafful savla
2	Parks and garden	yes	2	Bhupendra sheth
3	Water supply	Yes	2	Hemal singh rathod
4	Drainage	Yes	2	Darshin p mehta
5	Street light	Yes	2	Jatan badheka
6	Solid west management	Yes	2	Kashyap shah
7	Transport	Yes	2	Darsmesh rana
8	Heritage cell	Yes	2	Rajendra shah
9	Health	Yes	2	Chintu zala
10	Food	Yes	2	Jitendra gohil
11	TDO	Yes	2	Nilesh parmar
12	GAD	Yes	2	Manoj cristion

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Yes it is available , but data not but data yet to be obtained
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	to be explored
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

RAJKOT (RMC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Yogesh Meghnathi
Contact details of City Coordinator (Phone number and email ID)	MO. 8200679270, E mail: ymeghnathi@gmail.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Chirag pandya, city engineer
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	11% online rest offline done

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Fire	Yes	2	Theba
2	Pollution control, water quality	Yes	2	K.A.Meswani
3	Urban dev. , town country planning	Yes	2	V.V. Patel
4	Power P.G.V.C.L	Yes	3	Jitendrasingh Jhala
5	Education	Yes	2	N.M. Adeshna
6	Health	Yes	2	Dr. Gulzar Nayak
7	Disaster management	Yes	2	A.K. Dave
8	Transport	Yes	2	Paresh patel
9	Commercial tax	Yes	2	jalak Vora
10	Street light	Yes	2	k.P.dathariya
11	Home- police	Yes	2	DYSP Zala
12	ULB	Yes	6	Chirag Pandya overall coordianator
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	to be explored
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	to be explored
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

SURAT (SMC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Ms Nidhi Tailor
Contact details of City Coordinator (Phone number and email ID)	Mo. 8488857240, E mail:nidhitailor72@gmail.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Mr Bharat Dalal
Secondary data entry mode (online portal/offline through excel)	On line partial data available -11%
Percentage of data entry completed	11%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Plan approval urban housing	yes	3	S.K. patel, M.P. jaimalani IOff line)
2	Education and health, infrastructure, Recretion	Yes	3	Dr.A.K. Naik
3		Yes	2	Gayatri Jariwala
4	Traffic, transport mobility, safety	Yes	2	R.J. Pandya, K.B. Naik
5	Water Resource, Power, renewable Energy, pollution & environment	Yes	1	k.H. khatwani,A.j.Naik, D.C. Bhagwagar
6	Citizen services underULB ie, city profile, revenue, Social protection	Yes	4	B.I.Dalal, C.Y.Bhatt, M.M. Rao
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 **Average response time in case of health emergencies**	Does the city have an EMRS?	to be explored
2	11.3 **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	to be explored
3	12.3 **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	to be explored
4	15.4 **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	to be explored
5	15.5 **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	to be explored

GANDHI NAGAR (GNMC)

INCEPTION REPORT

Date: 8th March, 2018

Particulars	Details
Commencement of CRM:	8th March 2018
Name of the State Coordinator	Ms Shilpa Maniar
Name of City Coordinator	Nimisha Gohil
Contact details of City Coordinator (Phone number and email ID)	Mo. 798484376878, Email:nimisha.gohil22@gmail.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB	Dr. kalpesh Gauswami
Secondary data entry mode (online portal/offline through excel)	Off line
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Transport	yes	none	Upendra sutariya
2	RTO	yes	none	Upendra sutariya
3	GUDA	yes	none	A.V. Patel
4	GUDA	yes	1	A.V. Patel
5	GPCB	yes	none	A.V. Patel
6	Health	yes	1	Dr. kalpesh Gauswami
7	Drainage –water supply, Road	yes	1	V.R. suthar
8	Traffic police	yes	1	Dipakbhai solanki
9	Education	yes	1	Dipakbhai solanki
10	Sanitation	yes	1	S.M.Chowdhry
11	Hotel	yes	none	S.M.Chowdhry
12	Torrent Power	yes	none	Bharat Patel
13	Employment ex.	yes	1	Kaushik soni

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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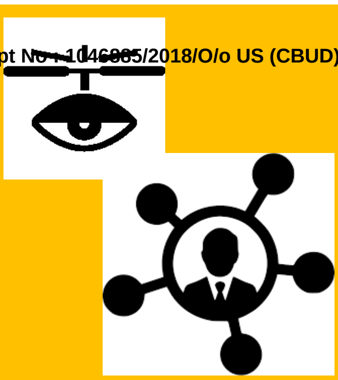
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	they have will be provided
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	they have will be provided
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	they have will be provided
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	they have will be provided
5	**15.5** Quality of water in public surface water bodies		they have will be provided



GURUGRAM (MCG)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	23.03.2018
Name of the State Coordinator	Sourabh Midha
Name of City Coordinator	Sourabh Midha
Contact details of City Coordinator (Phone number and email ID)	+919999271111 gurgaon@liveabilityindex.co.in
Date of the State Workshop	17th March, 2018
Name and designation of the Nodal Officer from the ULB	Mr. Sudhir Chauhan, STP
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	-

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Pollution Control Board			
2	Development Board			
3	Electricity Board			
4	State Disaster Management Authority			
5	State Education Department			
6	State Health Department			
7	State Renewable Energy Development Agency			
8	State Sales/Commercial Taxes Department			
9	Town and Country Planning	Y	1	
10	Traffic and Police			
11	Transport Authority	Y	1	
12	Urban Local Body	Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

KARNAL

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	23.03.2018
Name of the State Coordinator	Sourabh Midha
Name of City Coordinator	Sourabh Midha
Contact details of City Coordinator (Phone number and email ID)	+919999271111 karnal@liveabilityindex.co.in
Date of the State Workshop	17th March, 2018
Name and designation of the Nodal Officer from the ULB	Mr. Dharampal, DTP
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	-

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Pollution Control Board			
2	Development Board			
3	Electricity Board			
4	State Disaster Management Authority			
5	State Education Department			
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency			
8	State Sales/Commercial Taxes Department			
9	Town and Country Planning	Y	1	
10	Traffic and Police			
11	Transport Authority			
12	Urban Local Body	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	No
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

FARIDABAD (MCF)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	23.03.2018
Name of the State Coordinator	Sourabh Midha
Name of City Coordinator	Anup Tewatia
Contact details of City Coordinator (Phone number and email ID)	+919910063198 faridabad@liveabilityindex.co.in
Date of the State Workshop	17th March, 2018
Name and designation of the Nodal Officer from the ULB	Mr. Ramesh Bansal, Superintending Engineer
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	-

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Pollution Control Board	Y	1	
2	Development Board			
3	Electricity Board			
4	State Disaster Management Authority			
5	State Education Department			
6	State Health Department			
7	State Renewable Energy Development Agency			
8	State Sales/Commercial Taxes Department			
9	Town and Country Planning	Y	1	
10	Traffic and Police			
11	Transport Authority			
12	Urban Local Body	Y	5	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

SHIMLA

INCEPTION REPORT

Particulars	Details
Commencement of CRM:	26th March 2018
Name of the State Coordinator	Tsewang Dorji
Name of City Coordinator	Karma Sonam
Contact details of City Coordinator (Phone number and email ID)	karsoo009@gmail.com/9003081576
Date of the State Workshop	14th march 2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Municipal Commissioner	yes	5	
2	Taxation Department	Yes	2	
3	Pollution control board	Yes	2	
4	Health Department	yes	2	
5	Information Technology	yes	2	
6	Additional Secretary of Himachal Pradesh	Yes	2	
7	Joint secretary of Himachal Pradesh	Yes	4	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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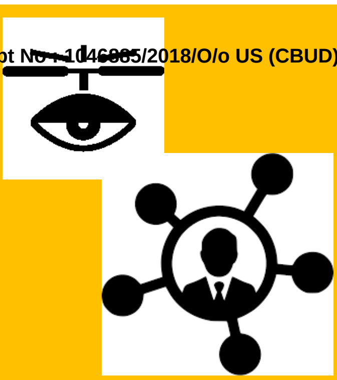
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No Traditional water source used for rough usage Three level of testing done: Field level , through departmental lab and independent agencies like IGMC or Health department



DHARAMSHALA

INCEPTION REPORT

Date: 2th March, 2018

Particulars	Details
Commencement of CRM:	26th March 2018
Name of the State Coordinator	Tsewang Dorji
Name of City Coordinator	Tsewang Dorji
Contact details of City Coordinator (Phone number and email ID)	tsewangdorjimu@gmail.com/9003081576
Date of the State Workshop	14th March 2018
Name and designation of the Nodal Officer from the ULB	Sandeep Kadam, Commissioner MC-Dharamshala
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Traffic and police department	y	1	Issue with appointing nodal officer
2	Excise and Taxation department			
3	Chief Medical Officer / Public health			
4	The regional Manager (HRTC- Dharamshala)			
5	The regional transport Officer			
6	Pollution control board			
7	Electricity board			
8	Education Department			
9	MC-Dharamshala			
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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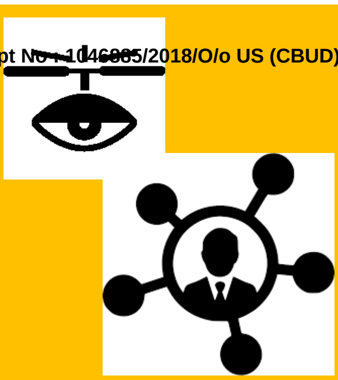
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	no
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes Drinking water source without conventional treatment but with chlorination and drinking water source with conventional treatment 50 water sample test in a month



JAMMU

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM: Jammu &Kashmir	30/3/2018
Name of the State Coordinator	Dr.Anupa Sharma
Name of City Coordinator	Dr.Anupa Sharma
Contact details of City Coordinator (Phone number and email ID)	jammu@liveabilityindex.co.in
Date of the State Workshop	28/3/2018
Name and designation of the Nodal Officer from the ULB	Ankush Kapoor
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	5%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Directorate of Education	Y	3	N
2	Dept. of Health& medical education	Y	3	N
3	Dept. of Police	Y	2	N
4	Chief Engg. (PDD)	Y	7	N
5	Director Health Services ,Jammu	Y	2	N
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

SRINAGAR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM: Srinagar	8/3/2018
Name of the State Coordinator	Dr. Anupa Sharma
Name of City Coordinator	Shazia Sadaf
Contact details of City Coordinator Phone number and email ID)	9797858498 srinagar@liveabilityindex.co.in
Date of the State Workshop	28/3/2018
Name and designation of the Nodal Officer from the ULB	Mr. Altaf
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Chairman of Pollution Control Board	Y	4	N
2	Commissioner Secretary	Y	2	N
3	Directorate School Education	Y	8	N
4	Srinagar Municipal Cooperation	Y	3	N
5	Chief Engg PDD	Y	2	N
6	Chief Town Planner	Y	2	N
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

RANCHI (RMC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	17.03.18
Name of the State Coordinator	SUMANTRA MUKHERJEE
Name of City Coordinator	SUMANTRA MUKHERJEE
Contact details of City Coordinator (Phone number and email ID)	sumantra2006@gmail.com +91 89695 11998
Date of the State Workshop	16.03.18
Name and designation of the Nodal Officer from the ULB	Sandeep Kumar, City Manager
Secondary data entry mode (online portal/offline through excel)	Online portal
Percentage of data entry completed	46%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Urban Development & Housing Dept., Govt of Jharkhand	Y	5	Chandan Kumar (Nodal Officer)
2	State pollution control board	Y	2	S. K. Tiwari (Nodal Officer)
3	Development Authority	Y	1	Manoj Verma (Nodal Officer)
4	DISCOM	Y	1	G. Mukherjee (Nodal Officer)
5	State Disaster Management Authority	N	0	---
6	State renewable energy development	N	0	S. R. Singh (Nodal Officer)
7	State Education Dept.	Y	1	Ashish Kumar (Nodal officer)
8	Sanjay Tiwari	N	0	Sanjay Tiwari
9	State sales & commercial tax dept.	Y	1	R. P. Barnwal
10	State transport authority	N	0	Saurav Verma
11	Town Planning	Y	1	Manoj Verma(Nodal Officer)
12	Traffic & Police dept.	Y	1	Dilip Khalkho (Nodal Officer)
13	ULB, Ranchi	Y	3	Sandeep Kumar (Nodal Officer)

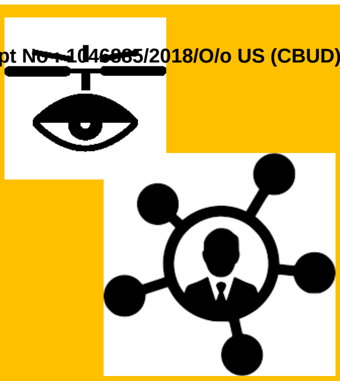
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Data unavailable with the health dept.
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Data not yet filled in the portal. Data not provided by he dept. But the ULB says that there is a Comprehensive City Mobility Plan for Ranchi city.
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Data not yet been provided by the PHED, but they say that the data is available with them.
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Data not yet been provided by the state pollution control board, but they say that the data is available with them.
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Data not yet been provided by the state pollution control board, but they say that the data is available with them.

State Orientation Workshop

Ranchi Municipal Commissioner, Director State Urban Development Authority & Principal Secretary Urban Development & Housing Dept, GoJ (Left to Right) during the state workshop

Representatives from all relevant departments during the state workshop on 16th March 2018



DHANBAD

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	20.03.18
Name of the State Coordinator	Sumantra Mukharjee
Name of City Coordinator	Vijay Kumar
Contact details of City Coordinator :(Phone number and email ID)	8969687692, & vijayxidas@gmail.com
Date of the State Workshop	16th March 2018
Name and designation of the Nodal Officer from the ULB:	Santosh Kumar, City Manager
Secondary data entry mode (online portal/offline through excel):	online
Percentage of data entry completed	45

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB, Dhanbad	Yes	6	Sri Santosh Kumar
2	Health	Yes	3	Dr Sanjeev Kumar Prasad
3	Pollution Control	Yes	2	Sri Ram Narayan Chuodhary
4	Disaster Management	Yes	2	Sri Sanjay Kr Jha
5	DTO	Yes	1	Sri Pankaj Kr Shaw
6	Commercial Tax	Yes	1	Not yet
7	City Police	Yes	1	Sri Piyush Pandey
8	Education	Yes	1	Sri Vinit Kumar
9	Electricity	Yes	1	Sri Subhas Kr Singh
10	Town Planning	No		
11	Development Authority	Yes	2	Sri Mahesh Kumar Santhalia
12	Traffic Police	No		
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	There is No EMRS,
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Data not available
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes, but data not yet provided by the dept.
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes, Data Available
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes, Data Available

MANGALURU CITY CORPORATION (MCC)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE: 10.03.18
Name of the State Coordinator	Bhagavana Das M
Name of City Coordinator	Veeresh Jamabigi
Contact details of City Coordinator (Phone number and email ID)	9880545615 Veeresh.cardst@gmail.com
Date of the State Workshop	26.03.18
Name and designation of the Nodal Officer from the ULB	Abdul Rahaman
Secondary data entry mode (online portal/offline through excel)	oneline
Percentage of data entry completed	15%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	IT In charge MCC	y	1	
2	EA/MD &CEO.	y	1	
3	AE. MSCL.MCC	y	1	
4	SE, MSCL.MCC	y	1	
5	Town Police	y	1	
6	RTO Officer	y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	NO
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

TUMKUR

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9.3.2018
Name of the State Coordinator :	Bhagavandas M.
Name of City Coordinator :.	Kanmani M
Contact details of City Coordinator (Phone number and email ID) :	09449655144 kanmanism@gmail.com
Date of the State Workshop	26.03.2018
Name and designation of the Nodal Officer from the ULB	P.N.Swamy General Manager (Admin) Tumkur Smart City
Secondary data entry mode (online portal/offline through excel)	Online portal
Percentage of data entry completed	Initiated today

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Tumkur smart city office	Y	4	Introduction and discussion with Nodal officer, started collecting information from departments. Today initiating the portal entry.
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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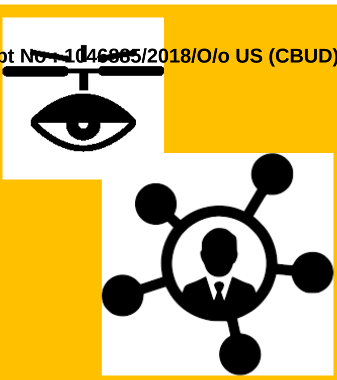
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes



BELAGAVI

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9.3.2018
Name of the State Coordinator :	Bhagavandas M.
Name of City Coordinator :.	Devenrappa
Contact details of City Coordinator (Phone number and email ID) :	9845873208
Date of the State Workshop	26.03.2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	Initiated today

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	smart city office	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Davanagere

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9.3.2018
Name of the State Coordinator :	Bhagavandas M.
Name of City Coordinator :.	Vijaya Kumar
Contact details of City Coordinator (Phone number and email ID) :	9448865911
Date of the State Workshop	26.03.2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	Initiated today

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	smart city office	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

SIVAMOGA

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9.3.2018
Name of the State Coordinator :	Bhagavandas M.
Name of City Coordinator :.	Vijaya Prasad
Contact details of City Coordinator (Phone number and email ID) :	9886181414
Date of the State Workshop	26.03.2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	Initiated today

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	smart city office	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Bangaluru

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9.3.2018
Name of the State Coordinator :	Bhagavandas M.
Name of City Coordinator :.	Gopal N
Contact details of City Coordinator (Phone number and email ID) :	9449566715
Date of the State Workshop	26.03.2018
Name and designation of the Nodal Officer from the ULB	Dharma Prasad AWA (Smart City)
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	Initiated today

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	smart city office	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	YES
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	NO
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

KOCHI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	5th March 2018
Name of the State Coordinator	Satheesh Chandran N
Name of City Coordinator	Princy Jacob
Contact details of City Coordinator (Phone number and email ID)	Mob:9544099150, princyjacob@gmail.com
Date of the State Workshop	19.03.2018
Name and designation of the Nodal Officer from the ULB	T.S Saifdeen, Additional Secretary
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	Not yet started

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Kochi Corporation	Y	9	Yes
2	Greater Cochin Development Authority	Y	2	Yes
3	Cochi Smart Mission Ltd	Y	6	Yes
4	District Education Office	N		
5	District Medical Office (Health)	N		
6	District Disaster Management Authority	N		
7	City Police Commissioner Office (Home Department)	N		
8	Regional Transport Office	N		
9	District Planning Office (Town & Country Planning)	N		
10	KSEB, Electrical Circle Ernakulam- Deputy Chief Engineer Office, Ernakulam	N		
11	Kerala State Pollution Control Board (Chief Environmental Engineer, Regional Office, Ernakulam)	N		

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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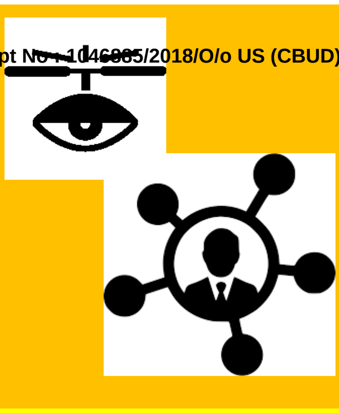
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No , The industrial pollution data is available
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No



(Thiruvananthapuram Muncipal corporation)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Satheesh Chandran
Name of City Coordinator	John Cyril
Contact details of City Coordinator (Phone number and email ID)	9847227391 johnthycaud@gmail.com
Date of the State Workshop	19-03-2018
Name and designation of the Nodal Officer from the ULB	Vishnu Venugopal Trivandrum Smart City Manager
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	Not yet started

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	KWA	Y	2	
2	DMO	Y	2	
3	RTO	Y	1	
4	KSRTC	Y	3	
5	KSEB	Y	1	
6	Trivandrum city police	Y	1	
7	District education officer	Y	2	
8	NATPAC	Y	1	
9	DPCB	Y	1	
10	Kerala Sports council	Y		
11	SDMA			
12	Trivandrum	Y	10	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
13	ANERT	Y	1	
14	PWD	Y	1	
15	DPCB	Y	1	
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	The City is having an EMRS and the numbers are 102 and 108
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	The city is in possession of a comprehensive mobility plan and it was formulated in 2014
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes the city conducts water testing and it is done on a weekly basis
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	The DPCB is having data on noise pollution and the study was carried out by CSIR in 2015
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) No specific city level inventory b) Data not available c) Data not available

LAKSHADWEEP

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	6th March 2018
Name of the State Coordinator	Satheesh Chandran
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9447043414
Date of the State Workshop	19th March 2017
Name and designation of the Nodal Officer from the ULB	Arun Jadhav Executive Engineer
Secondary data entry mode (online portal/offline through excel)	Off line
Percentage of data entry completed	Data pooling in progress

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Public works department	yes	1	
2	Education	yes	1	
3	Health	yes	1	
4	Science and technology	yes	1	
5	Electricity (Power)	yes	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	No
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	No
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	yes

Gwalior

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16, 20 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Saurabh Maurya
Contact details of City Coordinator (Phone number and email ID)	7691929445 msaurabh6@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Mahip Tejaswi Additional Commissioner and CEO smart city
Secondary data entry mode (online portal/offline through excel)	online
Percentage of data entry completed	6%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	health	Y	1	
2	Labour	Y	1	
3	Education	Y	2	
4	Police	Y	2	
5	Planning and Statistics	Y	2	
6	Town and country planning	Y	2	
7	Urja Vikas Nigam	Y	1	
8	Pollution Control Board	Y	2	
9	Commercial taxes	Y	1	
10	Nagar Nigam	Y	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	yes

JABALPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 Mar 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Kishore Shakyavar
Contact details of City Coordinator (Phone number and email ID)	8103947709 kishore.shakyawar@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Gajendra Singh Nagesh CEO Smart City
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	13%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Town and Country Planning	Data Recd		Committee member
2	Health	Y		
3	Education			Sent letter regretting data giving due to strike
4	Pollution Control Board	Email		Sent data directly
5	Collector Office Revenue officer	Y		
6	Homeguard	Y		
7	Urja Vikas Nigam	Y		
8	Regional Energy Development corporation	Phone		Out of station
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes but different agencies

Bhopal

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Rajkumar Meena
Contact details of City Coordinator (Phone number and email ID)	7223978140
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Chandramauli Shukla
Secondary data entry mode (online portal/offline through excel)	Not started
Percentage of data entry completed	0

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Pollution Control Board	Y	2	Committee members
2	Commercial taxes (VAT)	Y	1	
3	Commercial tax (profession Tax)	Y	1	
4	Health (civil surgeon)	Y		
5	Bhopal Development Authority	Y	1	
6	Education	Y	2	
7	Police	Y	2	
8	Traffic	Y	1	
9	Electricity	Y	1	
10	Disaster Management	Y	1	
11	Smart City Office	Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Y
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Y
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Y
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Y
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes but with different agencies

INDORE

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16, 22 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Rachna Patidar
Contact details of City Coordinator (Phone number and email ID)	9685105353 rachanapatidarind@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Mr. Rohan Saxena Additional commissioner and CEO Smart city
Secondary data entry mode (online portal/offline through excel)	Not done
Percentage of data entry completed	0%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Nagar Nigam	Y	3	
2	Smart City	daily	3	
3	Disaster Management	Y	2	
4	Pollution Control board	Y	1	
5	health	N	1	
6	education	Y	1	
7	traffic	Y	1	
8	Hotel Management	Y	1	
9	Police	Y	3	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	yes
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes has to be compiled from different departments

Ujjain

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Sapna Rathore
Contact details of City Coordinator (Phone number and email ID)	9584852356 sapna.rathore87@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Mr. Awdesh Sharma Additional commissioner and CEO smart city
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	65%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Nagar Nigam	Y		
2	PCB	Y	2	
3	Revenue	Y	4	
4	POlice	Y	8	
5	PHE	Y	4	
6	Property tax	Y	3	
7	Jan Sampark	y	2	
8	Health	y	4	
9	IT cell	y	1	
10	Ujjain Development Authority	y	1	
11	Food Department	y	1	
12	PMAY	y	1	
13	Accounts	y	4	
14	Upper Commissioner	N	4	Could not meet

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Education	Y	1	
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Need to compile

SAGAR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 Mar 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Harsh Vijay Kirar
Contact details of City Coordinator (Phone number and email ID)	9907611728
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	yes
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Transport Authority	Y	1	
2	Town and Country Planning	Y	1	
3	Traffic and Poice Department	Y	1	
4	Urban Local Body	y	1	
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

SATNA

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16, 20 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Ramnath Satpute
Contact details of City Coordinator (Phone number and email ID)	satputeramnath1982@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Devendra Singh CEO Smart City
Secondary data entry mode (online portal/offline through excel)	Not done
Percentage of data entry completed	0%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Nagar Nigam		2	
2	Smart City		2	
3	Traffic		2	
4	Pollution control board		2	
5	Education		2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	N
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Y
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Y
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Will have to be compiled

SAGAR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	16 March 2018
Name of the State Coordinator	Chitra Khanna
Name of City Coordinator	Harsh Vijay
Contact details of City Coordinator (Phone number and email ID)	9907611728 harshvijay09@gmail.com
Date of the State Workshop	12 March 2018
Name and designation of the Nodal Officer from the ULB	Rahul Singh Rajpoot CEO smart City
Secondary data entry mode (online portal/offline through excel)	Not done
Percentage of data entry completed	0%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Transport	Y	1	
2	Commercial taxes	Y	1	
3	traffic	Y	1	
4	Health	Y	1	
5	Electricity	Y	1	
6	Pollution control board	Y	1	
7	Education	Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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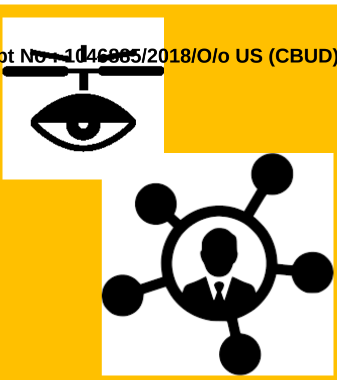
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	N
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Y
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Y
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Need to compile the data



GREATER MUMBAI (MCGM)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM: IPSOS	DATE:- 28-3-18
Name of the State Coordinator:-	Arvind Ghosh
Name of City Coordinator:-	Sharifa Bale
Contact details of City Coordinator :- (Phone number and email ID)	Mob:-9850195276,9967160978 sharifabale@gmail.com
Date of the State Workshop	17-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. Gaikwad
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	0

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	4	Yes
2	District Collector office	Y	2	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

NASIK

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Pankaj Patil
Contact details of City Coordinator (Phone number and email ID)	nashik@liveabilityindex.co.in 9766788444
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

KDMC

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Sachin Wankhade
Contact details of City Coordinator (Phone number and email ID)	9970023670
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

2016

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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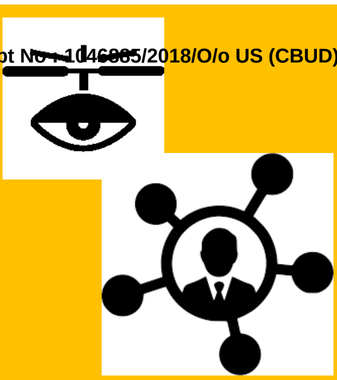
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	



NAVI MUMBAI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Niharika Belwalkar
Contact details of City Coordinator (Phone number and email ID)	7709004439
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Thane

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Sarifa Bale
Contact details of City Coordinator (Phone number and email ID)	9850195276
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Pune

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Sonya Surnar
Contact details of City Coordinator	Pune@liveabilityindex.co.in 9075322079
Date of the State Workshop	17th March ‘2018 Completed
Name and designation of the Nodal Officer from the ULB	Mr Ashish Agarwal Central Nodal Officer Smart Cities
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	50 %

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	MSEB			
2	Health			
3	Education			
4	Forest			
5	Environment			
6	Town Planning			
7	Police			
8	Sports			
9	Smart City	YES	2	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

Pimpri Chinchwad

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Nikhil Deshmane
Contact details of City Coordinator (Phone number and email ID)	8888970638
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	Yet to be finalized
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Nagpur

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	Atul Choudhury
Contact details of City Coordinator (Phone number and email ID)	9922371375
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	Yet to be finalized
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

VASAI VIRAR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	
Contact details of City Coordinator	
Date of the State Workshop	17th March '2018 Completed
Name and designation of the Nodal Officer from the ULB	Harshal Patil IT Engineer
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	50 %

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1				
2	Health	1		
3	Education	1		
4	Forest			
5	Environment			
6	Town Planning	1		
7	Police			
8	Sports	1		
9	Municipal Commissionerate	3		
10				
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12				
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	yes
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

Aurangabad

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9094881199
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	Yet to be finalized
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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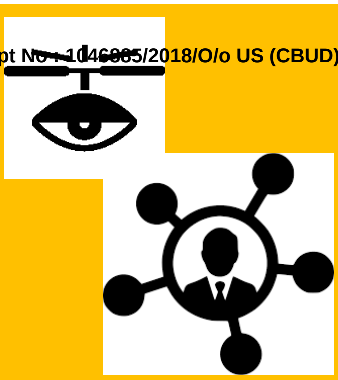
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	



Amravati

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9094881199
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	Yet to be finalized
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Solapur

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Arindam Ghosh
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9094881199
Date of the State Workshop	17/3/2018
Name and designation of the Nodal Officer from the ULB	Yet to be finalized
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1		Y	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

IMPHAL

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	23.03.2018
Name of the State Coordinator	Sushil Huidrom
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9862584011
Date of the State Workshop	‘to be confirmed”
Name and designation of the Nodal Officer from the ULB	None
Secondary data entry mode (online portal/offline through excel)	Not started
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Manipur Housing and Urban Development Department	Y	3	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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SHILLONG

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	27 March 2018
Name of the State Coordinator	Smti Lata.S.Keith
Name of City Coordinator	Isaac Aibor Ryndem, Nibahun Diengdoh
Contact details of City Coordinator (Phone number and email ID)	Isaac-9774361251, isaac.Aibor@gmail.com, Nibahun-7085194517, diengdohnibahun@gmail.com
Date of the State Workshop	19th March 2018
Name and designation of the Nodal Officer from the ULB	Shri B.Laloo (Joint-Director of Urban Affair, Meghalaya Shillong)-9863282347
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	None

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Directorate of Urban Affair, Meghalaya Shillong	Yes	12	Shri B.Laloo
2	Shilllong Municipal Board,	Yes	3	Not Identify yet
3	Meghalaya Power Distribution Corporation Ltd, Shillong	Yes	3	Not Identify yet
4	Public Work Department, Shillong	Yes	2	Not Identify yet
5	Public Health Engineering, Department, Shillong	Yes	1	Dr. A.War
6	Department of School Education and Literacy, Shillong	Yes	1	Shri P. Ryngksai (Joint Director of School Education and Literacy)
7	Health and Services Department Shillong	Yes	1	Dr. D. War (Joint Director)
8	Head of Reneweble and Non-Conventional Energy, Shillong	Yes	2	Not Identify yet
9	State Disaster Management, Shillong	Yes	2	Not identify yet
10	Meghalaya State Transport Department, Shillong	Yes	2	Not Identify yet

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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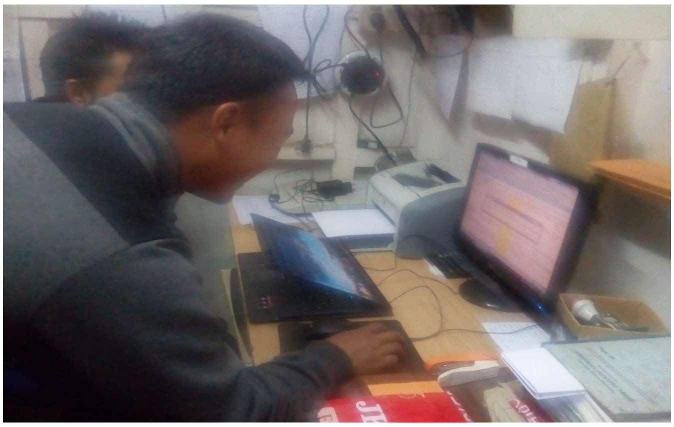
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes, National Health Mission
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	No, The Meghalaya operate buses outside the city
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes, It is being tested in Mawphlang Water Treatment Plan
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes, data is maintained in State Pollution Control Board
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	There is no Inventory of all Public Surface water bodies in the City.

Insert photographs, if any

Meghalaya State TransportDepartment Shillong



Superintendent of Police Traffic Shillong

Aizawl

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Albert Lalzikpuia Ralte
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	7005562258 albertdasaint.aer@gmal.com
Date of the State Workshop	16 March 2018
Name and designation of the Nodal Officer from the ULB	Not yet appointed
Secondary data entry mode (online portal/offline through excel)	offline
Percentage of data entry completed	Not available

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Health	Y	2	Not appointed
2	Disaster Management	Y	1	Not appointed
3	MPCB	Y	1	Not appointed
4	Transport	Y	3	Not appointed
5	Home	N	0	Not appointed
6	UD&PA	Y	4	Not appointed
7	Aizawl Municipal Council	Y	2	Not appointed
8	Art&Culture	N	0	Not appointed
9	Public Health Engineering	Y	1	Not appointed
10	Tourism	N	0	Not appointed
11	Forest	N	0	Not appointed
12	Electricity/Discom	Y	1	Not appointed
13	Education	Y	0	Not appointed
14	Taxation	Y	2	Not appointed

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Not Available
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not Available
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not Available
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not Available
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not Available

Kohima

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	03.04.2018 (Sheduled)
Name of the State Coordinator	Surenthung Enny
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	7005659160
Date of the State Workshop	Scheduled 4.04.2018
Name and designation of the Nodal Officer from the ULB	Not yet appointed
Secondary data entry mode (online portal/offline through excel)	offline
Percentage of data entry completed	Not available

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Not Available
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not Available
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not Available
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not Available
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not Available

Bhubaneswar (BMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	7th March, 2018
Name of the State Coordinator	Ranjit Kumar Sahoo
Name of City Coordinator	Ranjit Kumar Sahoo
Contact details of City Coordinator (Phone number and email ID)	9437383446, rksindev@gmail.com
Date of the State Workshop	15.3.2018
Name and designation of the Nodal Officer from the ULB	Dr. Krishana Kumar
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Control Board	Y	2	Y
2	Development Authority	Y	3	Y
3	Discoms/ Electricity Board	Y	2	Y
4	State Disaster Management Authority	Y	2 2	N
5	State Education Department	Y	2	N
6	State Health Department	Y	3	Y
7	State Renewable Energy	Y	2	Y
8	State Sales/ Commercial tax Department	Y	1	Y
9	State Transport Authority	Y	2	Y
10	Town and Country Planning Department	Y	3	N
11	Traffic and Police Department	Y	2	N
12	Urban Local Body	Y	20	Y
13	Department of Culture	y	1	N
14				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Data not Updated
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Data not Updated
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Data not Updated
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

Rourkela (RMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	7th March, 2018
Name of the State Coordinator	Ranjit Kumar Sahoo
Name of City Coordinator	Manmath Kumar Bhanja deo
Contact details of City Coordinator (Phone number and email ID)	9437092302, mkbdeo@gmail.com
Date of the State Workshop	15.3.2018
Name and designation of the Nodal Officer from the ULB	Rasmita Panda
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Control Board	Y	1	Y
2	City Development Authority	Y	3	Y
3	Discoms/ Electricity Board	Y	2	Y
4	Urban Local Body	Y	12	Y
5	Education Department	Y	2	Y
6	Health Department	Y	2	Y
7	Renewable Energy	Y	1	N
8	Sales/ Commercial tax Department	Y	2	N
9	State Transport Authority	Y	3	Y
10	Town and Country Planning Department	Y	2	Y
11	Traffic and Police Department	Y	1	N
12	Disaster Management Authority	Y	1	N
13	Department of Culture	y	1	N
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Data not Updated
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Data not Updated
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Data not Updated
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

PUDUCHERRY

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM: 23/03/2018	21.03.2018
Name of the State Coordinator	
Name of City Coordinator :	Siva Mathiyazhagan
Contact details of City Coordinator (Phone number and email ID) :	9626804025555 | Puducherry@liveabilityindex.co.in
Date of the State Workshop	14.03.2018
Name and designation of the Nodal Officer from the ULB	Sivabalane, Asst. Engineer
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	60%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	2	A. Sivabalane AE& Nodal Officer 9443535930 drsivabalan1967@gmail.com
2	Development Authority	Y	2	
3	DISCOM/ Electricity Board	Y	2	
4	State Disaster Management Authority	Y	2	
5	State Education Department	Y	3	
6	State Health Department	Y	3	
7	State Renewable Energy	Y	2	
8	Development Agency & Town and Country Planning	Y	3	
9	Traffic and Police Department	Y	3	
10	Urban Local Body	Y	6	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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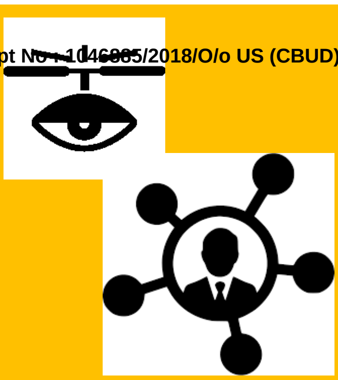
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Yet to receive the data
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	YES (Data has been collected)
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES (Data has been collected)
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yet to receive the data
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yet to receive the data



Amritsar

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	
Name of the State Coordinator	Suriti Sachdeva
Name of City Coordinator	Paras Popli
Contact details of City Coordinator (Phone number and email ID)	9888308926
Date of the State Workshop	19.03.2018
Name and designation of the Nodal Officer from the ULB	Sorab Arora
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Jalandhar

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	
Name of the State Coordinator	Suriti Sachdeva
Name of City Coordinator	Deepak Sharma
Contact details of City Coordinator (Phone number and email ID)	9781585974
Date of the State Workshop	19.03.2018
Name and designation of the Nodal Officer from the ULB	Dr. Shikha Bhagat Joint Commissioner
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Ludhiana

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	
Name of the State Coordinator	Suriti Sachdeva
Name of City Coordinator	Suriti Sachdeva
Contact details of City Coordinator (Phone number and email ID)	7838274376
Date of the State Workshop	19.03.2018
Name and designation of the Nodal Officer from the ULB	Dr. Poonampreet Kaur Joint Commissioner
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

JODHPUR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9th March 2018
Name of the State Coordinator	Debajyoti Chakraborty
Name of City Coordinator	Rajshri Tak
Contact details of City Coordinator (Phone number and email ID)	rajshreetak21@gmail.com 7023796925
Date of the State Workshop	23rd March 2018
Name and designation of the Nodal Officer from the ULB	Anil Mathur
Secondary data entry mode (online portal/offline through excel)	offline
Percentage of data entry completed	Not sure, needs to be followed up

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB		10	Anil Mathur
2	Health		1	
3	Transport		1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Not yet explored
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Not yet explored
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Not yet explored
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Not yet explored
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not yet explored

Ajmer Municipal Coorporation

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9th March 2018
Name of the State Coordinator	Debajyoti Chakraborty
Name of City Coordinator	Deepti Singh
Contact details of City Coordinator (Phone number and email ID)	9928427785
Date of the State Workshop	Please indicate the date of the workshop if completed or scheduled or 'to be confirmed"
Name and designation of the Nodal Officer from the ULB	Jyoti Kakwani
Secondary data entry mode (online portal/offline through excel)	Data entry started offline, the update needs to be taken from respective departments
Percentage of data entry completed	update needs to be taken from respective departments

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Power discom	Yes	2	CP Gandhi 9413364918
2	Health	Yes	3	Balbeer Singh Data manager (9829860466)
3	Education	Yes	1	No nominated
4	Traffic	Yes	1	Raju Chaudary (Constable)
5	ULB	Yes	6	Jyoti Kakwani
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	To be explored
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	To be explored
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	To be explored
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	To be explored
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	To be explored

Jaipur Municipal Coorporation

INCEPTION REPORT

Date: 12th March, 2018

Particulars	Details
Commencement of CRM:	12 March 2018
Name of the State Coordinator	Mr. Debajyoti Chakraborty
Name of City Coordinator	Mr. Debajyoti Chakraborty
Contact details of City Coordinator (Phone number and email ID)	Mo 9174642502 email dev2015bpl@gmail.com
Date of the State Workshop	21 March, 2018
Name and designation of the Nodal Officer from the ULB	Dr. Harsai Meena Additional commissioner 9413373747
Secondary data entry mode (online portal/offline through excel)	Offline first
Percentage of data entry completed	Will start from 28 March 2018

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Transport	Y	One	Not Finalised
2	Comm.Tax	Y	One	Not Finalised
3	Municipality	Y	Seven	Yes, Vaibhav
4	Town & Country planning	Y	One	Yes, Navang Sharma
5	Renewable energy	Y	One	Yes, Rajeev Singh
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Not explored yet
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not explored yet
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not explored yet
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not explored yet
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not explored yet

Insert photographs, if any

GOVERNMENT OF RAJASTHAN
STATE ORIENTATION WORKSHOP
ASSESSMENT OF LIVEABILITY INDICES

GOVERNMENT OF RAJASTHAN

Kota Municipal Coorporation

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9th March 2018
Name of the State Coordinator	Mr.Debajyoti Chakraborty
Name of City Coordinator	Mr. Kulwant Gaur
Contact details of City Coordinator (Phone number and email ID)	stardrkota@gmail.com 8386900102
Date of the State Workshop	21st March 2018
Name and designation of the Nodal Officer from the ULB	NK Sharma Smart city project executive
Secondary data entry mode (online portal/offline through excel)	Not started yet
Percentage of data entry completed	Not started yet

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Electricity RSEB / KEDL	Yes	2	**Not officially nominated** BL Pacherwal (9413365732) Anit Singhal (PA to KEDL head) 2324192
2	ULB	Yes	4	**Not officially nominated** NK Sharma (9950454985)
3	Transport	Yes	1	**Not officially nominated** Dharmender (9413014555)
4	Education	Yes	1	
5	Health	Yes	1	
6	Traffic and Poice Department	Yes	1	Mr. Pankaj Singh (9530443233)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	To be explored
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	To be explored
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	To be explored
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	To be explored
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	To be explored

UDAIPUR

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator	Mr. Debajyoti Chakraborty
Name of City Coordinator	Beena Chittora
Contact details of City Coordinator (Phone number and email ID)	9672776000 beena.pariwala@gmail.com
Date of the State Workshop	21st March 2018
Name and designation of the Nodal Officer from the ULB	Manish Arora Executive engineer 8003377650
Secondary data entry mode (online portal/offline through excel)	Not initiated yet
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	yes	3	Mr.Manish Arora (8003377650)
2				Letters to all other department will be issued on 28 March 2018 and officers will be nominated accordingly
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Not yet explored
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not yet explored
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not yet explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not yet explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not yet explored

GANGTOK

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Dr.latashori k
Name of City Coordinator	Susmitra Chettri
Contact details of City Coordinator (Phone number and email ID)	8145886504
Date of the State Workshop	Completed 20/03/2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	No
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes data available, Not as per CRM norm
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Data Available, not yet fill up in the portel.

NAMCHI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	28/03/2018
Name of the State Coordinator	Dr.latashori k
Name of City Coordinator	Sushma pradhan
Contact details of City Coordinator (Phone number and email ID)	9593265046/pradhansushma12@gmail.com
Date of the State Workshop	Completed 20/03/2018
Name and designation of the Nodal Officer from the ULB	Margaret rai Stenographer
Secondary data entry mode (online portal/offline through excel)	Online
Percentage of data entry completed	7%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Town and country planning department	Yes	5	Navin rai
2	ULB	Yes	3	Margaret rai
3	Development authority	Yes	5	Navin rai
4	Pollution control board	Yes	1	Not yet appointed/city coordinator following up regularly
5	Disoms & electricity board	Yes	1	Not yet appointed/city coordinator following up regularly
6	State disaster managements	Yes	1	Not yet appointed/under process/city coordinator following up regularly
7	State education department	Yes	1	Not yet appointed/ under process/ city coordinator following up regularly

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State health department	Yes	1	Not yet appointed/under process/city coordinator following up regularly
2	State renewable energy department	Yes	1	Not yet appointed/under process/city coordinator following up regularly
3	State sales and commercial tax	No		Not yet appointed
4	Traffic and police department	Yes	1	Not yet appointed/city coordinator following up regularly
5	Transport authority	Yes	1	Not yet appointed/city coordinator following up regularly
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	No
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes data available, Not as per CRM norm
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Data Available, not yet fill up in the portel.

GREATER CHENNAI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	22.03.18
Name of the State Coordinator	Mrs. Uma Ravikumar
Name of City Coordinator	K.J.Alex
Contact details of City Coordinator (Phone number and email ID)	78 45 78 999 3 aj62129@gmail.com
Date of the State Workshop	12.03.2018
Name and designation of the Nodal Officer from the ULB	Mr.B.V.Babu. E.E Special Officer
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	Not Available

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Education	Y	3	YES
2	Health	Y	2	YES
3	Economy and Employment (Finance/Labour	Y	2	YES
4	State Disaster Management	Y	2	YES
5	Slum Clearance Board	Y	3	YES
6	District Employment Office	Y	1	YES
7	Census	Y	1	YES
8	State Transport	Y	2	YES
9	TTDC	Y	2	YES
10	Commercial Tax	Y	2	YES
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS? YES	Data has been collected in all the below cases, but not shared ,
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan. YES	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens? YES	Data has been collected
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms? YES	Data has been collected
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city. YES b) Designated best use for each public surface water body in the city. YES c) Data on number of tests conducted for each public surface water body. YES	Data has been collected

COIMBATORE

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE 09-03-2018
Name of the State Coordinator	Padma Parthasarathy
Name of City Coordinator	K.R.Srinivasan
Contact details of City Coordinator (Phone number and email ID)	9364463636 srirayappan@gmail.com
Date of the State Workshop	12-3-2018
Name and designation of the Nodal Officer from the ULB	Mr.Natarajan Superintending Engineer
Secondary data entry mode (online portal/offline through excel)	Online and Offline
Percentage of data entry completed	14%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Electricity Board	Yes	1	
2	Tamilnadu state Transport corporation	Yes	1	
3	Local Planning Authority	Yes	1	
4	City Education Office	Yes	1	
5	City Health office	Yes	1	
6	Tamil Nadu Pollution Control Board	Yes	1	
7	City Police Department	Yes	1	
8	Urban Local Body IT Department	Yes	1	
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	The Line department meeting was held on 27TH March 2018 the time line fixed for submit secondary data on 5th April 2018 hence **So for not get any secondary Data**
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	The Line department meeting was held on 27TH March 2018 the time line fixed for submit secondary data on 5th April 2018 hence **So for not get any secondary Data**
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	The Line department meeting was held on 27TH March 2018 the time line fixed for submit secondary data on 5th April 2018 hence **So for not get any secondary Data**
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	The Line department meeting was held on 27TH March 2018 the time line fixed for submit secondary data on 5th April 2018 hence **So for not get any secondary Data**
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	The Line department meeting was held on 27TH March 2018 the time line fixed for submit secondary data on 5th April 2018 hence **So for not get any secondary Data**

MADURAI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	10.03.2018
Name of the State Coordinator	Ms.Padma Parthasarathy
Name of City Coordinator	Dr.S.Prathiban
Contact details of City Coordinator (Phone number and email ID)	9787776601
Date of the State Workshop	12-03-2018
Name and designation of the Nodal Officer from the ULB	Mr.A.Mathuram
Secondary data entry mode (online portal/offline through excel)	Online /
Percentage of data entry completed	23

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Tamilnadu Pollution Control Board	N		Communication sent to all line department regarding data upload and secondary data
2	Regional Transport Office (North)	N		
3	Regional Transport Office (South)	N		
4	Regional Transport Office (Central)	N		
5	Commercial Taxes Department	N		
6	Electricity Board Department	N		
7	Traffic and Police Department	N		
8	State Disaster Authority	N		
9	Education Department	N		
10	Health Department	N		
11	Renewable Energy Department	N		

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Town and Country Planning Department	N		
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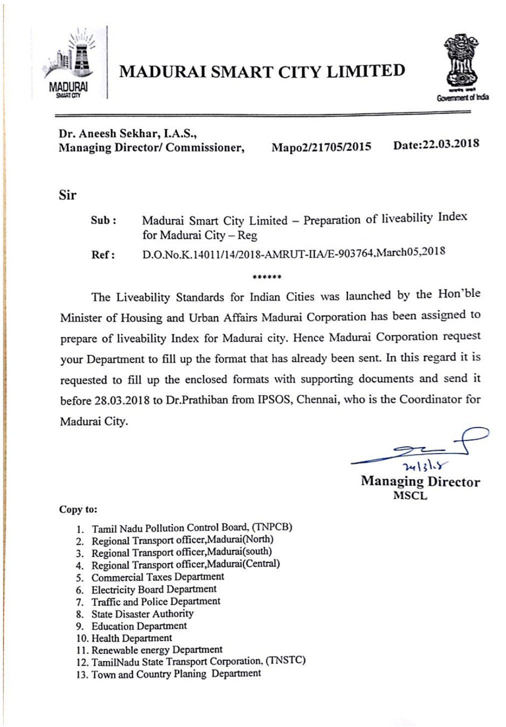
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

Insert photographs, if any



MADURAI SMART CITY

MADURAI SMART CITY LIMITED

Government of India

Dr. Aneesh Sekhar, I.A.S.,
Managing Director/ Commissioner, **Mapo2/21705/2015** **Date:22.03.2018**

Sir

Sub : Madurai Smart City Limited – Preparation of liveability Index for Madurai City – Reg

Ref : D.O.No.K.14011/14/2018-AMRUT-IIA/E-903764,March05,2018

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The Liveability Standards for Indian Cities was launched by the Hon'ble Minister of Housing and Urban Affairs Madurai Corporation has been assigned to prepare of liveability Index for Madurai city. Hence Madurai Corporation request your Department to fill up the format that has already been sent. In this regard it is requested to fill up the enclosed formats with supporting documents and send it before 28.03.2018 to Dr.Prathiban from IPSOS, Chennai, who is the Coordinator for Madurai City.

24/3/18
Managing Director
MSCL

Copy to:

1. Tamil Nadu Pollution Control Board, (TNPCB)
2. Regional Transport officer,Madurai(North)
3. Regional Transport officer,Madurai(south)
4. Regional Transport officer,Madurai(Central)
5. Commercial Taxes Department
6. Electricity Board Department
7. Traffic and Police Department
8. State Disaster Authority
9. Education Department
10. Health Department
11. Renewable energy Department
12. TamilNadu State Transport Corporation, (TNSTC)
13. Town and Country Planing Department

S DINDIGUL

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	10.03.2018
Name of the State Coordinator	Mrs.Padmaparthasarathy
Name of City Coordinator	D Chitra Sivakumar
Contact details of City Coordinator (Phone number and email ID)	982144899 sivaspeech@gmail.com
Date of the State Workshop	Completed 12/3/2018
Name and designation of the Nodal Officer from the ULB	N.Manohar Commissioner Dindigul Corporation
Secondary data entry mode (online portal/offline through excel)	No
Percentage of data entry completed	47

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Urban local body	Yes	6	
2	Education department	Yes	1	
3	Transport department	Yes	1	
4	Pollution control department	Yes	1	
5	Commercial tax department	Yes	1	
6	Police and Traffic department	Yes	1	
7	Tourism department	Yes	1	
8	Public Health	Yes	1	
9	Revenue	Yes	1	
10	District sports officer	Yes	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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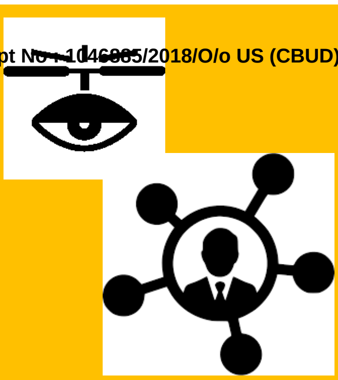
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	No
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	No
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes data to be collected
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes data to be collected
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes data to be collected



ERODE

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	12.03.2018
Name of the State Coordinator	Mrs. Uma Ravishankar
Name of City Coordinator	Mr. M.Sachithanandam
Contact details of City Coordinator (Phone number and email ID)	7305955855 sachithanandamm@gmail.com
Date of the State Workshop	12-3-2018
Name and designation of the Nodal Officer from the ULB	Mr.M.Pichaimuthu J E
Secondary data entry mode (online portal/offline through excel)	offline through excel
Percentage of data entry completed	9%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Education Department	Y	1	Thiru.R.Balamurali, Chief Educational Officer, Erode-638001
2	Traffic and Police Department	Y	1	A.SEKAR, DEPUTY SUPERINTENDENT OF POLICE, TOWN TRAFFIC , ERODE.
3	Central / State Pollution Control Board	Y	1	
4	Discoms / Electricity Board	Y	1	
5	State Health Department	Y	1	
6	State Sales / Commercial Taxes Department	Y	1	
7	Transport Authorities	Y	1	
8	Urban Local Body	N		Mr. M.Pichaimuthu JE Erode Corporation
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Insert photographs, if any

THOOTHUKKUDI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	10.03.2018
Name of the State Coordinator	Mrs.Uma Ravisankar
Name of City Coordinator	P.Sridhar
Contact details of City Coordinator (Phone number and email ID)	9003428887,mswsridhar@gmail.com
Date of the State Workshop	12.03.18
Name and designation of the Nodal Officer from the ULB	Mr.Subramani,E1
Secondary data entry mode (online portal/offline through excel)	offline
Percentage of data entry completed	0%(Started entering in excel)

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	State Pollution control board	N		Will be held on 3.4.18
2	Development authority	N		Will be held on 3.4.18
3	Electricity board	N		Will be held on 3.4.18
4	State Disasater Management authority	N		Will be held on 3.4.18
5	State education department	N		Will be held on 3.4.18
6	State health department	N		Will be held on 3.4.18
7	State renewable energy department	N		Will be held on 3.4.18
8	State sales/Commercial taxes department	N		Will be held on 3.4.18
9	Town and Country planning department	N		Will be held on 3.4.18
10	Traffic police department	N		Will be held on 3.4.18
11	Transport authority	N		Will be held on 3.4.18
12	ULB	N		Will be held on 3.4.18

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	NO
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	NO
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes

TIRUPUR)

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM: Tiruppur District	DATE - 9 March 2013
Name of the State Coordinator Mrs. Uma Ravikumar	
Name of City Coordinator - D. Sivakumar	
Contact details of City Coordinator (Phone number and email ID)	Mobile – 9994783417 Email – siva.cfar@gmail.com
Date of the State Workshop - 11th - 13th March 2018	
Name and designation of the Nodal Officer from the ULB - Mrs.Sowdhamani, Assistant Programmer	
Secondary data entry mode (online portal/offline through excel)	Both online & offline
Percentage of data entry completed 174 questions response uplodaed online 32 % Progress as on 28th March 2018	

Summary of Stakeholder Engagement

Name of departments/agency identified	Status of meetin g (Y/N)	R Total number of meeting s so far	Remarks, if any (state if nodal officer nominated)
Tamil Nadu State Transport corporation	Yes	1	In progress will update
District Chief Education	Yes	2	In progress will update
Commercial Tax	Yes	1	In progress will update
Tiruppur Development Authority	Yes	2	Mr. Mathivanan, AD
District Employment Office	Yes	1	In progress will update
City Health office	Yes	2	Dr. K. Boopathi, CHO
Traffic control of Police	Yes	1	In progress will update
Tamil Nadu Electricity Board	Yes	1	In progress will update
Public Health	Yes	1	In progress will update
DPH	Yes	1	In progress will update
School Education	Yes	2	In progress will update
Pollution Control Board	Yes	1	In progress will update
Accounts	Yes	2	
Revenue	Yes	2	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meeting s so far	Remarks, if any (state if nodal officer nominated)
1	Engineering	Yes	2	
2	IT Department	Yes	2	
3	Establishment	Yes	2	
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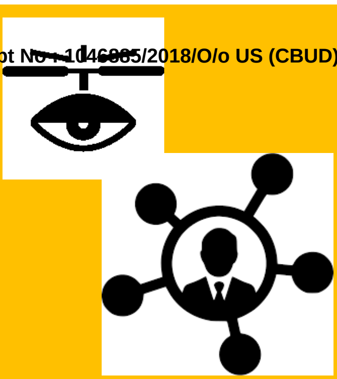
Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Collection in Progress
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Collection in Progress
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Collection in Progress
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Collection in Progress
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Data available and collection in progress

Insert photographs, if any

TIRUPPUR CITY MUNICIPAL CORPORATION



TIRUCHIRAPPALLI

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	12.03.2018
Name of the State Coordinator:	PADMA P
Name of City Coordinator :	Dr. R. SRIDHAR
Contact details of City Coordinator (Phone number and email ID)	7598266692 kareshridhar@gmail.com
Date of the State Workshop	12.03.2018
Name and designation of the Nodal Officer from the ULB	Mr. KANNAN, EXECUTIVE ENGINEER, TIRUCHIRAPPALLI CITY CORPORATION
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	8%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Transport	Yes	2	Mr. Loganathan
2	ULB	Yes	4	Mr. Kannan
3	Pollution control board	Yes	1	
4	Commercial Tax Department	Yes	1	
5	Tourism Department	Yes	1	
6	Public Health	Yes	2	
7	Education Department	Yes	1	
8	Police Department	Yes	1	
9	Revenue	Yes	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	YES
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	NO
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	NO
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

VELLOR

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	15.03.2018
Name of the State Coordinator	Ms.P. PADMA
Name of City Coordinator	S.RAMAMURTHY
Contact details of City Coordinator (Phone number and email ID)	9843326013 Ra_thy@hotmail.com
Date of the State Workshop	12.03.2018”
Name and designation of the Nodal Officer from the ULB	Dr.C.Vijayakumar
Secondary data entry mode (online portal/offline through excel)	online
Percentage of data entry completed	28%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Vellore Corpn	Y	1	First Time Log in
2	Vellore Corpn	y	1	Nodal Officer Nominated
3	DEO (SE)	Y	1	Nodal Officer Nominated
4	Vellore Corpn	Y	2	Data Collection Started
5	Vellore Corpn	Y	3	Livability – Excel Sheet Explained
6	DEO (EE)	Y	1	Livability – Excel Sheet Explained
7	AEO Urban & Rural	Y	1	Livability – Excel Sheet Explained
8	TANGEDCO	Y	1	Livability – Excel Sheet Explained
9	CPCB	Y	1	Livability – Excel Sheet Explained
10	DD HEALTH SERVICES	Y	1	Livability – Excel Sheet Explained
11	SP (POLICE)	Y	1	Livability – Excel Sheet Explained
12	RTO	Y	1	Livability – Excel Sheet Explained

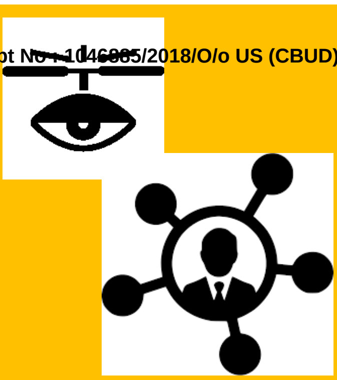
Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
15	TEDA	Y	1	Livability – Excel Sheet Explained
16	DC-Commercial Tax	Y	1	Livability – Excel Sheet Explained
17	DEO (EE)	Y	2	Assisting to fill the excel sheet
18	AEO Urban & Rural	Y	2	Assisting to fill the excel sheet
19	TANGEDCO	Y	2	Assisting to fill the excel sheet
20	CPCB	Y	2	Assisting to fill the excel sheet
21	DD HEALTH SERVICES	Y	2	Assisting to fill the excel sheet
22	SP (POLICE)	Y	2	Assisting to fill the excel sheet
23	RTO	Y	2	Assisting to fill the excel sheet
24	TOWN PLANNING	Y	2	Assisting to fill the excel sheet
25	DISASTER MGT	Y	2	Assisting to fill the excel sheet
26	TEDA	Y	2	Assisting to fill the

Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	NO
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	NO
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	a) YES b) NO c) NO

Insert photographs, if any

VELLORE CITY MUNICIPAL CORPORATION
(ISO 9001:2008 Certified)
வரவேற்பு
Pachaiyappa's Silks
-3-2018



Salem

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE 16/3/2018
Name of the State Coordinator :	Uma Ravikumar
Name of City Coordinator:	Ravindran.R
Contact details of City Coordinator (Phone number and email ID):	8122316554, Email:ravindranmsw@gmail.com
Date of the State Workshop	12/3/2018
Name and designation of the Nodal Officer from the ULB :	Mr.Ashokan EE
Secondary data entry mode (online portal/offline through excel) :	Online portal
Percentage of data entry	completed:9% Completed 51/547

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central pollution control dept	Today meeting	-	good support
2	Urban development Authority	Today meeting		
3	Electricity Board	Today meeting		
4	State disaster management	Today meeting		
5	Education department	Today meeting		
6	Health department	Today meeting		
7	State sales commercial tex	Today meeting		
8	Town and Country planning department	Today meeting		
9	Traffic and police Department	Today meeting		
10	Transport Department	Today meeting		
11	State Renewable energy development department	Today meeting		
12	ULB Departments	Today		

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	We waiting for this data
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	We waiting for this data
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	We waiting for this data
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	We waiting for this data
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	We waiting for this data

Tirunelveli

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE 16/3/2018
Name of the State Coordinator :	Uma Ravikumar
Name of City Coordinator:	C V Suresh kumar
Contact details of City Coordinator (Phone number and email ID):	9362251529
Date of the State Workshop	12/3/2018
Name and designation of the Nodal Officer from the ULB :	
Secondary data entry mode (online portal/offline through excel) :	offline
Percentage of data entry	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	We waiting for this data
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	We waiting for this data
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	We waiting for this data
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	We waiting for this data
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	We waiting for this data

Thanjavur

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE 16/3/2018
Name of the State Coordinator :	P Padma
Name of City Coordinator:	S. Jayaseelam
Contact details of City Coordinator (Phone number and email ID):	9486542225
Date of the State Workshop	12/3/2018
Name and designation of the Nodal Officer from the ULB :	
Secondary data entry mode (online portal/offline through excel) :	offline
Percentage of data entry	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Y	1	
2	Development Authority	Y	1	
3	DISCOM/ Electricity Board	Y	1	
4	State Disaster Management Authority	Y	1	
5	State Education Department	Y	1	
6	State Health Department	Y	1	
7	State Renewable Energy Development Agency	Y	1	
8	State Sales/ Commercial taxes department	Y	1	
9	State Transport Authority	Y	1	
10	Town and Country Planning	Y	1	
11	Traffic and Poice Department	Y	1	

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	We waiting for this data
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	We waiting for this data
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	We waiting for this data
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	We waiting for this data
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	We waiting for this data

GREATER WARANGAL (GWMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	09.03.2018
Name of the State Coordinator	P.C.Kasinath
Name of City Coordinator	V.N. Ravinder
Contact details of City Coordinator (Phone number and email ID)	9052399691 vn.ravinder@gmail.com
Date of the State Workshop	District Level Meeting yet to be confirmed
Name and designation of the Nodal Officer from the ULB	**Mr. Nageshwar** **Additional Commissioner**
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	5%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	No	0	Yes
2	Development Authority	No	0	No
3	DISCOM/ Electricity Board	No	0	Yes
4	State Disaster Management Authority	No	0	Yes
5	State Education Department	No	0	Yes
6	State Health Department	No	0	No
7	State Renewable Energy Development Agency	No	0	Yes
8	State Sales/ Commercial taxes department	No	0	Yes
9	State Transport Authority	No	0	Yes
10	Town and Country Planning	No	0	Yes
11	Traffic and Poilce Department	No	0	Yes
12	Urban Local Body	Yes	6	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	No
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes No No

KARIMNAGAR (KMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	09.03.2018
Name of the State Coordinator	P.C.Kasinath
Name of City Coordinator	B. Anil Kumar
Contact details of City Coordinator (Phone number and email ID)	82295695 anilkumar234b@gmail.com
Date of the State Workshop	District Level Meeting yet to be confirmed
Name and designation of the Nodal Officer from the ULB	**Mr. Kalyan** **Smart City Coordinator**
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	0%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	No	0	No
2	Development Authority	No	0	No
3	DISCOM/ Electricity Board	No	0	No
4	State Disaster Management Authority	No	0	No
5	State Education Department	No	0	No
6	State Health Department	No	0	No
7	State Renewable Energy Development Agency	No	0	No
8	State Sales/ Commercial taxes department	No	0	No
9	State Transport Authority	No	0	No
10	Town and Country Planning	No	0	No
11	Traffic and Poilce Department	No	0	No
12	Urban Local Body	Yes	8	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	No
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No No No

GREATER HYDERABAD (GHMC)

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	09.03.2018
Name of the State Coordinator	P.C.Kasinath
Name of City Coordinator	N. Padmarao
Contact details of City Coordinator (Phone number and email ID)	9492483675 padmarao775@gmail.com
Date of the State Workshop	16.03.2018 Hyderabad Workshop
Name and designation of the Nodal Officer from the ULB	**Bharathi Holikare IAS** **Additional Commissioner**
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	Around 25%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Central/ State Pollution Board	Yes	2	Yes
2	Development Authority	Yes	4	Yes
3	DISCOM/ Electricity Board	Yes	2	Yes
4	State Disaster Management Authority	Yes	1	Yes
5	State Education Department	Yes	2	Yes
6	State Health Department	Yes	0	Yes
7	State Renewable Energy Development Agency	Yes	0	Yes
8	State Sales/ Commercial taxes department	Yes	1	Yes
9	State Transport Authority	Yes	2	Yes
10	Town and Country Planning	Yes	3	Yes
11	Traffic and Poice Department	Yes	2	Yes
12	Urban Local Body	Yes	4	Yes
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yes
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes Yes Yes

Insert photographs, if any

AGARTALA

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	DATE: 27/3/2018
Name of the State Coordinator	Manidip Bandyopadhyay
Name of City Coordinator n/a	
Contact details of City Coordinator (Phone number and email ID)	8974879606 / manidipb@yahoo.com
Date of the State Workshop	27/03/2018
Name and designation of the Nodal Officer from the ULB	Sujit Sarkar, Clerical (LDC)
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	Yet to be started

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	AMC	Y	1	YES
2	HEALTH & FAMILY WELFARE	Y	1	YES
3	REVENUE SERVICES	Y	1	YES
4	TRAFFIC	Y	1	YES
5	POLICE	Y	1	YES
6	EDUCATION	Y	1	YES
7	DISCOM/ TSECL	Y	1	YES
8	DISASTER MANAGEMENT	Y	2	YES
9	VEHICLES / RTO	Y	1	YES
10	WATER SUPPLY AND SANITATION	Y	1	YES
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	NO
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	YES
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	YES
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	YES
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	YES

Insert photographs, if any

LUCKNOW

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9th March 2018
Name of the State Coordinator	Mr. SVP Pankaj
Name of City Coordinator	Mr. Rakesh Bhatt
Contact details of City Coordinator (Phone number and email ID)	7905075294
Date of the State Workshop	23rd March 2018
Name and designation of the Nodal Officer from the ULB	Mr. PK Srivastva 9415609558 bhattsharnam@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	17/547

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	DUDA	Yes	1	Nidhi Bajpai (8527300288)
2	Education (Basic education, secondary)	Yes	2	(Not officially appointed)
3	Health	Yes	2	Dr.s.k rawat (9839891770)
4	ULB	Yes	6	Mr. PK Srivastva 9415609558
5	Archeology	Yes	1	Mr Hashmi (Not officially appointed)
6	Environment	Yes	1	Pankaj Bhusan (9415188957)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Obtaining data from health department
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yet to be explored
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yet to be explored
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Yet to be explored
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yet to be explored

MORADABAD

INCEPTION REPORT

Date: 24th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	S.V.P.Pankaj
Name of City Coordinator –	Mr. Veeresh Kumar
Contact details of City Coordinator	veereshkgaur@gmail.com , 91 9219722776
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr.T.N. Mishra -9105900568, tninfinite@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	1	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	1	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

Agra

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9th March 2018
Name of the State Coordinator	Mr. SVP Pankaj
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9599318693
Date of the State Workshop	23rd March 2018
Name and designation of the Nodal Officer from the ULB	
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yet to be explored
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yet to be explored
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yet to be explored
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yet to be explored

ALIGARH

INCEPTION REPORT

Date: 24th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Mr. S.V.P.Pankaj
Name of City Coordinator –	Ramavtar Singh
Contact details of City Coordinator	sramavtar76@gmail.com 09012012510,
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. Santosh kumar sharma 8057141199 nnaligarh@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	1	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	1	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
13				
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

RAMPUR

INCEPTION REPORT

Date: 24th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Mr. S.V.P.Pankaj
Name of City Coordinator –	Rajesh Kumar
Contact details of City Coordinator	rajeshkumar1788@gmail.com , 9412185632
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. Ashwani Tripathi-9451071531-ashteawari@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	2	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	2	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	1	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
13	Musial commissioner Office	Yes	7	
14				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

Raebareli

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator	Mr. SVP Pankaj
Name of City Coordinator	Ms Shubha Shukla
Contact details of City Coordinator (Phone number and email ID)	Mo 9415173694 email sabla.rbl@gmail.com
Date of the State Workshop	23 March, 2018
Name and designation of the Nodal Officer from the ULB	Mr Prashant
Secondary data entry mode (online portal/offline through excel)	Not started yet
Percentage of data entry completed	Data entry will start from 2nd April 2018

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	yes	5	Yes, Prashant
2	Health	yes	1	Not officially nominated
3	Education	yes	1	Not officially nominated
4	Central/ State Pollution Board	yes	1	Yes, Manish Tripathi
5	Police	yes	2	Not officially nominated
6	Transport	yes	2	Not officially nominated
7	Power	yes	1	Not officially nominated
8	Commercial tax	yes	1	Not officially nominated
9	Town planning	yes	1	Not officially nominated
10	Development Authority	yes	2	Yes, Intejab Ahmed
11	DISCOM/ Electricity Board	yes	1	Yes, Mr. Fahad Ali
12				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Not explored yet
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	It is in place but has not yet been explored for the assessment exercise
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Not explored yet
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Not explored yet
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not explored yet

BARELI

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Mr. S.V.P. Pankaj
Name of City Coordinator –	Dimple Gaur
Contact details of City Coordinator -	dimple.gaur1234@gmail.com 9219742015
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. S.K. Ambedkar 7055519601,shivkumarambedkar65@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	3	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	1	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	2	
12	Project Manager (NEDA)	Yes	1	
13	Musial commissioner Office	Yes	10	
14				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

JHANSI

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Mr. S.V.P. Pankaj
Name of City Coordinator –	Ajay Singh
Contact details of City Coordinator -	ajay_mayurifd72@yahoo.com, 9415033356
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Smt. Sandhya Dhamani - 88882936677,sandhya.spa@gmail.com
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	1	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	1	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
13	Musial commissioner Office	Yes	5	
14				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

SAHRANPUR

INCEPTION REPORT

Date: 24th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	S.V.P.Pankaj
Name of City Coordinator –	Dhananjay Saxena
Contact details of City Coordinator	saxena.jay28@gmail.com 9795758782
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. S. K. Garg-skgarg7898@gmail.com, 9891805858
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	1	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	1	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	2	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
13				
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Yes
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

KANPUR

INCEPTION REPORT

Date: 24th March, 2018

Particulars	Details
Commencement of CRM:	DATE
Name of the State Coordinator	Mr. S.V.P.Pankaj
Name of City Coordinator –	Meenakshi Dixit
Contact details of City Coordinator	meenakshi.social15@gmail.com 9795122724
Date of the State Workshop	23-3-2018
Name and designation of the Nodal Officer from the ULB	Mr. Maneesh Singh- 8601800801,
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	S.S.P Office Moradabad	Yes	1	
2	Development Authority	Yes	2	
3	Addl. District Magistrate F &.R	Yes	1	
4	Superintendent Of Traffic **Police**	Yes	1	
5	C.M. O	Yes	1	
6	Chief En. Electricity board Moradabad	Yes	1	
7	Regional transport officer	Yes	1	
8	commissioner sales tax	Yes	1	
9	Executive engineer Pulsation Control	Yes	2	
10	B.S.A (Primary Education)	Yes	1	
11	D.I.O.S	Yes	1	
12	Project Manager (NEDA)	Yes	1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Yes
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	No
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	No

Varanasi

INCEPTION REPORT

Date: 9th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator -	Pankaj
Name of City Coordinator-	Ms Ragini Singh
Contact details of City Coordinator (Phone number and email ID)	7007907773 (raginisingh1973@gmail.com)
Date of the State Workshop	23 March 2018
Name and designation of the Nodal Officer from the ULB	Mr Anupam
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	Not started yet , will only commence on 28 March 2018

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Urban Local Body	yes	2	Yes
2	Pollution control board		2	Officially not nominated
3	Electricity Board		1	Officially not nominated
4	Health Department		3	Officially not nominated
5	Tourism		1	Officially not nominated
6	Disaster Management		2	Officially not nominated
7	Commercial tax		1	Officially not nominated
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	NA
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	NA
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	NA
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	NA
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	NA

MEERUT

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	Details from 9th March 2018 to 24th March 2018
Name of the State Coordinator	Mr. Pankaj
Name of City Coordinator	Mr Rakesh Bhatt
Contact details of City Coordinator (Phone number and email ID)	9044594538 bhattsharnam@gmail.com
Date of the State Workshop	23rd March2018
Name and designation of the Nodal Officer from the ULB	Mr Manoj Tripathi (9451206800)
Secondary data entry mode (online portal/offline through excel)	OFFLINE
Percentage of data entry completed	55/547

Summary of Stakeholder Engagement

Receipt No : 1046885/2018/O/o US (CBUD)

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB	yes	5	Mr Manoj Tripathi (9451206800)
2	Transport		1	Not appointed
3	Electricity		1	Not appointed
4	Health		1	Not appointed
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	Not explored yet
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not explored yet
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not explored yet
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not explored yet
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not explored yet

GHAZIABAD

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator	Mr.Pankaj
Name of City Coordinator	Akhilesh Srivastava
Contact details of City Coordinator (Phone number and email ID)	akvastava1986@gmail.com 8077682032
Date of the State Workshop	23 March 2018
Name and designation of the Nodal Officer from the ULB	Moinuddin Chief engineer (9821441185)
Secondary data entry mode (online portal/offline through excel)	online
Percentage of data entry completed	13%

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	ULB		7	
2	Ghaziabad Development Authority		1	
3	Traffic		3	
4	Pollution control Board		2	
5	Water supply		1	
6	Town planning		1	
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** Average response time in case of health emergencies	Does the city have an EMRS?	Not explored yet
2	**11.3** Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	Not explored yet
3	**12.3** Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	Not explored yet
4	**15.4** Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	Not explored yet
5	**15.5** Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not explored yet

ALLAHABAD

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	9 March 2018
Name of the State Coordinator	Mr. Pankaj
Name of City Coordinator	Amir Rasheed
Contact details of City Coordinator (Phone number and email ID)	amir102@rediffmail.com 8934914683
Date of the State Workshop	23 March 2018
Name and designation of the Nodal Officer from the ULB	Harikesh Chaurasia (7408422303)
Secondary data entry mode (online portal/offline through excel)	Offline
Percentage of data entry completed	50/547

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Health department	yes	2	Not appointed yet
2	ULB	Yes	6	Harikesh Chaurasia (7408422303)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3** **Average response time in case of health emergencies**	Does the city have an EMRS?	Not explored yet
2	**11.3** **Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	Not explored yet
3	**12.3** **Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Not explored yet
4	**15.4** **Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Not explored yet
5	**15.5** **Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Not explored yet

DEHRADUN

INCEPTION REPORT

Date: 27th March, 2018

Particulars	Details
Commencement of CRM:	07.03.2018
Name of the State Coordinator	Alok Thapliyal
Name of City Coordinator	
Contact details of City Coordinator (Phone number and email ID)	9690023194,
Date of the State Workshop	15th March 2018
Name and designation of the Nodal Officer from the ULB	Neeraj Joshi (Additional Municipal Commissioner)
Secondary data entry mode (online portal/offline through excel)	Offline through excel
Percentage of data entry completed	Excel sent to all the departments who in turn have started to fill in the data

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
1	Nagar Nigam	Y	2	Mr. Dharmesh
2	Health Department	Y	2	Mr. Bimal Maurya
3	Pollution Control Board	Y	2	Mr. S.S. Rana
4	Police Department	Y	1	Mrs. Pushpa Rautela
5	Mussooriee Dehradun Development Authority	Y	1	Mrs. Khulbe (Town planner) and Mr. Sanjeevan Soontha (system Administrator) have been appointed for filling up the data.
6	UREDA	Y	1	Mr. A.K. Tyagi
7	Education Department	Y	1	Dr. Anand
8	Transport	Y	1	
9	Country and Town Planning Department	Y	1	Mr. S.K. Pant
10				

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	**4.3 Average response time in case of health emergencies**	Does the city have an EMRS?	Yes
2	**11.3 Mode share of public transport**	Does the city have a Comprehensive City Mobility Plan	
3	**12.3 Quality of water supplied**	Does the city test the quality of drinking water supplied to the citizens?	Yes
4	**15.4 Level of noise pollution**	Does the city has data on noise pollution as per CPCB norms?	Yes
5	**15.5 Quality of water in public surface water bodies**	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	Yes Yes (single river Suswa)

Howrah

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	Yet to commence officially pending clearance from the office of the Principal Secretary (UD), Govt of WB
Name of the State Coordinator	UDITENDU DUTT-MAZUMDAR
Name of City Coordinators	Uditendu Dutt-Mazumdar
Contact details of City Coordinator (Phone number and email ID)	HOWRAH :- Cell : 9830093771; Email – arunodit@hotmail.com
Date of the State Workshop	Tentatively scheduled for 3rd. April, 2018
Name and designation of the Nodal Officer from the ULB	To be appointed
Secondary data entry mode (online portal/offline through excel)	
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Kolkata

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	Yet to commence officially pending clearance from the office of the Principal Secretary (UD), Govt of WB
Name of the State Coordinator	UDITENDU DUTT-MAZUMDAR
Name of City Coordinators	Sonali Guha
Contact details of City Coordinator (Phone number and email ID)	Cell : 9433092567 Email – sonali_101@hotmail.com
Date of the State Workshop	Tentatively scheduled for 3rd. April,
Name and designation of the Nodal Officer from the ULB	To be appointed
Secondary data entry mode (online portal/offline through excel)	No comments
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

Durgapur

INCEPTION REPORT

Date: 28th March, 2018

Particulars	Details
Commencement of CRM:	Yet to commence officially pending clearance from the office of the Principal Secretary (UD), Govt of WB
Name of the State Coordinator	UDITENDU DUTT-MAZUMDAR
Name of City Coordinators	DURGAPUR : Joseph Dinabandhu Das
Contact details of City Coordinator (Phone number and email ID)	Cell : 8334080028 Email - joseph.kolkata@gmail.com
Date of the State Workshop	Tentatively scheduled for 3rd. April, 2018,
Name and designation of the Nodal Officer from the ULB	To be appointed
Secondary data entry mode (online portal/offline through excel)	No comments
Percentage of data entry completed	

Summary of Stakeholder Engagement

Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Sl. No.	Name of departments/agency identified	Status of meeting (Y/N)	Total number of meetings so far	Remarks, if any (state if nodal officer nominated)
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Status of secondary data availability on select indicators

Sl. No.	Indicator number and description	Particular	Status of data
1	4.3 Average response time in case of health emergencies	Does the city have an EMRS?	
2	11.3 Mode share of public transport	Does the city have a Comprehensive City Mobility Plan	
3	12.3 Quality of water supplied	Does the city test the quality of drinking water supplied to the citizens?	
4	15.4 Level of noise pollution	Does the city has data on noise pollution as per CPCB norms?	
5	15.5 Quality of water in public surface water bodies	Does the city has a) inventory of all public surface water bodies in the city b) Designated best use for each public surface water body in the city c) Data on number of tests conducted for each public surface water body	

K-14012/101(11)/2017- SCM-III(V)-pt-2
Government of India
Ministry of Housing & Urban Affairs
(CBUD Division)
****

Nirman Bhawan, New Delhi
Dated: 28th March 2018

To

The Pay and Accounts Officer (Secretariat),
Ministry of Housing & Urban Affairs,
Nirman Bhawan, New Delhi.

Subject: - Payment of **Rs.2,18,85,640/-(excl. Taxes) [Rs. Two Crore Eighteen Lakh Eighty-Five Thousand Six Hundred and Forty]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities.

Sir,

I am directed to convey the sanction of the Competent Authority for Payment of **Rs.2,18,85,640/-(excl. Taxes) [Rs. Two Crore Eighteen Lakh Eighty-Five Thousand Six Hundred and Forty]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities under CBUD project funded by World Bank. the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The details of the payment are as under:-

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released**
			Fee	GST@18 %	**Fee**
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640	39,39,415	2,18,85,640/- (excl GST) only
	Grand total to be released				**Rs.2,18,85,640/- (Excl GST)**

2. Administration Section is requested to deduct TDS as per provision on Rs. 2,18,85,640/- (excl. Taxes).

3. The e-payment may be drawn in favour of M/s IPSOS Research Pvt. Ltd with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Banking Corporatioin Ltd. Mumbai / Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	Ipsos Research Pvt. Ltd
Account no.	030777080001
IFSC Code	HSBC0400002

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.97 for the year 2017-18.

5. This issues with the approval of Integrated Finance Division and concurrence of JS & FA vide e-office No. 3136811 (dated 26.3.2018 7:47 PM).

Yours faithfully

28/3/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Copy to:-

1. Admn. II Section with original copy for forwarding to PAO.
2. Senior Associate Director-Finance, Ipsos Research Private Limited, Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western, Express Highway, Goregaon East, Mumbai-400063.
3. PPS to JS (CBUD), MoHUA Nirman Bhawan, New Delhi.
4. Intergrated Finance Division, MoHUA Nirman Bhawan.
5. TL, PMU (CBUD) MoHUA Nirman Bhawan, New Delhi.
6. Sanction Folder.

28/3/2018

(G.Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Ipsos Research Private Limited

INVOICE NO - 18270619

Payment Terms : 60 days
Due Date : 19/05/2018
Invoice Date : 19/03/2018
(1/1)

MINISTRY OF HOUSING AND URBAN AFFAIRS,
GOVERNMENT OF INDIA
202-C, NIRMAN BHAWAN, MAULANA AZAD ROAD,
New Delhi
India
07 Delhi

Company : Ipsos Research Pvt.Ltd [32002]
Income Tax PAN No. : AABCI3609K

End Client : 13920206
Sales Order : 18000499 S2
Accounting Contact : IpsosIndiaInvoice@ipsos.com

Purchase Order Number : NA
Client Contact : G. Vijay Kumar
Client Tel : 011 23063217
Client Email : g.vijaykumar@nic.in

JOB NUMBER	IPSOS SALES REF.	DESCRIPTION	TOTAL	
1709582501 32205	Sharma, Tripti Tel +44 (0) 20 7347 3813 Tripti.Sharma@ipsos.com	HSN code 9983 AssessmentofLiveabilityindices	21,885,640.00	INR

Initial invoice on Assessment of Liveability Indices for 116 cities in India

Total Budget Research	109,428,200.00
Already Billed	.00
Percentage Billed on this Invoice	20.00%

Invoice Subtotal	21,885,640.00	**INR**
IGST 18.000 %	3,939,415.20	**INR**
Total Amount Due	25,825,055.20	**INR**

Rupees TWO CRORE FIFTY EIGHT LAC TWENTY FIVE THOUSAND FIFTY FIVE AND PAISE TWENTY ONLY

Ipsos Billing Address:
1701, 17th Floor, F wing Lotus Corporate Park,
off western express highway,
Goregaon east Mumbai - 400 063
27 Maharashtra
India
GSTIN: 27AABCI3609K1ZJ

Passed for payment of Rs. 2,18,85,640/- (excl Taxes) only
[Two crore Eighteen Lakh Eighty Five thousand Six Hundred & Forty only]

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Remit Payment to

Ipsos Research Pvt.Ltd
Lotus Corporate Park,
1701, 17th Floor, F Wing,
Off Western Express Highway,
Goregoan East,
Mumbai 400 063
India

Payment Details

IFSC Code : HSBC0400002
Swift Code : HSBCINBBXXX
Account Number : 030-777080-001
Bank Name : HSBC Bank, Mumbai
Bank Address : Banking Corporation Ltd.
Mumbai/ Fort Branch
52/60, M G Road,
Mumbai 400001
India

IPSOS RESEARCH PVT. LTD.
DELHI
Dt. 20/3/18

- Please draw cheque in favour of
  "Ipsos Research Pvt. Ltd."
- Payment of this invoice, or correspondence regarding the same may please be forwarded to our **Mumbai Office.**
- Invoices not paid on or before due date will carry interest @ 3% per month.

Registered Office Address :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
CIN: U74130MH2004PTC14694
Phone: +91 22 66208000
Fax: +91 22 66208200
E-Mail: IpsosIndiaInvoice@ipsos.com
This file is signed using Digital Signature.

For Ipsos Research Pvt. Ltd.
Signed by : AMIT DIWAN
(Personal , CID - 5300122)
Date : 20/Mar/2018 16:02:26
Location :
Reason :
Amit Diwan
Senior Associate Director - Finance

Payment for Liveability Index Study (GST Payment)

Name of Contract	**Consulting Services for Assessment of Liveability Indices in 116 cities in India**
Contract Date	21 February, 2018
Name of Consortium :	IPSOS Research Private Limited in consortium with Athena Infonomics India Private Limited and The Economist Group Limited
Report / Deliverable (at this Stage):	Inception Report GST
Date of Bill Submission	**May, 2018**

On approval of the inception report by the competent authority, the invoice submitted by the consulting firm is recommended for further processing for payment. As per the Contract, Payment Schedule **(Clause 41.2 Special Conditions of Contract)** is given below:

S.NO	%OF PAYMENT	DELIVERABLE	DUE DATE	DATE OF PAYMENT	AMOUNT OF PAYMENT
1	Twenty (20%) percent of the Contract Price	Acceptance/ approval of Inception Report	Within 8 weeks from start	2,18,85,640 paid on 28.3.18 **GST Recommended Now**	39,39,415
2	Fifty (50%) of the Contract Price.	Acceptance/ approval of Draft Final Report	Within 12 weeks from start		
3	Thirty (30%) of the Contract Price.	Acceptance/ approval of Final Report	Within 20 weeks from start		

Contractual Amount:	10,94,28,200 plus GST
Payments made till Date:	2,18,85,640
Payment Under Process Inception Report GST	39,39,415/-
Amount due at this stage	39,39,415/-
Total Payment recommended:	39,39,415/-

The project implementation committee has recommended the approval of the report and same has been confirmed by JS (Amrut).

The Consultant/Consulting Firm had raised the invoices for **Rs. 2,58,25,055/- (Rupees Two Crore Fifty Eight Lakh Twenty Five Thousand Fifty Five only) (inclusive of GST)** against which payment of **Rs. 2,18,85,640/- (Rupees Two Crore Eighteen Lakh Eighty Five Thousand Six Hundred Forty only) (w/o GST)** has already been made. The consultant has now submitted proof of payment of GST of Rs. 39,39,415/- (Rs. Thirty Nine Lakh Thirty Nine Thousand Four Hundred Fifteen only) which is now recommended.

Umang.

25/5/18

Team Leader/Sector Specialist CBUD (Rakesh Gujral)	Urban Management Specialist CBUD (Umang Handoo Raina)	Municipal Finance Specialist CBUD (Ketan Vora)

DESAI SAKSENA & ASSOCIATES
Chartered Accountants

Laxmi Building
1st Floor
Sir P.M. Road, Fort
Mumbai- 400001

Tel : 66 26 16 00
Fax : 66 26 16 17
Email : contact@dsaca.co.in

Website : www.dsaca.co.in

TO WHOMSOEVER IT MAY CONCERN

As per the information, explanation given to us and as shown by the records produced before us, we hereby certify that M/s.Ipsos Research Private Limited, having registered office at Lotus Corporate Park, 1701, 17th Floor, F wing, Off Western Express Highway, Goregaon East, Mumbai – 400 063, the payment of IGST (18%)amounting Rs. 39,39,415.20/- pertaining to Ministry of Housing and Urban Affairs vide invoice ref no. 18270619 dated 19.03.2018 has been made to the Government on **17th April, 2018**.

Thanking You,
Yours Faithfully,

For DESAI SAKSENA & ASSOCIATES
Chartered Accountants

CA Varsha Nanwani
Taxation Manager
Membership No. 174729

Place: Mumbai
Date: 20th April, 2018

GOODS AND SERVICES TAX
PAYMENT RECEIPT

CPIN: **18042700362501** Deposit Date : **17/04/2018** Deposit Time : **18:20:55** e-Scroll : **NA**

Payment Particulars

CIN: **HDFC18042700362501** Name of Bank: **HDFC BANK** BRN: **495282826**

Details of Taxpayer

GSTIN: **27AABCI3609K1ZJ**

E-mail Id: **hardika.kotecha@ipsos.com**

Mobile No.: **9920143033**

Name: **IPSOS RESEARCH PRIVATE LIMITED**

Address : **17th Floor, 1701, F wing,**
Lotus Corporate Park,Off Western
Express Highway,Goregaon East,
Maharashtra,MHMSU,400063

Details of Deposit **(All Amount in Rs.)**

Government	Major Head	Minor Head					
		Tax	Interest	Penalty	Fee	Others	Total
Government of India	CGST(0005)	0	0	0	0	0	0
	IGST(0008)	5000000	0	0	0	0	5000000
	CESS(0009)	0	0	0	0	0	0
	Sub-Total	5000000	0	0	0	0	5000000
Maharashtra	SGST(0006)	0	0	0	0	0	0
Total Amount							**5000000**
Total Amount (in words)							**Rupees Fifty Lakhs Only**

Mode of Payment: **Internet Banking - HDFC BANK**

Notes:
1. Status of the transaction can be tracked under 'Track Payment Status' at GST website
2. Payment status will be set as 'Paid' for this transaction.
3. This is a system generated receipt.

This challan includes Rs 39.39,415 (Thirtynine lakhs, thirtynine thousand four hundred and fifteen only) paid against GST charged from MoHUA vide invoice no 18270619 dt 19.3.18

Sharma

Tripti Sharma
25-5-2018

K-14012/101(11)/2017- SCM-III(V)-pt-2
Government of India
Ministry of Housing & Urban Affairs
(CBUD Division)
****

Nirman Bhawan, New Delhi
Dated: 12th June 2018

To

The Pay and Accounts Officer (Secretariat),
Ministry of Housing & Urban Affairs,
Nirman Bhawan, New Delhi.

Subject: - Payment of **Rs.39,39,415/- against Goods & Service Tax** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities.

Sir,

I am directed to convey the sanction of the Competent Authority for Payment of **Rs.39,39,415/- [Rs. Thirty-Nine Lakh Thirty-Nine Thousand Four Hundred and Fifteen only] against Goods & Service Tax** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities under CBUD project funded by World Bank. The contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released**
			Fee	GST@18 %	**GST**
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640	39,39,415	Rs.39,39,415/-
	Grand total to be released against GST payment				**Rs.39,39,415/-**

2. Since this is Tax payment, so, Administration Section is requested not to deduct the TDS.

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

3. The e-payment may be drawn in favour of M/s IPSOS Research Pvt. Ltd with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Banking Corporatioin Ltd. Mumbai / Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	Ipsos Research Pvt. Ltd
Account no.	030777080001
IFSC Code	HSBC0400002

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.56 for the year 2018-19.

5. This issues with the approval of Integrated Finance Division and concurrence of JS & FA's note dated 08/06/2018 at 4:45 PM [VIDE COMPUTER NO.: 3136811].

Yours faithfully

12/6/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

Copy to:-

1. Admn. II Section with original copy for forwarding to PAO.
2. Senior Associate Director-Finance, Ipsos Research Private Limited, Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western, Express Highway, Goregaon East, Mumbai-400063.
3. PPS to JS (CBUD), MoHUA Nirman Bhawan, New Delhi.
4. Intergrated Finance Division, MoHUA Nirman Bhawan.
5. TL, PMU (CBUD) MoHUA Nirman Bhawan, New Delhi.
6. Sanction Folder.

12/6/2018

(G.Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

DESAI SAKSENA & ASSOCIATES
Chartered Accountants

Laxmi Building
1st Floor
Sir P.M. Road, Fort
Mumbai- 400001

Tel : 66 26 16 00
Fax : 66 26 16 17
Email : contact@dsaca.co.in

Website : www.dsaca.co.in

TO WHOMSOEVER IT MAY CONCERN

As per the information, explanation given to us and as shown by the records produced before us, we hereby certify that M/s.Ipsos Research Private Limited, having registered office at Lotus Corporate Park, 1701, 17th Floor, F wing, Off Western Express Highway, Goregaon East, Mumbai – 400 063, the payment of IGST (18%)amounting Rs. 39,39,415.20/- pertaining to Ministry of Housing and Urban Affairs vide invoice ref no. 18270619 dated 19.03.2018 has been made to the Government on **17th April, 2018**.

Thanking You,
Yours Faithfully,

For DESAI SAKSENA & ASSOCIATES
Chartered Accountants

CA Varsha Nanwani
Taxation Manager
Membership No. 174729

Place: Mumbai
Date: 20th April, 2018

GOODS AND SERVICES TAX
PAYMENT RECEIPT

CPIN: **18042700362501** Deposit Date : **17/04/2018** Deposit Time : **18:20:55** e-Scroll : **NA**

Payment Particulars

CIN: **HDFC18042700362501** Name of Bank: **HDFC BANK** BRN: **495282826**

Details of Taxpayer

GSTIN: **27AABCI3609K1ZJ** E-mail Id: **hardika.kotecha@ipsos.com** Mobile No.: **9920143033**

Name: **IPSOS RESEARCH PRIVATE LIMITED**

Address : **17th Floor, 1701, F wing,
Lotus Corporate Park,Off Western
Express Highway,Goregaon East,
Maharashtra,MHMSU,400063**

Details of Deposit (All Amount in Rs.)

Government	Major Head	Minor Head					
		Tax	Interest	Penalty	Fee	Others	Total
Government of India	CGST(0005)	0	0	0	0	0	0
	IGST(0008)	5000000	0	0	0	0	5000000
	CESS(0009)	0	0	0	0	0	0
	Sub-Total	5000000	0	0	0	0	5000000
Maharashtra	SGST(0006)	0	0	0	0	0	0
Total Amount							5000000
Total Amount (in words)							**Rupees Fifty Lakhs Only**

Mode of Payment: **Internet Banking - HDFC BANK**

Notes:
1. Status of the transaction can be tracked under 'Track Payment Status' at GST website
2. Payment status will be set as 'Paid' for this transaction.
3. This is a system generated receipt.

This challan includes Rs 39,39,415 (Thirty nine lakhs, thirty nine thousand four hundred and fifteen only) paid against GST charged from MoHUA vide invoice no 18270619 dt 19.3.18

Sharma

Tripti Sharma
25-5-2018

Passed for the payment of Rs. 39,39,415/- only.

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

01/06/2018 11:41 AM

Sanjay Kumar
(JOINT SECRETARY)

3136811.

01/06/2018 12:20 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

01/06/2018 12:35 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Integrated Finance Division

Due to non submission of the proof of depositing the GST, proposal for payment against 1st deliverable to M/s. IPSOS Research Private Limited (India) w.r.t. consultancy work for providing assessment of liveability indices in 116 cities, was concurred to excluding GST - refer p.49/N.

Now, the consultant has submitted the proof of depositing the GST amounting to Rs.39,39,415/- (18% of the payment of Rs. 2,18,85,640/- for 1st deliverable). We may, therefore, concur to the proposal for reimbursement of Rs.39,39,415/- to the consultant.

04/06/2018 10:13 AM

Pankaj Kumar
(US(IFD-II))

05/06/2018 1:41 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Ref. IFD's notes above:

We may forward the file to JS&FA for her approval please.

06/06/2018 4:55 PM

Pankaj Kumar
(US(IFD-II))

06/06/2018 5:21 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

08/06/2018 4:45 PM

Jhanja Tripathy
(JS &FA)

08/06/2018 4:47 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

08/06/2018 5:29 PM

Pankaj Kumar
(US(IFD-II))

11/06/2018 10:09 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

11/06/2018 12:28 PM

G Vijay Kumar
(US (CBUD))

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AGARTALA

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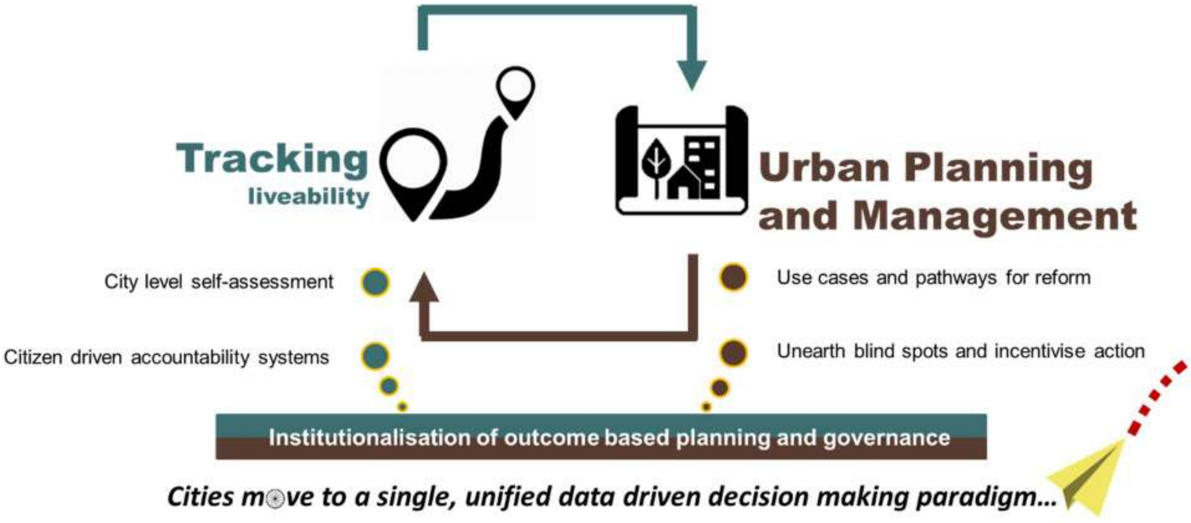
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

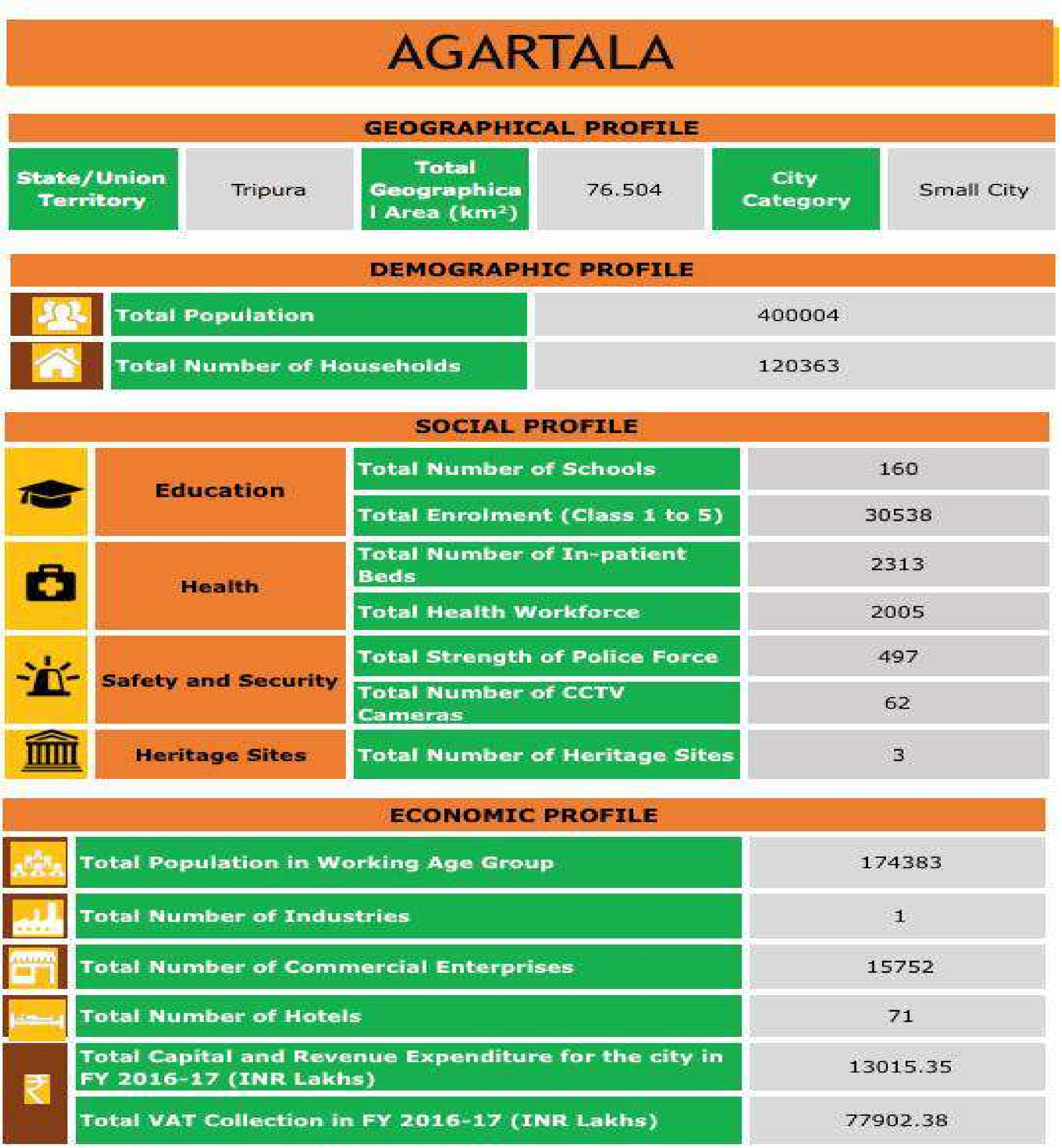
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AGARTALA

GEOGRAPHICAL PROFILE

State/Union Territory	Tripura	Total Geographical Area (km²)	76.504	City Category	Small City

DEMOGRAPHIC PROFILE

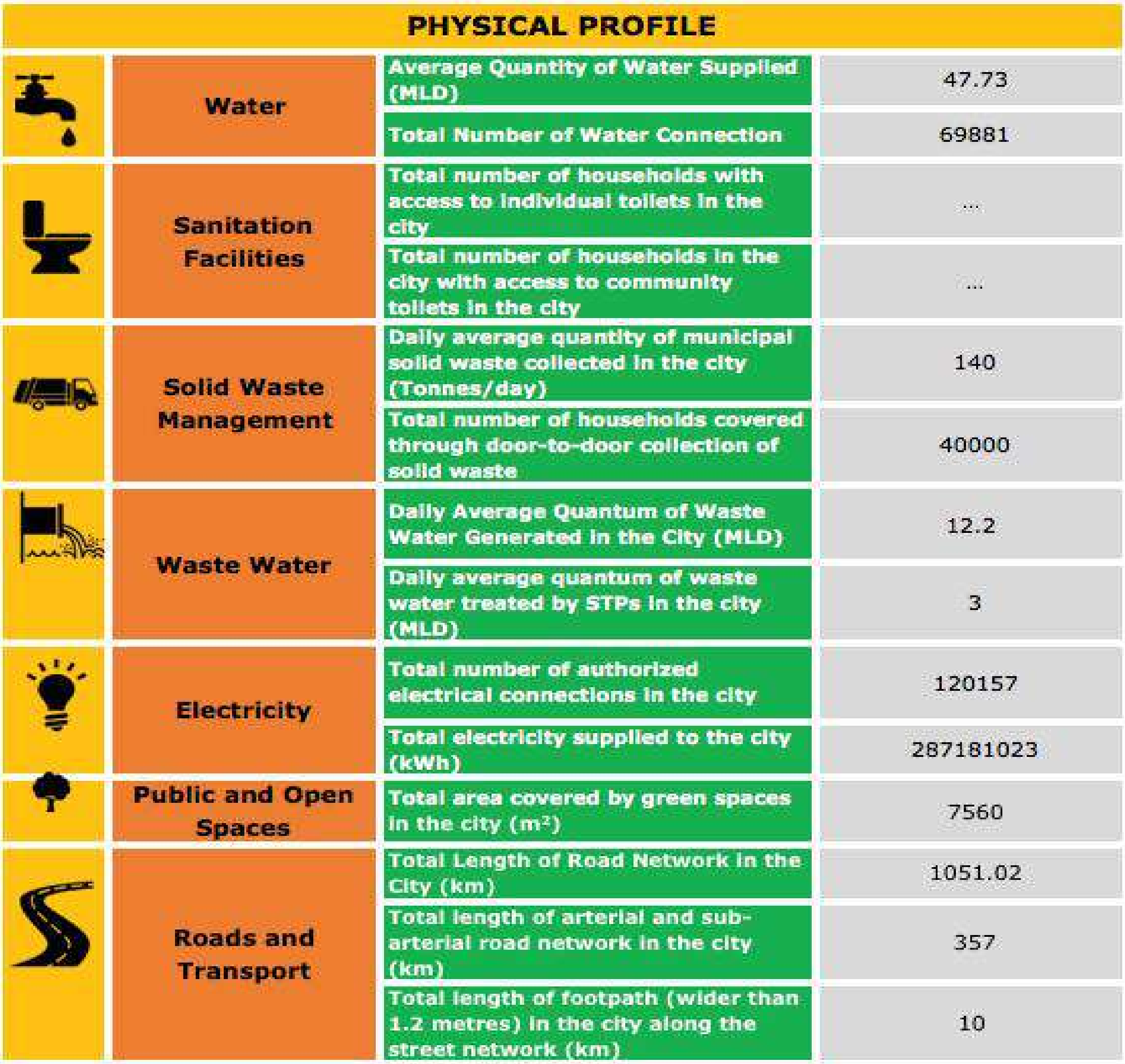
Total Population	400004
Total Number of Households	120363

SOCIAL PROFILE

Education	Total Number of Schools	160
	Total Enrolment (Class 1 to 5)	30538
Health	Total Number of In-patient Beds	2313
	Total Health Workforce	2005
Safety and Security	Total Strength of Police Force	497
	Total Number of CCTV Cameras	62
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	174383
Total Number of Industries	1
Total Number of Commercial Enterprises	15752
Total Number of Hotels	71
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13015.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	77902.38



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	47.73
	Total Number of Water Connection	69881
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	140
	Total number of households covered through door-to-door collection of solid waste	40000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	12.2
	Daily average quantum of waste water treated by STPs in the city (MLD)	3
Electricity	Total number of authorized electrical connections in the city	120157
	Total electricity supplied to the city (kWh)	287181023
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7560
Roads and Transport	Total Length of Road Network in the City (km)	1051.02
	Total length of arterial and sub-arterial road network in the city (km)	357
	Total length of footpath (wider than 1.2 metres) in the city along the street network (km)	10

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open	8.1 Per capita availability of green spaces

Pillars of Comprehensive Development	Category	Indicators
	Spaces	8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollu-	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	tion	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

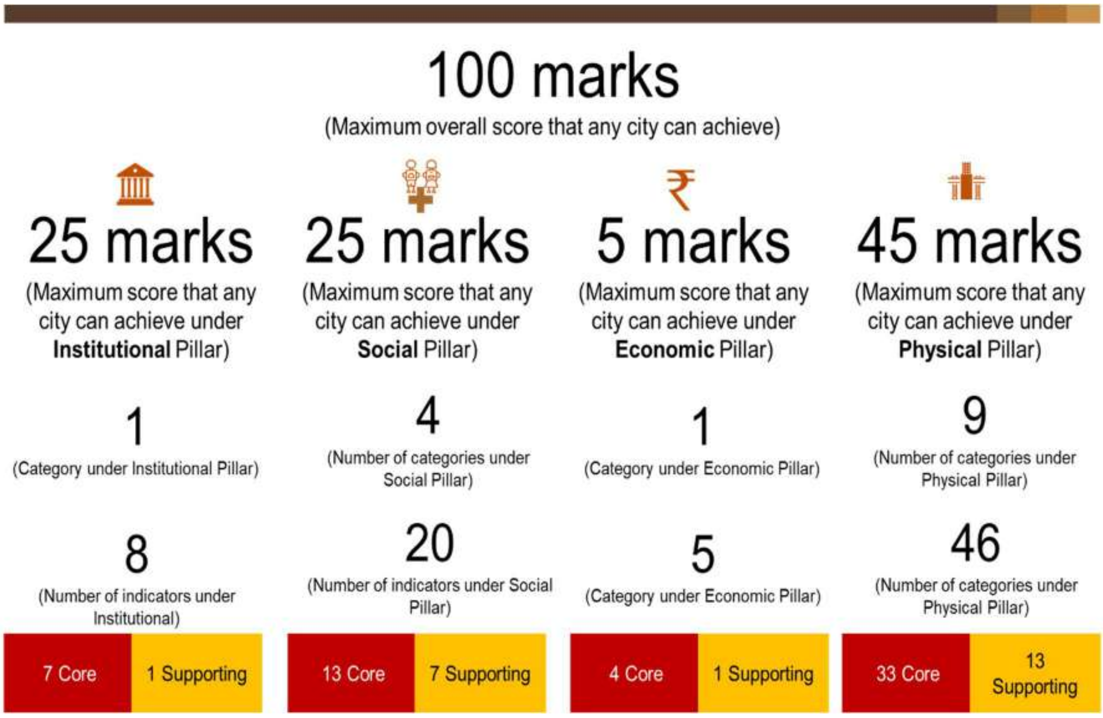
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions

on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Agartala Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Public Work Section, Agartala Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Public Work Section, Agartala Municipal Corporation
Urban Local Body	For Heritage sites related data	Agartala Municipal Corporation
Urban Local Body	For Ecological sites related data	Agartala Municipal Corporation
Urban Local Body	For Housing related data	Agartala Municipal Corporation
Urban Local Body	For Building plan related data	Building Plan Section, Agartala Municipal Corporation
Urban Local Body	For Roads related data	Public Work section, Agartala Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management Section, Agartala Municipal Corporation
Urban Local Body	For IT services related data	IT Section, Agartala Municipal Corporation
Urban Local Body	For Vendor committee related data	Agartala Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tripura State Pollution Control Board
Development Authority	Building Infrastructure	Building Plan Section, Agartala Municipal Corporation
	Construction planning	Building Plan Section, Agartala Municipal Corporation

	Green Building	Building Plan Section, Agartala Municipal Corporation
	Rain water harvesting	Building Plan Section, Agartala Municipal Corporation
	Universal Design Principle	Building Plan Section, Agartala Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tripura State Electricity Corporation Limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Section, Agartala Municipal Corporation
	Citizen Services	Health and Family welfare department
	Disease Prevalence	Health and Family welfare department
	Health Infrastructure	Health and Family welfare department
State Renewable Energy Development Agency		Tripura Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Planning department, Tripura
Traffic and Police Department		State Police department
Transport Authorities	Buses	Tripura state road transport corporation
	Registered Vehicles	Tripura state road transport corporation
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 3 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

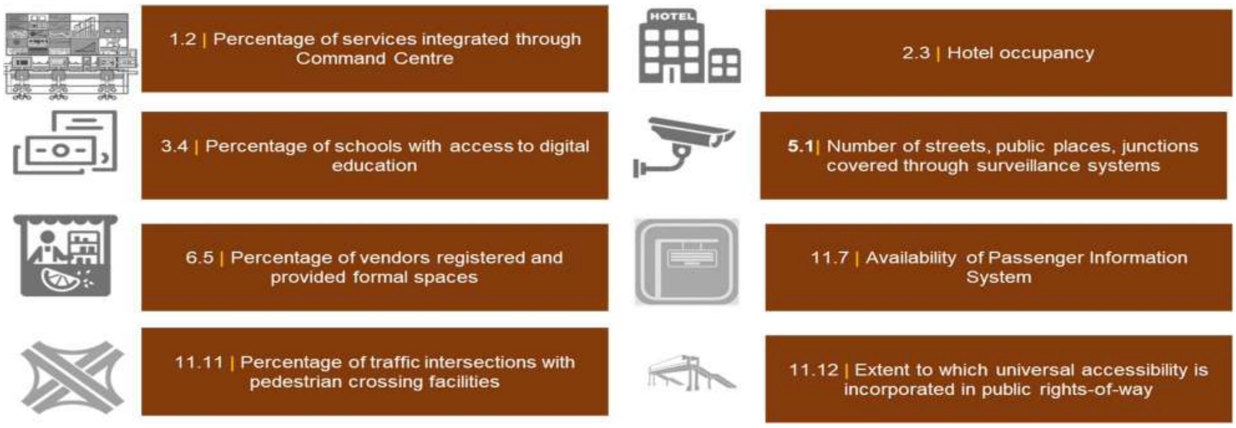
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	3

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

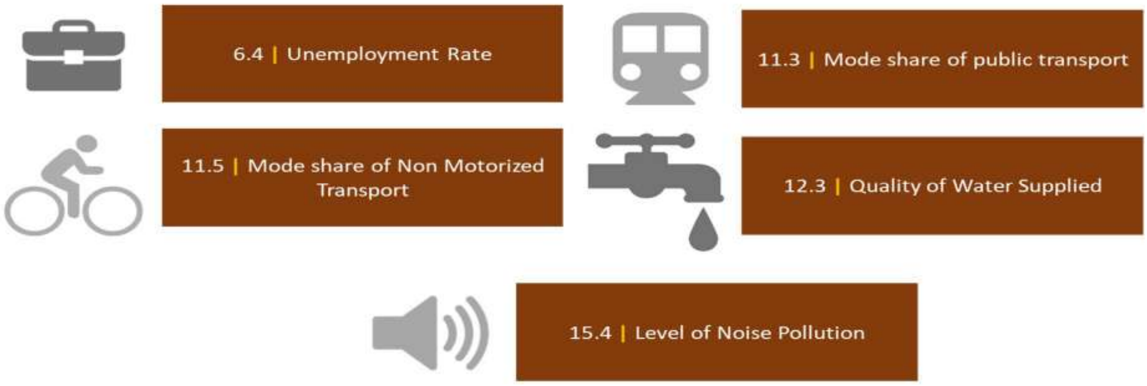
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

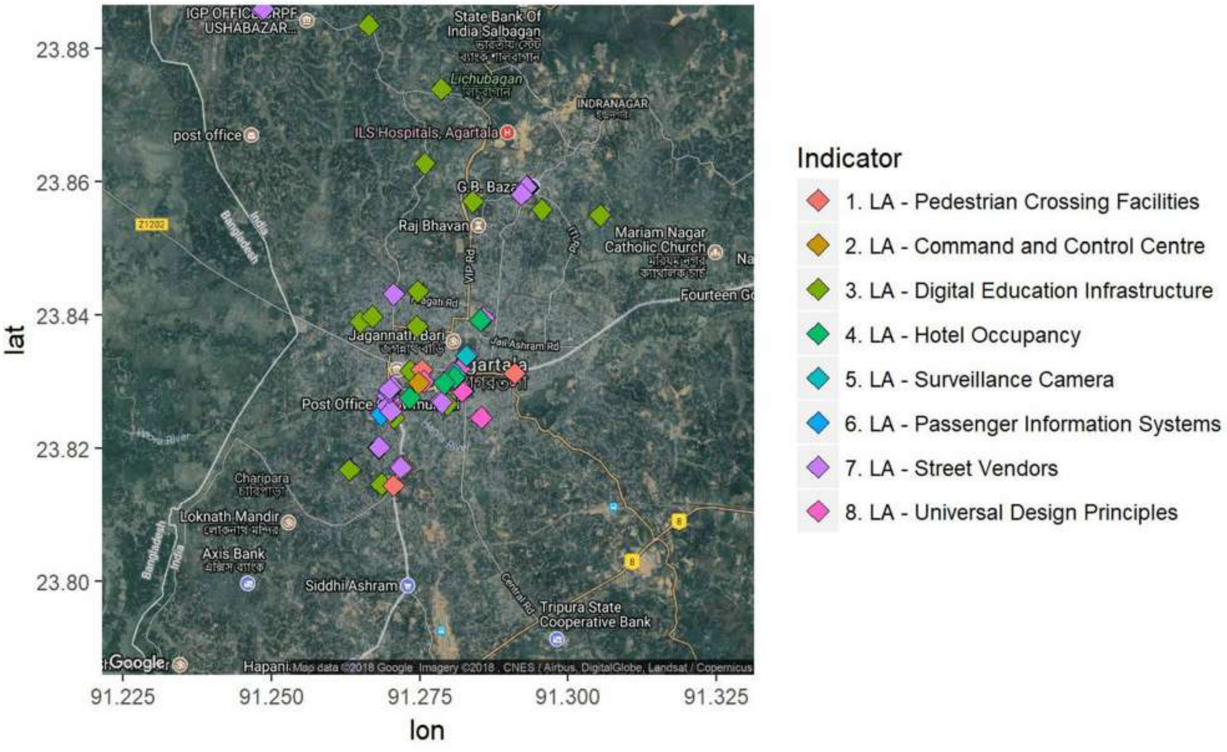
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.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INDRANAGAR
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Raj Bhavan
Mariam Nagar Catholic Church
Fourteen G
Jagannath Bari
Agartala
Post Office
Charipara
Loknath Mandir
Axis Bank
Siddhi Ashram
Tripura State Cooperative Bank
Google
Hapania
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**69.71**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	0.666666666666667
	1.1i professional tax	0.5
	1.1j information	0.923076923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**

Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**6.98**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.000758970365836094
	1.3c water supply	0.359147329738751
	1.3d solid waste management	0.056407982860435
	1.3e property tax	0.0847468279949505
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0.0355034618001361
	1.3h complaints/ grievance redressal	0
	1.3i information	0.091420765519228
	1.3j electricity	0.000603990029190483
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.14**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	0
	1.4e professional tax	0

	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**91.7**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4446.83
Denominator	Total demand raised for the year	4849.54
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**28.36**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1802.78
Denominator	Total O&M cost for providing water supply services during the year	6356.04
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**12.43**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	6645.69
Denominator	Total expenditure (revenue and capital accounts) in the same year	53450.51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward**	**6.67**

	Committees/ Area *Sabhas*	
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	4
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites re-stored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**71**
Description	Average Occupancy rate of Hotels	71
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	22977.52
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**4**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	4
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**98.25**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	63941
Denominator	Total population in the age group of 6-14 years	65079
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**102.8**
Formula:	*Numerator / Denominator*	

Numerator	Total female enrolment in primary and secondary schools (public and private	32628
Denominator	Total female population in the age group of 6-14 years	31738
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**34.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	28104
Denominator	Total number of teachers available for primary grades (public and private schools)	826
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**28.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	73
Denominator	Total number of schools	258
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**88.05**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	88.0540304160328
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92.09**
Formula:	*Product of ratios of students passing successive grades*	

	(between grades 6 to 8) in 2016-17	
Numerator	Percentage	144475426
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**39.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1774
Denominator	Total population of the city	444352
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**12.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	566
Denominator	Total population of the city	444352
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15.3**
Description	Total response time for health-related distress calls received in the city	15.3
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3859
Denominator	Total population of the city	444352

Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	752
Denominator	Total population of the city	444352
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**2.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	36
Denominator	Total length of road network in the city	1332.84
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1673.67**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7437
Denominator	Total population of the city	444352
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**2**

Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	149
Denominator	Total crimes recorded in the same year	7437
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**51.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	230
Denominator	Total population of the city	444352
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**22.8**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4811.37
Denominator	Total VAT/GST collection during preceding year	211.0259
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**5.27**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	10.35

Denominator	Total Professional Tax collection during preceding year	196.24
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-23.18**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-682
Denominator	Number of construction permits during preceding year	29.42
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	13721
Denominator	Total labour force in the city	65079
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**141.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2308
Denominator	Total number of vendors in the city	1626.975

Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**13.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	9789
Denominator	Total number of slum and EWS households in the city	742.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**11.33**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	9874332630096
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	96842.49
Denominator	Total population of the city	444352
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.34**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	153020.85
Denominator	Total population of the city	444352
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**12.95**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	20640000
Denominator	Total area of the city (total area of all land uses)	159350000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	444352
Denominator	Area allocated for residential land use (in hectares)	20640000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**75.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	217406
Denominator	Total number of households in the city	289235

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	351827
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	
Description	Total number of sustained electrical interruptions in a year	**4747**
Unit	Number	4747
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.58**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	131124
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	814
Denominator	Total energy consumption from all sources	1395530543

Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1633964.58333333
Denominator	Total quantum of water and waste water handled during the period	3960
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	7591275
Denominator	Total number of street light installations	28935
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.7**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1395530543
Denominator	Total population of the city	444352
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	55
Denominator	Total area of the city (sq.km)	159.35
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	310
Denominator	Total population of the city	444352
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1332.84
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**To be computed**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	19
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	1.289
Denominator	Total length of road network in the city	2665.68
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	332
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**11.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	37
Denominator	Total number of public right-of-way areas in the city	335
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**74.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	214596
Denominator	Total number of households in the city	289235
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**281.31**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	125
Denominator	Total population of the city	444352
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	35
Denominator	Total number of samples tested for water quality	35

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**30.4**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	38
Denominator	Quantum of water put into the distribution system (mld)	125
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**50.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	92897
Denominator	Total number of water connections in the city	185349
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**10.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	248
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2256
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**121.04**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with access to individual and/or community toilets	301721
Denominator	Total number of properties in the city	249264
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**105.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	263619
Denominator	Total number of properties in the city	249264
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**7.27**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	7
Denominator	Total waste water generated in the city per day	96.28
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**195.71**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	13.7
Denominator	Total waste water received at treatment plants per day	7
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.36**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	18.062
Denominator	Total length of road network in the city	1332.84

Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	298003
Denominator	Total number of households and establishments in the city	298046
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	520
Denominator	Total quantum of MSW generated in the city	520
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.42**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	221.84
Denominator	Average MSW generated in the city (tons per month)	15600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration	Data Unavailable

	over 24 hours of SO2	
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	6
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AGRA

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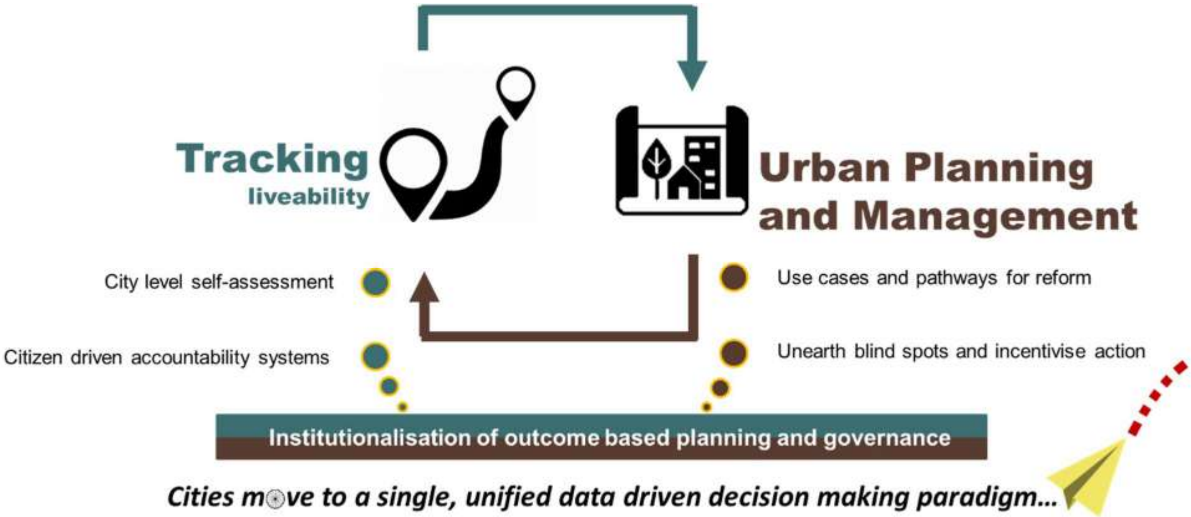
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

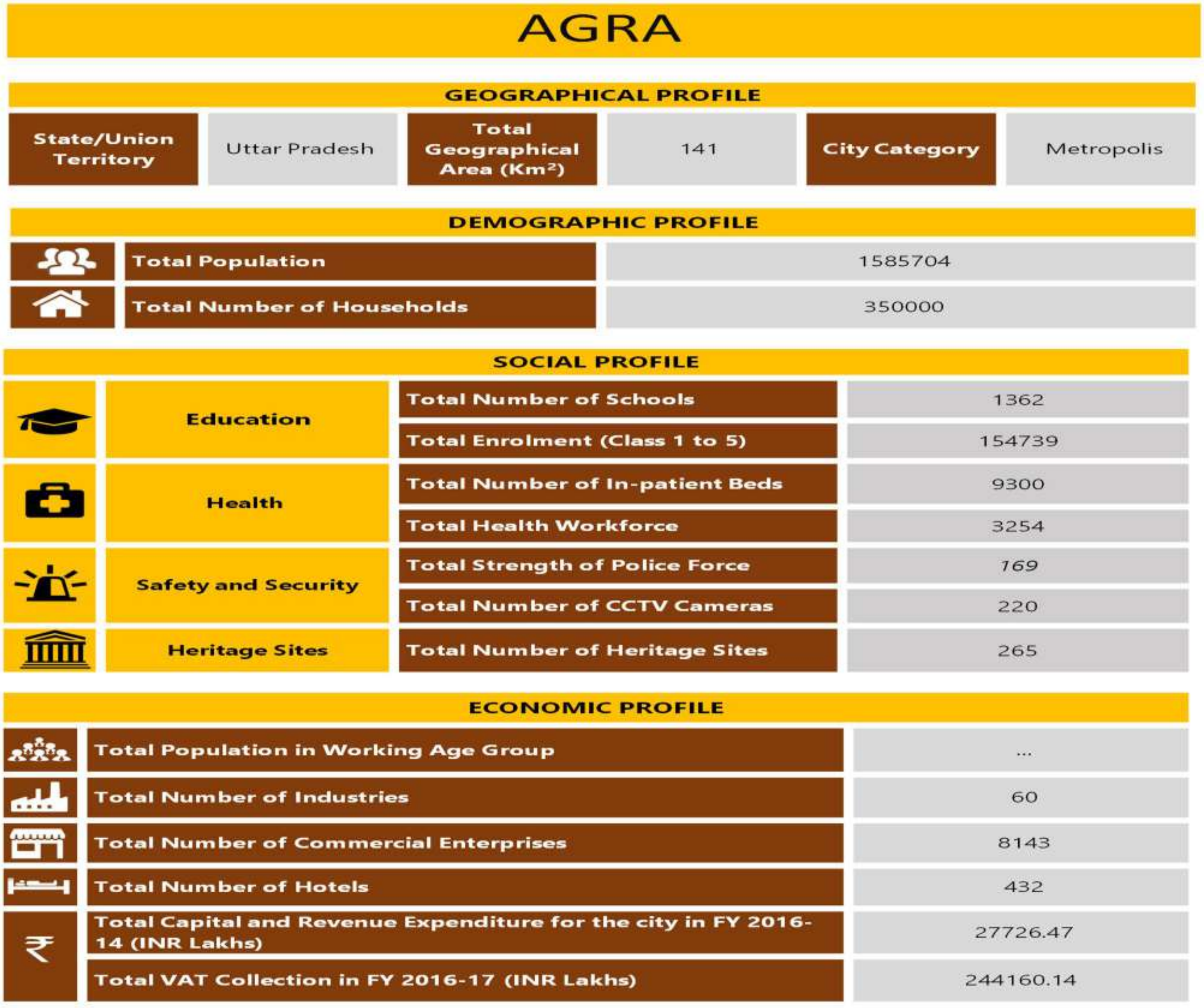

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AGRA

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	141	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

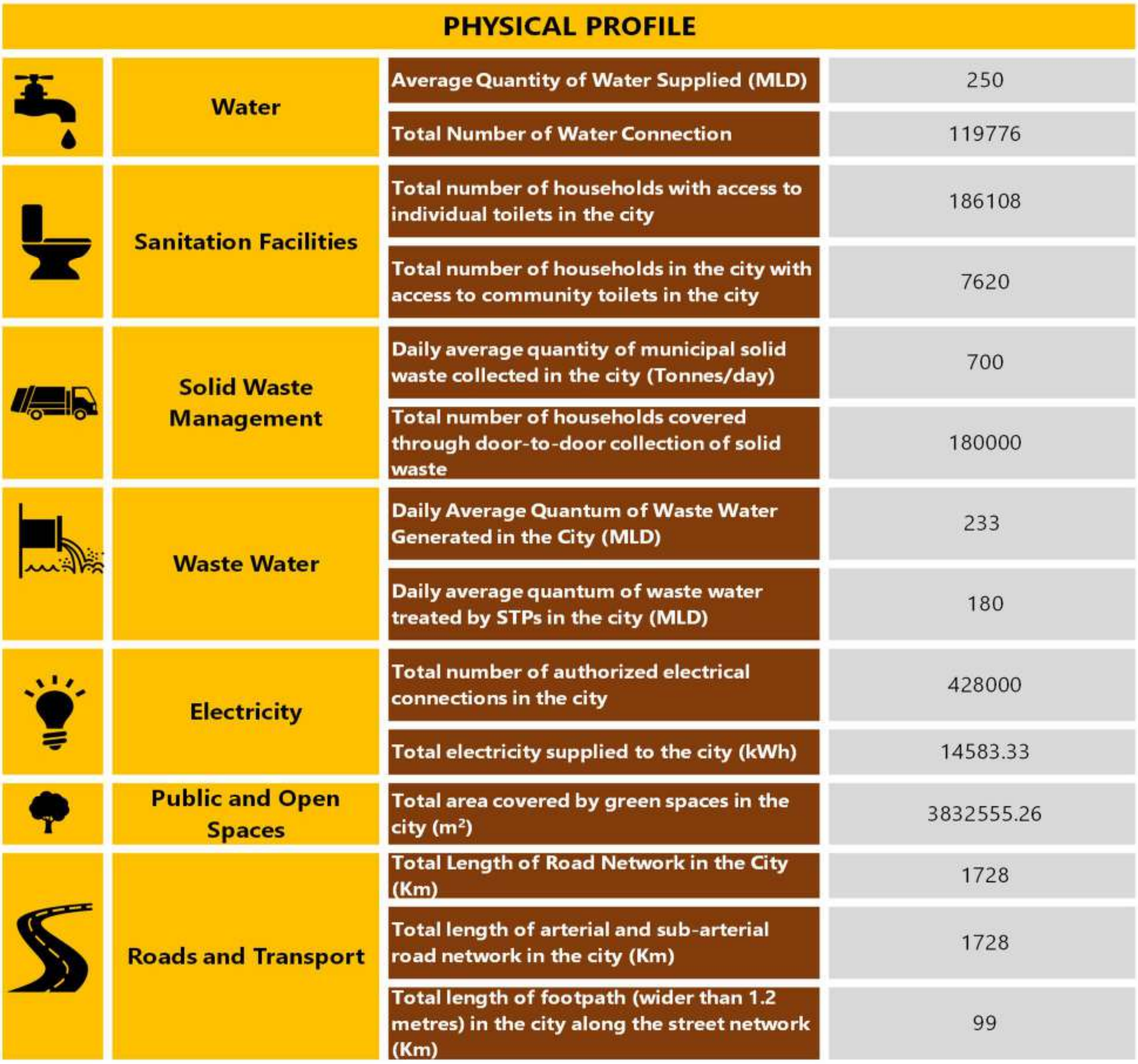
Total Population	1585704
Total Number of Households	350000

SOCIAL PROFILE

Education	**Total Number of Schools**	1362
	Total Enrolment (Class 1 to 5)	154739
Health	**Total Number of In-patient Beds**	9300
	Total Health Workforce	3254
Safety and Security	**Total Strength of Police Force**	*169*
	Total Number of CCTV Cameras	220
Heritage Sites	**Total Number of Heritage Sites**	265

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	60
Total Number of Commercial Enterprises	8143
Total Number of Hotels	432
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	27726.47
Total VAT Collection in FY 2016-17 (INR Lakhs)	244160.14



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	250
	Total Number of Water Connection	119776
Sanitation Facilities	Total number of households with access to individual toilets in the city	186108
	Total number of households in the city with access to community toilets in the city	7620
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	700
	Total number of households covered through door-to-door collection of solid waste	180000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	233
	Daily average quantum of waste water treated by STPs in the city (MLD)	180
Electricity	Total number of authorized electrical connections in the city	428000
	Total electricity supplied to the city (kWh)	14583.33
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	3832555.26
Roads and Transport	Total Length of Road Network in the City (Km)	1728
	Total length of arterial and sub-arterial road network in the city (Km)	1728
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	99

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

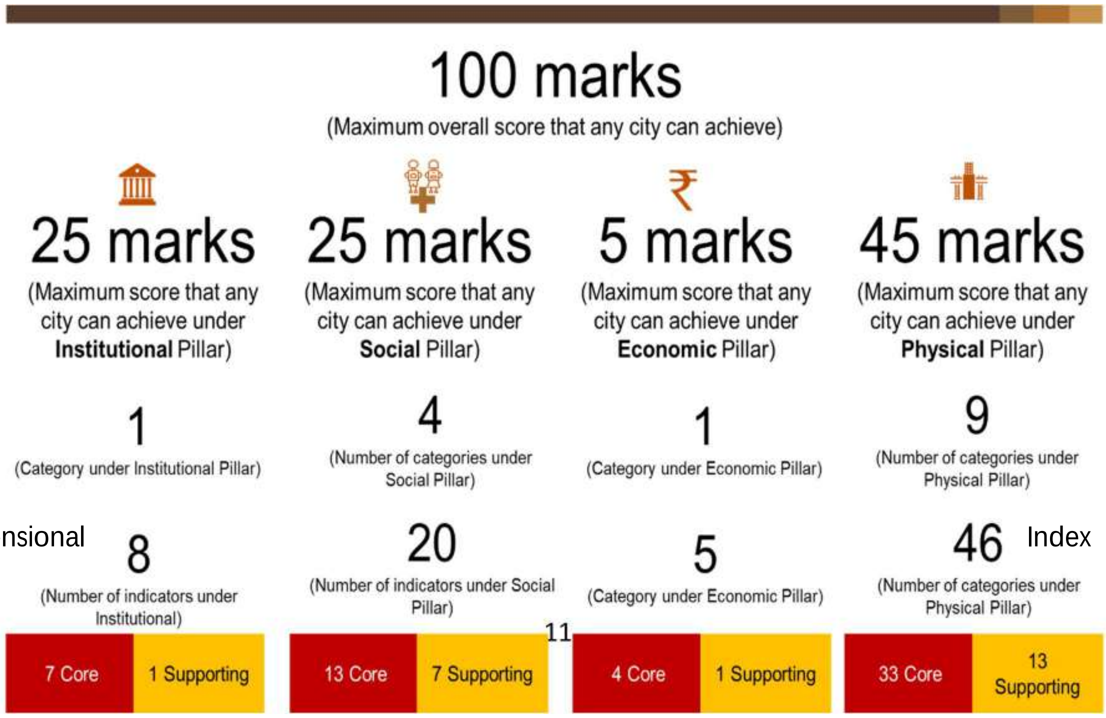
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index

Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission

of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Agra Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Park and Recreation, Agra Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Water supply office, Agra Municipal Corporation
Urban Local Body	For Heritage sites related data	Heritage and tourism department
Urban Local Body	For Ecological sites related data	Ecological section
Urban Local Body	For Housing related data	Housing section
Urban Local Body	For Building plan related data	Development Authorities
Urban Local Body	For Roads related data	Roads section, Agra Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management section, Agra Municipal Corporation
Urban Local Body	For IT services related data	Agra Smart city limited
Urban Local Body	For Vendor committee related data	Agra Municipal Corporation
Urban Local Body	Any other departments involved	

Designated data owners	Subcategories	Data owners at city level
	in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water supply office
Development Authority	Building Infrastructure	Development Authorities
	Construction planning	Development Authorities
	Green Building	Development Authorities
	Rain water harvesting	Water supply department
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Discom/Electricity board
State Disaster management authority		Agra Municipal Corporation
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
	Citizen Services	
	Disease Prevalence	
	Health Infrastructure	
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	Town and country planning department
Traffic and Police Department		
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	Transport Authorities
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 16 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

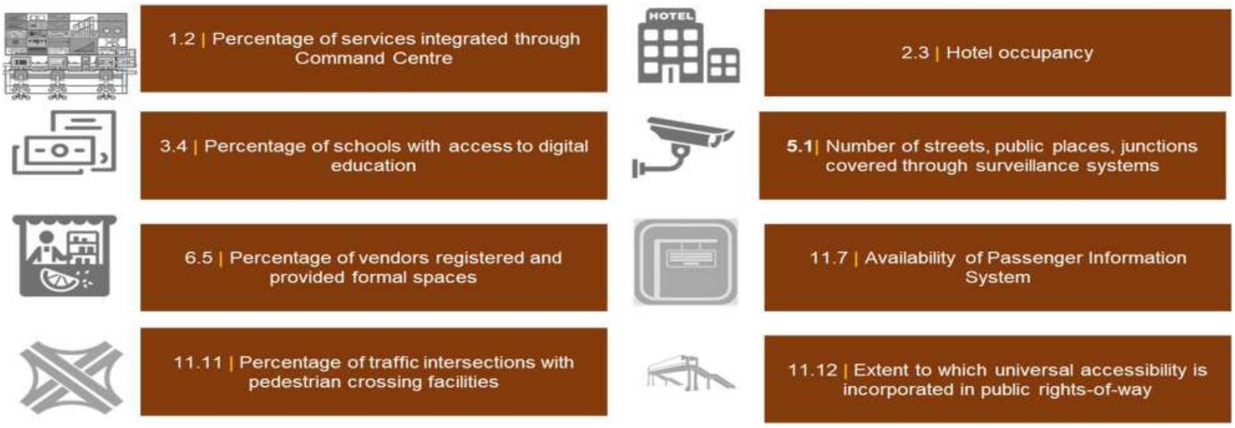
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	7
DISCOM/Electricity Department	0
Traffic and Police Department	3
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	1
Total	15*

* The count of documents is based on first round of submission.

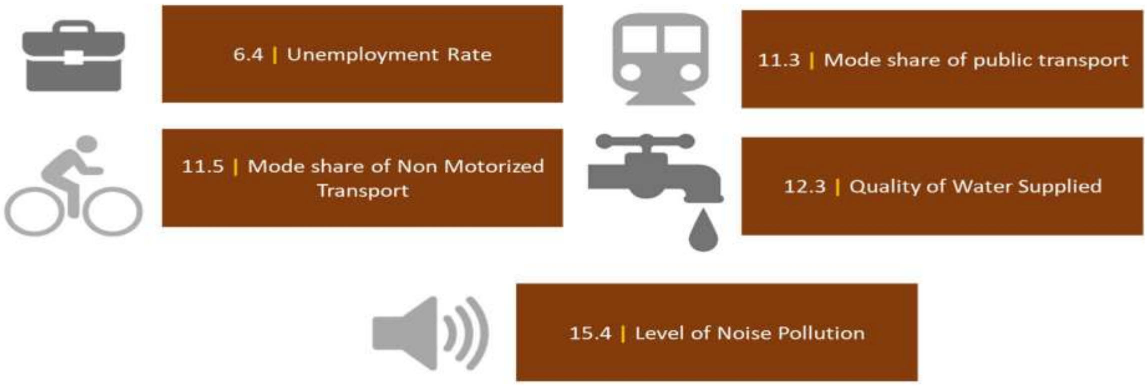
4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

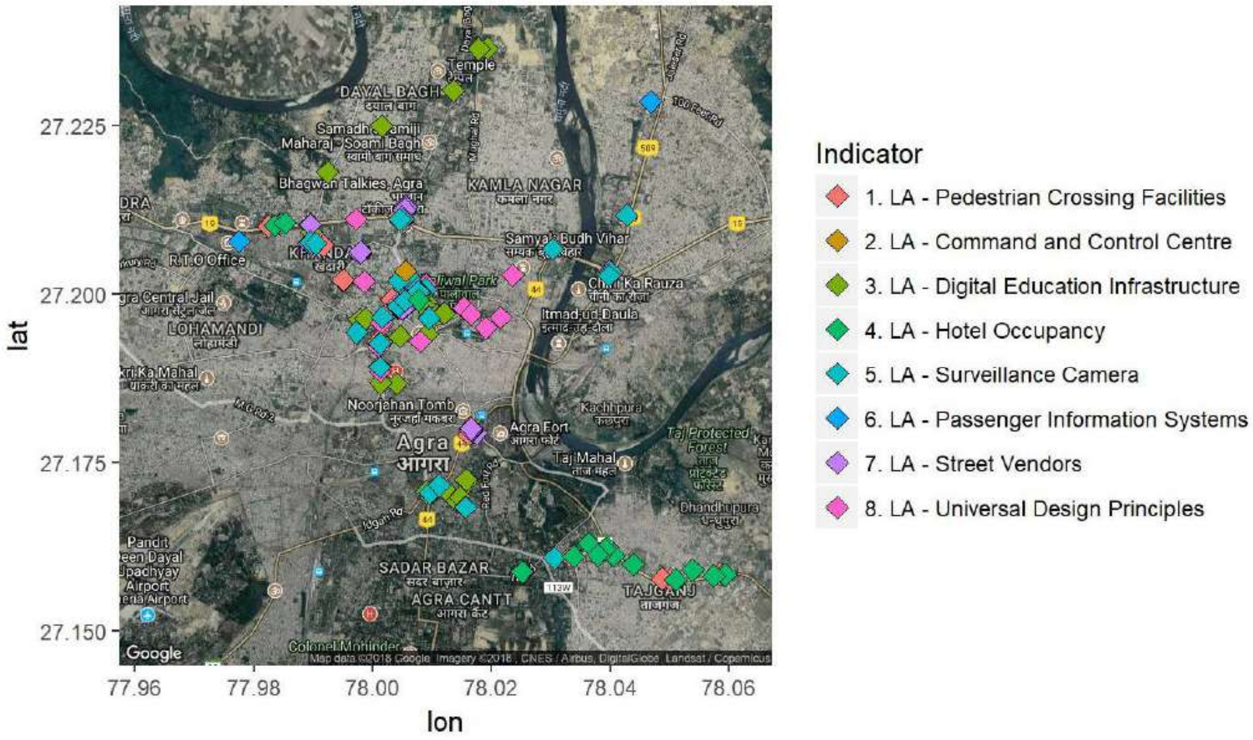

1.2 | Percentage of services integrated through Command Centre
HOTEL
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
27.225
27.200
27.175
27.150
lon
77.96
77.98
78.00
78.02
78.04
78.06
DAYAL BAGH
Temple
Samadhi Swamiji Maharaj - Soami Bagh
Bhagwan Talkies, Agra
KAMLA NAGAR
Samyak Budh Vihar
R.T.O Office
KHANDARI
Agra Central Jail
LOHAMANDI
Paliwal Park
Chini Ka Rauza
Itmad-ud-Daula
Noorjahan Tomb
Agra
आगरा
Agra Fort
Kachhpura
Taj Mahal
Taj Protected Forest
Dhandhupura
Pandit Deen Dayal Upadhyay Airport
SADAR BAZAR
AGRA CANTT
TAJGANJ
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**65.53**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.75
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1

	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**50**
Description	Services integrated through an integrated or a singular operations command centre	10.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.4**
Description		
Sub Indicators	1.3a Building plan	0.001413628
	1.3b Birth/Death Certificate	0.000186247
	1.3c water supply	0
	1.3d solid waste management	0.011999717
	1.3e property tax	0.000842448
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	9.20727E-05
	1.3i information	0.002402718
	1.3j electricity	0.175233645
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**98.93**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2530.56
Denominator	Total demand raised for the year	2558
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**88.92**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	5161.53
Denominator	Total O&M cost for providing water supply services during the year	5804.9
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-5.49**
Formula:	*Numerator / Denominator*	

Numerator	Total capital expenditure during a year	-3803.41
Denominator	Total expenditure (revenue and capital accounts) in the same year	69318.05
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	100
Denominator	Total number of wards	100
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**3.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	10
Denominator	Total number of historic buildings/sites identified	265
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.3	**Hotel Occupancy**	**25.71**
Description	Average Occupancy rate of Hotels	25.71428571
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	6.41
Denominator	Total budget of the ULB (capital and revenue)	27726.47
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**20**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	20
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**59.73**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	208965
Denominator	Total population in the age group of 6-14 years	349837
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**58.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	92308
Denominator	Total female population in the age group of 6-14 years	158827
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**61.9**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	154739
Denominator	Total number of teachers available for primary grades (public and private schools)	2500
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	1362
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**41.25**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	41.25085184
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**57.43**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	349646672

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**58.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	9300
Denominator	Total population of the city	1585704
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**20.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3254
Denominator	Total population of the city	1585704
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**22**
Description	Total response time for health-related distress calls received in the city	22
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**3.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	54353
Denominator	Total population of the city	1585704
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	331
Denominator	Total population of the city	1585704
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**12.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	220
Denominator	Total length of road network in the city	1728
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**721.13**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	11435
Denominator	Total population of the city	1585704
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1166
Denominator	Total crimes recorded in the same year	11435
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**87.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1382
Denominator	Total population of the city	1585704
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**5.77**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	9380.73
Denominator	Total VAT/GST collection during preceding year	1624.7974
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-13.55**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number	-63

	of permits during preceding year)	
Denominator	Number of construction permits during preceding year	4.65
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	70066
Denominator	Total labour force in the city	349837
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**4.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1140
Denominator	Total number of vendors in the city	23630
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**49.02**
Formula:	*Numerator / Denominator*	

Numerator	Total number of slum and EWS households covered through formal/affordable housing	72035
Denominator	Total number of slum and EWS households in the city	1469.49
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**5.49**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	252136342263904
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**2.42**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	3832555.26
Denominator	Total population of the city	1585704
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	4352075.71
Denominator	Total population of the city	1585704
Unit	Square metres (sq.m.)	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**4.58**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	6455200
Denominator	Total area of the city (total area of all land uses)	141000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1585704
Denominator	Area allocated for residential land use (in hectares)	99238000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**112**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	392000
Denominator	Total number of households in the city	350000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	428000
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**8**
Description	Total number of sustained electrical interruptions in a year	8
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	60
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	6280
Denominator	Total energy consumption from all sources	14583.33
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1221308.083
Denominator	Total quantum of water and waste water handled during the period	12900
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2555000
Denominator	Total number of street light installations	38700
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	29983.81
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	14583.33
Denominator	Total population of the city	1585704
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	96
Denominator	Total area of the city (sq.km)	141
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	406
Denominator	Total population of the city	1585704
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	3
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.52**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	9
Denominator	Total length of road network in the city	1728
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	9
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**3.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	1
Denominator	Total number of signalised intersections in the city	28
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	59

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total available on-street parking spaces in the city	59
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**2.86**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	99
Denominator	Total length of road network in the city	3456
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	31
Denominator	Total number of junctions/ intersections on major roads in the city	50
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**1.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	7
Denominator	Total number of public right-of-way areas in the city	409
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**32.7**
Formula:	*Numerator / Denominator*	

Numerator	Total number of households with direct water supply connection	114451
Denominator	Total number of households in the city	350000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**157.66**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	250
Denominator	Total population of the city	1585704
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	24134
Denominator	Total number of samples tested for water quality	24134
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	250
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**4.45**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	5325
Denominator	Total number of water connections in the city	119776
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**7.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	48
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	613
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**129.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	247774
Denominator	Total number of properties in the city	192000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**92.66**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	177901
Denominator	Total number of properties in the city	192000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**77.25**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	180
Denominator	Total waste water generated in the city per day	233
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**156.67**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	282
Denominator	Total waste water received at treatment plants per day	180
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**61.34**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1060
Denominator	Total length of road network in the city	1728
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**63.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	228000
Denominator	Total number of households and establishments in the city	358143
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**98.31**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	700
Denominator	Total quantum of MSW generated in the city	712
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**31.57**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	6630
Denominator	Average MSW generated in the city (tons per month)	21000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4.25**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4.25
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.2	**Concentration of NO2 - air pollution**	**23**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	23
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**193.25**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	193.25
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	96
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	348
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AHMEDABAD

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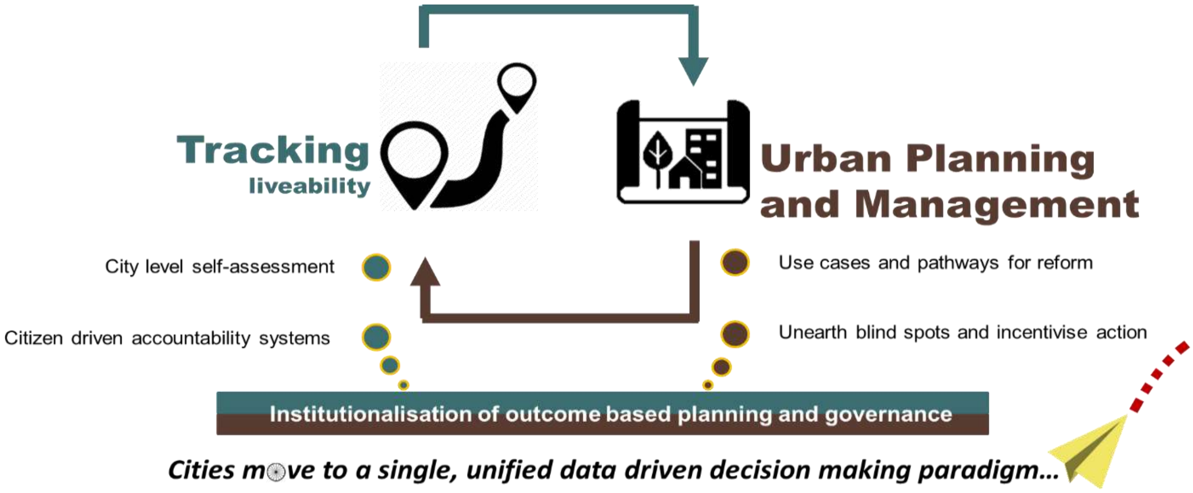
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

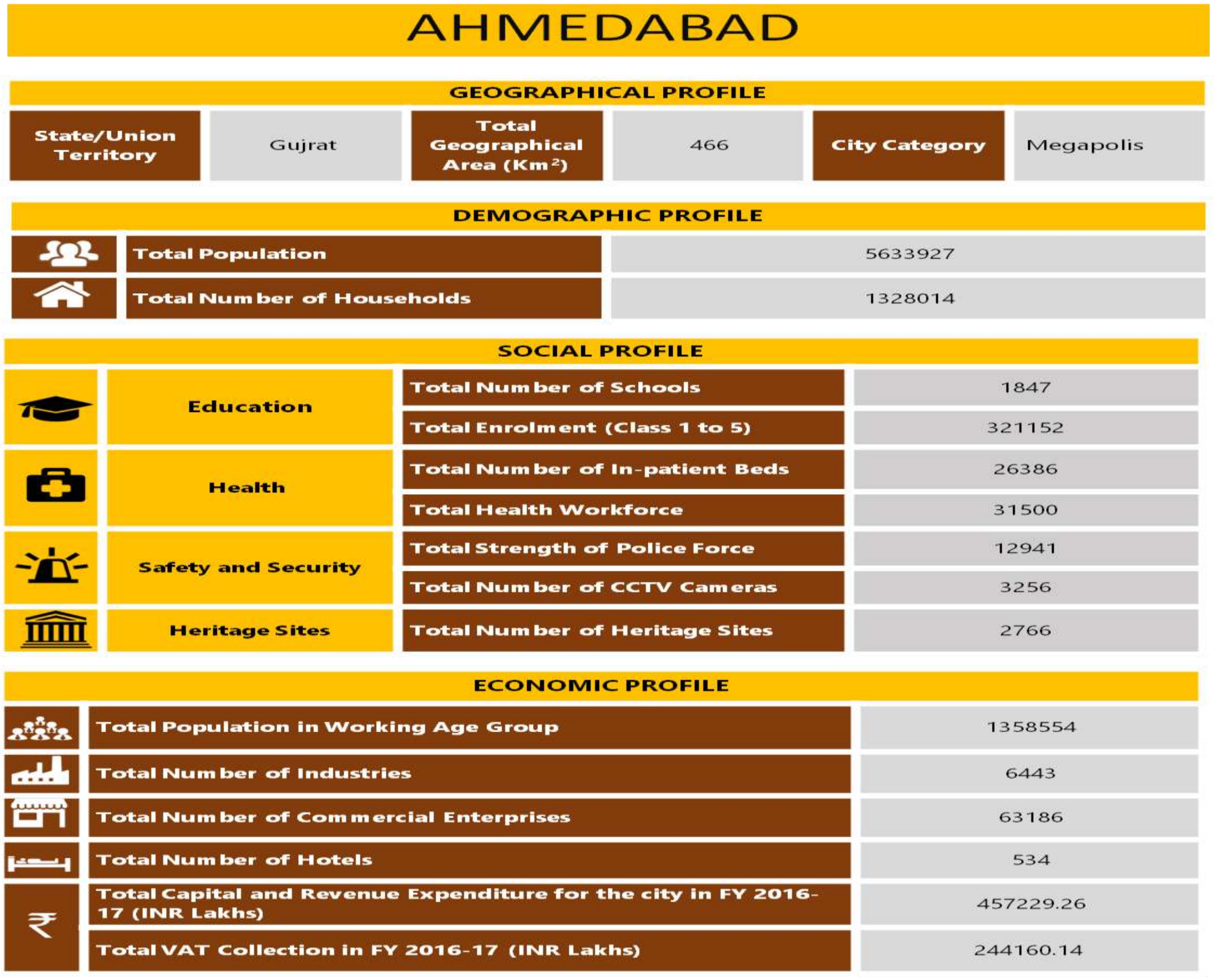

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AHMEDABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km²)**	466	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	5633927
Total Number of Households	1328014

SOCIAL PROFILE

Education	**Total Number of Schools**	1847
	Total Enrolment (Class 1 to 5)	321152
Health	**Total Number of In-patient Beds**	26386
	Total Health Workforce	31500
Safety and Security	**Total Strength of Police Force**	12941
	Total Number of CCTV Cameras	3256
Heritage Sites	**Total Number of Heritage Sites**	2766

ECONOMIC PROFILE

Total Population in Working Age Group	1358554
Total Number of Industries	6443
Total Number of Commercial Enterprises	63186
Total Number of Hotels	534
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	457229.26
Total VAT Collection in FY 2016-17 (INR Lakhs)	244160.14

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	1150
	Total Number of Water Connection	980726
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	1309487
	Total number of households in the city with access to community toilets in the city	38198
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	3893
	Total number of households covered through door-to-door collection of solid waste	1433337
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	800
	Daily average quantum of waste water treated by STPs in the city (MLD)	651
Electricity	**Total number of authorized electrical connections in the city**	1818130
	Total electricity supplied to the city (kWh)	7017640000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	26335200
Roads and Transport	**Total Length of Road Network in the City (Km)**	2470
	Total length of arterial and sub-arterial road network in the city (Km)	520
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	730

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Mr. Amish Shah, Chief Accounts Officer
Urban Local Body	For Park and Recreation Related Questions	Mr. Jignesh Patel, Director, Parks and Garden
Urban Local Body	For Water Supply and Drainage related questions	Jagdish A. Patel,(I/C) C.E (WRM),General Manager (SRFDCL)
Urban Local Body	For Heritage sites related data	P K Vasudevan Nair, Deputy GM of Heritage Cell
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Harpalsinh M. Zala Add. City Engineer, Housing Project, Slum Networking Project
Urban Local Body	For Building plan related data	Rajesh G Patel,TDO BPSP
Urban Local Body	For Roads related data	Hitesh Contractor,Additional City

Designated data owners	Subcategories	Data owners at city level
		Engineer
Urban Local Body	For Solid waste management related data	Harshadrai Solanki, Director, Solid Waste Management & Conservancy Services
Urban Local Body	For IT services related data	Yatindra Naik (Physical)Manager,E-governance
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Jagdish Patel, City Engineer Girish Patel, In-charge, city and country planning
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Ms. Darshna Patel,Environment Engineer
Development Authority	Building Infrastructure	Rajesh G Patel,TDO BPSP
	Construction planning	Rajesh G Patel,TDO BPSP
	Green Building	Rajesh G Patel,TDO BPSP
	Rain water harvesting	Rajesh G Patel,TDO BPSP
	Universal Design Principle	Rajesh G Patel,TDO BPSP
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Naimesh Panchal, AM Customer Service, Torrent Power Dipak H Suthar,Add. Chief Engineer (Electrical)(Street Light & Project) Devang Darji, Power and DISCOM
State Disaster management authority		M.F.Dastoor Chief Fire Officer
State Education Department		Dr. Lagdhir Desai, Administrative Officer, Edu. Dept. Dr. Ashwin Trivedi, Assistant Administrative Officer, School Board
State Health Department	Health care professionals	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Citizen Services	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Disease Prevalence	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Health Infrastructure	Dr. Bhavin Solanki, Medical Officer of Health (I/C)

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency		Discoms / Electricity Board Devang Darji, Add. Chief Eng. Electricity
State Sales / Commercial Taxes Department		Dipak Trivedi, Assessor and Tax Collector (professional Tax) Debashish Banerjee, Assessor and Tax Collector (Prop.Tax),
Town and Country Planning Department	Land Use	Girish Patel, Country and City Palnning
Traffic and Police Department		P.A.Patel, Addl. City Engineer Police Commissioner office, Ahmedabad
Transport Authorities	Buses	1) Deepak Trivedi, General Manager (Operations), Ahmedabad Janmarg Limited (BRTS) 2) RajendraPrasad Pandey Dy. Transport Manager, AMTS
	Registered Vehicles	
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of

	Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	48
Total	60

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

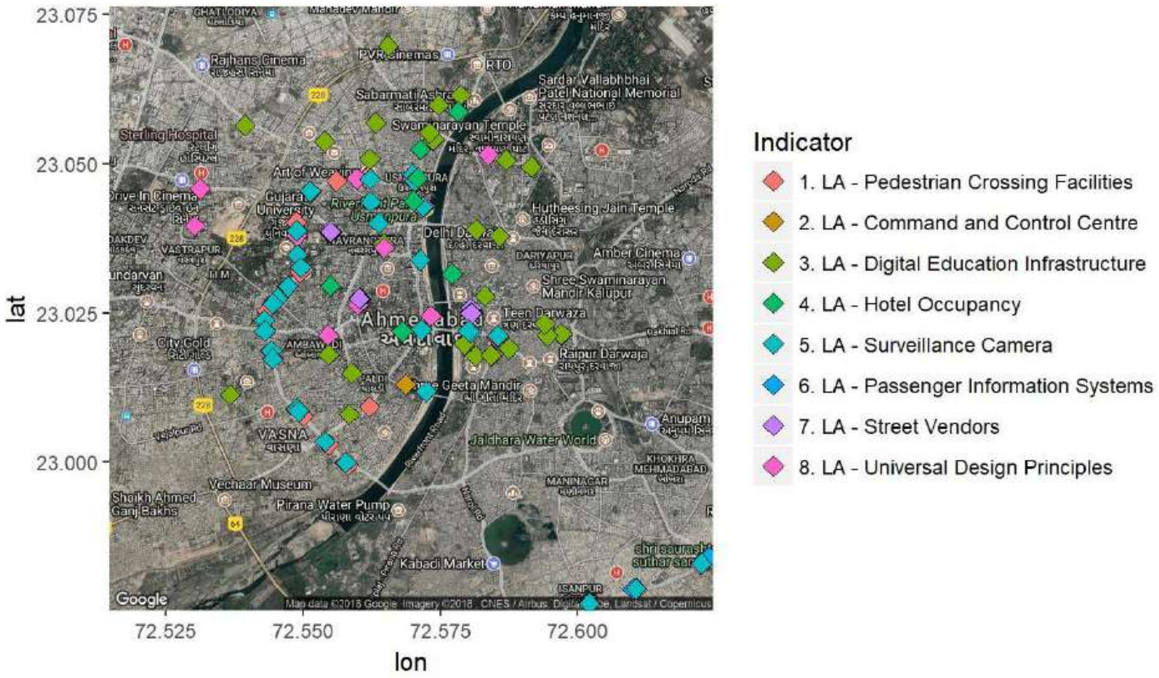
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.075
23.050
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lat
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72.600
lon
Rajhans Cinema
PVR Cinemas
RTO
Sabarmati Ashram
Swaminarayan Temple
Sardar Vallabhbhai Patel National Memorial
Sterling Hospital
Drive In Cinema
Art of Weaving
Gujarat University
Riverfront Park
VASTRAPUR
Hutheesing Jain Temple
Delhi Darwaza
Amber Cinema
DARIYAPUR
Shree Swaminarayan Mandir Kalupur
Ahmedabad
Teen Darwaza
City Gold
AMBAWADI
Raipur Darwaja
Geeta Mandir
VASNA
Jaldhara Water World
Anupam
KHOKHRA MEHMADABAD
MANINAGAR
Vechaar Museum
Shaikh Ahmed Ganj Bakhsh
Pirana Water Pump
Kabadi Market
ISANPUR
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc.,

and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	39.94
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0.5
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	109.52
Description	Services integrated through an integrated or a singular operations command centre	23
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	27.48

Description		
Sub Indicators	1.3a Building plan	4.26259E-08
	1.3b Birth/Death Certificate	0.00185408
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.005993284
	1.3f professional tax (RC)	0.523371732
	1.3g professional tax (EC)	0.044774846
	1.3h complaints/ grievance redressal	NA
	1.3i information	0.034266685
	1.3j electricity	1.313286729
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	0.07
Description		
Sub Indicators	1.4a water supply	0.5
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	95.44
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	99751.97
Denominator	Total demand raised for the year	104515.92
Unit	Percentage	

Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	279.47
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	13475.34
Denominator	Total O&M cost for providing water supply services during the year	4821.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	34.97
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	371935.73
Denominator	Total expenditure (revenue and capital accounts) in the same year	1063731.1
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	100
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	48
Denominator	Total number of wards	48
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**3.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	97
Denominator	Total number of historic buildings/sites identified	2766
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1422.94
Denominator	Total budget of the ULB (capital and revenue)	457229.26
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**366**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	366
Unit		

Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**52.56**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	508522
Denominator	Total population in the age group of 6-14 years	967501
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**54.56**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	236110
Denominator	Total female population in the age group of 6-14 years	432772
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**229.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	321152
Denominator	Total number of teachers available for primary grades (public and private schools)	1397
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**14.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	273

Denominator	Total number of schools	1847
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**80.43** 80.42610338
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**87.88** 3950954275
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**46.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	26386
Denominator	Total population of the city	5633927
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**55.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	31500

Denominator	Total population of the city	5633927
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**10**
Description	Total response time for health-related distress calls received in the city	10
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	13924
Denominator	Total population of the city	5633927
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	10157
Denominator	Total population of the city	5633927
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**131.82**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	3256
Denominator	Total length of road network in the city	2470
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**690.9**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	38925
Denominator	Total population of the city	5633927
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**5.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1960
Denominator	Total crimes recorded in the same year	38925
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**5.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	287
Denominator	Total population of the city	5633927
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-49.82**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-242433.86
Denominator	Total VAT/GST collection during preceding year	4865.94
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**28.75**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	3663.76
Denominator	Total Professional Tax collection during preceding year	12741.99
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-2.48**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-57
Denominator	Number of construction permits during preceding year	22.96
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	40364

Denominator	Total labour force in the city	967501
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	42981
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**2.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	10186
Denominator	Total number of slum and EWS households in the city	4136.3
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**120.21** 5.18183E+15
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	

Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**4.67**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	26335200
Denominator	Total population of the city	5633927
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.9**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	5084856
Denominator	Total population of the city	5633927
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**56.27**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	262200000
Denominator	Total area of the city (total area of all land uses)	466000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	5633927
Denominator	Area allocated for residential land use (in hectares)	302700000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**106.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	1410807
Denominator	Total number of households in the city	1328014

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	1818130
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**240**
Description	Total number of sustained electrical interruptions in a year	240
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	23
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	19475199
Denominator	Total energy consumption from all sources	7017640000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	15506201.08
Denominator	Total quantum of water and waste water handled during the period	54030
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	54343453
Denominator	Total number of street light installations	148870
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	13393
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	9228537.73
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	7017640000
Denominator	Total population of the city	5633927
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	3908.8

Denominator	Total area of the city (sq.km)	466
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	1553
Denominator	Total population of the city	5633927
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	22
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**2.87**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	70.77
Denominator	Total length of road network in the city	2470
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**56.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	9
Denominator	Total number of major transport interchanges in the city	16
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	2.5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**8.81**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	141
Denominator	Total number of major interchanges in the city	16
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	206
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1237.75
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**14.78**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total length of footpaths (wider than 1.2 m) available in the city	730
Denominator	Total length of road network in the city	4940
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**113.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	509
Denominator	Total number of junctions/ intersections on major roads in the city	450
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**7.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1705
Denominator	Total number of public right-of-way areas in the city	21654
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**102.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	1360000

Denominator	Total number of households in the city	1328014
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**204.12**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1150
Denominator	Total population of the city	5633927
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	1917
Denominator	Total number of samples tested for water quality	76874
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**10.43**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	120
Denominator	Quantum of water put into the distribution system (mld)	1150
Unit	Percentage	
Benchmark	Less than 15%	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.5	Percentage of water connections covered through meters	**0.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	1155
Denominator	Total number of water connections in the city	980726
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**60.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1496
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2479
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**78.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1538082
Denominator	Total number of properties in the city	1954994
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**98.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	1919899
Denominator	Total number of properties in the city	1954994
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**85**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	680
Denominator	Total waste water generated in the city per day	800
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**99.88**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	650.2
Denominator	Total waste water received at treatment plants per day	651
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**32.39**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	800

Denominator	Total length of road network in the city	2470
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**136.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	1892862
Denominator	Total number of households and establishments in the city	1391200
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	3893
Denominator	Total quantum of MSW generated in the city	3893
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**23.92**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	27933
Denominator	Average MSW generated in the city (tons per month)	116790
Unit	Percentage	

Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**12.94**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	12.94
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.62**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.62
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**112**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	112
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	51
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**97.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	64591

Denominator	Total number of samples tested	66448
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

Ministry of Urban Development
Government of India

AIZAWL

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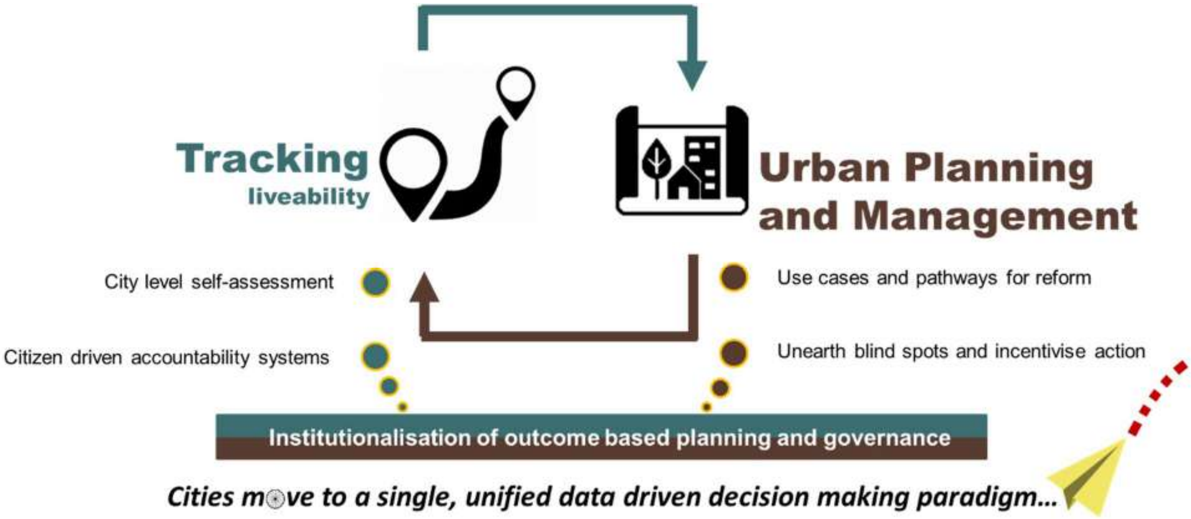
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

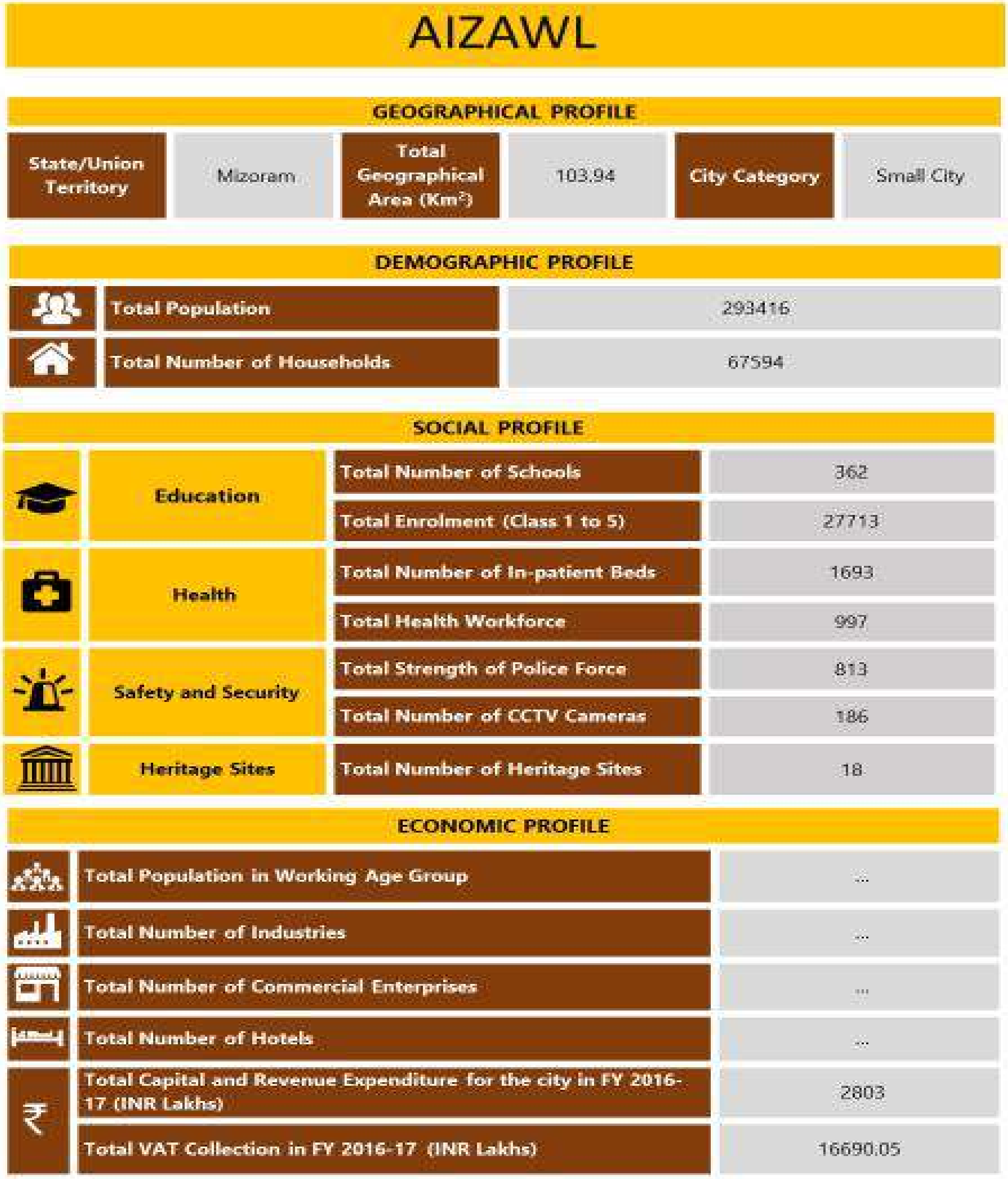
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AIZAWL

GEOGRAPHICAL PROFILE

State/Union Territory	Mizoram	Total Geographical Area (Km^2)	103.94	City Category	Small City

DEMOGRAPHIC PROFILE

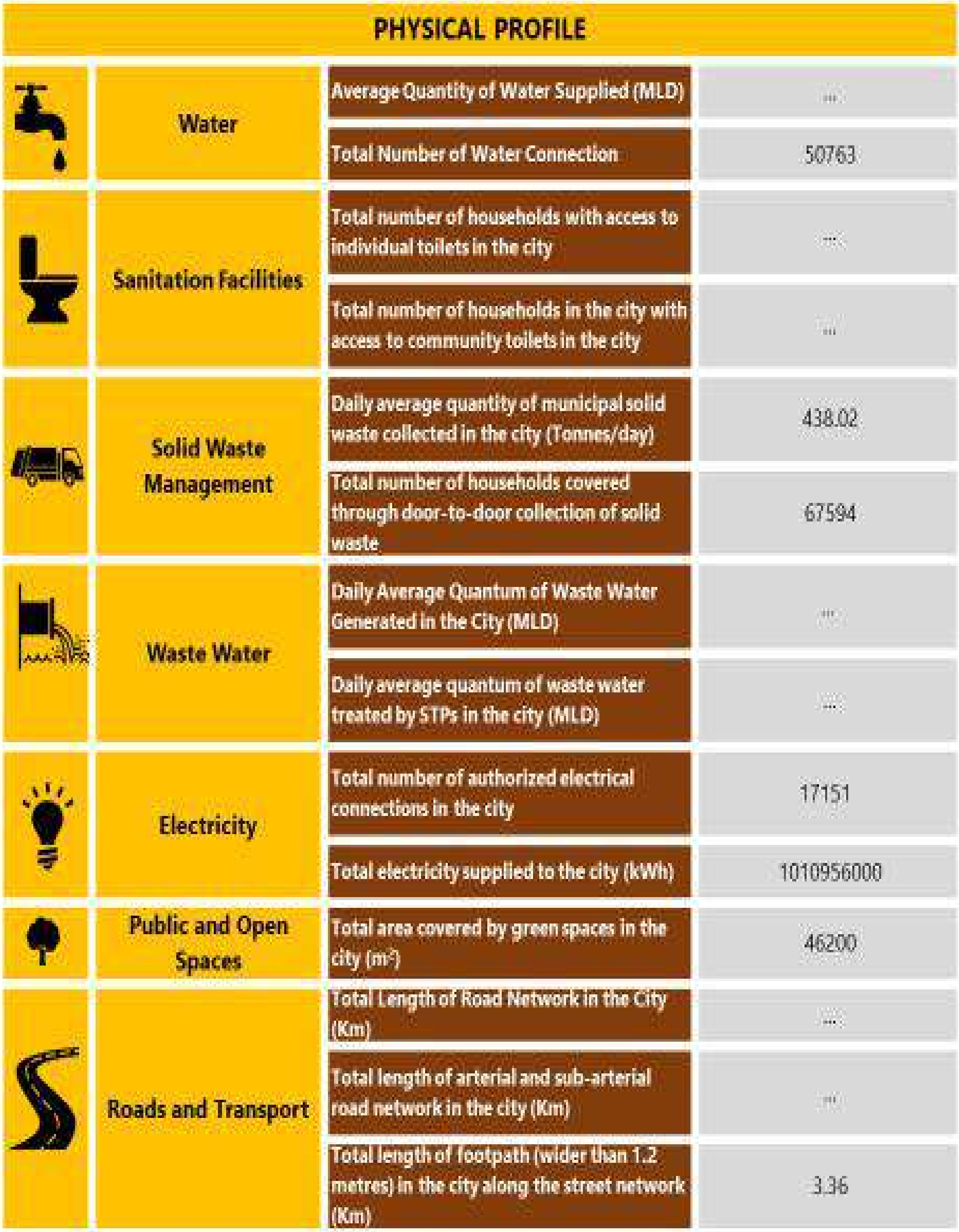
Total Population	293416
Total Number of Households	67594

SOCIAL PROFILE

Education	Total Number of Schools	362
	Total Enrolment (Class 1 to 5)	27713
Health	Total Number of In-patient Beds	1693
	Total Health Workforce	997
Safety and Security	Total Strength of Police Force	813
	Total Number of CCTV Cameras	186
Heritage Sites	Total Number of Heritage Sites	18

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	...
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2803
Total VAT Collection in FY 2016-17 (INR Lakhs)	16690.05



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	...
		Total Number of Water Connection	50763
	Sanitation Facilities	Total number of households with access to individual toilets in the city	....
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	438.02
		Total number of households covered through door-to-door collection of solid waste	67594
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
		Daily average quantum of waste water treated by STPs in the city (MLD)	....
	Electricity	Total number of authorized electrical connections in the city	17151
		Total electricity supplied to the city (kWh)	1010956000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	46200
	Roads and Transport	Total Length of Road Network in the City (Km)	....
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3.36

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

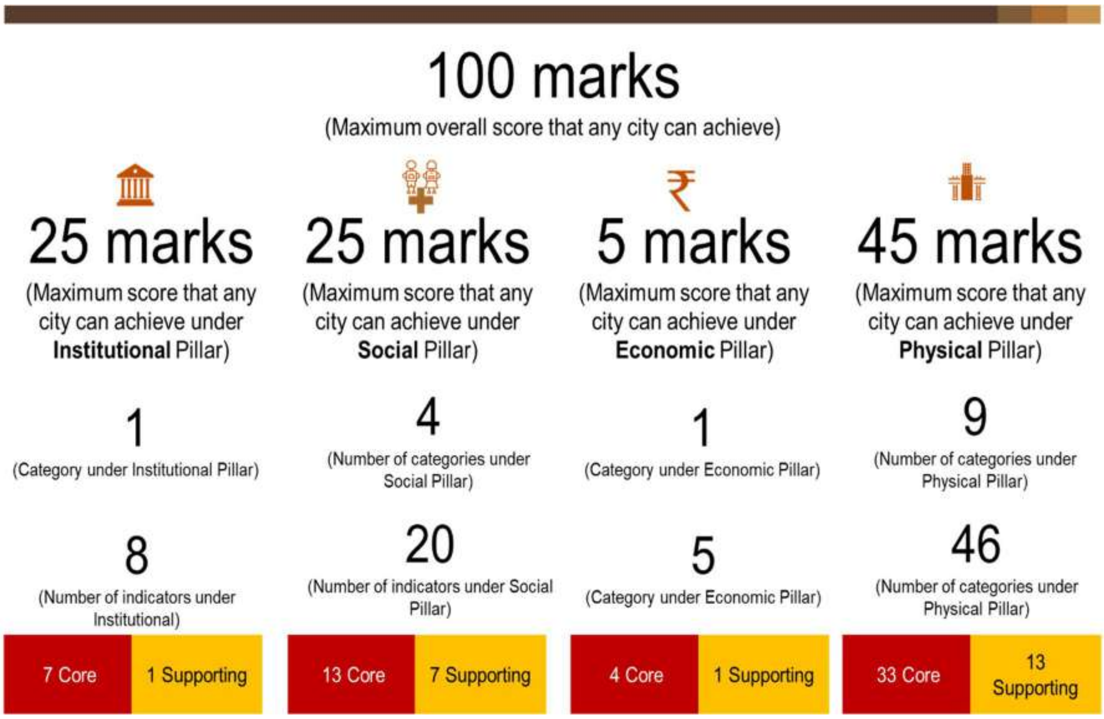
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Aizawl Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Aizawl Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Aizawl Municipal Corporation
Urban Local Body	For Heritage sites related data	Aizawl Municipal Corporation
Urban Local Body	For Ecological sites related data	Aizawl Municipal Corporation
Urban Local Body	For Housing related data	Aizawl Municipal Corporation
Urban Local Body	For Building plan related data	Aizawl Municipal Corporation
Urban Local Body	For Roads related data	Aizawl Municipal Corporation
Urban Local Body	For Solid waste management related data	Aizawl Municipal Corporation
Urban Local Body	For IT services related data	Aizawl Municipal Corporation
Urban Local Body	For Vendor committee related data	Aizawl Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Mizoram Pollution Control Board
Development Authority	Building Infrastructure	Urban Development and Poverty Alleviation Aizawl Municipal Corporation
	Construction planning	
	Green Building	

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	
	Universal Design Principle	
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Power and electricity department
State Disaster management authority		Disaster management and rehabilitation department
State Education Department		State education department, Mizoram
State Health Department	Health care professionals	Health Department, GoM
State Health Department	Citizen Services	
State Health Department	Disease Prevalence	
State Health Department	Health Infrastructure	
State Renewable Energy Development Agency		-
State Sales / Commercial Taxes Department		Taxation Department
Town and Country Planning Department	Land Use	Aizawl Municipal Corporation
Traffic and Police Department		Home Department
Transport Authorities	Buses	Transport Department, Mizoram
Transport Authorities	Registered Vehicles	
Transport Authorities	Sub urban rail transport	
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM /Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	1
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	2
Disaster Management	0
Urban Local Body	4
Total	7

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

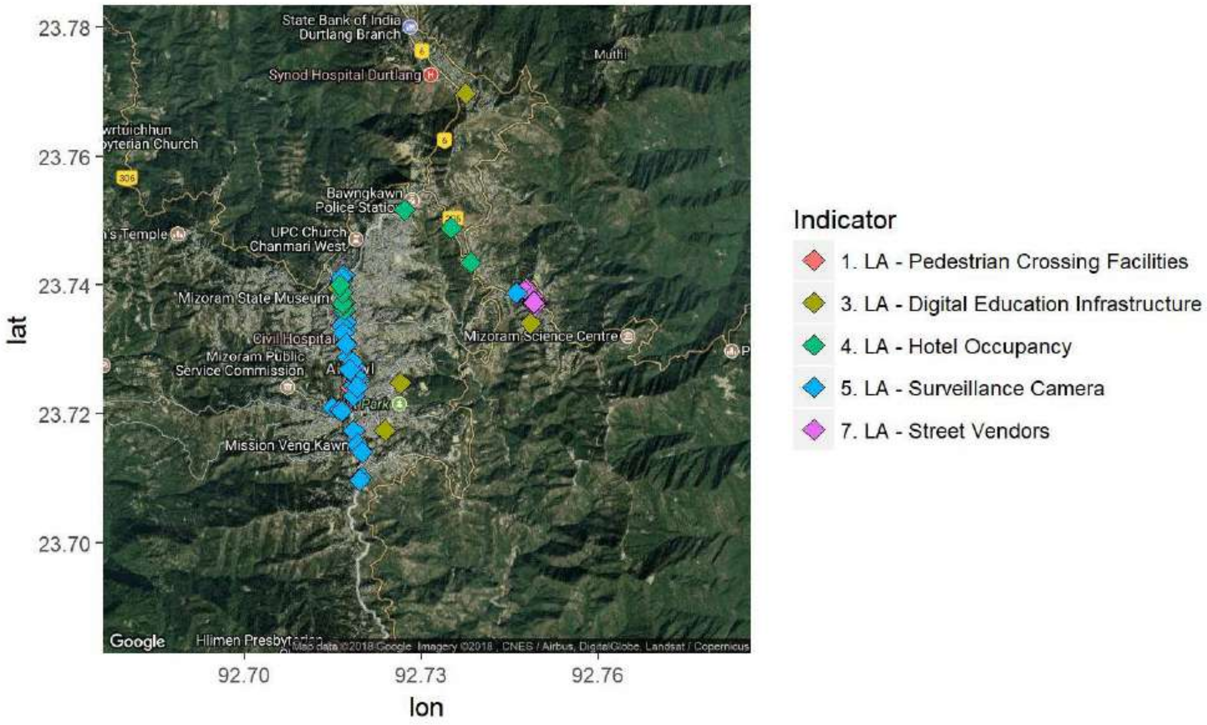
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.78
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lon
State Bank of India Durtlang Branch
Synod Hospital Durtlang
Muthi
Bawngkawn Police Station
UPC Church Chanmari West
Mizoram State Museum
Civil Hospital
Mizoram Public Service Commission
Mizoram Science Centre
Mission Veng Kawn
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**17.46**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**

Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	NA
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**838.6**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	239
Denominator	Total demand raised for the year	28.5
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**85.76**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2188.9
Denominator	Total O&M cost for providing water supply services during the year	2552.32
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-164.98**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-2638
Denominator	Total expenditure (revenue and capital accounts) in the same year	1599
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	19
Denominator	Total number of wards	19
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	18
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	2803
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-**

		Computable
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**82.79**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	43203
Denominator	Total population in the age group of 6-14 years	52184
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**82.26**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	21340
Denominator	Total female population in the age group of 6-14 years	25941
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**76.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	27713
Denominator	Total number of teachers available for primary grades (public and private schools)	362
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities	Data

	for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	Unavailable
Denominator	Total number of schools	362
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**78.74**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	78.73882336
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92.29**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	27305850
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**55.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1639
Denominator	Total population of the city	293416
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**33.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	997

Denominator	Total population of the city	293416
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**23**
Description	Total response time for health-related distress calls received in the city	23
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**4.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	13154
Denominator	Total population of the city	293416
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	116
Denominator	Total population of the city	293416
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	186
Denominator	Total length of road network in the city	Data

		Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**389.21**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1142
Denominator	Total population of the city	293416
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	117
Denominator	Total crimes recorded in the same year	1142
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**15.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	46
Denominator	Total population of the city	293416
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**15.62**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2254.83
Denominator	Total VAT/GST collection during preceding year	144.3522
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**10.59**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	1.82
Denominator	Total Professional Tax collection during preceding year	17.18
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**71.31**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	845
Denominator	Number of construction permits during preceding year	11.85
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	52184
Unit	Per 1000 persons	

Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**12.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	410
Denominator	Total number of vendors in the city	3323
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**100.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	29638
Denominator	Total number of slum and EWS households in the city	293.54
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	46200
Denominator	Total population of the city	293416
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	NA
Denominator	Total population of the city	293416
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	103940000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	293416
Denominator	Area allocated for residential land use (in hectares)	40640000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**296.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	200362
Denominator	Total number of households in the city	67594
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	17151
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification)	

	will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	NA
Denominator	Total energy consumption from all sources	1010956000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	21801.33333
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	6050
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.69**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1010956000
Denominator	Total population of the city	293416
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	56
Denominator	Total area of the city (sq.km)	103.94
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.06**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	311
Denominator	Total population of the city	293416
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	40.1
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0

Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	49.2
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	52
Denominator	Total available on-street parking spaces in the city	52
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	3.3643
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	1381
Unit	Percentage	

Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**70.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	47832
Denominator	Total number of households in the city	67594
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	Data Unavailable
Denominator	Total population of the city	293416
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	127
Denominator	Total number of samples tested for water quality	435
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	Data Unavailable

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	NA
Denominator	Total number of properties in the city	35788
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**148.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	53285

Denominator	Total number of properties in the city	35788
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**104.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	70416
Denominator	Total number of households and establishments in	67594

	the city	
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	438.02
Denominator	Total quantum of MSW generated in the city	159880
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**39.54**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	5196.1
Denominator	Average MSW generated in the city (tons per month)	13140.6
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**15.86**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	15.86
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**75**

Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	75
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	2
Denominator	Total number of noise samples	2
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	180
Denominator	Total number of samples tested	180
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

AJMER

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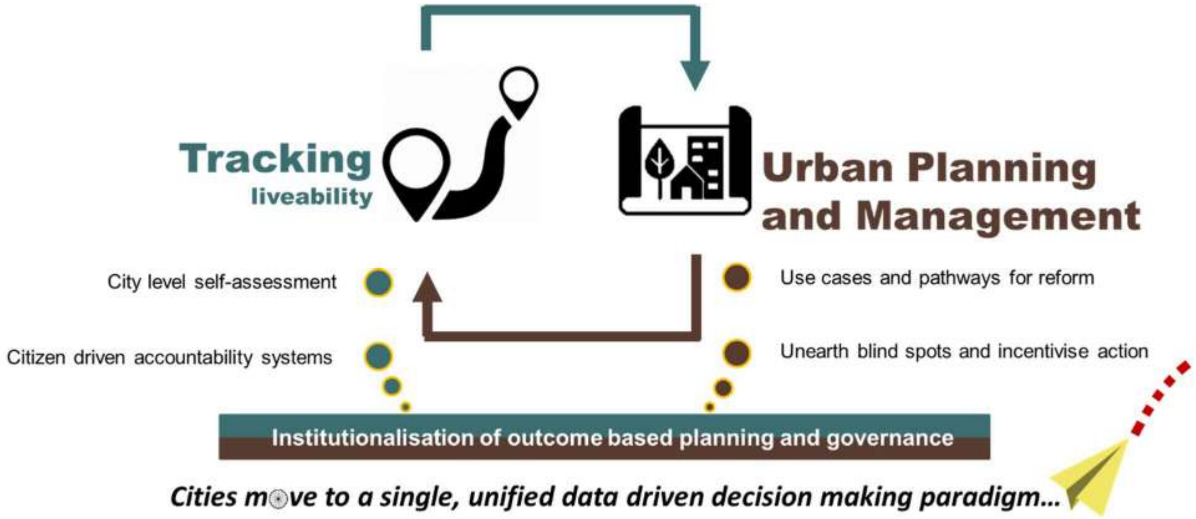
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

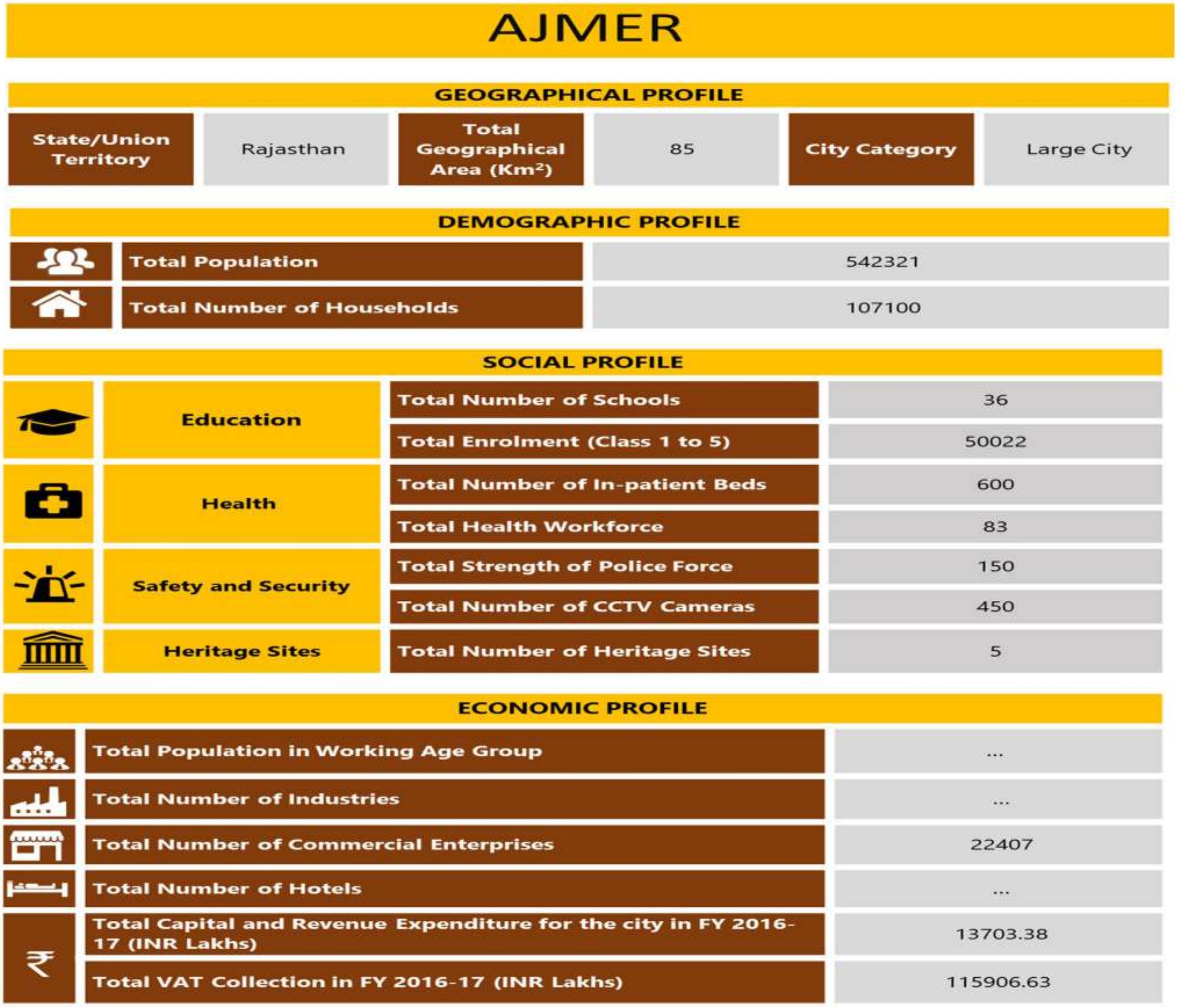

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	Total Geographical Area (Km²)	85	City Category	Large City

DEMOGRAPHIC PROFILE

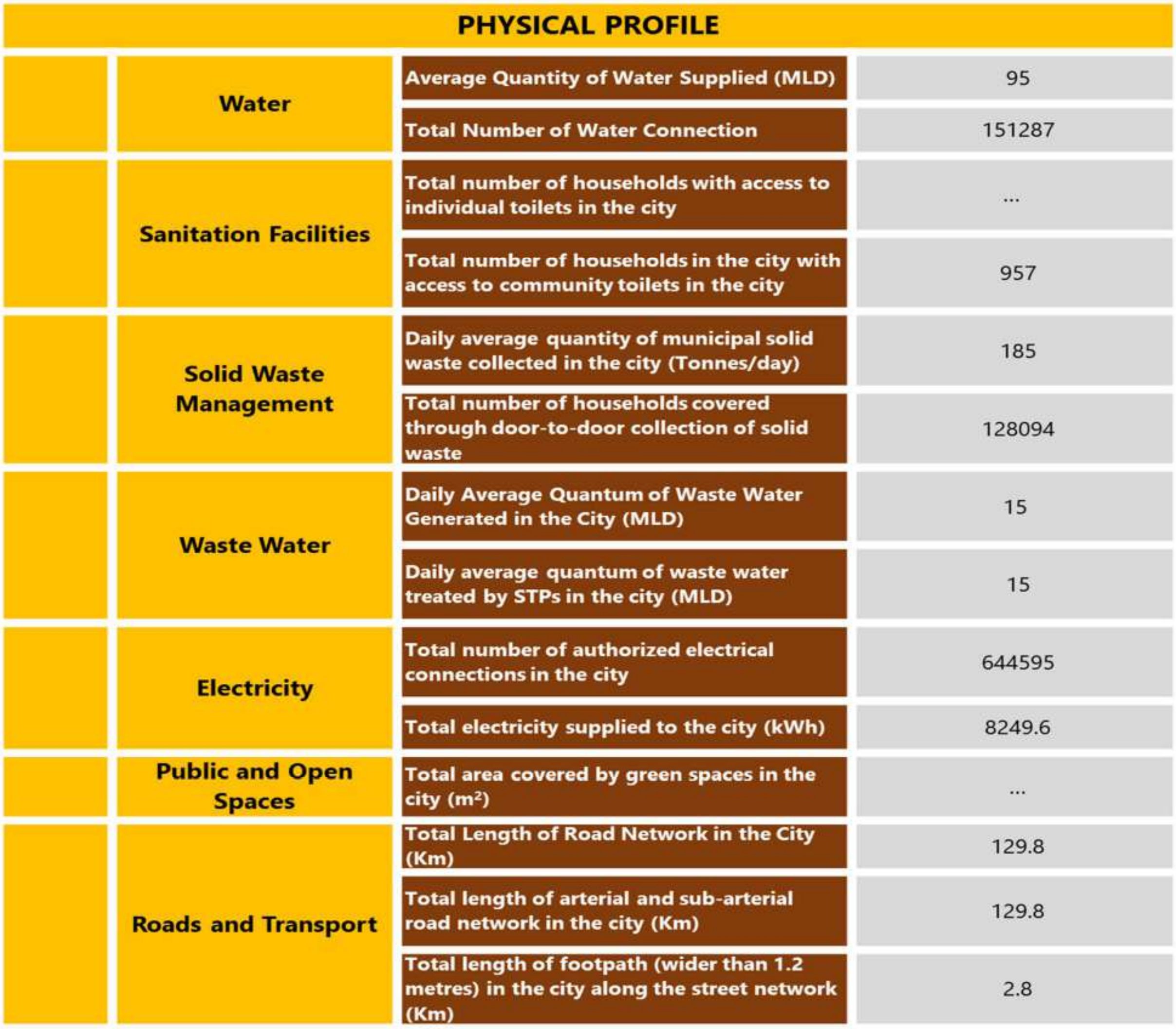
Total Population	542321
Total Number of Households	107100

SOCIAL PROFILE

Education	Total Number of Schools	36
	Total Enrolment (Class 1 to 5)	50022
Health	Total Number of In-patient Beds	600
	Total Health Workforce	83
Safety and Security	Total Strength of Police Force	150
	Total Number of CCTV Cameras	450
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

	Total Population in Working Age Group	...
	Total Number of Industries	...
	Total Number of Commercial Enterprises	22407
	Total Number of Hotels	...
₹	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13703.38
	Total VAT Collection in FY 2016-17 (INR Lakhs)	115906.63



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	95
		Total Number of Water Connection	151287
	Sanitation Facilities	Total number of households with access to individual toilets in the city	...
		Total number of households in the city with access to community toilets in the city	957
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	185
		Total number of households covered through door-to-door collection of solid waste	128094
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	15
		Daily average quantum of waste water treated by STPs in the city (MLD)	15
	Electricity	Total number of authorized electrical connections in the city	644595
		Total electricity supplied to the city (kWh)	8249.6
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
	Roads and Transport	Total Length of Road Network in the City (Km)	129.8
		Total length of arterial and sub-arterial road network in the city (Km)	129.8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

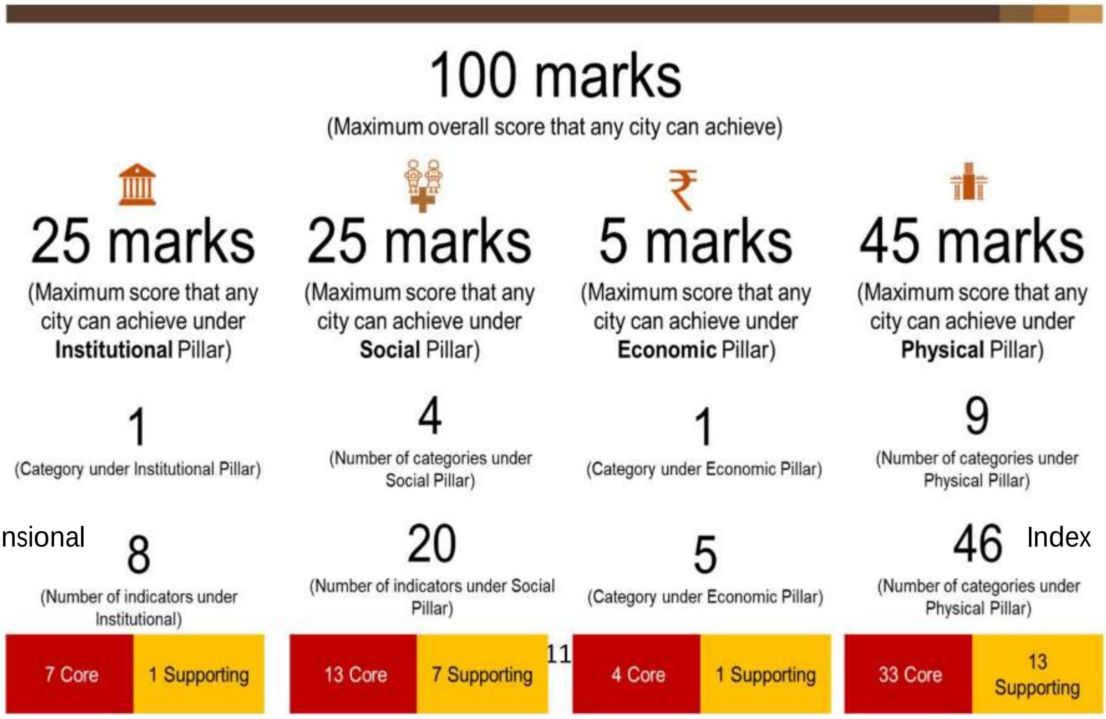
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index

Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Nagar Nigam , Tarun , NeeruGurjar
Urban Local Body	For Park and Recreation Related Questions	ADA& Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	PHED & Nagar Nigam NirmanShakha
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	
Urban Local Body	For Building plan related data	ADA & Town & Country Planning
Urban Local Body	For Roads related data	PWD
Urban Local Body	For Solid waste management related data	Nagar Nigam NirmanShakha
Urban Local Body	For IT services related data	Nagar Nigam
Urban Local Body	For Vendor committee related data	Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Nagar Nigam
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Development Authority

Designated data owners	Subcategories	Data owners at city level
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Nagar Nigam & Energy Discom Power House
State Disaster management authority		Collectrate Disaster manegment
State Education Department		Education Board
State Health Department	Health care professionals	CM&HO office health department
	Citizen Services	
	Disease Prevalence	CM&HO office health department
	Health Infrastructure	CM&HO office health department
State Renewable Energy Development Agency		Power Discom
State Sales / Commercial Taxes Department		Commercial Tax department
Town and Country Planning Department	Land Use	Town and Country Planning
Traffic and Police Department		SP Office
Transport Authorities	Buses	Transport office
	Registered Vehicles	Transport office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

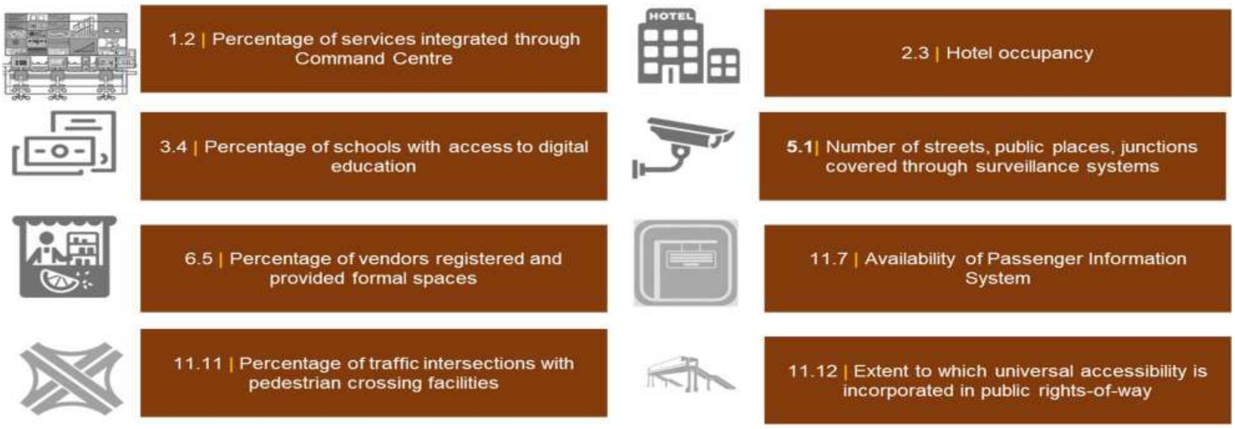
Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**39**
Total	**40***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

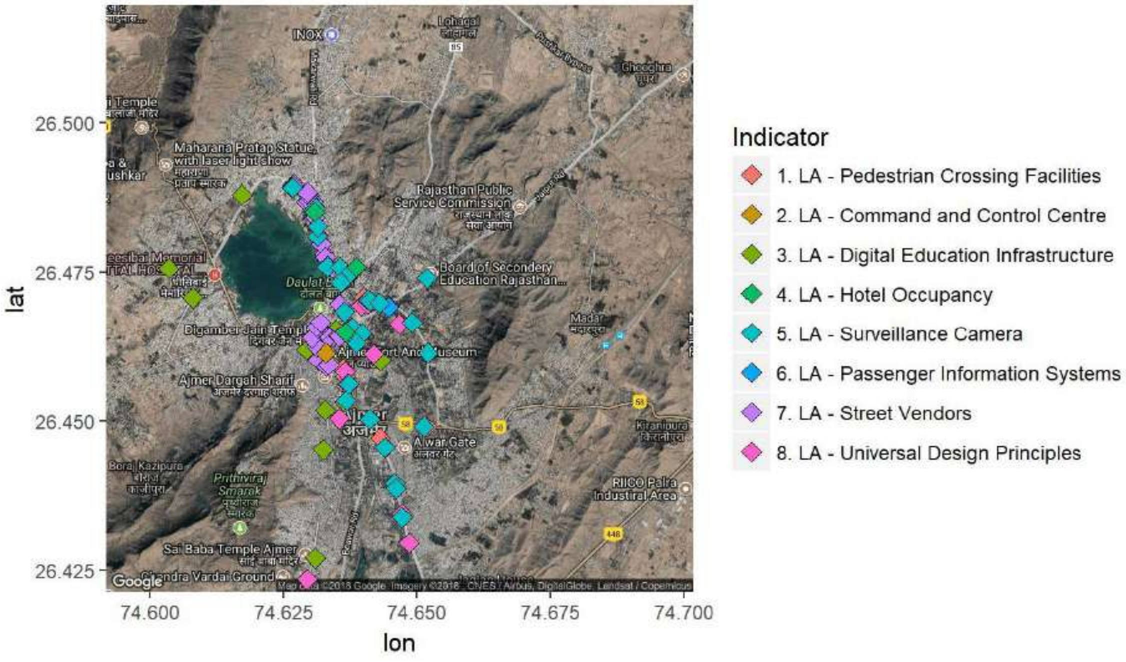
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
26.500
26.475
26.450
26.425
74.600
74.625
74.650
74.675
74.700
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**40.47**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0
	1.1g fogging	0.5
	1.1h property tax	0.333333333
	1.1i professional tax	0

	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**23.81**
Description	Services integrated through an integrated or a singular operations command centre	5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.01**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	7.09838E-05
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**7.3**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	27.5
	1.4c street lights	0

	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	7
	1.4g building plan	2
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**56.27**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	38124018
Denominator	Total demand raised for the year	67752694
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	12068682
Denominator	Total O&M cost for providing water supply services during the year	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-194.97**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-18768.49
Denominator	Total expenditure (revenue and capital accounts) in the same year	9626.55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in	

	the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**140**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	7
Denominator	Total number of historic buildings/sites identified	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**12288.79**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1683980
Denominator	Total budget of the ULB (capital and revenue)	13703.38
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**17**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	17
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**100.03**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	96515
Denominator	Total population in the age group of 6-14 years	96488
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**104.11**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	47190
Denominator	Total female population in the age group of 6-14 years	45328
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	50022
Denominator	Total number of teachers available for primary grades (public and private schools)	Data Unavailable
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	Data Unavailable
Denominator	Total number of schools	36

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**124.74**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	124.7391969
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**113.21**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	244801920
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**11.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	600
Denominator	Total population of the city	542321
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**1.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	83
Denominator	Total population of the city	542321
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**10.13**

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	54920
Denominator	Total population of the city	542321
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	285
Denominator	Total population of the city	542321
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**346.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	450
Denominator	Total length of road network in the city	129.8
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**11.06**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	60
Denominator	Total population of the city	542321
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**626.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	376

Denominator	Total crimes recorded in the same year	60
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	#VALUE!
Denominator	Total population of the city	542321
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**6.37**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	6942.93
Denominator	Total VAT/GST collection during preceding year	1089.637
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-20**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-90
Denominator	Number of construction permits during preceding year	4.5

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	96488
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**89.88**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2168
Denominator	Total number of vendors in the city	2412.2
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	188.85
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	542321
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	96001
Denominator	Total population of the city	542321
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	85000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**8689.65**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	542321

Denominator	Area allocated for residential land use (in hectares)	62.41
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**479.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	513140
Denominator	Total number of households in the city	107100
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	644595
Denominator	Total number of electricity connections in the city	644595
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2951980**
Description	Total number of sustained electrical interruptions in a year	2951980
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.4**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1180792
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	Data Unavailable
Denominator	Total energy consumption from all sources	8485.05
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	3300
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	12.99
Denominator	Total number of street light installations	39217
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	9000
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	8485.05
Denominator	Total population of the city	542321
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.58**
Formula:	*Numerator / Denominator*	

Numerator	Total length of public transport network (km)	34000
Denominator	Total area of the city (sq.km)	85
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	24
Denominator	Total population of the city	542321
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	129.8
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be**

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

		computed
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**1**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	2
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	7
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.08**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2.8
Denominator	Total length of road network in the city	259.6

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**61.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	245
Denominator	Total number of junctions/ intersections on major roads in the city	400
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	2
Denominator	Total number of public right-of-way areas in the city	77
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**70.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	75617
Denominator	Total number of households in the city	107100
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**175.17**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	95
Denominator	Total population of the city	542321
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	11
Denominator	Total number of samples tested for water quality	2120
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**21.05**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	20
Denominator	Quantum of water put into the distribution system (mld)	95
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	Data Unavailable
Denominator	Total number of water connections in the city	151287
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	21

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**12.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	13039
Denominator	Total number of properties in the city	103310
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**148.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	153900
Denominator	Total number of properties in the city	103310
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	15
Denominator	Total waste water generated in the city per day	15
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	129.8
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**116.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	150501
Denominator	Total number of households and establishments in the city	129507
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**84.09**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	185
Denominator	Total quantum of MSW generated in the city	220
Unit	Percentage	

Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	5550
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12

Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

ALIGARH

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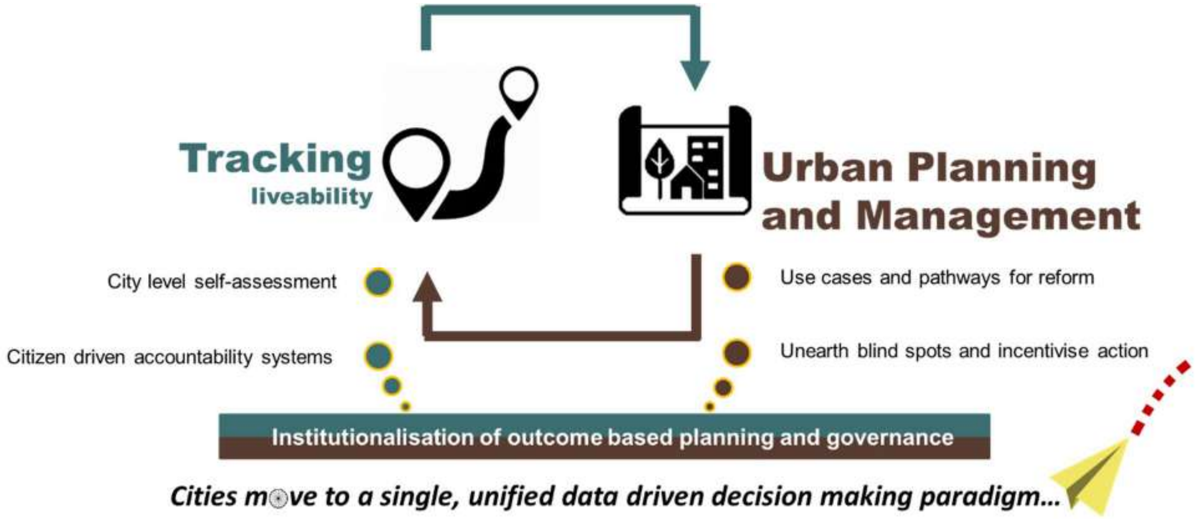
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

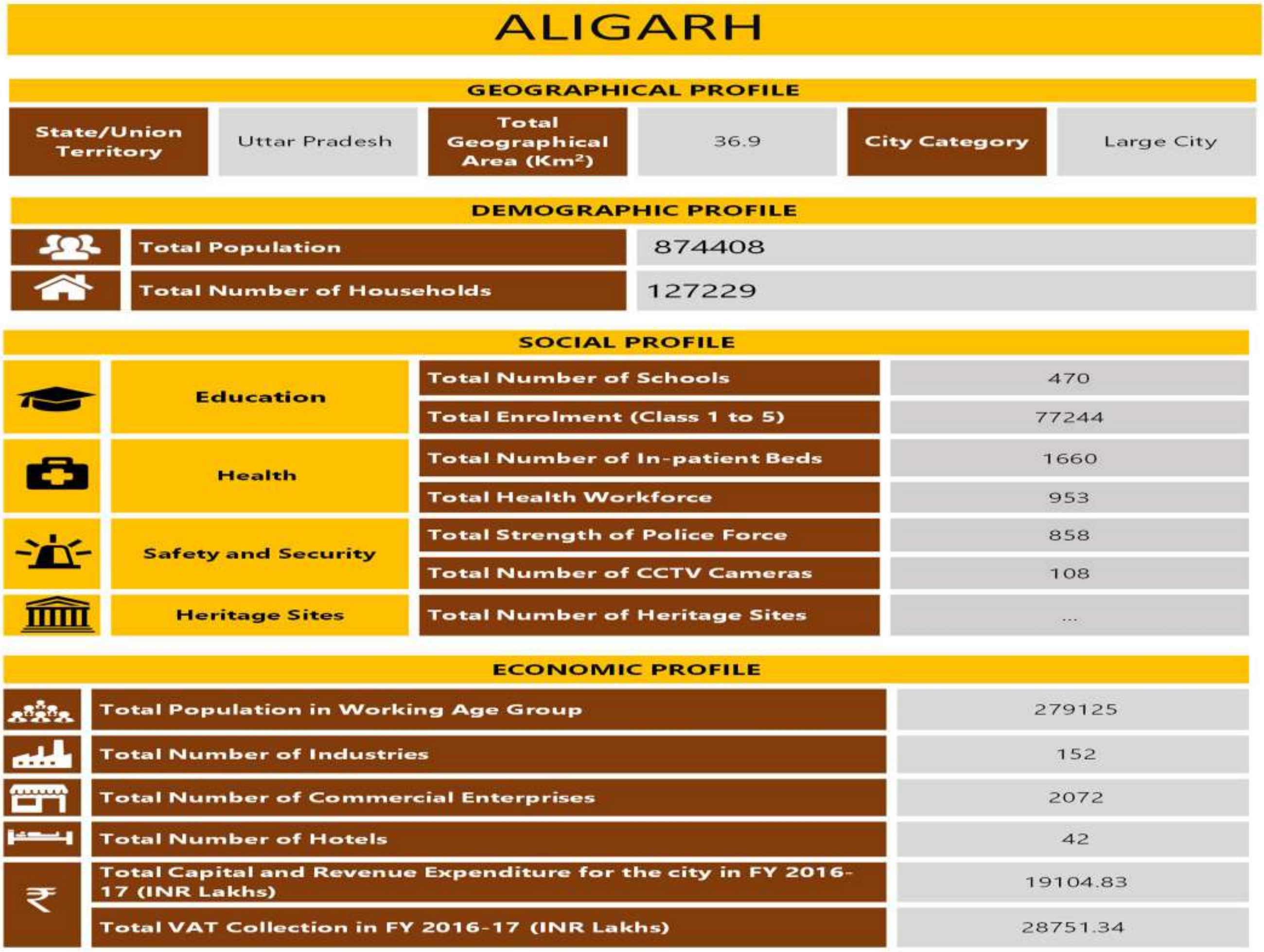
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



ALIGARH

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km^2)	36.9	City Category	Large City

DEMOGRAPHIC PROFILE

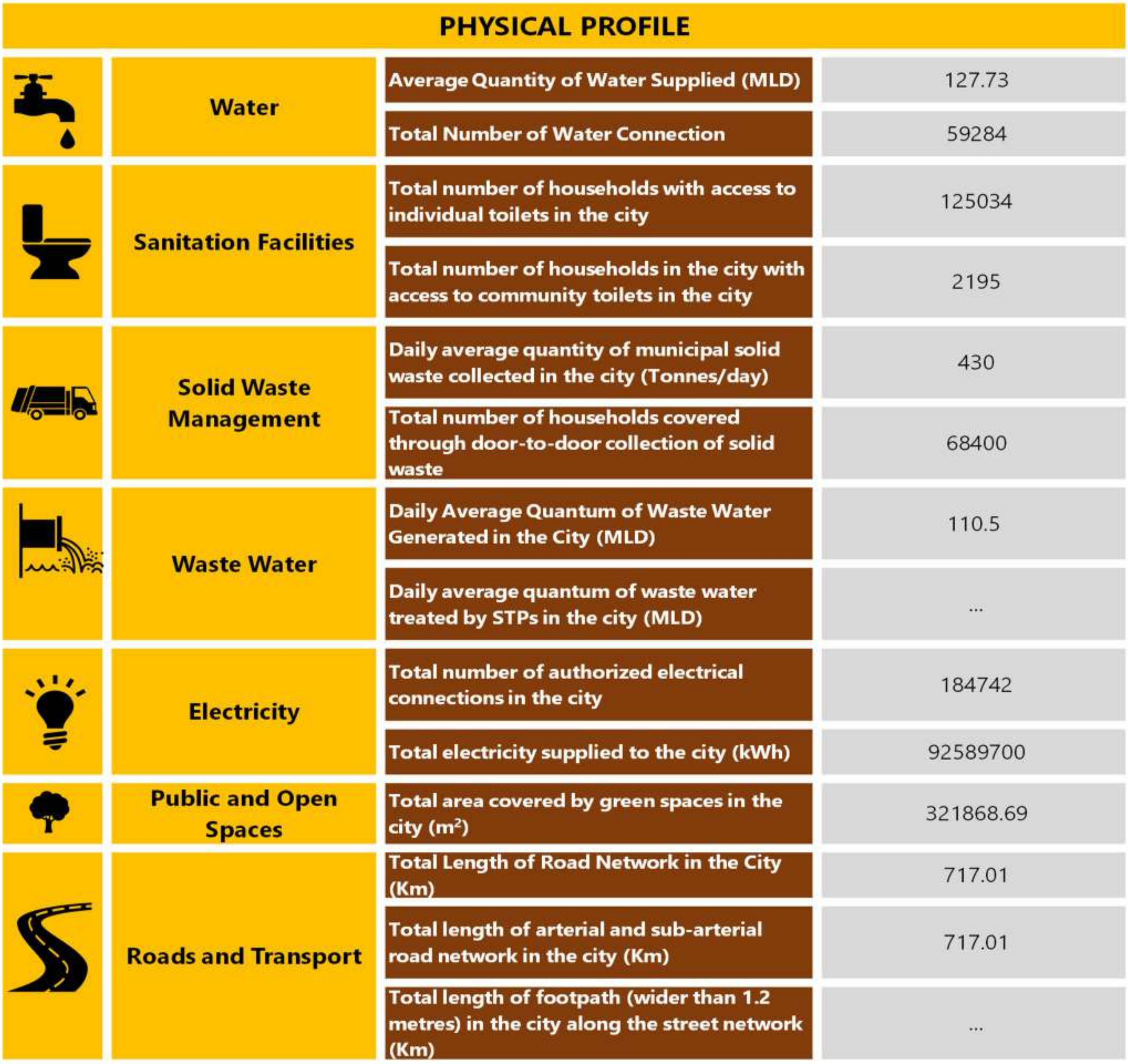
Total Population	874408
Total Number of Households	127229

SOCIAL PROFILE

Education	Total Number of Schools	470
	Total Enrolment (Class 1 to 5)	77244
Health	Total Number of In-patient Beds	1660
	Total Health Workforce	953
Safety and Security	Total Strength of Police Force	858
	Total Number of CCTV Cameras	108
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	279125
Total Number of Industries	152
Total Number of Commercial Enterprises	2072
Total Number of Hotels	42
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	19104.83
Total VAT Collection in FY 2016-17 (INR Lakhs)	28751.34



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	127.73
	Total Number of Water Connection	59284
Sanitation Facilities	Total number of households with access to individual toilets in the city	125034
	Total number of households in the city with access to community toilets in the city	2195
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	430
	Total number of households covered through door-to-door collection of solid waste	68400
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	110.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	184742
	Total electricity supplied to the city (kWh)	92589700
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	321868.69
Roads and Transport	Total Length of Road Network in the City (Km)	717.01
	Total length of arterial and sub-arterial road network in the city (Km)	717.01
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution

Pillars of Comprehensive Development	Category	Indicators
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

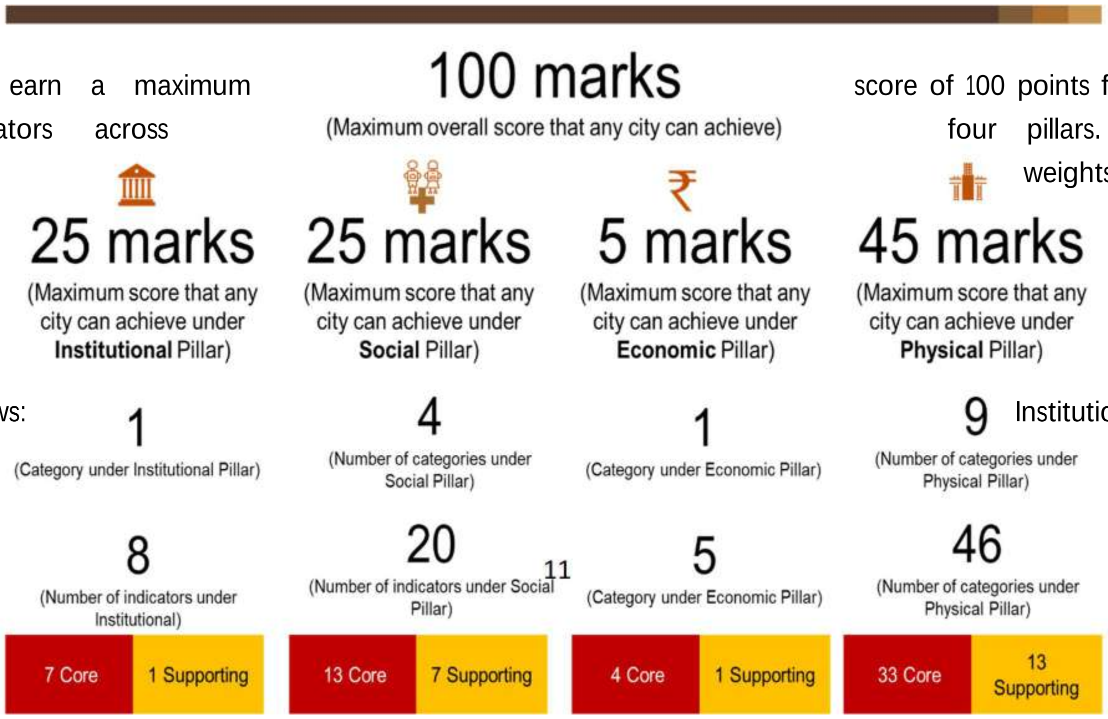
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: (25 Institutional


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index

Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Park and Recreation Related Questions	Civil department
Urban Local Body	For Water Supply and Drainage related questions	Jalkal vibhag Nagar
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Civil Department
Urban Local Body	For Housing related data	Moradabad Development Authority / properties tax department
Urban Local Body	For Building plan related data	Aligarh Development Authority
Urban Local Body	For Roads related data	Public Works Department / civil department
Urban Local Body	For Solid waste management related data	Health Department Nagar Palika Parishad Aligarh
Urban Local Body	For IT services related data	IT department (main office) Nagar palika parishad Aligarh
Urban Local Body	For Vendor committee related data	Tex department ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Aligarh
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Alighar
Development Authority	Building Infrastructure	Rampur development Authority
	Construction planning	Rampur development Authority
	Green Building	Rampur development Authority
	Rain water harvesting	Rampur development Authority
	Universal Design Principle	Rampur development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd
State Disaster management authority		State Disaster Management [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector

Designated data owners	Subcategories	Data owners at city level
		of school (DIOS)
State Health Department	Health care professionals	UP State Health Department (CMO)
	Citizen Services	UP State Health Department (CMO)
	Disease Prevalence	UP State Health Department (CMO)
	Health Infrastructure	UP State Health Department (CMO)
State Renewable Energy Development Agency		State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic police, Civil police & Grand Railway police
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2

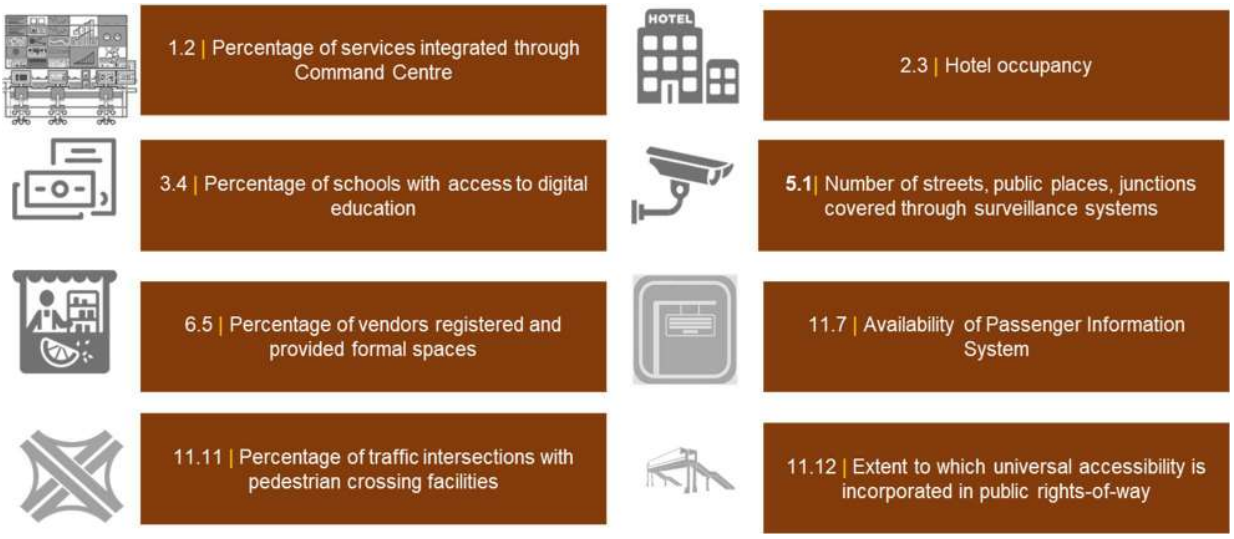
DISCOM/Electricity Department	3
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	7
State Renewable Energy Department	2
Town and Country Planning	1
State Health Department	14
Transport Authority	6
Disaster Management	1
Urban Local Body	7
Total	45*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

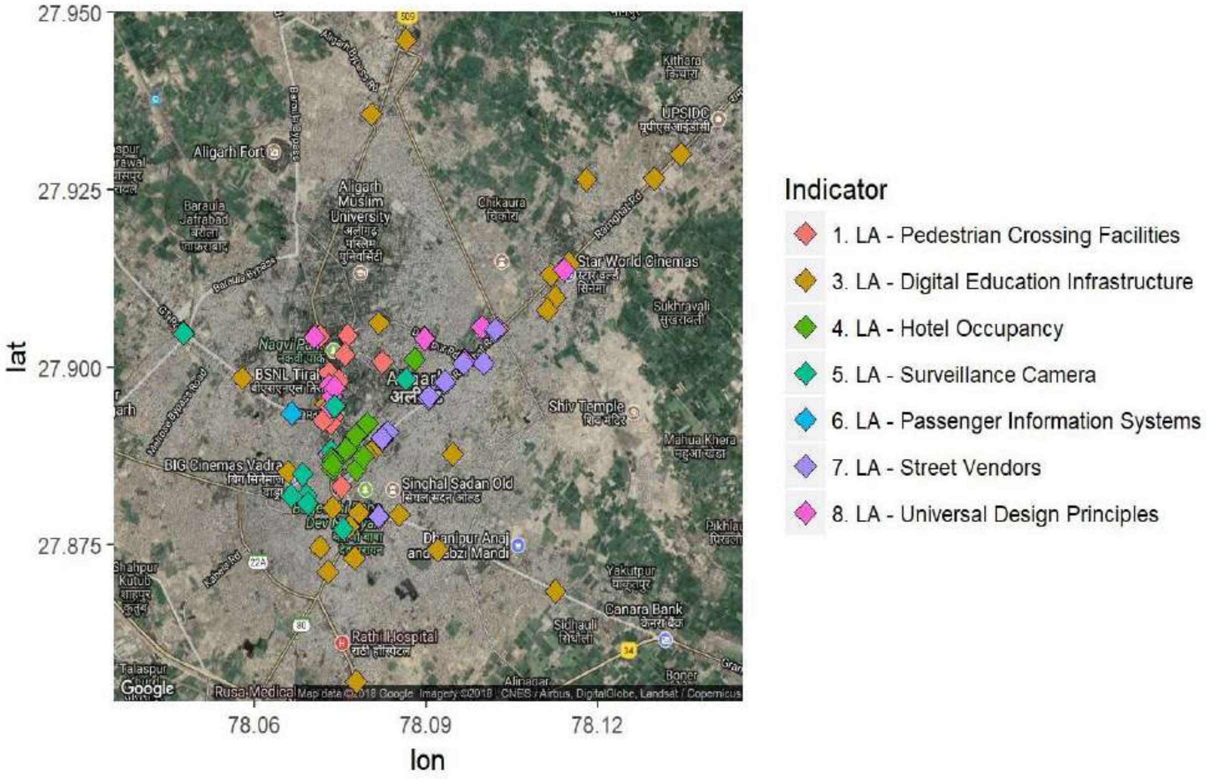
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


27.950
27.925
27.900
27.875
lat
78.06
78.09
78.12
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Aligarh Fort
Aligarh Muslim University
Chikaura
UPSIDC
Star World Cinemas
Sukhravali
Nagvi Park
BSNL Tiral
Shiv Temple
Mahua Khera
BIG Cinemas Vadra
Sinchal Sadan Old
Dhanipur Anaj and Sabzi Mandi
Yakutpur
Canara Bank
Sidhauli
Rathi Hospital
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc.,

and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**64.2**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**7.58**
Description		
Sub Indicators	1.3a Building plan	NA

	1.3b Birth/Death Certificate	0.003309191
	1.3c water supply	0.001041429
	1.3d solid waste management	0.000444872
	1.3e property tax	5.50189E-05
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	0.000169353
	1.3i information	0.000169257
	1.3j electricity	0.676619285
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.43**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	2
	1.4c street lights	2
	1.4d sewerage	4
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	9
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**88.69**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2318.65
Denominator	Total demand raised for the year	2614.26
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**25.47**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	321
Denominator	Total O&M cost for providing water supply services during the year	1260.1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**24.83**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	12647.79
Denominator	Total expenditure (revenue and capital accounts) in the same year	50935.01
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	70
Denominator	Total number of wards	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable

Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**8.57**
Description	Average Occupancy rate of Hotels	8.571428571
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	30.5
Denominator	Total budget of the ULB (capital and revenue)	19104.83
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**48**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	48
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**55.58**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	110600
Denominator	Total population in the age group of 6-14 years	199010
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**57.63**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	53418

Denominator	Total female population in the age group of 6-14 years	92693
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**8.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	77244
Denominator	Total number of teachers available for primary grades (public and private schools)	9547
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**12.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	58
Denominator	Total number of schools	470
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**144.28**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	144.2797733737
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**77.03**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	120097068
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**18.98**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1660
Denominator	Total population of the city	874408
Unit	Number per 10,000 population	

Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**10.9**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	953
Denominator	Total population of the city	874408
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**32316**
Description	Total response time for health-related distress calls received in the city	32316
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**6.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	59219
Denominator	Total population of the city	874408
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2340
Denominator	Total population of the city	874408
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**15.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	108
Denominator	Total length of road network in the city	717.019
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1077.3**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	9420
Denominator	Total population of the city	874408
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**5.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	536
Denominator	Total crimes recorded in the same year	9420
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**38.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	336
Denominator	Total population of the city	874408
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**14.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	3739.95
Denominator	Total VAT/GST collection during preceding year	250.1139
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-30.02**

Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-124.82
Denominator	Total Professional Tax collection during preceding year	415.74
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-50**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-121
Denominator	Number of construction permits during preceding year	2.42
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	1220
Denominator	Total labour force in the city	199010
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	5470
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through**	**8**

	formal/ housing	
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	5427
Denominator	Total number of slum and EWS households in the city	678.66
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**Non-Computable**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	320868.69
Denominator	Total population of the city	874408
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.4**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1226727.59
Denominator	Total population of the city	874408
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	36700000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	874408
Denominator	Area allocated for residential land use (in hectares)	61280300
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**121.7**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	154832
Denominator	Total number of households in the city	127229
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	184742
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2498**
Description	Total number of sustained electrical interruptions in a year	2498
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a	

	benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	27200
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	9500
Denominator	Total energy consumption from all sources	92589700
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1401522.75
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	15012

Denominator	Total number of street light installations	31460
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	92589700
Denominator	Total population of the city	874408
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	143
Denominator	Total area of the city (sq.km)	36.7
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	118
Denominator	Total population of the city	874408

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	717.019
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**3**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	6
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	3
Denominator	Total number of signalised intersections in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**88.89**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	8
Denominator	Total available on-street parking spaces in the city	9
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	NA
Denominator	Total length of road network in the city	1434.038
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**41.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	20
Denominator	Total number of junctions/ intersections on major roads in the city	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	79
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	57254
Denominator	Total number of households in the city	127229
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**146.08**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	127.73
Denominator	Total population of the city	874408
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	3527
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	127.73
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	59284
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**100.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	127865
Denominator	Total number of properties in the city	127229
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**194.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	247740
Denominator	Total number of properties in the city	127229
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**19.91**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	22
Denominator	Total waste water generated in the city per day	110.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	4.5
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1.1
Denominator	Total length of road network in the city	717.019
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**59.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	77200
Denominator	Total number of households and establishments in the city	129301
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	430
Denominator	Total quantum of MSW generated in the city	430
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**83.72**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	10800
Denominator	Average MSW generated in the city (tons per month)	12900
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non-computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non-computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**244**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	244
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	12
Denominator	Total number of noise samples	12
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**300**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	72
Denominator	Total number of samples tested	24
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

ALLAHABAD

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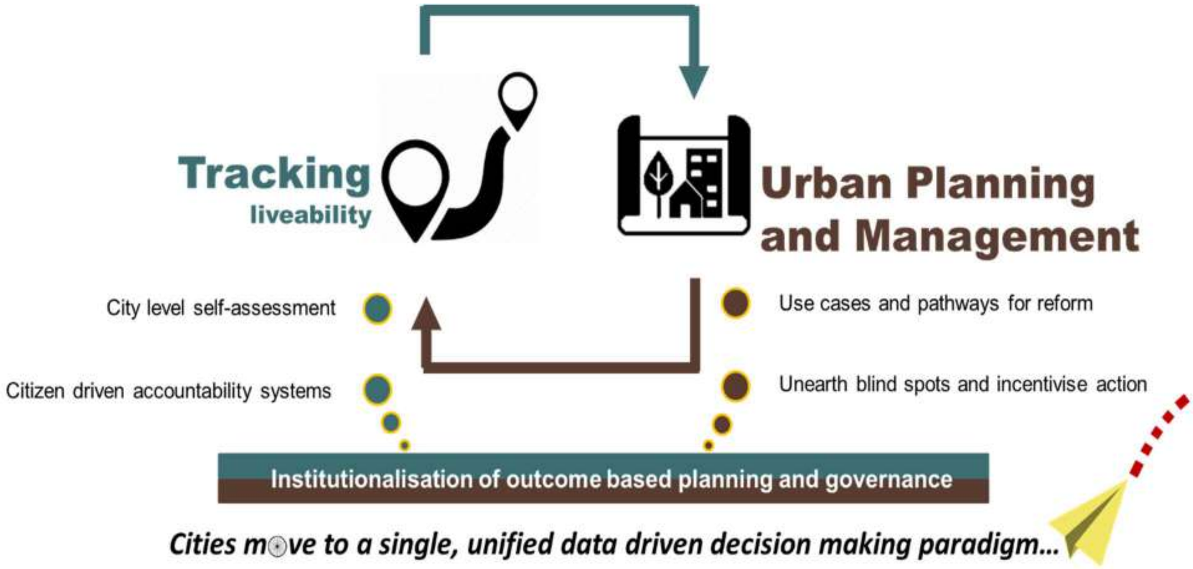
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

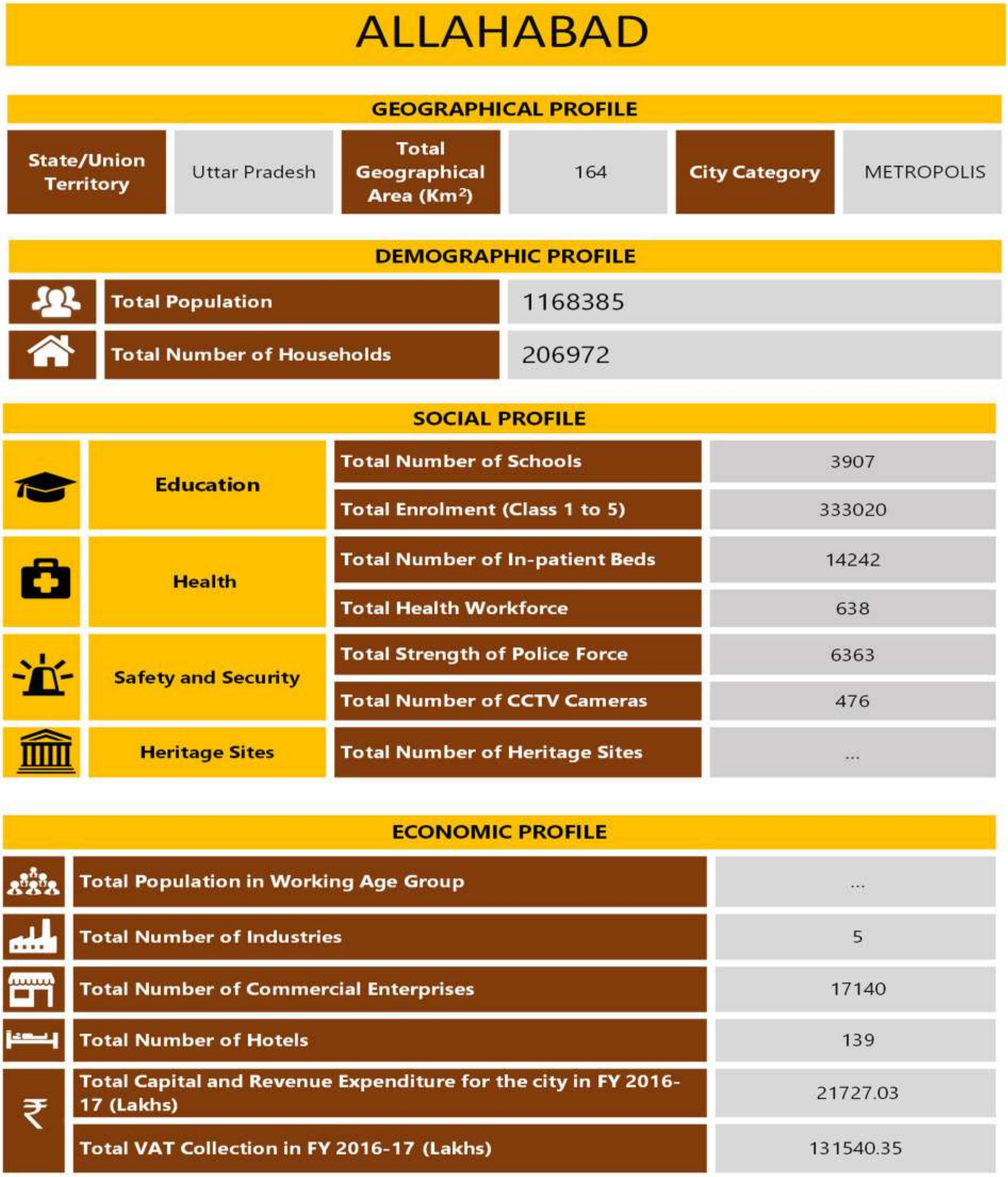
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



ALLAHABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km^2)	164	City Category	METROPOLIS

DEMOGRAPHIC PROFILE

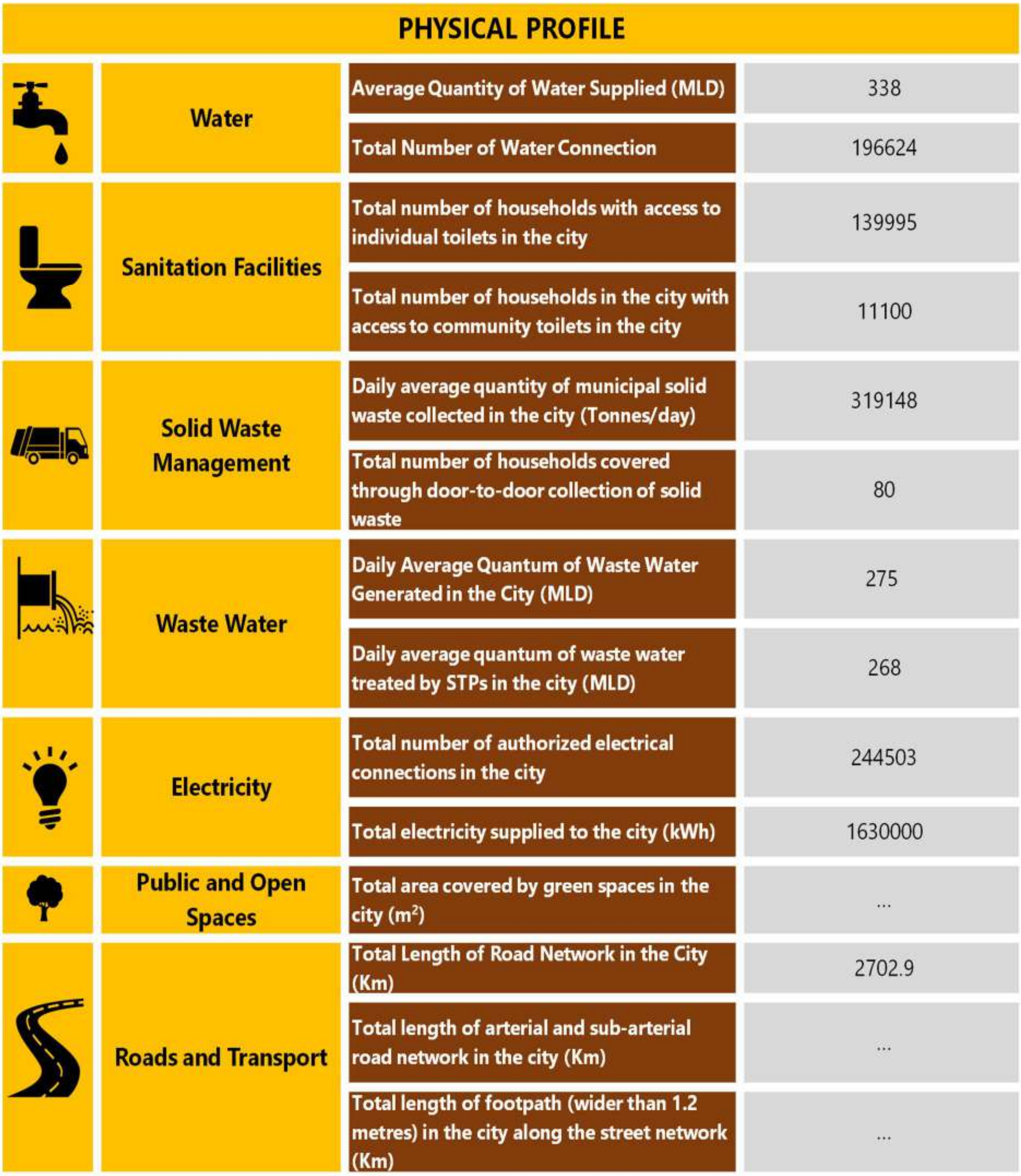
Total Population	1168385
Total Number of Households	206972

SOCIAL PROFILE

Education	Total Number of Schools	3907
	Total Enrolment (Class 1 to 5)	333020
Health	Total Number of In-patient Beds	14242
	Total Health Workforce	638
Safety and Security	Total Strength of Police Force	6363
	Total Number of CCTV Cameras	476
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	5
Total Number of Commercial Enterprises	17140
Total Number of Hotels	139
Total Capital and Revenue Expenditure for the city in FY 2016-17 (Lakhs)	21727.03
Total VAT Collection in FY 2016-17 (Lakhs)	131540.35



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	338
	Total Number of Water Connection	196624
Sanitation Facilities	Total number of households with access to individual toilets in the city	139995
	Total number of households in the city with access to community toilets in the city	11100
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	319148
	Total number of households covered through door-to-door collection of solid waste	80
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	275
	Daily average quantum of waste water treated by STPs in the city (MLD)	268
Electricity	Total number of authorized electrical connections in the city	244503
	Total electricity supplied to the city (kWh)	1630000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	2702.9
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports

Pillars of Comprehensive Development	Category	Indicators
		activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate

Pillars of Comprehensive Development	Category	Indicators
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains

Pillars of Comprehensive Development	Category	Indicators
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

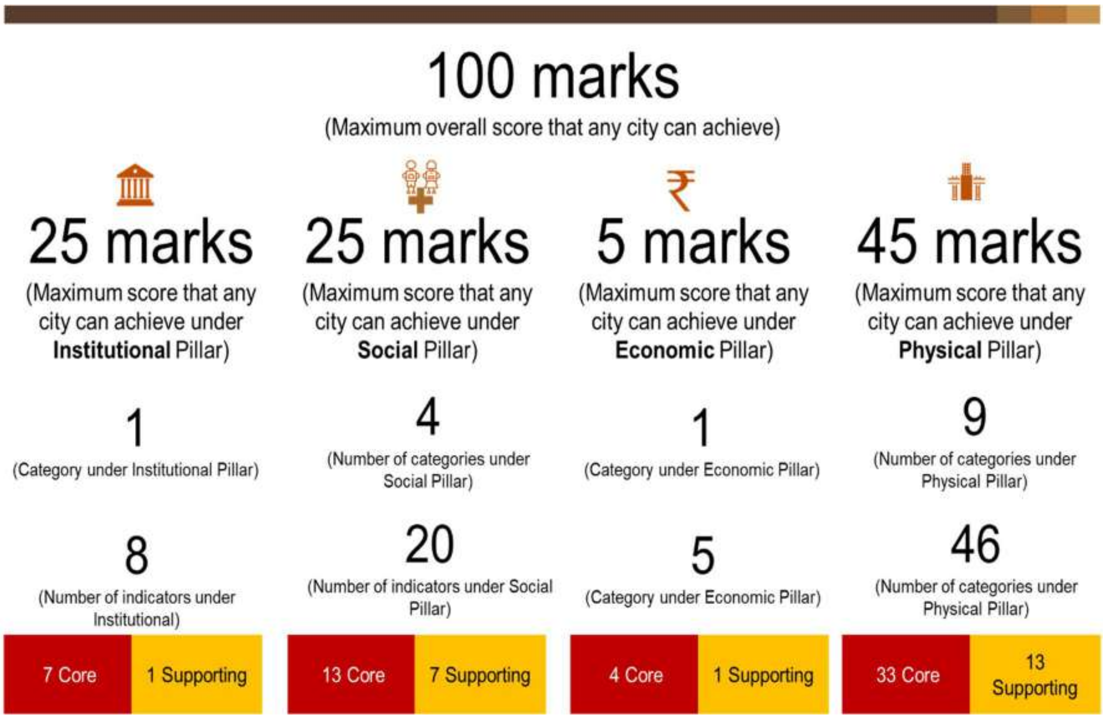
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account and Taxation Department Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Environment and Parks Department Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Environment and Parks Department Nagar Nigam
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Nagar Nigam
Urban Local Body	For Building plan related data	Nagar Nigam
Urban Local Body	For Roads related data	Nagar Nigam
Urban Local Body	For Solid waste management related data	Environment and Parks Department
Urban Local Body	For IT services related data	IT Department Nagar Nigam
Urban Local Body	For Vendor committee related data	Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	-
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Allahabad Development Authority
	Construction planning	Allahabad Development Authority
	Green Building	Allahabad Development Authority
	Rain water harvesting	Allahabad Development Authority
	Universal Design Principle	Allahabad Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electrical Department
State Disaster management authority		Disaster Management Department
State Education Department		Basic Shiksha Adhikari
State Health Department	Health care professionals	Chief Medical Officer
	Citizen Services	Chief Medical Officer
	Disease Prevalence	Chief Medical Officer
	Health Infrastructure	Chief Medical Officer
State Renewable Energy		Uttar Pradesh New and Renewable Energy

Designated data owners	Subcategories	Data owners at city level
Development Agency		Department Agency
State Sales / Commercial Taxes Department		Sales Tax Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Superintendent of police & Superintendent of traffic
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	99999
	Mono Rail Authority	99999
	Tramways	99999
	Marine Transport Authority	99999

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 52 numbers of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	4
DISCOM/Electricity Department	6
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	2
State Health Department	9
Transport Authority	2
Disaster Management	1
Urban Local Body	23
Total	52*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

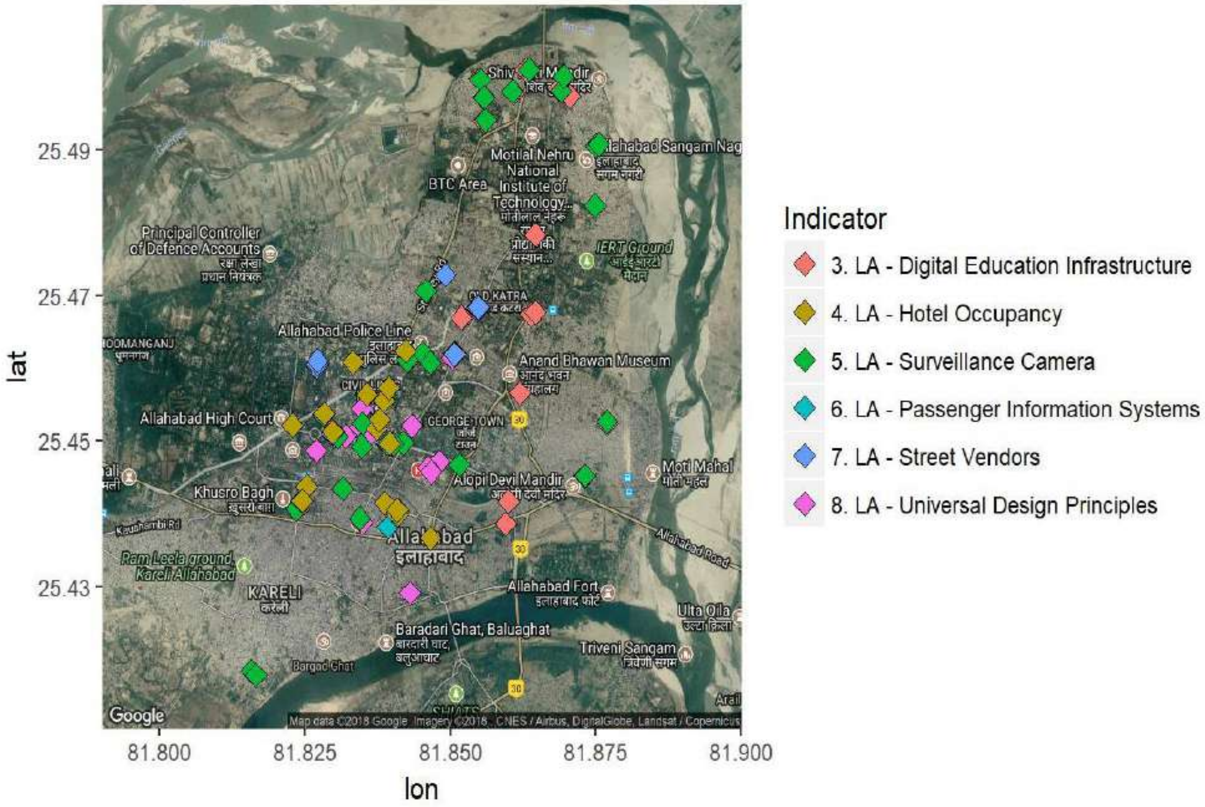
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
lat
25.49
25.47
25.45
25.43
lon
81.800
81.825
81.850
81.875
81.900
Allahabad Police Line
Allahabad High Court
Motilal Nehru National Institute of Technology
Anand Bhawan Museum
Khusro Bagh
Alopi Devi Mandir
Allahabad
इलाहाबाद
Allahabad Fort
Baradari Ghat, Baluaghat
Triveni Sangam
KARELI
GEORGE TOWN
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**45.71**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.25
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.07**
Description		

Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.002964491
	1.3c water supply	4.83157E-05
	1.3d solid waste management	0
	1.3e property tax	0.000798015
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000718513
	1.3i information	0.000256765
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	0
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	0
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**53.7**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3872.92
Denominator	Total demand raised for the year	7212.59
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**101.01**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	4493.4
Denominator	Total O&M cost for providing water supply services during the year	4448.63
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**1.23**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	695.66
Denominator	Total expenditure (revenue and capital accounts) in the same year	56397.1
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	80
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for	Data

	restoration	Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**14.29**
Description	Average Occupancy rate of Hotels	14.28571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	21727.03
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**238.89**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	498712
Denominator	Total population in the age group of 6-14 years	208760
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**266.54**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	257277
Denominator	Total female population in the age group of 6-14 years	96525
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**32.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	333020
Denominator	Total number of teachers available for primary grades (public and private schools)	10110
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	NA
Denominator	Total number of schools	3907
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**113.2**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	113.1980125543
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**104.58**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	2974507916
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**121.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	14242
Denominator	Total population of the city	1168385
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**5.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	638
Denominator	Total population of the city	1168385
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5774
Denominator	Total population of the city	1168385
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	3508
Denominator	Total population of the city	1168385
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**17.61**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	476
Denominator	Total length of road network in the city	2702.9
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1429.75**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	16705
Denominator	Total population of the city	1168385
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1
Denominator	Total crimes recorded in the same year	16705
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**40.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	472
Denominator	Total population of the city	1168385
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**6.71**

Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	8268.04
Denominator	Total VAT/GST collection during preceding year	1232.7231
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-9.81**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-61
Denominator	Number of construction permits during preceding year	6.22
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	3927
Denominator	Total labour force in the city	208760
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No:	**Percentage of vendors registered and provided formal**	**Non-**

6.5	**spaces**	**Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	13800
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	302
Denominator	Total number of slum and EWS households in the city	602.76
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	1168385
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No:	Per capita availability of public and recreational places	**Non-**

8.2		**Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	1168385
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	164000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**104.66**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1168385
Denominator	Area allocated for residential land use (in hectares)	11164
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**97.84**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	202500
Denominator	Total number of households in the city	206972
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	244503
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**110**
Description	Total number of sustained electrical interruptions in a year	110
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	240
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1560
Denominator	Total energy consumption from all sources	1630000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	18180
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	43847
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	7990
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1630000
Denominator	Total population of the city	1168385
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	43
Denominator	Total area of the city (sq.km)	164
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.12**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	138
Denominator	Total population of the city	1168385
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	2702.9
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.67**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	19
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	7
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	5405.8
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	

Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	2
Denominator	Total number of public right-of-way areas in the city	559
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**83.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	172658
Denominator	Total number of households in the city	206972
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**289.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	338
Denominator	Total population of the city	1168385
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-**

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	338
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	196624
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**24.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	25
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	104
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**73.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	152515
Denominator	Total number of properties in the city	206972
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**67.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	139995
Denominator	Total number of properties in the city	206972
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**97.45**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	268
Denominator	Total waste water generated in the city per day	275
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**102.61**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	275
Denominator	Total waste water received at treatment plants per day	268
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	2702.9
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	99
Denominator	Total number of households and establishments in the city	224112
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**110.79**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	319148
Denominator	Total quantum of MSW generated in the city	288060
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	9574440
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**421**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	421
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**40.59**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	40.59
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**142.74**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	142.74
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	340
Denominator	Total number of noise samples	552
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AMARAVATI

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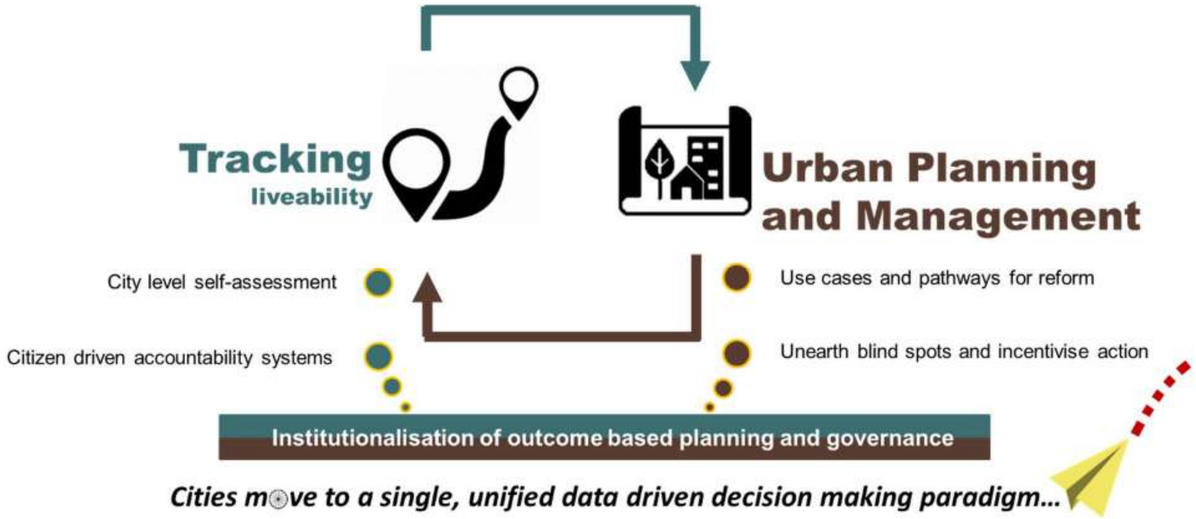
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

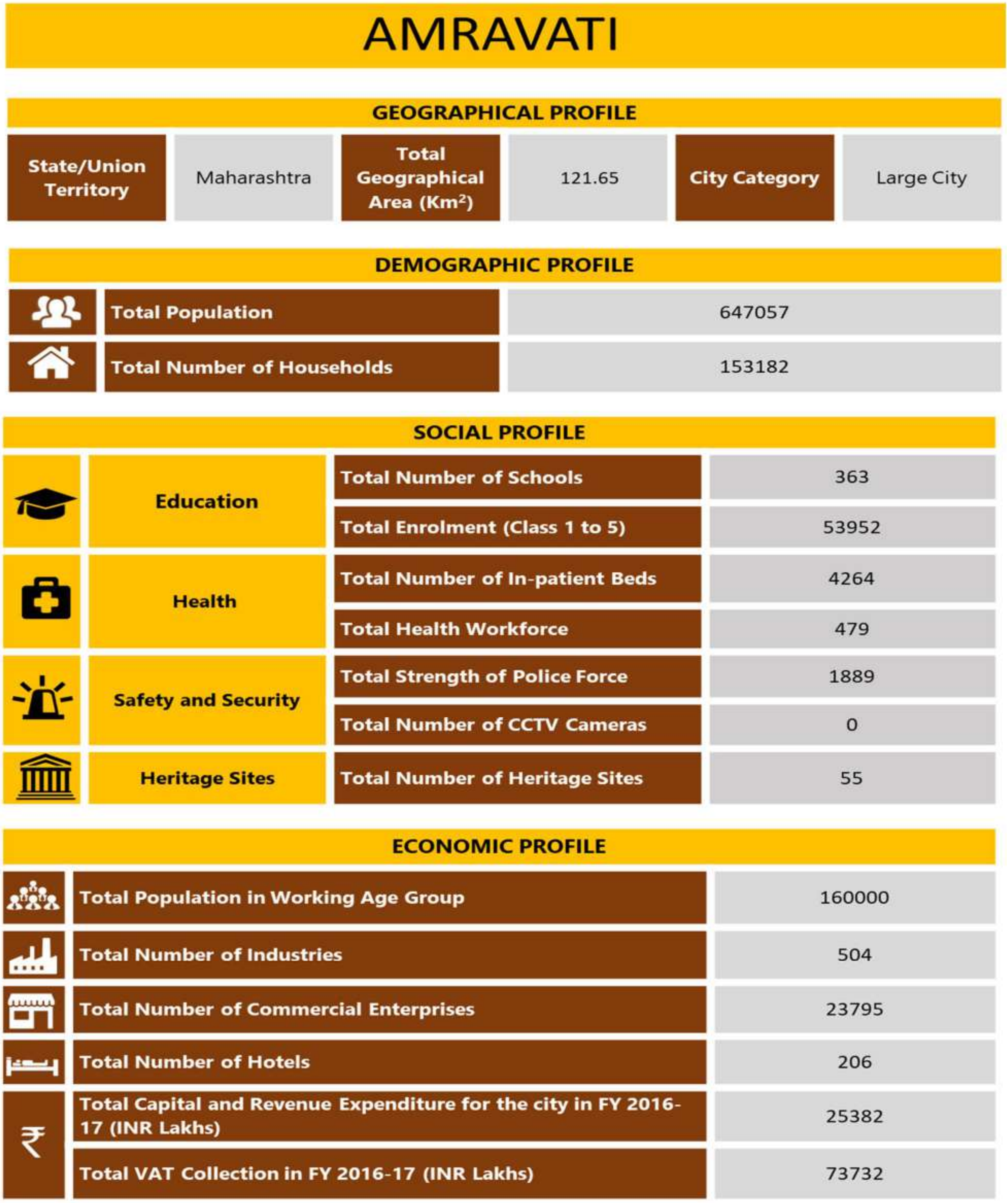
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AMRAVATI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	121.65	City Category	Large City

DEMOGRAPHIC PROFILE

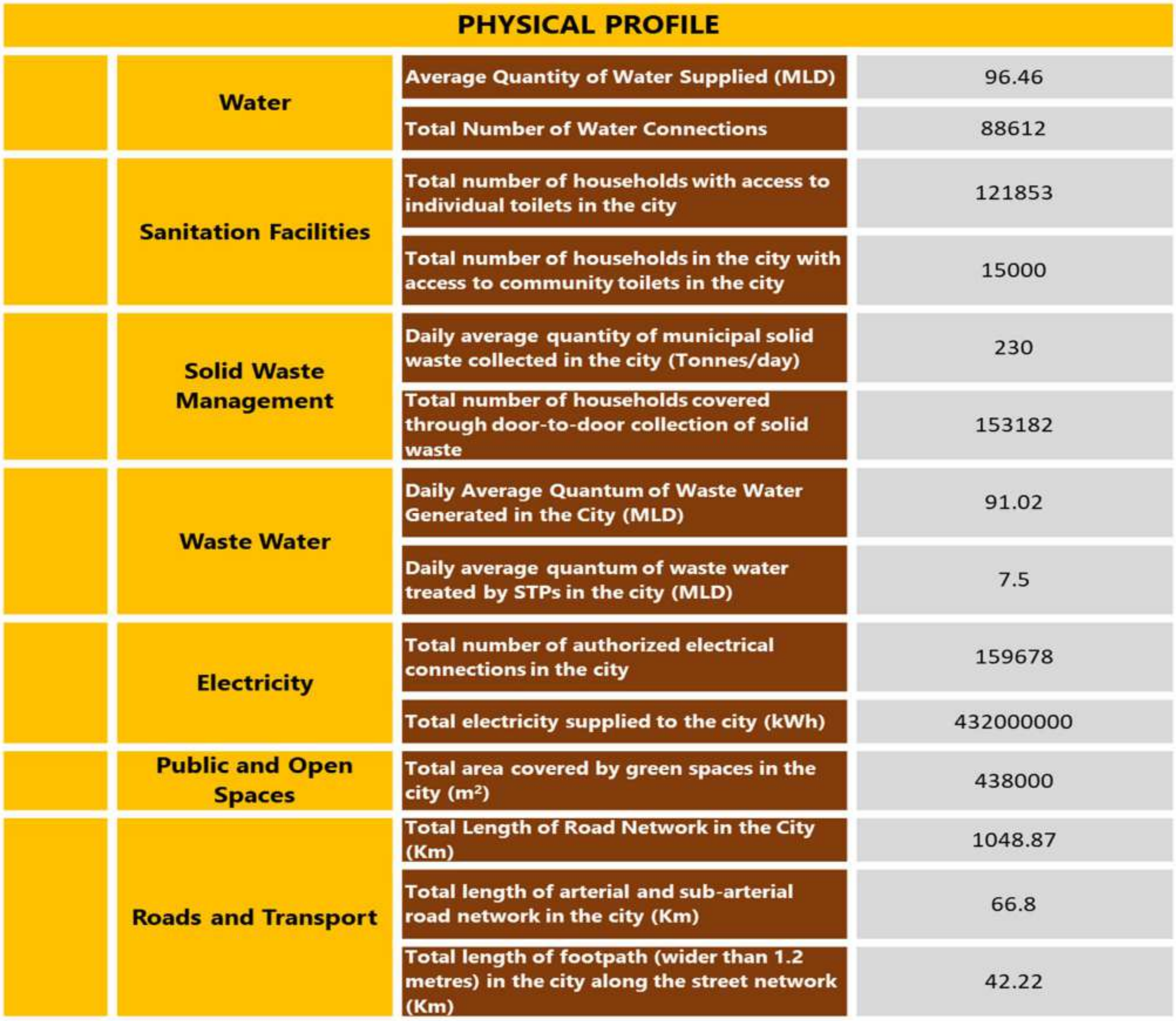
Total Population	647057
Total Number of Households	153182

SOCIAL PROFILE

Education	Total Number of Schools	363
	Total Enrolment (Class 1 to 5)	53952
Health	Total Number of In-patient Beds	4264
	Total Health Workforce	479
Safety and Security	Total Strength of Police Force	1889
	Total Number of CCTV Cameras	0
Heritage Sites	Total Number of Heritage Sites	55

ECONOMIC PROFILE

Total Population in Working Age Group	160000
Total Number of Industries	504
Total Number of Commercial Enterprises	23795
Total Number of Hotels	206
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25382
Total VAT Collection in FY 2016-17 (INR Lakhs)	73732



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	96.46
		Total Number of Water Connections	88612
	Sanitation Facilities	Total number of households with access to individual toilets in the city	121853
		Total number of households in the city with access to community toilets in the city	15000
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	230
		Total number of households covered through door-to-door collection of solid waste	153182
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	91.02
		Daily average quantum of waste water treated by STPs in the city (MLD)	7.5
	Electricity	Total number of authorized electrical connections in the city	159678
		Total electricity supplied to the city (kWh)	432000000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	438000
	Roads and Transport	Total Length of Road Network in the City (Km)	1048.87
		Total length of arterial and sub-arterial road network in the city (Km)	66.8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	42.22

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

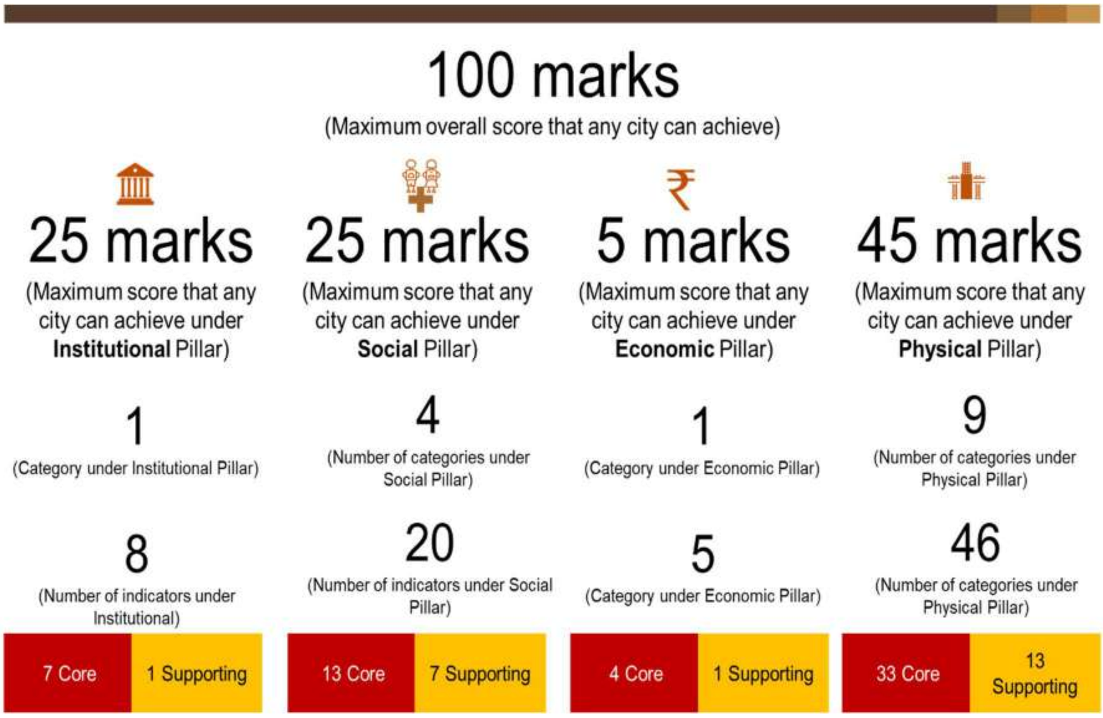
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	**Population range**
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts & Audit departments
Urban Local Body	For Park and Recreation Related Questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Water Supply and Drainage related questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Heritage sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Ecological sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Housing related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Building plan related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Roads related data	Assistant Director, Planning Wing and

Designated data owners	Subcategories	Data owners at city level
		Manager, IT Department
Urban Local Body	For Solid waste management related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For IT services related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Vendor committee related data	NA
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Assistant Director, Planning Wing and Manager, IT Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Andhra Pradesh- Capital Region Development Authority (AP- CRDA)
	Construction planning	Andhra Pradesh- Capital Region Development Authority
	Green Building	Andhra Pradesh- Capital Region Development Authority
	Rain water harvesting	Andhra Pradesh- Capital Region Development Authority
	Universal Design Principle	Andhra Pradesh- Capital Region Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL)
State Disaster management authority		Addition Commissioner (Projects) District DM Authority,
State Education Department		District Educational Officer
State Health Department	Health care professionals	District Medical & Health Department
	Citizen Services	District Medical & Health Department
	Disease Prevalence	District Medical & Health Department
	Health Infrastructure	District Medical & Health Department
State Renewable Energy Development Agency		National Renewable Energy Corporation Limited
State Sales / Commercial Taxes Department		Deputy Commissioner, Commercial tax Department
Town and Country Planning Department	Land Use	Town Planning Department.

Designated data owners	Subcategories	Data owners at city level
Traffic and Police Department		Office of Superintendent of Police.
Transport Authorities	Buses	Road Transport Authority
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 2 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**2**
Total	**2***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**30.77**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0

	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**130.95**
Description	Services integrated through an integrated or a singular operations command centre	27.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**109.35**
Description		
Sub Indicators	1.3a Building plan	0.24533616
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	1.941747573
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.33**
Description		
Sub Indicators	1.4a water supply	3
	1.4b solid waste	2

	1.4c street lights	3
	1.4d sewerage	3
	1.4e professional tax	NA
	1.4f parks and recreational spaces	3
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	Data Unavailable
Denominator	Total O&M cost for providing water supply services during the year	55
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	Data Unavailable
Denominator	Total expenditure (revenue and capital accounts) in the same year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA

Denominator	Total number of wards	29
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**0**
Description	Average Occupancy rate of Hotels	0
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**7**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	7

Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6607
Denominator	Total population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3487
Denominator	Total female population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**20.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	3988
Denominator	Total number of teachers available for primary grades (public and private schools)	197
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**20.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	15
Denominator	Total number of schools	74
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**128.69**

Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	128.6882456
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**103.46**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	737877
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**3.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	34
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**10.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	110
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**25**
Description	Total response time for health-related distress calls received in the city	25
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	266

Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	6
Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**11.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	22
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**226.21**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	233
Denominator	Total population of the city	103000
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**15.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	35

Denominator	Total crimes recorded in the same year	233
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**39.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	41
Denominator	Total population of the city	103000
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-11.26**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-59.63
Denominator	Total VAT/GST collection during preceding year	5.2979
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**6300**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	126
Denominator	Number of construction permits during preceding year	0.02
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	Data Unavailable
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**276.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	23332
Denominator	Total number of slum and EWS households in the city	84.51
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	63.93
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**621.33**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	63996740
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1.187
Denominator	Total area of the city (total area of all land uses)	217000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**1481.78**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	103000
Denominator	Area allocated for residential land use (in hectares)	69.511
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**109.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	41623
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	10
Denominator	Total number of electricity connections in the city	49838
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	49
Denominator	Total energy consumption from all sources	61510253
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	7105

Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	37055
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	61510253
Denominator	Total population of the city	103000
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	20
Denominator	Total area of the city (sq.km)	217
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**8.39**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	864
Denominator	Total population of the city	103000
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**15.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	30
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**56.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	13
Denominator	Total number of major transport interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.57**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	13
Denominator	Total number of major interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**10.16**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	40
Denominator	Total length of road network in the city	393.62
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**10.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	18

Denominator	Total number of public right-of-way areas in the city	175
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	37959
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	Data Unavailable
Denominator	Total population of the city	103000
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	30
Denominator	Total number of samples tested for water quality	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	Data Unavailable

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	38130
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**18.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	11
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	61
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**112.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	38126
Denominator	Total number of properties in the city	33967
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**39.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	13466
Denominator	Total number of properties in the city	33967

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	37959
Denominator	Total number of households and establishments in the city	38040
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**87.5**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	14

Denominator	Total quantum of MSW generated in the city	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	420
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**74.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	74.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	30
Denominator	Total number of noise samples	33
Unit	Percentage	

Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	30
Denominator	Total number of samples tested	30
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AMRAVATI

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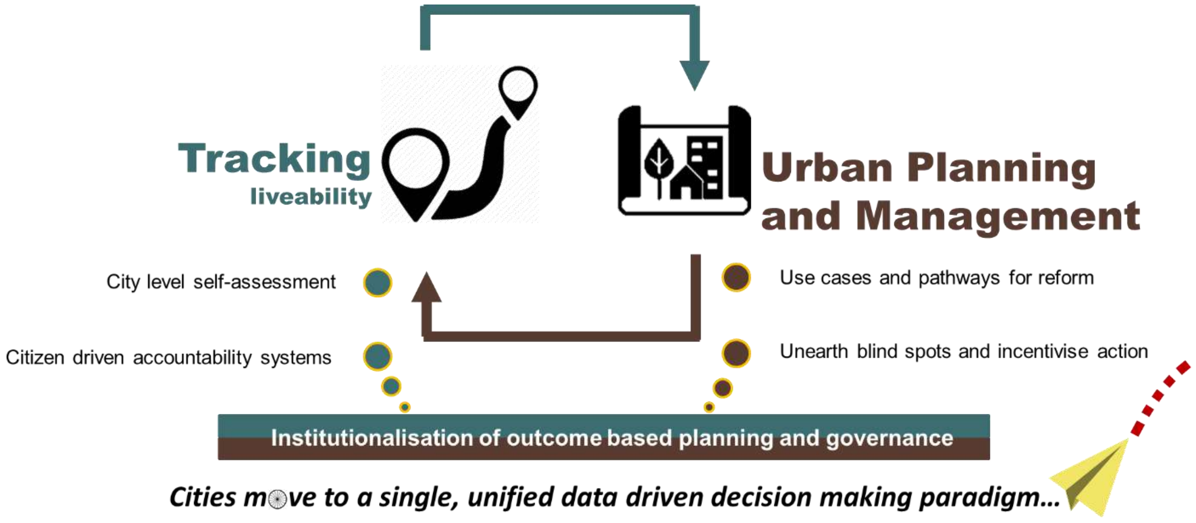
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

AMRAVATI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	121.65	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	647057
Total Number of Households	153182

SOCIAL PROFILE

Education	**Total Number of Schools**	363
	Total Enrolment (Class 1 to 5)	53952
Health	**Total Number of In-patient Beds**	4264
	Total Health Workforce	479
Safety and Security	**Total Strength of Police Force**	1889
	Total Number of CCTV Cameras	0
Heritage Sites	**Total Number of Heritage Sites**	55

ECONOMIC PROFILE

Total Population in Working Age Group	160000
Total Number of Industries	504
Total Number of Commercial Enterprises	23795
Total Number of Hotels	206
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25382
Total VAT Collection in FY 2016-17 (INR Lakhs)	73732

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	96.46
		Total Number of Water Connections	88612
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	121853
		Total number of households in the city with access to community toilets in the city	15000
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	230
		Total number of households covered through door-to-door collection of solid waste	153182
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	91.02
		Daily average quantum of waste water treated by STPs in the city (MLD)	7.5
	Electricity	**Total number of authorized electrical connections in the city**	159678
		Total electricity supplied to the city (kWh)	432000000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	438000
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1048.87
		Total length of arterial and sub-arterial road network in the city (Km)	66.8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	42.22

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts & Audit departments
Urban Local Body	For Park and Recreation Related Questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Water Supply and Drainage related questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Heritage sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Ecological sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Housing related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Building plan related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Roads related data	Assistant Director, Planning Wing and

Designated data owners	Subcategories	Data owners at city level
		Manager, IT Department
Urban Local Body	For Solid waste management related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For IT services related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Vendor committee related data	NA
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Assistant Director, Planning Wing and Manager, IT Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Andhra Pradesh- Capital Region Development Authority (AP- CRDA)
	Construction planning	Andhra Pradesh- Capital Region Development Authority
	Green Building	Andhra Pradesh- Capital Region Development Authority
	Rain water harvesting	Andhra Pradesh- Capital Region Development Authority
	Universal Design Principle	Andhra Pradesh- Capital Region Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL)
State Disaster management authority		Addition Commissioner (Projects) District DM Authority,
State Education Department		District Educational Officer
State Health Department	Health care professionals	District Medical & Health Department
	Citizen Services	District Medical & Health Department
	Disease Prevalence	District Medical & Health Department
	Health Infrastructure	District Medical & Health Department
State Renewable Energy Development Agency		National Renewable Energy Corporation Limited
State Sales / Commercial Taxes Department		Deputy Commissioner, Commercial tax Department
Town and Country Planning Department	Land Use	Town Planning Department.

Designated data owners	Subcategories	Data owners at city level
Traffic and Police Department		Office of Superintendent of Police.
Transport Authorities	Buses	Road Transport Authority
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 2 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	2
Total	2*

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**30.77**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0

	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**130.95**
Description	Services integrated through an integrated or a singular operations command centre	27.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**109.35**
Description		
Sub Indicators	1.3a Building plan	0.24533616
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	1.941747573
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**2.33**
Description		
Sub Indicators	1.4a water supply	3
	1.4b solid waste	2

	1.4c street lights	3
	1.4d sewerage	3
	1.4e professional tax	NA
	1.4f parks and recreational spaces	3
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	Data Unavailable
Denominator	Total O&M cost for providing water supply services during the year	55
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	Data Unavailable
Denominator	Total expenditure (revenue and capital accounts) in the same year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA

Denominator	Total number of wards	29
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**0**
Description	Average Occupancy rate of Hotels	0
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**7**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	7

Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6607
Denominator	Total population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3487
Denominator	Total female population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**20.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	3988
Denominator	Total number of teachers available for primary grades (public and private schools)	197
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**20.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	15
Denominator	Total number of schools	74
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**128.69**

Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	128.6882456
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**103.46**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	737877
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**3.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	34
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**10.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	110
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**25**
Description	Total response time for health-related distress calls received in the city	25
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	266

Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	6
Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**11.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	22
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**226.21**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	233
Denominator	Total population of the city	103000
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**15.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	35

Denominator	Total crimes recorded in the same year	233
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**39.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	41
Denominator	Total population of the city	103000
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-11.26**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-59.63
Denominator	Total VAT/GST collection during preceding year	5.2979
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**6300**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	126
Denominator	Number of construction permits during preceding year	0.02
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	Data Unavailable
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**276.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	23332
Denominator	Total number of slum and EWS households in the city	84.51
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	63.93
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**621.33**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	63996740
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1.187
Denominator	Total area of the city (total area of all land uses)	217000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 9.2	Net Density	**1481.78**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	103000
Denominator	Area allocated for residential land use (in hectares)	69.511
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**109.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	41623
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	10
Denominator	Total number of electricity connections in the city	49838
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	49
Denominator	Total energy consumption from all sources	61510253
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	7105

Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	37055
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	61510253
Denominator	Total population of the city	103000
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	20
Denominator	Total area of the city (sq.km)	217
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**8.39**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	864
Denominator	Total population of the city	103000
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**15.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	30
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**56.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	13
Denominator	Total number of major transport interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.57**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	13
Denominator	Total number of major interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**10.16**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	40
Denominator	Total length of road network in the city	393.62
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**10.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	18

Denominator	Total number of public right-of-way areas in the city	175
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	37959
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	Data Unavailable
Denominator	Total population of the city	103000
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	30
Denominator	Total number of samples tested for water quality	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	Data Unavailable

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	38130
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**18.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	11
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	61
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**112.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	38126
Denominator	Total number of properties in the city	33967
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**39.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	13466
Denominator	Total number of properties in the city	33967

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**99.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	37959
Denominator	Total number of households and establishments in the city	38040
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**87.5**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	14

Denominator	Total quantum of MSW generated in the city	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	420
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**74.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	74.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	30
Denominator	Total number of noise samples	33
Unit	Percentage	

Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	30
Denominator	Total number of samples tested	30
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

AMRITSAR

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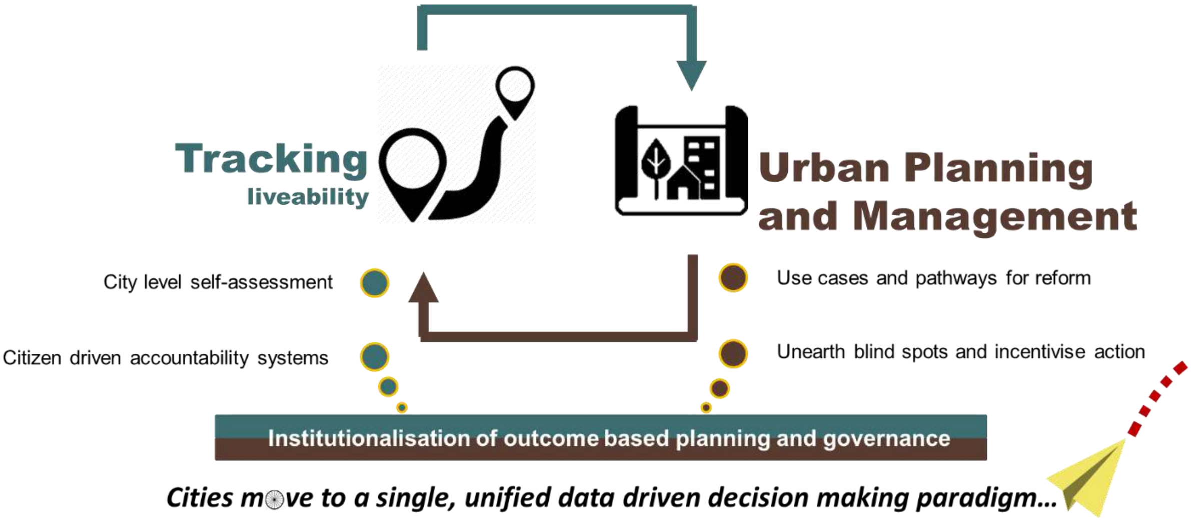
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

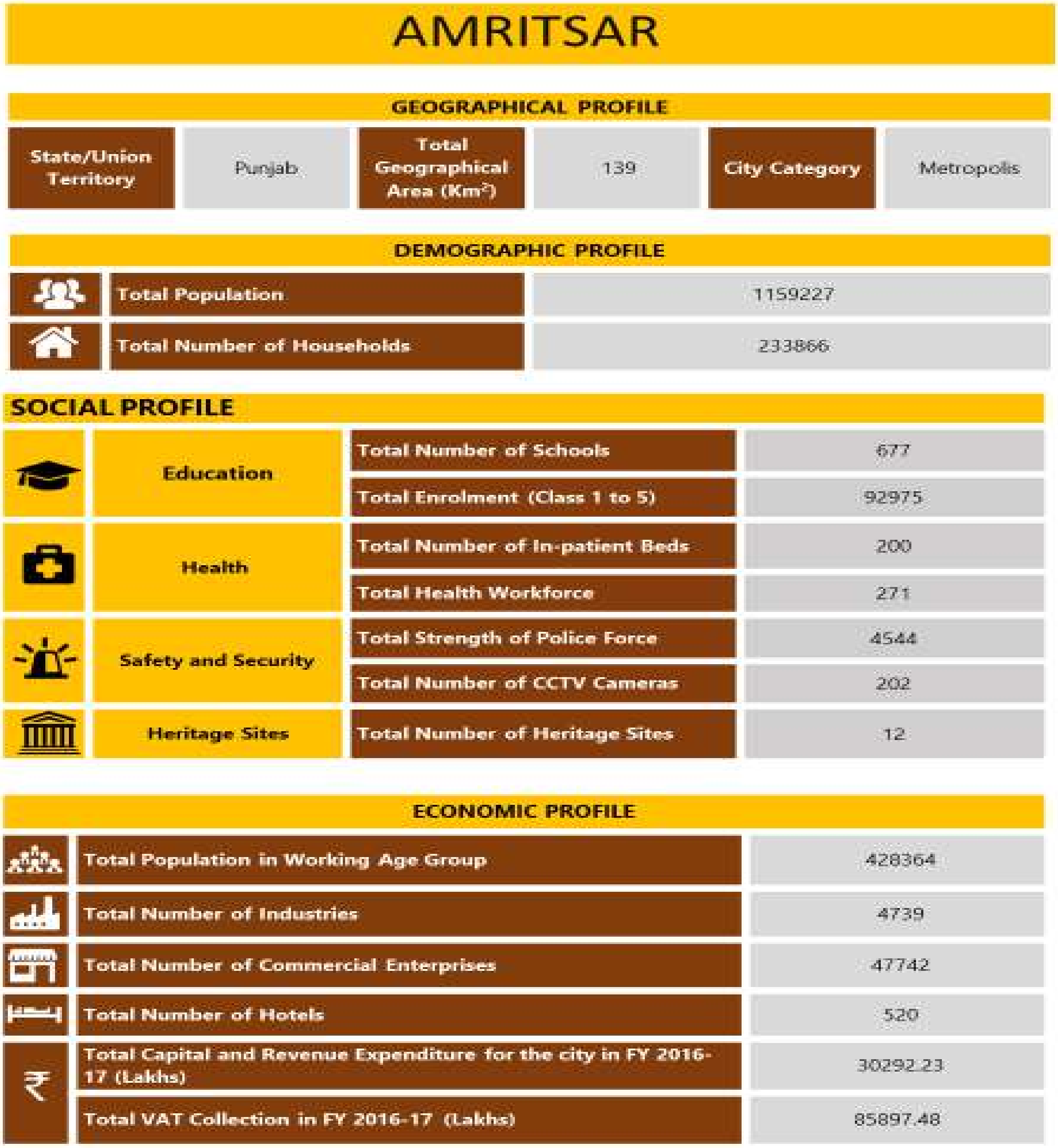
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AMRITSAR

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	Total Geographical Area (Km²)	139	City Category	Metropolis

DEMOGRAPHIC PROFILE

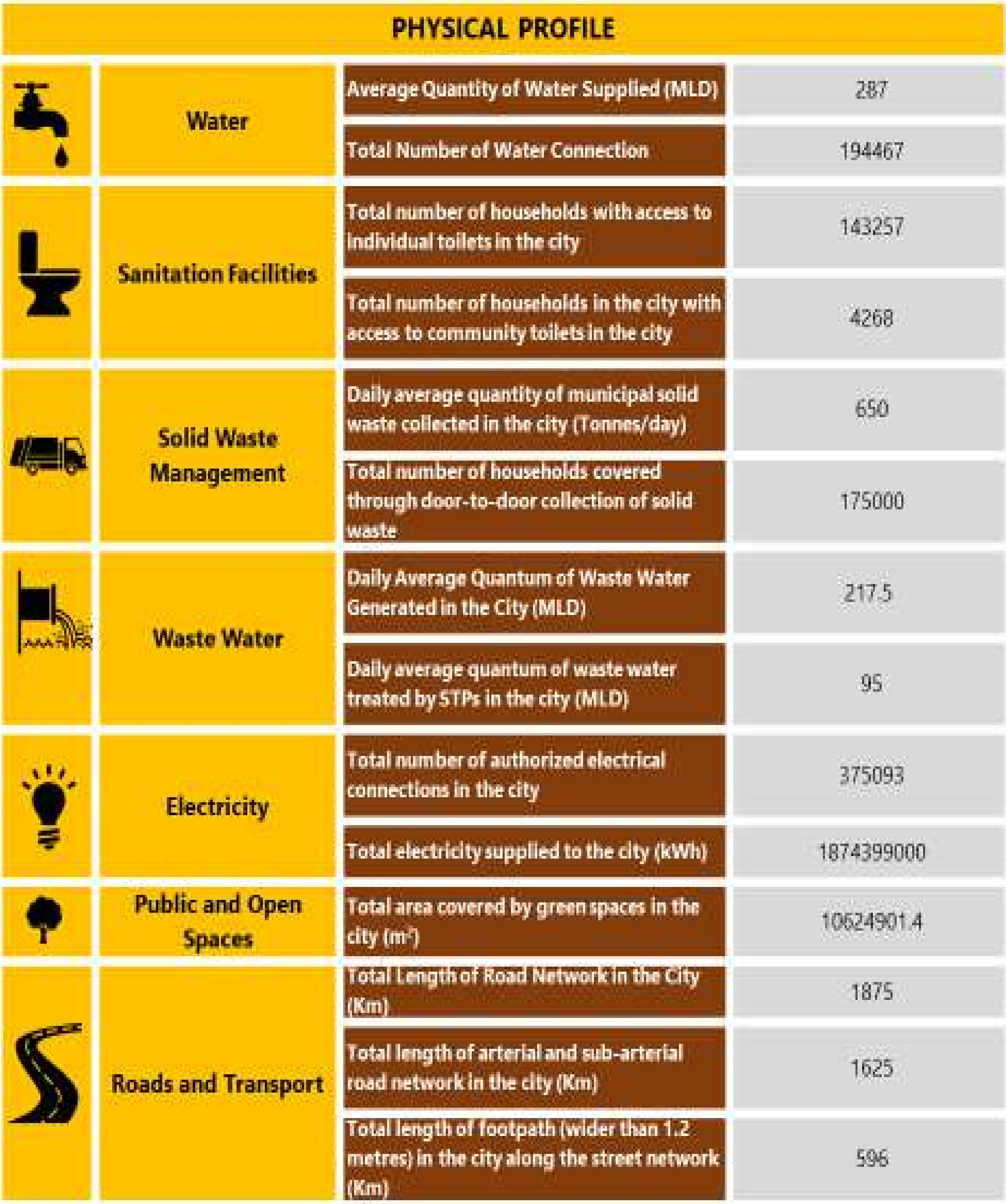
Total Population	1159227
Total Number of Households	233866

SOCIAL PROFILE

Education	Total Number of Schools	677
	Total Enrolment (Class 1 to 5)	92975
Health	Total Number of In-patient Beds	200
	Total Health Workforce	271
Safety and Security	Total Strength of Police Force	4544
	Total Number of CCTV Cameras	202
Heritage Sites	Total Number of Heritage Sites	12

ECONOMIC PROFILE

Total Population in Working Age Group	428364
Total Number of Industries	4739
Total Number of Commercial Enterprises	47742
Total Number of Hotels	520
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (Lakhs)	30292.23
Total VAT Collection in FY 2016-17 (Lakhs)	85897.48



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	287
	Total Number of Water Connection	194467
Sanitation Facilities	Total number of households with access to individual toilets in the city	143257
	Total number of households in the city with access to community toilets in the city	4268
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
	Total number of households covered through door-to-door collection of solid waste	175000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	217.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	95
Electricity	Total number of authorized electrical connections in the city	375093
	Total electricity supplied to the city (kWh)	1874399000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10624901.4
Roads and Transport	Total Length of Road Network in the City (Km)	1875
	Total length of arterial and sub-arterial road network in the city (Km)	1625
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	596

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

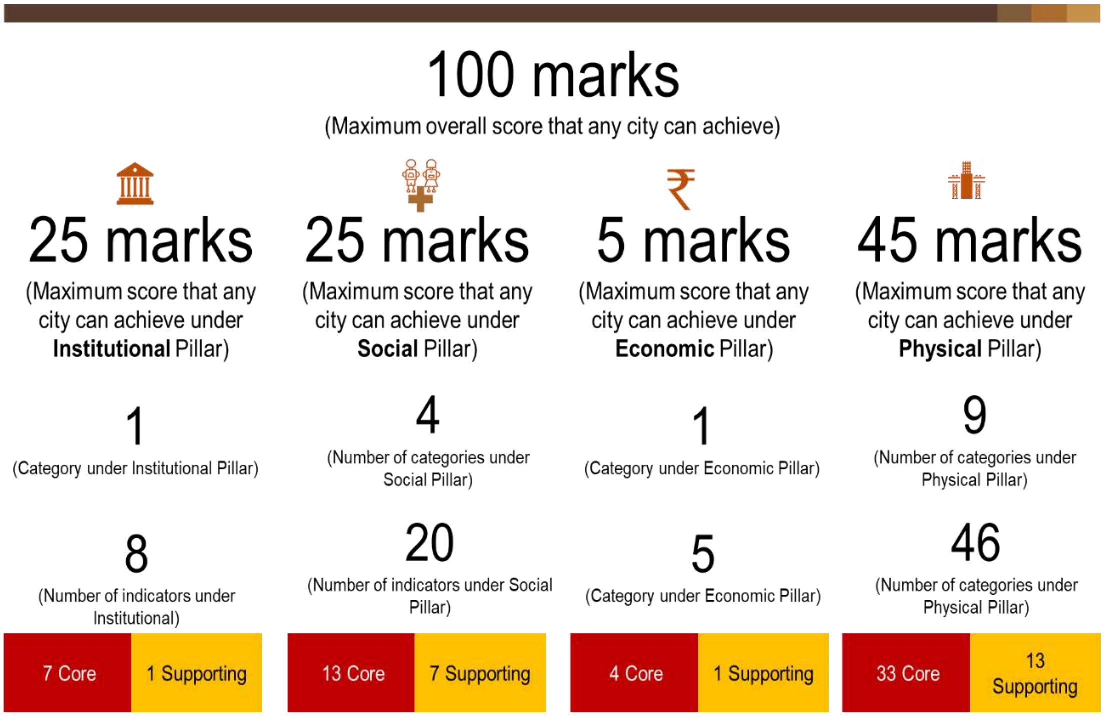
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\text{indicator value for the city} - \text{indicator value for the worst performing city}}{\text{benchmark} - \text{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Deputy Controller (Finance & Accounts)
Urban Local Body	For Park and Recreation Related Questions	Horticulture Department, Municipal Corporation, Amritsar.
Urban Local Body	For Water Supply and Drainage related questions	Operation & Maintenance Cell, Municipal Corporation, Amritsar.
Urban Local Body	For Heritage sites related data	1. Punjab Heritage and Tourism Promotion Board Department. 2. Civil Department, Municipal Corporation, Amritsar.
Urban Local Body	For Ecological sites related data	There are no ecological sites in Amritsar
Urban Local Body	For Housing related data	License & Census Branch, Municipal Corporation, Amritsar.
Urban Local Body	For Building plan related data	Municipal Town Planning Department, Municipal Corporation, Amritsar.
Urban Local Body	For Roads related data	Civil Department, Municipal Corporation, Amritsar.
Urban Local Body	For Solid waste management related data	Health Department, Municipal Corporation, Amritsar.
Urban Local Body	For IT services related data	IT Department, Municipal Corporation, Amritsar.
Urban Local Body	For Vendor committee related data	Estate Department, Municipal Corporation, Amritsar.
Urban Local Body	Any other departments	1. District Sports Office, Guru Nanak

Designated data owners	Subcategories	Data owners at city level
	involved in providing data for questions mentioned under Urban Local Body	Stadium, Gandhi Ground Amritsar (Stadium Related Data). 2. Property Tax Department, Municipal Corporation, Amritsar (Property Tax Related Data). 3. Employment Generation & Training Office (District Employment Exchange Related Data). 4. Public Works Development Department (Roads Related Data). 5. Amritsar Improvement Trust, Amritsar (Bicycle Track Related Data). 6. Street Light, Municipal Corporation Amritsar (Street Light Related Data) 7. Death & Birth Department, Municipal Corporation Amritsar (Online Services Birth & Death related data)
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board, Amritsar.
Development Authority	Building Infrastructure	1. Amritsar Development Authority (PUDA- Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Construction planning	1. Amritsar Development Authority (PUDA- Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Green Building	Amritsar Development Authority (PUDA- Punjab Urban Development Authority), Amritsar.
	Rain water harvesting	1. Amritsar Development Authority (PUDA- Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Universal Design Principle	Public Works Department, Amritsar.
DISCOM/Electricity	Electrical Connection/	Punjab State Power Corporation Limited

Designated data owners	Subcategories	Data owners at city level
Board	Grievance Redressal/ Power supply	
State Disaster management authority		Joint Commissioner, Municipal Corporation, Amritsar
State Education Department		1. Block Education Elementary Office (Primary), Punjab School Education Board. 2. District Education Office (Secondary), Punjab School Education Board.
State Health Department	Health care professionals	Chief Medical Office
State Health Department	Citizen Services	Chief Medical Office
State Health Department	Disease Prevalence	Chief Medical Office
State Health Department	Health Infrastructure	Indian Medical Association
State Renewable Energy Development Agency		Punjab Energy Development Authority, Zila Parishad Complex, Amritsar
State Sales / Commercial Taxes Department		Sales Tax & Excise Department, Amritsar
Town and Country Planning Department	Land Use	1. District Town Planner, Amritsar 2. Municipal Town Planner, Municipal Corporation Amritsar.
Traffic and Police Department		Traffic Police Department, Amritsar
Transport Authorities	Buses	General Manager Roadways
Transport Authorities	Registered Vehicles	Regional Transport Officer, Amritsar
Transport Authorities	Sub urban rail transport	Not exist in Amritsar city
Transport Authorities	Mono Rail Authority	Not exist in Amritsar city
Transport Authorities	Tramways	Not exist in Amritsar city
Transport Authorities	Marine Transport Authority	Not exist in Amritsar city

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 95 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	8
Traffic and Police Department	3
Development Authority	3
Pollution Control Board	3
State Renewable Energy Department	2
Town and Country Planning	7
State Health Department	9
Transport Authority	0
Disaster Management	0
Urban Local Body	57
Total	95

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

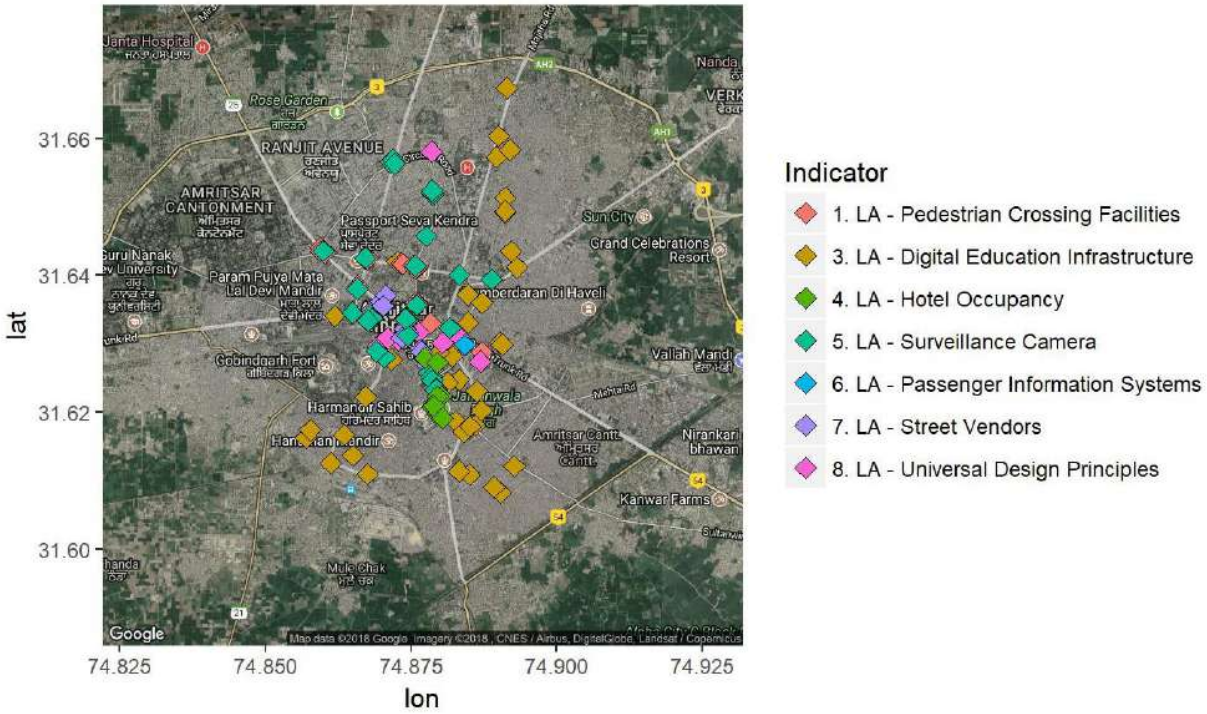
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1| Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Janta Hospital
Rose Garden
RANJIT AVENUE
AMRITSAR CANTONMENT
Guru Nanak Dev University
Passport Seva Kendra
Param Pujya Mata Lal Devi Mandir
Gobindgarh Fort
Harmandir Sahib
Durgiana Mandir
Jallianwala Bagh
Amritsar Cantt
Sun City
Grand Celebrations Resort
Vallah Mandi
Nirankari bhawan
Kanwar Farms
Mule Chak
Nanda
VERKA
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
31.66
31.64
31.62
31.60
lon
74.825
74.850
74.875
74.900
74.925
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**48.42**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0.25
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.461538462
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**23.27**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	0.000187194
	1.3e property tax	NA

	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	4.67265E-06
	1.3i information	NA
	1.3j electricity	0.698053549
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.1**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	2.5
	1.4d sewerage	2
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**70.12**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1689.83
Denominator	Total demand raised for the year	2410
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	14.13
Denominator	Total O&M cost for providing water supply services during the year	4334.81
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-27.25**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-14349.67
Denominator	Total expenditure (revenue and capital accounts) in the same year	52653.48
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	85
Denominator	Total number of wards	85
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	12
Denominator	Total number of historic buildings/sites identified	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	NA
Denominator	Total budget of the ULB (capital and revenue)	30292.23
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**11**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	11
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**76.46**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	146289
Denominator	Total population in the age group of 6-14 years	191316
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**79.84**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	66639
Denominator	Total female population in the age group of 6-14 years	83466

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**26.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	92975
Denominator	Total number of teachers available for primary grades (public and private schools)	3566
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**25.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	175
Denominator	Total number of schools	677
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**68.25**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	68.25105735
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**81.37**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	307713115
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**1.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	200
Denominator	Total population of the city	1159227
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**2.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	271
Denominator	Total population of the city	1159227
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	186
Denominator	Total population of the city	1159227
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	184

Denominator	Total population of the city	1159227
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**10.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	202
Denominator	Total length of road network in the city	1875
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**302.01**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3501
Denominator	Total population of the city	1159227
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	394
Denominator	Total crimes recorded in the same year	3501
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.4	**Transport-related fatality per lakh population**	**14.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	170
Denominator	Total population of the city	1159227
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**10.26**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	7991.79
Denominator	Total VAT/GST collection during preceding year	779.0569
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**8.33**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	11
Denominator	Number of construction permits during preceding year	1.32

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	24061
Denominator	Total labour force in the city	191316
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	100
Denominator	Total number of vendors in the city	16254
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**3.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	2443
Denominator	Total number of slum and EWS households in the city	789.53
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**

Formula:	*Numerator / Denominator*	91000000
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**9.17**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	10624901.39
Denominator	Total population of the city	1159227
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**1.19**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1377648
Denominator	Total population of the city	1159227
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**2.5**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	3475119
Denominator	Total area of the city (total area of all land uses)	139000000
Unit	Percentage	

Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1159227
Denominator	Area allocated for residential land use (in hectares)	42466581
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**121.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	284971
Denominator	Total number of households in the city	233866
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	375093
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**14055**

Description	Total number of sustained electrical interruptions in a year	14055
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.6**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1071570
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	340.35
Denominator	Total energy consumption from all sources	1874399000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1593953.417
Denominator	Total quantum of water and waste water handled during the period	11460
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	11931712
Denominator	Total number of street light installations	66976
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	23870
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1874399000
Denominator	Total population of the city	1159227
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	139
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	1159227
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	10
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	3.5
Denominator	Total length of road network in the city	1875
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA

Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	70
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronization**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	35
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	5
Denominator	Total available on-street parking spaces in the city	NA
Unit		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**15.89**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	596
Denominator	Total length of road network in the city	3750
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**67.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	57
Denominator	Total number of junctions/ intersections on major roads in the city	85
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	103
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**81.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	189765
Denominator	Total number of households in the city	233866

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**247.58**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	287
Denominator	Total population of the city	1159227
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	28
Denominator	Total number of samples tested for water quality	28
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**29.18**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	83.75
Denominator	Quantum of water put into the distribution system (mld)	287
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**3.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	6540
Denominator	Total number of water connections in the city	194467

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**188.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	226
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	120
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**46.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	157488
Denominator	Total number of properties in the city	335371
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**55.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	185274
Denominator	Total number of properties in the city	335371
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**43.68**

Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	95
Denominator	Total waste water generated in the city per day	217.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	95
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	10
Denominator	Total length of road network in the city	1875
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**72.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	205000
Denominator	Total number of households and establishments in the city	281608
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Total quantum of MSW collected by the ULB or private operator	650
Denominator	Total quantum of MSW generated in the city	650
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	19500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7.35**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.35
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**37.23**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	37.23
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**139.41**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	139.41
Unit	µg/m3	

Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	8
Denominator	Total number of noise samples	9
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

Ministry of Urban Development
Government of India

AURANGABAD

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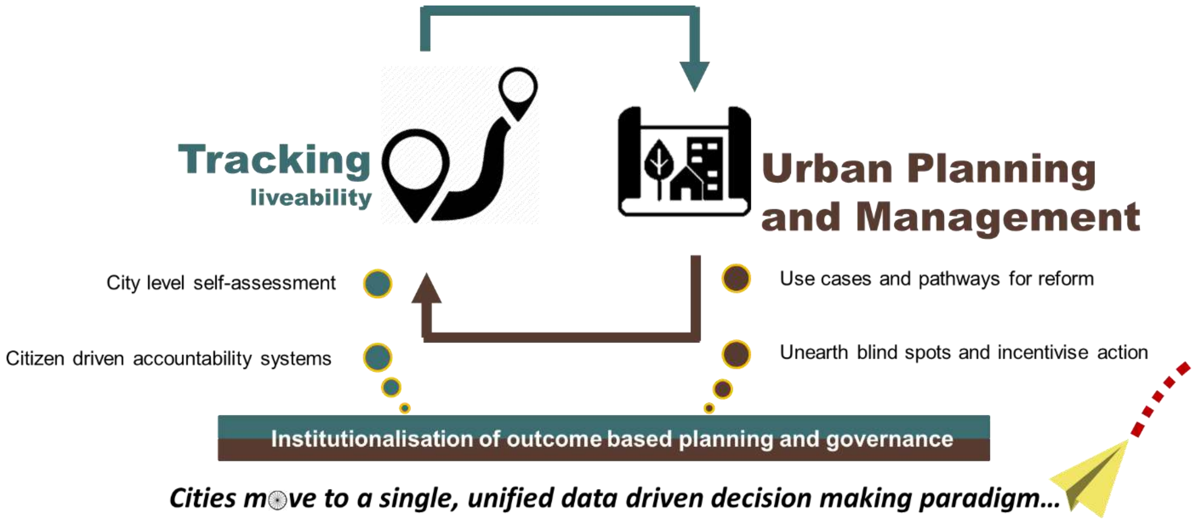
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

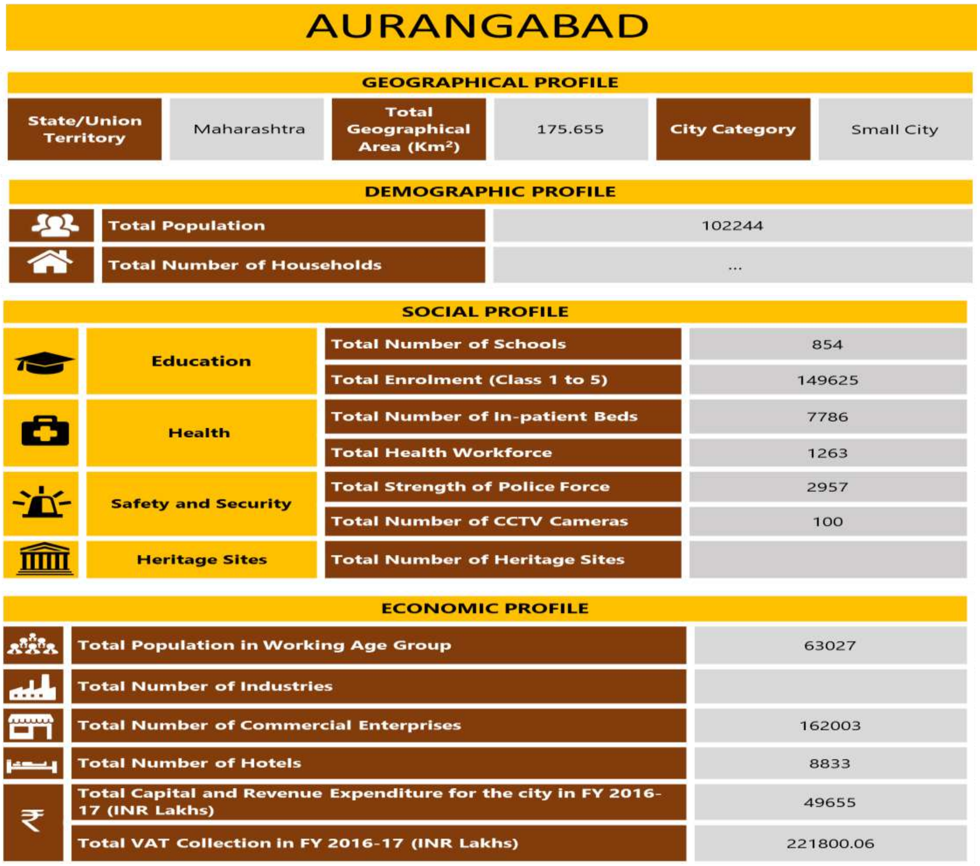
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities m◉ve to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AURANGABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km^2)	175.655	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	102244
Total Number of Households	...

SOCIAL PROFILE

Education	Total Number of Schools	854
	Total Enrolment (Class 1 to 5)	149625
Health	Total Number of In-patient Beds	7786
	Total Health Workforce	1263
Safety and Security	Total Strength of Police Force	2957
	Total Number of CCTV Cameras	100
Heritage Sites	Total Number of Heritage Sites	

ECONOMIC PROFILE

Total Population in Working Age Group	63027
Total Number of Industries	
Total Number of Commercial Enterprises	162003
Total Number of Hotels	8833
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	49655
Total VAT Collection in FY 2016-17 (INR Lakhs)	221800.06

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	113
		Total Number of Water Connections	...
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	...
		Total number of households covered through door-to-door collection of solid waste	...
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	103
		Daily average quantum of waste water treated by STPs in the city (MLD)	72
	Electricity	**Total number of authorized electrical connections in the city**	294882
		Total electricity supplied to the city (kWh)	2321520000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1579.74
		Total length of arterial and sub-arterial road network in the city (Km)	1175.17
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	43.42

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Catego

ries and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

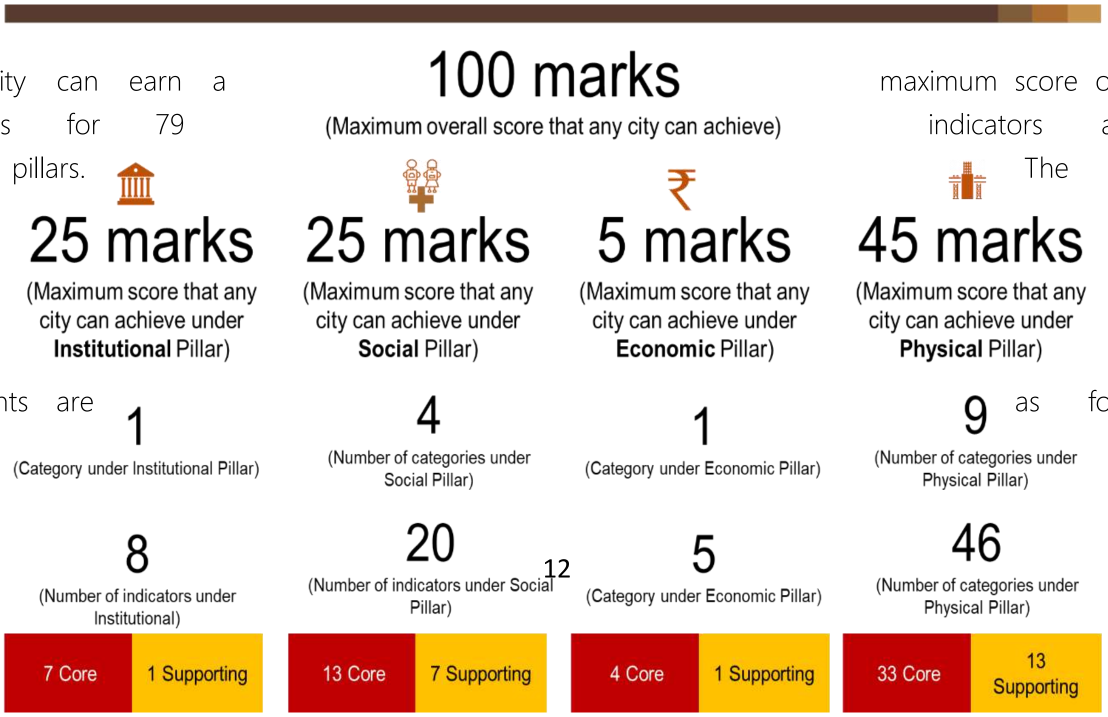
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows:


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Aurangabad Municipal

Designated data owners	Subcategories	Data owners at city level
		corporation
Urban Local Body	For Park and Recreation Related Questions	Garden Department, Aurangabad Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, Aurangabad Municipal corporation
Urban Local Body	For Heritage sites related data	Town Planning Department, Aurangabad Municipal corporation
Urban Local Body	For Ecological sites related data	Aurangabad Municipal corporation
Urban Local Body	For Housing related data	Housing Section, Aurangabad Municipal Corporation
Urban Local Body	For Building plan related data	Town Planning Department, Aurangabad Municipal Corporation
Urban Local Body	For Roads related data	Town Planning Department, Aurangabad Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management Department, Aurangabad Municipal Corporation
Urban Local Body	For IT services related data	IT Department, Aurangabad Municipal Corporation
Urban Local Body	For Vendor committee related data	Vendor Committee, Aurangabad Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board
Development Authority	Building Infrastructure	Town Planning Department, Aurangabad Municipal Corporation
	Construction planning	Town Planning Department, Aurangabad Municipal

Designated data owners	Subcategories	Data owners at city level
		Corporation
	Green Building	Town Planning Department, Aurangabad Municipal Corporation
	Rain water harvesting	Town Planning Department, Aurangabad Municipal Corporation
	Universal Design Principle	Town Planning Department, Aurangabad Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Development Corporation DISCOM, Aurangabad
State Disaster management authority		Disaster management Department, Aunganbad
State Education Department		District Education Department Education Department, AMC
State Health Department	Health care professionals	Health Department, AMC
	Citizen Services	Health Department, AMC
	Disease Prevalence	Health Department, AMC
	Health Infrastructure	Health Department, AMC
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Taxes department, Aurangabad
Town and Country Planning Department	Land Use	Town Planning Department, Aurangabad Municipal Corporation
Traffic and Police Department		Commissioner of Police Office, Aurangabad
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Maharashtra State Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 136 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	8
DISCOM/Electricity Department	7
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	9
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	5
Transport Authority	7
Disaster Management	1
Urban Local Body	97
Total	136*

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team

to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

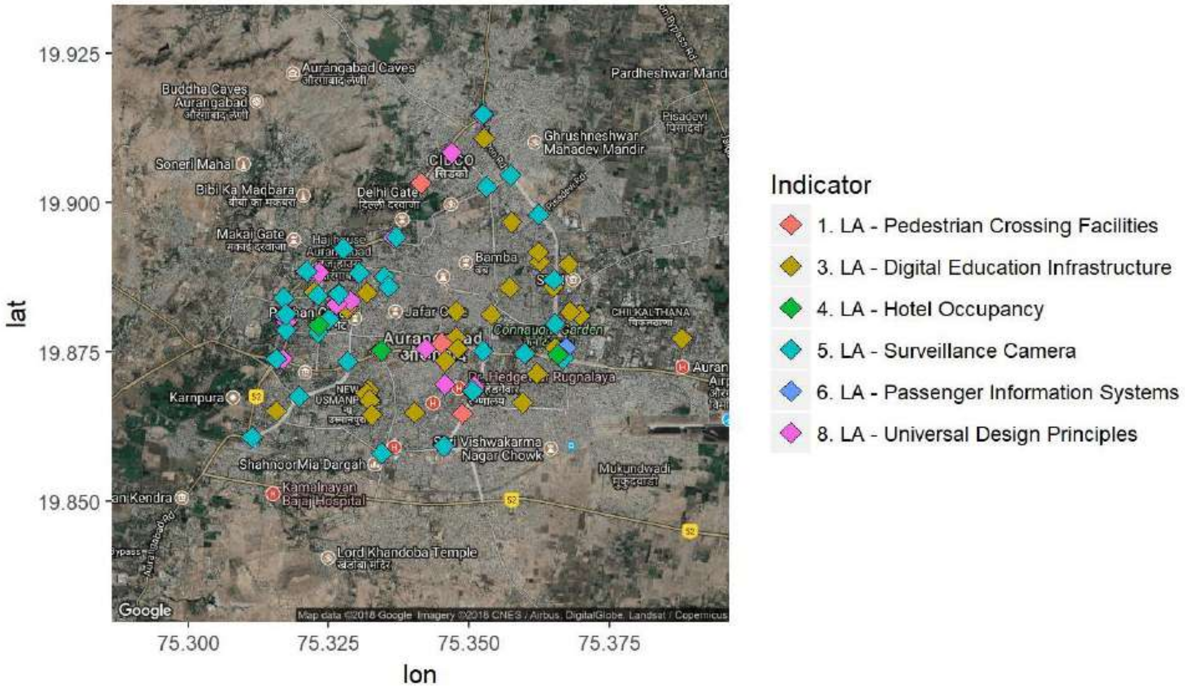
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


19.925
19.900
19.875
19.850
lat
75.300
75.325
75.350
75.375
lon
Aurangabad Caves
Buddha Caves Aurangabad
Pardheshwar Mand
Pisadevi
Ghrushneshwar Mahadev Mandir
Soneri Mahal
Bibi Ka Maqbara
Delhi Gate
CIDCO
Makai Gate
Bamba
Jafar Gate
Aurangabad
Connaught Garden
CHIKALTHANA
Karnpura
Dr. Hedgewar Rugnalaya
Vishwakarma Nagar Chowk
Shahnoor Mia Dargah
Kamalnayan Bajaj Hospital
Mukundwadi
Lord Khandoba Temple
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**29.09**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0.25
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.615384615
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**1.16**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA

	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.011560556
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	NA
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	0
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**95**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	95
Denominator	Total demand raised for the year	100
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	Data Unavailable

Denominator	Total O&M cost for providing water supply services during the year	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**16.71**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	16944
Denominator	Total expenditure (revenue and capital accounts) in the same year	101403
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**7.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	9
Denominator	Total number of wards	115
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data

		Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**72**
Description	Average Occupancy rate of Hotels	72
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	76
Denominator	Total budget of the ULB (capital and revenue)	49655
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**9**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	9
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**938.85**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	234947
Denominator	Total population in the age group of 6-14 years	25025
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**907.92**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	107797

Denominator	Total female population in the age group of 6-14 years	11873
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	149625
Denominator	Total number of teachers available for primary grades (public and private schools)	4044
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**23.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	202
Denominator	Total number of schools	854
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**109.01**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	109.0133246
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**96.81**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	789503052
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**761.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	7786

Denominator	Total population of the city	102244
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**123.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1263
Denominator	Total population of the city	102244
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**3.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3755
Denominator	Total population of the city	102244
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	59
Denominator	Total population of the city	102244
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**6.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	100

Denominator	Total length of road network in the city	1579.74
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**4780.72**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4888
Denominator	Total population of the city	102244
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**21.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1035
Denominator	Total crimes recorded in the same year	4888
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**145.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	149
Denominator	Total population of the city	102244
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-0.89**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-1986.3518
Denominator	Total VAT/GST collection during preceding year	2237.864118
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated	

	as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**-3.06**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-3
Denominator	Total Professional Tax collection during preceding year	98
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**6.63**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	75
Denominator	Number of construction permits during preceding year	11.32
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	25025
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	625.625
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	700.79
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**Data Unavailable**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	102244
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**8.01**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	819102
Denominator	Total population of the city	102244
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	175655000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	102244
Denominator	Area allocated for residential land use (in hectares)	0
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	254138
Denominator	Total number of households in the city	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	861
Denominator	Total number of electricity connections in the city	294882
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**6974**
Description	Total number of sustained electrical interruptions in a year	6974

Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.68**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	74286
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	80
Denominator	Total energy consumption from all sources	2321520000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	5550
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	61034
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings	**0**

	following green building norms	
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	641933.13
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	2321520000
Denominator	Total population of the city	102244
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	6318
Denominator	Total area of the city (sq.km)	175.655
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	28
Denominator	Total population of the city	102244
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle	**Non-**

	tracks	**Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	1579.74
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**1**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	50
Unit	Percentage	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1175.17
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	43.42
Denominator	Total length of road network in the city	3159.48
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**36.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	25
Denominator	Total number of junctions/ intersections on major roads in the city	68
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**2.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	2
Denominator	Total number of public right-of-way areas in the city	75
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	Data

		Unavailable
Denominator	Total number of households in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**1105.2**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	113
Denominator	Total population of the city	102244
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	113
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	Data Unavailable
Denominator	Total number of water connections in the city	Data Unavailable

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	4
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**9.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	21067
Denominator	Total number of properties in the city	219996
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	219996
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**69.9**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	72
Denominator	Total waste water generated in the city per day	103
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.4	Extent of reuse and recycling of waste water	**108.33**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	78
Denominator	Total waste water received at treatment plants per day	72
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	1579.74
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	Data Unavailable
Denominator	Total number of households and establishments in the city	162003
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	Data Unavailable
Denominator	Total quantum of MSW generated in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or	Data

	recycled (tons per month)	Unavailable
Denominator	Average MSW generated in the city (tons per month)	Data Unavailable
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.06**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.06
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**32.57**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	32.57
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**83.17**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	83.17
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	46
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

BAREILLY

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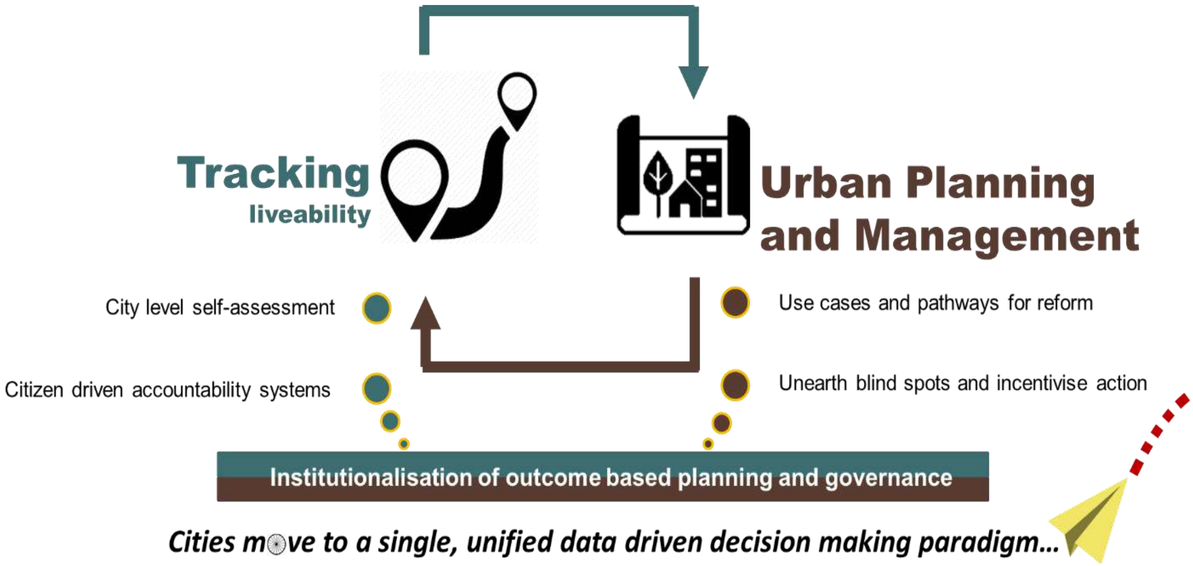
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

BAREILLY

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	106.43	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	904797
Total Number of Households	144034

SOCIAL PROFILE

Education	**Total Number of Schools**	547
	Total Enrolment (Class 1 to 5)	...
Health	**Total Number of In-patient Beds**	11283
	Total Health Workforce	2952
Safety and Security	**Total Strength of Police Force**	762
	Total Number of CCTV Cameras	71
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	509
Total Number of Industries	605
Total Number of Commercial Enterprises	10788
Total Number of Hotels	68
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	20692.18
Total VAT Collection in FY 2016-17 (INR Lakhs)	58390.45

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	146
	Total Number of Water Connection	97430
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	102268
	Total number of households in the city with access to community toilets in the city	207
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	3936.8
	Total number of households covered through door-to-door collection of solid waste	
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	146
	Daily average quantum of waste water treated by STPs in the city (MLD)	
Electricity	**Total number of authorized electrical connections in the city**	178341
	Total electricity supplied to the city (kWh)	15960000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	446319.36
Roads and Transport	**Total Length of Road Network in the City (Km)**	1162.93
	Total length of arterial and sub-arterial road network in the city (Km)	1162.93
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.95

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per

Pillars of Comprehensive Development	Category	Indicators
		10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters

Pillars of Comprehensive Development	Category	Indicators
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Nagar Nigam Bareilly
Urban Local Body	For Park and Recreation Related Questions	Udhyan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/ Jalkal Vibhag Nagar Nigam Bareilly
Urban Local Body	For Heritage sites related data	Archeological survey of India
Urban Local Body	For Ecological sites related data	Forrest department
Urban Local Body	For Housing related data	Bareilly Development Authority / Nirmaan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Building plan related data	Bareilly Development Authority
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Bareilly

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For IT services related data	Computer department of ulb
Urban Local Body	For Vendor committee related data	District Urban Development Agency Bareilly
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department, Bareilly Development Authority, District Urban Development Agency Bareilly, Employment Office Bareilly, Uttar Pradesh State Transport Bareilly
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh Pollution Control Board Bareilly
Development Authority	Building Infrastructure	Bareilly Development Authority
	Construction planning	Bareilly Development Authority
	Green Building	Bareilly Development Authority
	Rain water harvesting	Bareilly Development Authority
	Universal Design Principle	Bareilly Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Electricity Board Bareilly
State Disaster management authority		Central\state disaster management authority
State Education Department		Basic Education Department Bareilly
State Health Department	Health care professionals	District Hospital Bareilly
	Citizen Services	District Hospital Bareilly
	Disease Prevalence	District Hospital Bareilly
	Health Infrastructure	District Hospital Bareilly
State Renewable Energy Development Agency		UP NEDA Bareilly
State Sales / Commercial Taxes Department		Commercial tax department Bareilly
Town and Country Planning Department	Land Use	Town and Country Planning Department Bareilly
Traffic and Police Department		Police Department (civil, Traffic ,GRP)
Transport Authorities	Buses	Uttar Pradesh State Transport Bareilly
	Registered Vehicles	Regional Transport Office Bareilly
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	11
Transport Authority	2
Disaster Management	2
Urban Local Body	19
Total	45*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

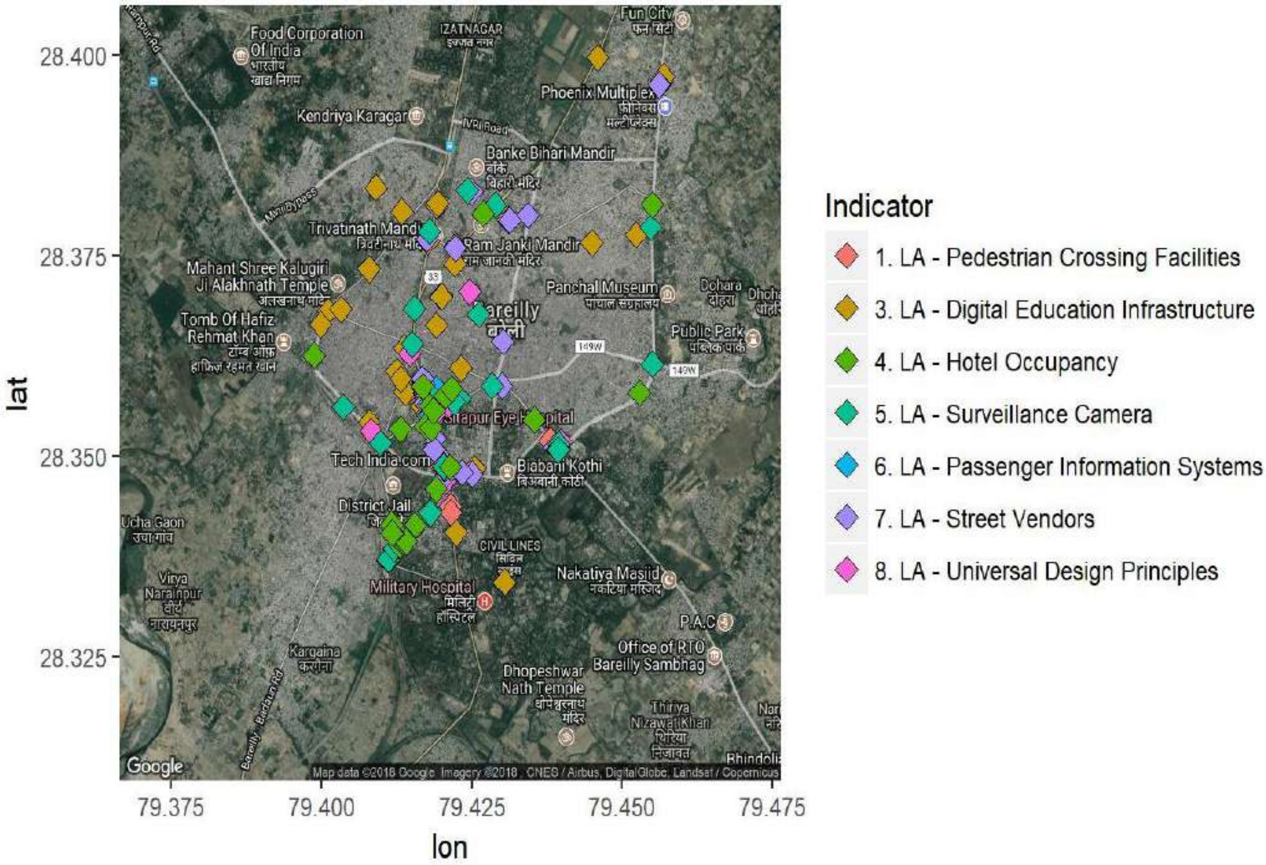
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.400
28.375
28.350
28.325
lat
79.375
79.400
79.425
79.450
79.475
lon
Food Corporation Of India
IZATNAGAR
Fun City
Phoenix Multiplex
Kendriya Karagar
Banke Bihari Mandir
Trivatinath Mandir
Ram Janki Mandir
Mahant Shree Kalugiri Ji Alakhnath Temple
Panchal Museum
Dohara
Tomb Of Hafiz Rehmat Khan
Bareilly
Public Park
Sitapur Eye Hospital
Tech India.com
Biabani Kothi
District Jail
Ucha Gaon
CIVIL LINES
Nakatiya Masjid
Virya Narainpur
Military Hospital
P.A.C
Kargaina
Office of RTO Bareilly Sambhag
Dhopeshwar Nath Temple
Thiriya Nizawat Khan
Bhindoli
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**61.54**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**13.13**
Description		

Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.003558533
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.521467301
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	NA
	1.4c street lights	6
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	4
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**88.11**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3820.07
Denominator	Total demand raised for the year	4335.68
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**1181**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	1181
Denominator	Total O&M cost for providing water supply services during the year	100
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-4.27**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-2011.652
Denominator	Total expenditure (revenue and capital accounts) in the same year	47160.018
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	80
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**0**
Description	Average Occupancy rate of Hotels	0
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	10.45
Denominator	Total budget of the ULB (capital and revenue)	20692.18
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	Data Unavailable
Denominator	Total population in the age group of 6-14 years	185947
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	Data Unavailable
Denominator	Total female population in the age group of 6-14 years	86882
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	Data Unavailable
Denominator	Total number of teachers available for primary grades (public and private schools)	Data Unavailable
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources	0

	such as NKN)	
Denominator	Total number of schools	547
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**Non-Computable**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**124.7**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	11283
Denominator	Total population of the city	904797
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**32.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2952
Denominator	Total population of the city	904797
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**22**
Description	Total response time for health-related distress calls received in the city	22

Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**2.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	21715
Denominator	Total population of the city	904797
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	37
Denominator	Total population of the city	904797
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**6.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	71
Denominator	Total length of road network in the city	1162.93
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**811.23**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7340
Denominator	Total population of the city	904797
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**7.81**
Formula:	*Numerator / Denominator*	

Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	573
Denominator	Total crimes recorded in the same year	7340
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**26.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	243
Denominator	Total population of the city	904797
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**9.9**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	5262.01
Denominator	Total VAT/GST collection during preceding year	531.2844
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**8.51**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	8
Denominator	Number of construction permits during preceding year	0.94
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	27878
Denominator	Total labour force in the city	185947
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	6200
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**25.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	10795
Denominator	Total number of slum and EWS households in the city	427.46
Unit	Percentage	

Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	446319.3663
Denominator	Total population of the city	904797
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.59**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	538269.3663
Denominator	Total population of the city	904797
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	106430000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	904797

Denominator	Area allocated for residential land use (in hectares)	69001500
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**11.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	16254
Denominator	Total number of households in the city	144034
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	178341
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**367**
Description	Total number of sustained electrical interruptions in a year	367
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	747
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as	

	a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	193
Denominator	Total energy consumption from all sources	15960000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	917.25
Denominator	Total quantum of water and waste water handled during the period	4380
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	34008
Denominator	Total number of street light installations	23669
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	3163
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	15960000

Denominator	Total population of the city	904797
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	40
Denominator	Total area of the city (sq.km)	106.43
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	904797
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1162.93
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	7.95
Denominator	Total length of road network in the city	2325.86
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**183.33**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	11
Denominator	Total number of junctions/ intersections on major roads in the city	6
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	563
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**48.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	69204
Denominator	Total number of households in the city	144034
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**161.36**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	146
Denominator	Total population of the city	904797
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	3315
Denominator	Total number of samples tested for water quality	3397
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**27.4**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	40
Denominator	Quantum of water put into the distribution system (mld)	146
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	97430
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**7.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	6
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	83
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**74.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	107256
Denominator	Total number of properties in the city	144034
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**157.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	226559
Denominator	Total number of properties in the city	144034

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	146
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**41.45**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	482
Denominator	Total length of road network in the city	1162.93
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	Data Unavailable
Denominator	Total number of households and establishments in the city	154822
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	3936.8
Denominator	Total quantum of MSW generated in the city	3936.8
Unit	Percentage	

Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	118104
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**12.39**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	12.39
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**22.73**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	22.73
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**182.42**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	182.42
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	4
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Number of tested samples meeting prescribed standards	112
Denominator	Total number of samples tested	112
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BANGALORE

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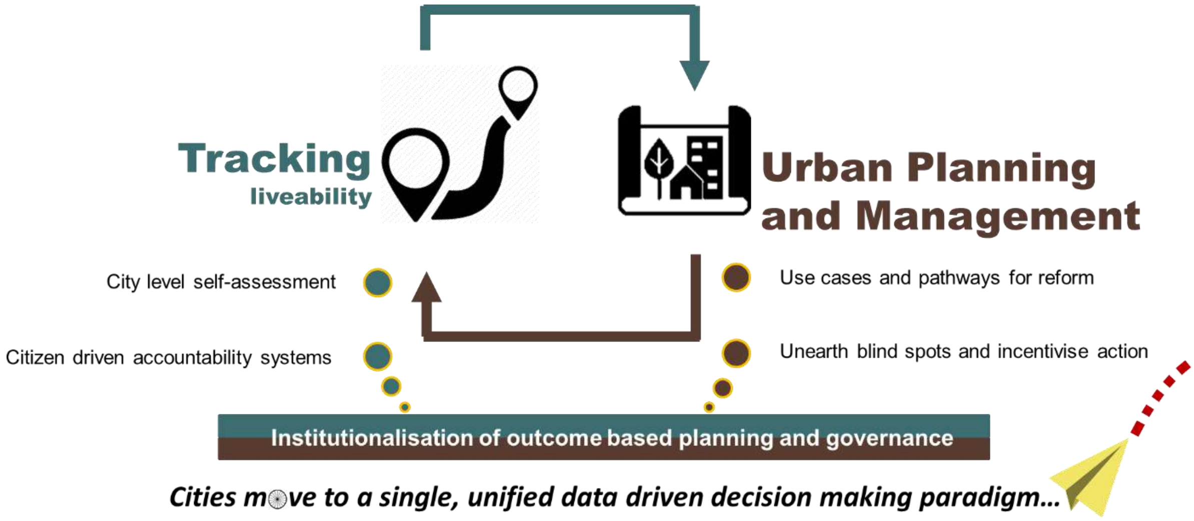
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

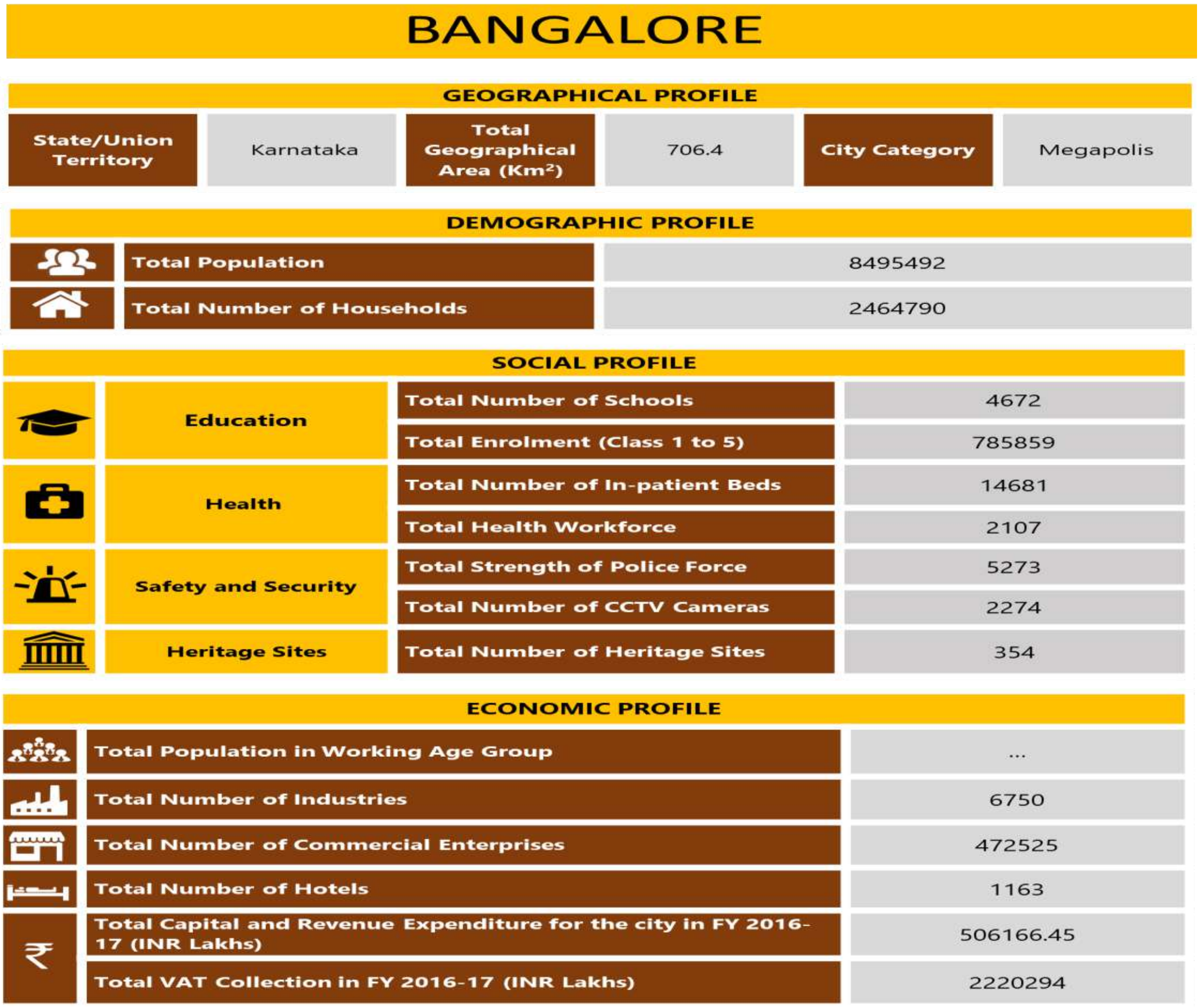

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BANGALORE

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km²)**	706.4	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	8495492
Total Number of Households	2464790

SOCIAL PROFILE

Education	**Total Number of Schools**	4672
	Total Enrolment (Class 1 to 5)	785859
Health	**Total Number of In-patient Beds**	14681
	Total Health Workforce	2107
Safety and Security	**Total Strength of Police Force**	5273
	Total Number of CCTV Cameras	2274
Heritage Sites	**Total Number of Heritage Sites**	354

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	6750
Total Number of Commercial Enterprises	472525
Total Number of Hotels	1163
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	506166.45
Total VAT Collection in FY 2016-17 (INR Lakhs)	2220294

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	1366.4
	Total Number of Water Connections	903136
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	951612
	Total number of households in the city with access to community toilets in the city	…
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	5383.8
	Total number of households covered through door-to-door collection of solid waste	2426700
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	1440
	Daily average quantum of waste water treated by STPs in the city (MLD)	721
Electricity	**Total number of authorized electrical connections in the city**	4940166
	Total electricity supplied to the city (kWh)	13133.16
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	100020000
Roads and Transport	**Total Length of Road Network in the City (Km)**	13500
	Total length of arterial and sub-arterial road network in the city (Km)	1400
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	895

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

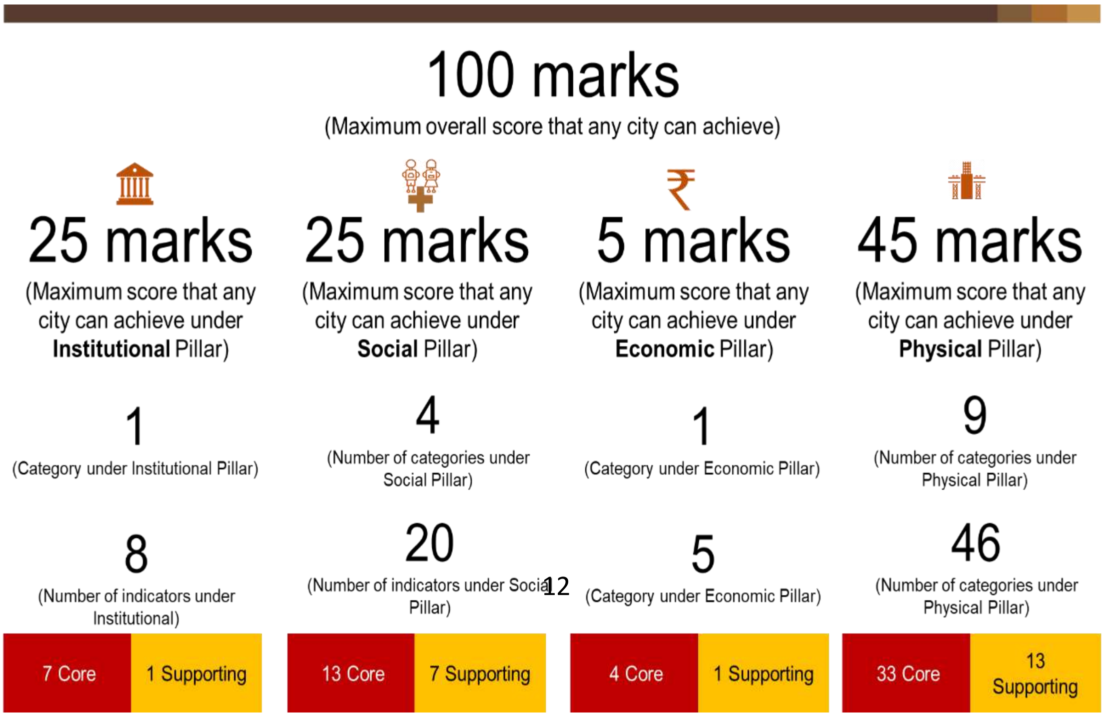
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core · 1 Supporting	13 Core · 7 Supporting	4 Core · 1 Supporting	33 Core · 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring..

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken

down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Heritage sites related data	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Ecological sites related data	Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Housing related data	Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Building plan related data	Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Roads related data	Engineering Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Solid waste	Solid waste management, Bruhath

Designated data owners	Subcategories	Data owners at city level
	management related data	Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For IT services related data	IT Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Vendor committee related data	Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, Bangalore Development Authority, Health Department, Pollution Department, Bangalore Water Supply & Sewerage Board, Police Department (BWSSB), Transport & Railway Department, Karnataka Slum Development Board (KSDB), Bangalore Electricity Supply Company Limited (BESCOM).
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Bangalore Development Authority (BDA) Bruhath Bengaluru Mahanagara Palike (BBMP)
	Construction planning	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Green Building	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Rain water harvesting	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bangalore Electricity Supply Company Limited (BESCOM)
State Disaster management authority		Revenue Department (Disaster management & Services)
State Education Department		Deputy Director of Public Instructions, Bangalore
State Health Department	Health care professionals	District Health & Family Welfare Department, Bangalore
	Citizen Services	District Health & Family Welfare Department
	Disease Prevalence	District Health & Family Welfare Department

Designated data owners	Subcategories	Data owners at city level
	Health Infrastructure	District Health & Family Welfare Department
State Renewable Energy Development Agency	Renewable Energy	Bangalore Electricity Supply Company Limited (BESCOM)
State Sales / Commercial Taxes Department		Commercial Taxes Department
Town and Country Planning Department	Land Use	Bengaluru Development Authority
Traffic and Police Department		Police Commissioner's Office, Bengaluru
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	0
State Renewable Energy Department	2
Town and Country Planning	1
State Health Department	1
Transport Authority	5
Disaster Management	1

Urban Local Body	15
Total	31*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

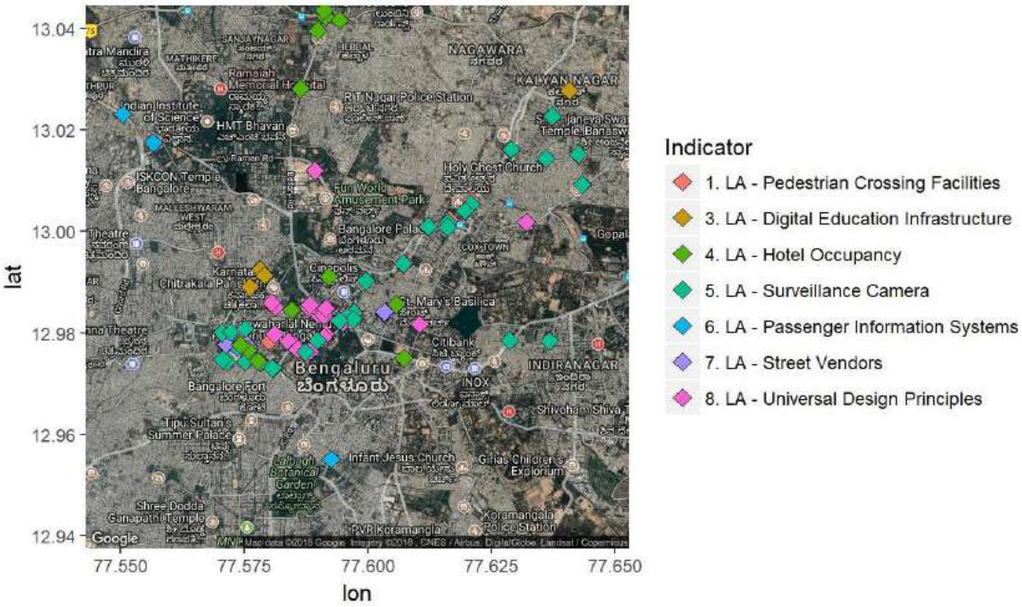
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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NAGAWARA
KALYAN NAGAR
SANJAYNAGAR
MATHIKERE
Ramaiah Memorial Hospital
RT Nagar Police Station
Indian Institute of Science
HMT Bhavan
ISKCON Temple Bangalore
MALLESHWARAM WEST
Holy Ghost Church
Fun World Amusement Park
Bangalore Palace
COX TOWN
Chitrakala Parishath
St. Mary's Basilica
Bengaluru
ಬೆಂಗಳೂರು
Citibank
INDIRANAGAR
Bangalore Fort
Shivoham Shiva
Tipu Sultan's Summer Palace
Lalbagh Botanical Garden
Infant Jesus Church
Gilrias Children's Explorium
Shree Dodda Ganapathi Temple
PVR Koramangala
Koramangala Police Station
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**76.48**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.25
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0

	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.53**
Description		
Sub Indicators	1.3a Building plan	0.022813671
	1.3b Birth/Death Certificate	0.000252193
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000965316
	1.3i information	0.000965218
	1.3j electricity	0.001370703
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.29**
Description		
Sub Indicators	1.4a water supply	0

	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	2
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**102.53**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	235826
Denominator	Total demand raised for the year	230000
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**137.78**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	115139.66
Denominator	Total O&M cost for providing water supply services during the year	83568.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**32.26**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	280421.84
Denominator	Total expenditure (revenue and capital accounts) in the same year	869123.58
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	198
Denominator	Total number of wards	198

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	354
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**80**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	32
Denominator	Total number of ecologically important sites identified in the city	40
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1359.08
Denominator	Total budget of the ULB (capital and revenue)	506166.45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the	

	benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**5**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	5
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**92.7**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	1180337
Denominator	Total population in the age group of 6-14 years	1273353
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**91.74**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	566852
Denominator	Total female population in the age group of 6-14 years	617883
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**41.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	785859
Denominator	Total number of teachers available for primary grades (public and private schools)	19128
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**39.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1848
Denominator	Total number of schools	4672
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.5	Percentage of students completing primary education	**102.61**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	102.6143151
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**98.97**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	16587129284
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**17.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	14681
Denominator	Total population of the city	8495492
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**2.48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2107
Denominator	Total population of the city	8495492
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**14**
Description	Total response time for health-related distress calls received in the city	14
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**1.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	119305
Denominator	Total population of the city	8495492

Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	7913
Denominator	Total population of the city	8495492
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**16.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	2274
Denominator	Total length of road network in the city	13500
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**127.83**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	10860
Denominator	Total population of the city	8495492
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**30.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3327
Denominator	Total crimes recorded in the same year	10860
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.4	Transport-related fatality per lakh population	**13.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1161
Denominator	Total population of the city	8495492
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-1.51**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-33961
Denominator	Total VAT/GST collection during preceding year	22542.55
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**9.62**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	5559
Denominator	Total Professional Tax collection during preceding year	57813
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**11.11**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	9
Denominator	Number of construction permits during preceding year	0.81
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	88286
Denominator	Total labour force in the city	1273353
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	31833.825
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**4.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	15403
Denominator	Total number of slum and EWS households in the city	3810.03
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**11.77**
Formula:	*Numerator / Denominator*	

Numerator	Total area of green space (sq.m.)	100020000
Denominator	Total population of the city	8495492
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1410581.29
Denominator	Total population of the city	8495492
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**30.68**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	216700000
Denominator	Total area of the city (total area of all land uses)	706400000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	8495492
Denominator	Area allocated for residential land use (in hectares)	338410000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**169.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	4179034

Denominator	Total number of households in the city	2464790
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	4940166
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**115112**
Description	Total number of sustained electrical interruptions in a year	115112
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.75**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	51814
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	8201.06
Denominator	Total energy consumption from all sources	457069.5
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0

Denominator	Total quantum of water and waste water handled during the period	62622
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	240000425
Denominator	Total number of street light installations	485751
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	2703693.791
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	457069.5
Denominator	Total population of the city	8495492
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	55860.19
Denominator	Total area of the city (sq.km)	706.4
Unit	Transport length (kms) per square km	
Benchmark	>=1	

Indicator No: 11.2	Availability of public transport	**1.27**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	10810
Denominator	Total population of the city	8495492
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	53.47
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	13500
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**61.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	89
Denominator	Total number of major transport interchanges in the city	144
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0.097
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.29**
Formula:	Numerator / Denominator	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of major interchanges with PIS	42
Denominator	Total number of major interchanges in the city	144
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**8.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	35
Denominator	Total number of signalised intersections in the city	400
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	3330
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**3.31**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	895
Denominator	Total length of road network in the city	27000
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**116.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	409
Denominator	Total number of junctions/ intersections on major roads in the city	350
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0

Denominator	Total number of public right-of-way areas in the city	935
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**33.61**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	828512
Denominator	Total number of households in the city	2464790
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**160.84**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1366.4
Denominator	Total population of the city	8495492
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	28751
Denominator	Total number of samples tested for water quality	29138
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	1366.4
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**100**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	903136
Denominator	Total number of water connections in the city	903136
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	92
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	92
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**64.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1008068
Denominator	Total number of properties in the city	1565947
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**60.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	951612
Denominator	Total number of properties in the city	1565947
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	1440
Denominator	Total waste water generated in the city per day	1440
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	721
Denominator	Total waste water received at treatment plants per day	721
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	13500
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**98.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	2899225
Denominator	Total number of households and establishments in the city	2937315
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**93.5**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	5383.8
Denominator	Total quantum of MSW generated in the city	5758.17
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**21.99**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	35510.5
Denominator	Average MSW generated in the city (tons per month)	161514
Unit	Percentage	

Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**30.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	30.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**83.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	83.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1051200
Denominator	Total number of noise samples	5256000
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	21
Denominator	Total number of samples tested	21
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BELAGAVI

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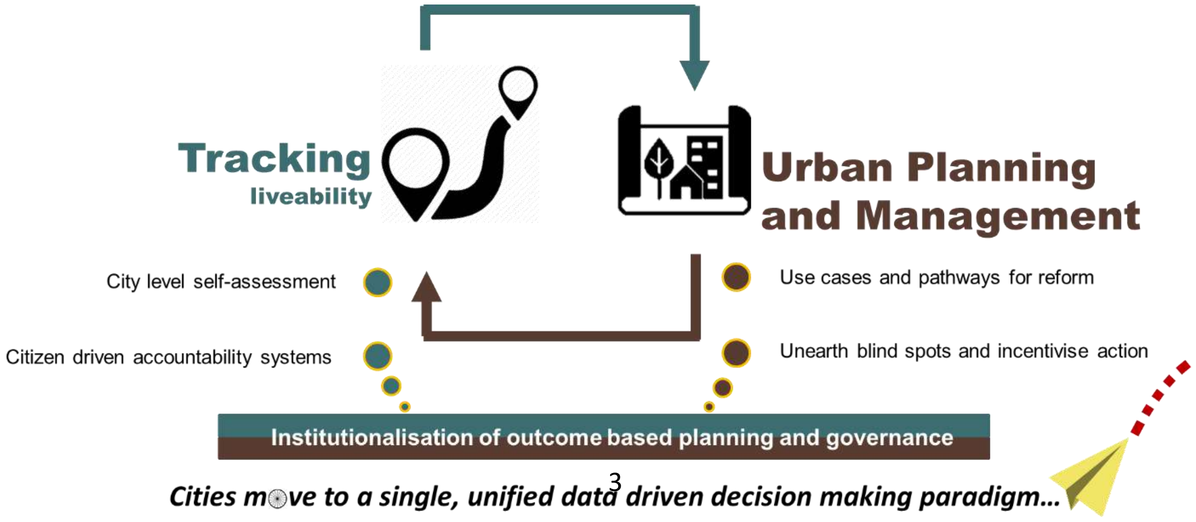
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

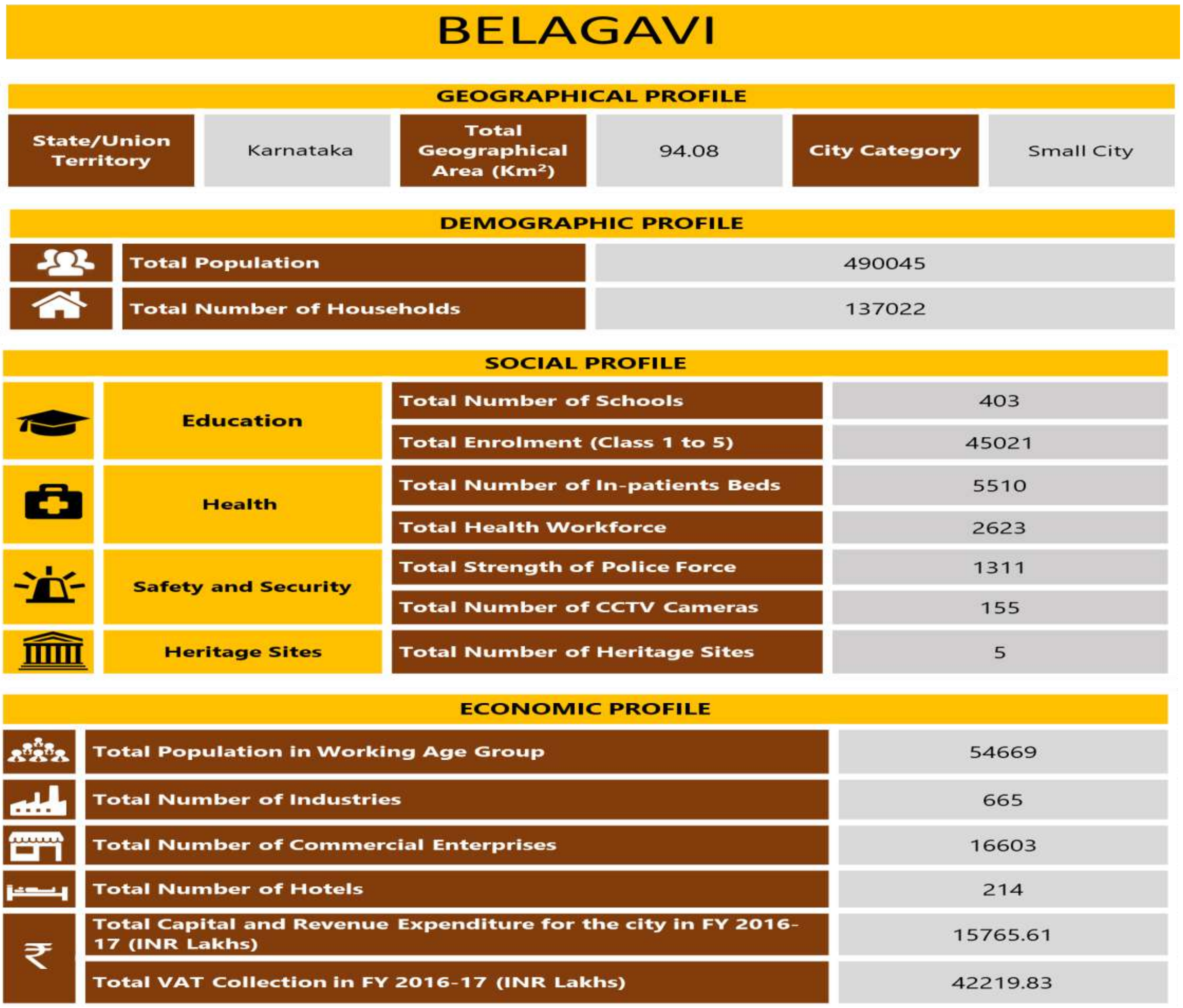

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BELAGAVI

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km²)**	94.08	**City Category**	Small City

DEMOGRAPHIC PROFILE

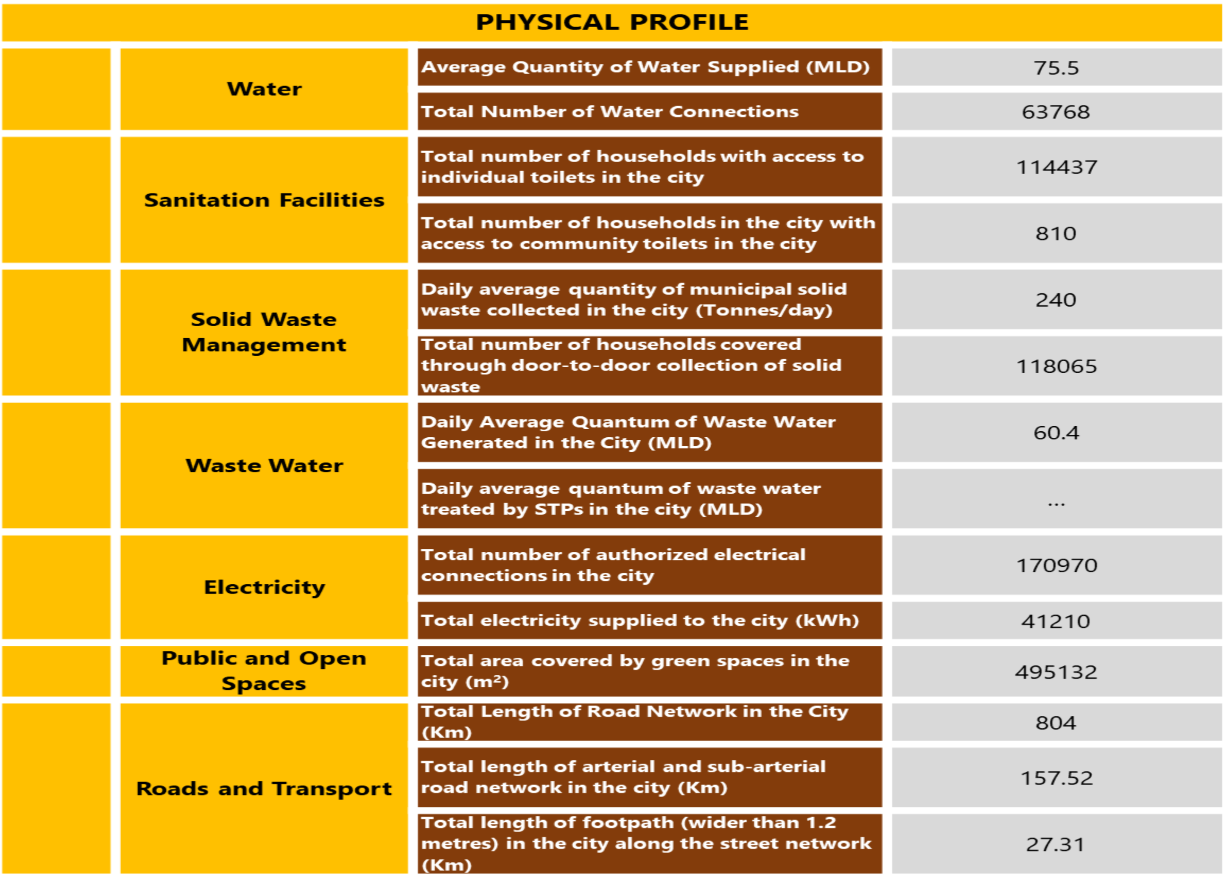
Total Population	490045
Total Number of Households	137022

SOCIAL PROFILE

Education	**Total Number of Schools**	403
	Total Enrolment (Class 1 to 5)	45021
Health	**Total Number of In-patients Beds**	5510
	Total Health Workforce	2623
Safety and Security	**Total Strength of Police Force**	1311
	Total Number of CCTV Cameras	155
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	54669
Total Number of Industries	665
Total Number of Commercial Enterprises	16603
Total Number of Hotels	214
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15765.61
Total VAT Collection in FY 2016-17 (INR Lakhs)	42219.83



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	75.5
		Total Number of Water Connections	63768
	Sanitation Facilities	Total number of households with access to individual toilets in the city	114437
		Total number of households in the city with access to community toilets in the city	810
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	240
		Total number of households covered through door-to-door collection of solid waste	118065
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	60.4
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	Total number of authorized electrical connections in the city	170970
		Total electricity supplied to the city (kWh)	41210
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	495132
	Roads and Transport	Total Length of Road Network in the City (Km)	804
		Total length of arterial and sub-arterial road network in the city (Km)	157.52
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	27.31

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

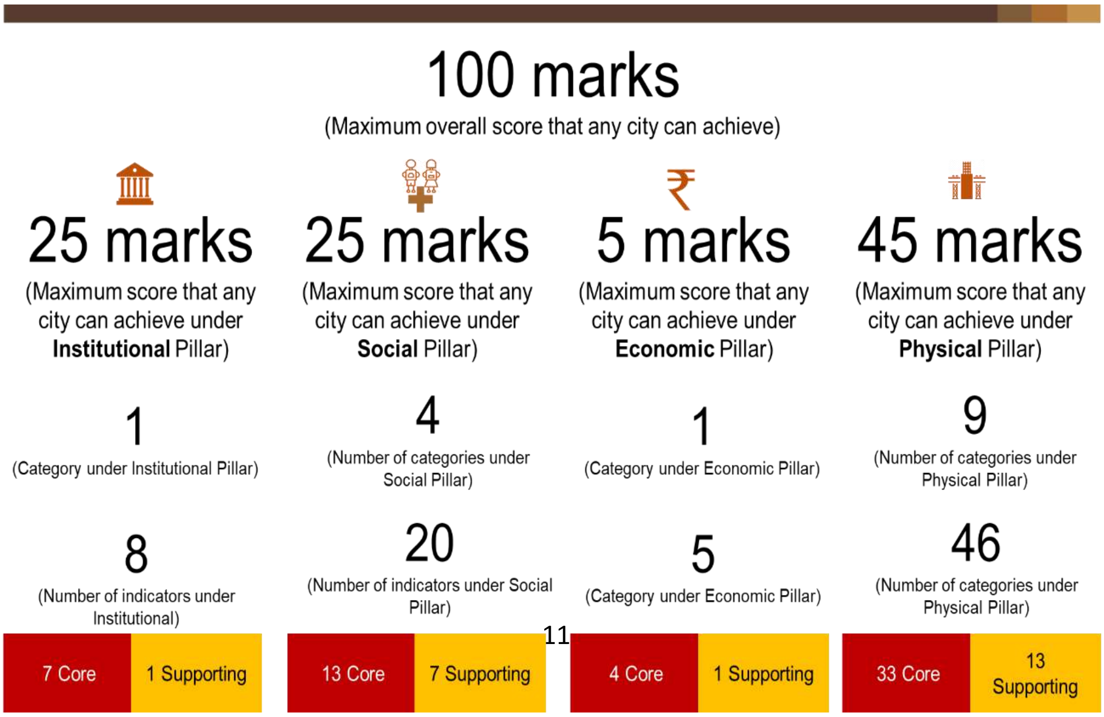
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\boldsymbol{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}}{\boldsymbol{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Belagavi City Copn.
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department Belagavi City Copn.
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department Belagavi City Copn.
Urban Local Body	For Heritage sites related data	Town Planning Department Belagavi City Copn.
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv housing Yojana. Belagavi City Copn. Slum Board Dept.
Urban Local Body	For Building plan related data	Town Planning Department Belagavi City Copn. (Belagavi Urban Dev. Authority)
Urban Local Body	For Roads related data	Engineering Department Belagavi City Copn. & Publc Works Department
Urban Local Body	For Solid waste management related data	Health & Sanitation section, Belagavi City Copn
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Vender Reg. Cell . Belagavi City Copn., National Urban Livelihood Mission

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Belagavi Development Authority, (CMP related), Health Department, State Pollution Control Board Health & Family Welfare Dept. Police Department (Crime & Accident information) Road Transport Dept. (Vehicles and road information)
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State / District Pollution control board, Belagavi Water Supply and Drainage Board Department of Health, Hygiene & Sanitation
Development Authority	Building Infrastructure	Belagavi Urban Development Authority & Engineering section BCC, Smart City Limited
	Construction planning	Development Authority and Town Planning Department, Belagavi City Corporation.
	Green Building	Town Planning Department,
	Rain water harvesting	Town Planning Department, Belagavi City Corporation.
	Universal Design Principle	Belagavi Urban Development Authority / Belagavi City Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Hubballi Electricity Supply Company Limited
State Disaster management authority		Disaster Management Cell, Deputy Commissioner Office
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy	Renewable Energy	Hubballi Electricity Supply Company Limited

Designated data owners	Subcategories	Data owners at city level
Development Agency		
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Belagavi Urban Development Authority/ Town planning
Traffic and Police Department		Police Commissioner's Office Belagavi
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 81 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	4
DISCOM/Electricity Department	5
Traffic and Police Department	18
Development Authority	0
Pollution Control Board	8
State Renewable Energy Department	0
Town and Country Planning	4
State Health Department	0
Transport Authority	3
Disaster Management	1

Urban Local Body	38
Total	81*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

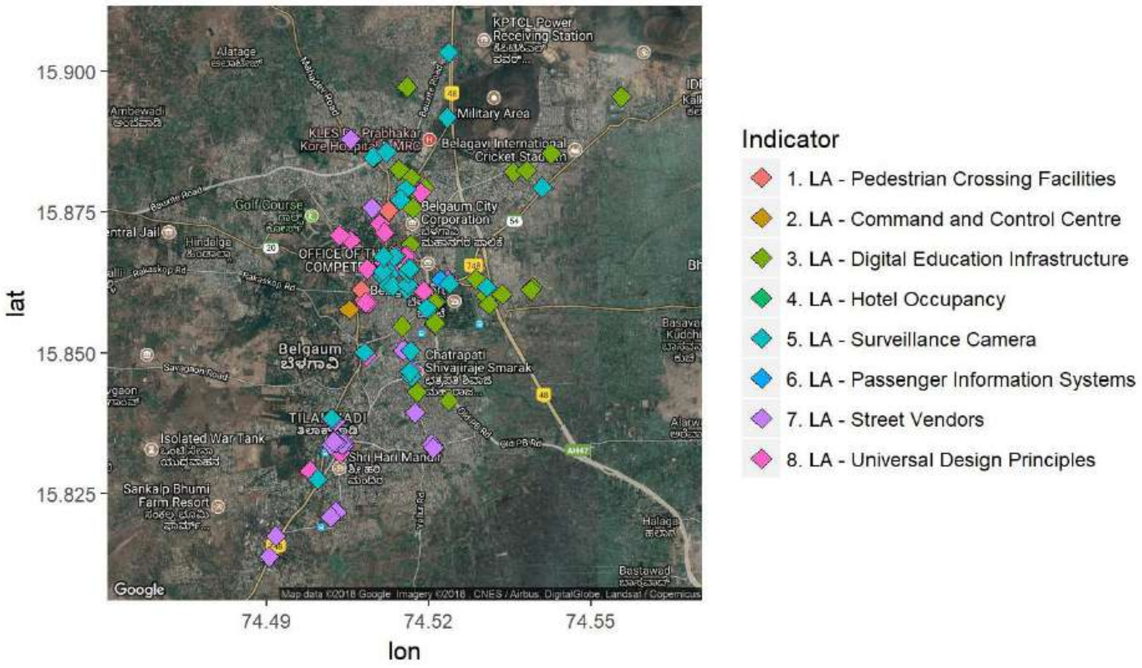
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


15.900
15.875
15.850
15.825
lat
74.49
74.52
74.55
lon
Belgaum City Corporation
Belgaum
Military Area
Belagavi International Cricket Stadium
KPTCL Power Receiving Station
KLES Dr Prabhakar Kore Hospital & MRC
Golf Course
Hindalga
Chatrapati Shivajiraje Smarak
TILAKWADI
Shri Hari Mandir
Isolated War Tank
Sankalp Bhumi Farm Resort
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**53.14**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0.75
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**26.19**
Description	Services integrated through an integrated or a singular operations command centre	5.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**4.87**
Description		
Sub Indicators	1.3a Building plan	0.00942796
	1.3b Birth/Death Certificate	2.24469E-05
	1.3c water supply	0.008031531
	1.3d solid waste management	0.002614046

	1.3e property tax	0.219321947
	1.3f professional tax (RC)	0.083333333
	1.3g professional tax (EC)	0.083333333
	1.3h complaints/ grievance redressal	0.016069953
	1.3i information	0.016069953
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**96.89**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3045.16
Denominator	Total demand raised for the year	3143.03
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**163.75**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	3204.81
Denominator	Total O&M cost for providing water supply services during the year	1957.19
Unit	Percentage	

Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**-18.78**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-4710.75
Denominator	Total expenditure (revenue and capital accounts) in the same year	25087.82
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	58
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**80**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**60**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	3
Denominator	Total number of ecologically important sites identified in the city	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**16.43**
Description	Average Occupancy rate of Hotels	16.42857143

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**6.96**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1096.89
Denominator	Total budget of the ULB (capital and revenue)	15765.61
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	764
Description	Number of cultural/sports events hosted by the city authority in the preceding year	764
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**89.67**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	72734
Denominator	Total population in the age group of 6-14 years	81112
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**90.43**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	34990
Denominator	Total female population in the age group of 6-14 years	38692
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**39.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	45021

Denominator	Total number of teachers available for primary grades (public and private schools)	1152
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**1.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	8
Denominator	Total number of schools	403
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**86.21**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	86.20627571
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**99.78**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	88166844
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**112.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5510
Denominator	Total population of the city	490045
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**53.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2623

Denominator	Total population of the city	490045
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**13**
Description	Total response time for health-related distress calls received in the city	13
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2457
Denominator	Total population of the city	490045
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	16
Denominator	Total population of the city	490045
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**19.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	155
Denominator	Total length of road network in the city	804
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**218.55**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1071

Denominator	Total population of the city	490045
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**87.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	933
Denominator	Total crimes recorded in the same year	1071
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**19.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	94
Denominator	Total population of the city	490045
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**0.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	396.41
Denominator	Total VAT/GST collection during preceding year	418.2342
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**16.32**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	100.92
Denominator	Total Professional Tax collection during preceding year	618.21
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**25.86**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	210
Denominator	Number of construction permits during preceding year	8.12
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	3907
Denominator	Total labour force in the city	81112
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	3373
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**19.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	2702
Denominator	Total number of slum and EWS households in the city	140.4

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**3.23**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	57019260600
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**1.01**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	495132
Denominator	Total population of the city	490045
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.47**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1700013.56
Denominator	Total population of the city	490045
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**8.59**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	8080000
Denominator	Total area of the city (total area of all land uses)	94080000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.13**
Formula:	*Numerator / Denominator*	

Numerator	Total population of the city	490045
Denominator	Area allocated for residential land use (in hectares)	3795850
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**98.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	134402
Denominator	Total number of households in the city	137022
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**101.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	173590
Denominator	Total number of electricity connections in the city	170970
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**408**
Description	Total number of sustained electrical interruptions in a year	408
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.74**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	43204.68
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	149946
Denominator	Total energy consumption from all sources	41210
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	11422811.06
Denominator	Total quantum of water and waste water handled during the period	2265
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	65296490
Denominator	Total number of street light installations	26852
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	49103
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	41210

Denominator	Total population of the city	490045
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	679
Denominator	Total area of the city (sq.km)	94.08
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	63
Denominator	Total population of the city	490045
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	22
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	804
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable

Denominator	Total number of major transport interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0.138
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.14**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	14
Denominator	Total available on-street parking spaces in the city	28
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	27.31
Denominator	Total length of road network in the city	1608
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	15
Denominator	Total number of junctions/ intersections on major roads in the city	45
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**4.79**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	31
Denominator	Total number of public right-of-way areas in the city	647
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**44.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	61108
Denominator	Total number of households in the city	137022
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**154.07**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	75.5
Denominator	Total population of the city	490045
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	699
Denominator	Total number of samples tested for water quality	715
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	75.5
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**18.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	11594
Denominator	Total number of water connections in the city	63768
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**18**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	99
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	550
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**109.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	132715

Denominator	Total number of properties in the city	121023
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**102.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	124237
Denominator	Total number of properties in the city	121023
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**35.1**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	21.2
Denominator	Total waste water generated in the city per day	60.4
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**46.89**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	377
Denominator	Total length of road network in the city	804
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**84.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	130538
Denominator	Total number of households and establishments in the city	153625

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**90.57**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	240
Denominator	Total quantum of MSW generated in the city	265
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**8.33**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	599.95
Denominator	Average MSW generated in the city (tons per month)	7200
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**15.73**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	15.727
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**77.73**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	77.727
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable

Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**80.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	17
Denominator	Total number of samples tested	21
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BHAGALPUR

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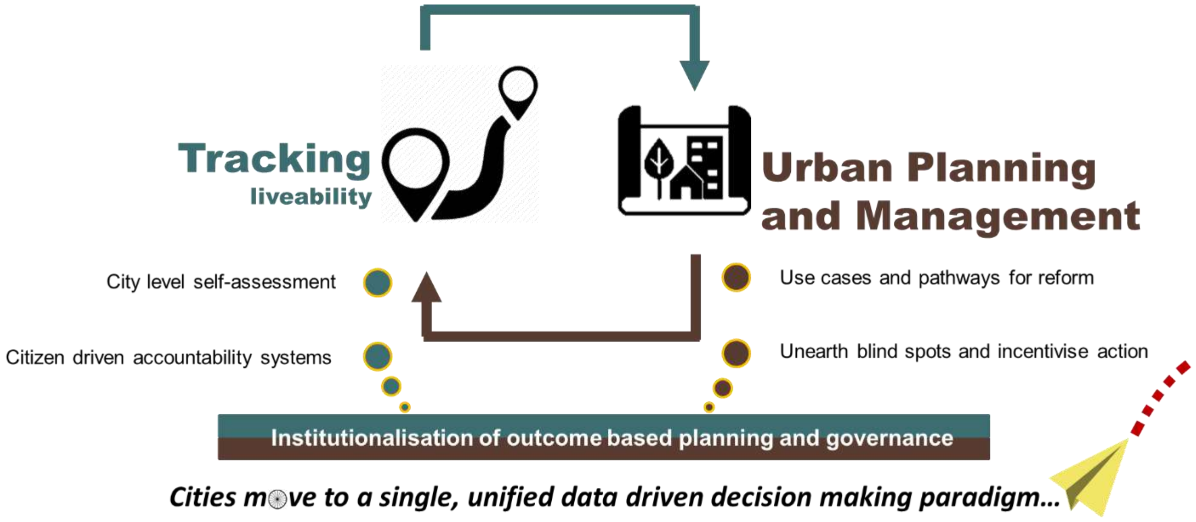
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

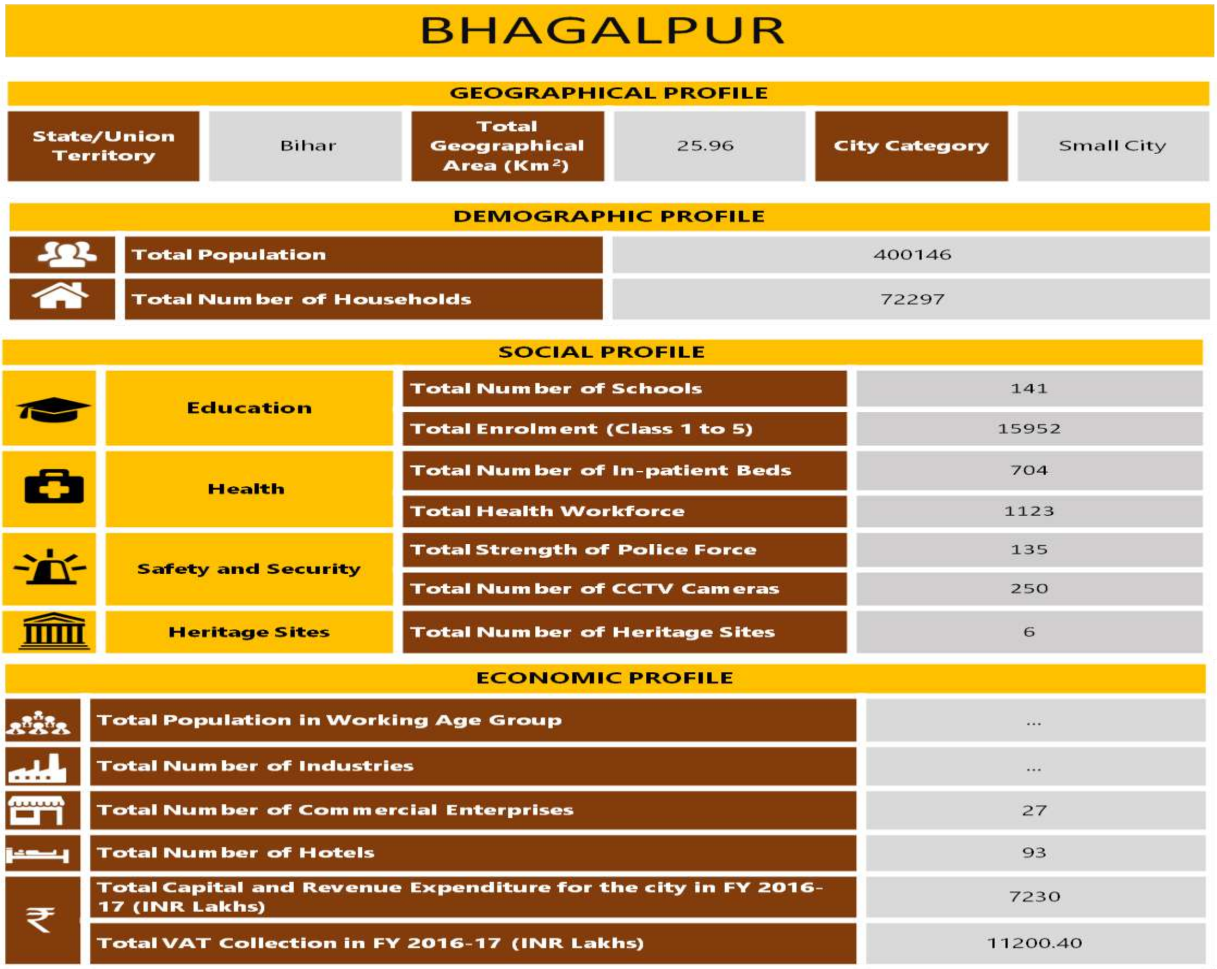
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BHAGALPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	**Total Geographical Area (Km^2)**	25.96	**City Category**	Small City

DEMOGRAPHIC PROFILE

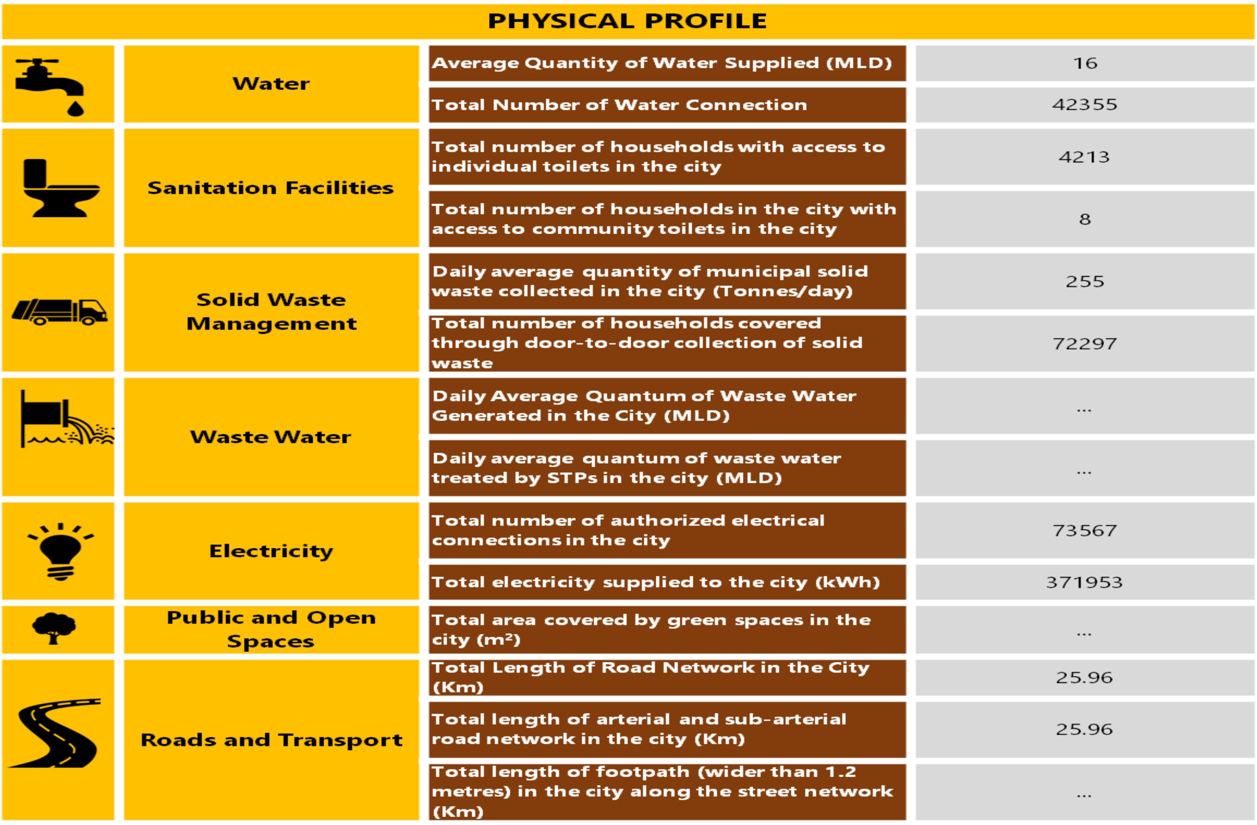
Total Population	400146
Total Number of Households	72297

SOCIAL PROFILE

Education	**Total Number of Schools**	141
	Total Enrolment (Class 1 to 5)	15952
Health	**Total Number of In-patient Beds**	704
	Total Health Workforce	1123
Safety and Security	**Total Strength of Police Force**	135
	Total Number of CCTV Cameras	250
Heritage Sites	**Total Number of Heritage Sites**	6

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	27
Total Number of Hotels	93
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7230
Total VAT Collection in FY 2016-17 (INR Lakhs)	11200.40



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	16
	Total Number of Water Connection	42355
Sanitation Facilities	Total number of households with access to individual toilets in the city	4213
	Total number of households in the city with access to community toilets in the city	8
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	255
	Total number of households covered through door-to-door collection of solid waste	72297
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	73567
	Total electricity supplied to the city (kWh)	371953
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	25.96
	Total length of arterial and sub-arterial road network in the city (Km)	25.96
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open	8.1 Per capita availability of green spaces

Pillars of Comprehensive Development	Category	Indicators
	Spaces	8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

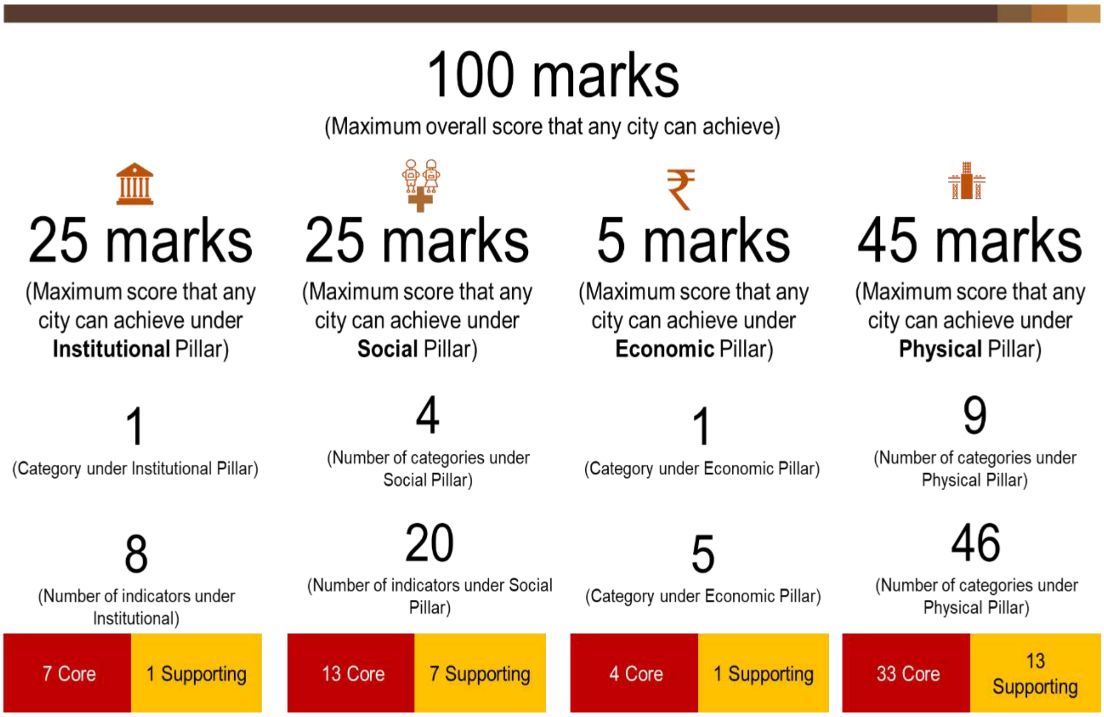
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

Institutional	Social	Economic	Physical
25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Bhagalpur

Designated data owners	Subcategories	Data owners at city level
		Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Heritage sites related data	Bhagalpur Municipal Corporation
Urban Local Body	For Ecological sites related data	Bhagalpur Municipal Corporation
Urban Local Body	For Housing related data	Social development SectionBhagalpur Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Solid waste management related data	Bhagalpur Municipal Corporation
Urban Local Body	For IT services related data	IT section, Bhagalpur Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Bhagalpur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar
Development Authority	Building Infrastructure	Engineering Department, Bhagalpur Municipal Corporation
	Construction planning	Engineering Department, Bhagalpur Municipal Corporation
	Green Building	Engineering Department, Bhagalpur Municipal Corporation
	Rain water harvesting	Engineering Department, Bhagalpur Municipal Corporation
	Universal Design Principle	Engineering Department, Bhagalpur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Bhagalpur Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 26 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	5
DISCOM/Electricity Department	2
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	1
State Renewable Energy Department	0
Town and Country Planning	0

State Health Department	4
Transport Authority	2
Disaster Management	1
Urban Local Body	9
Total	26*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

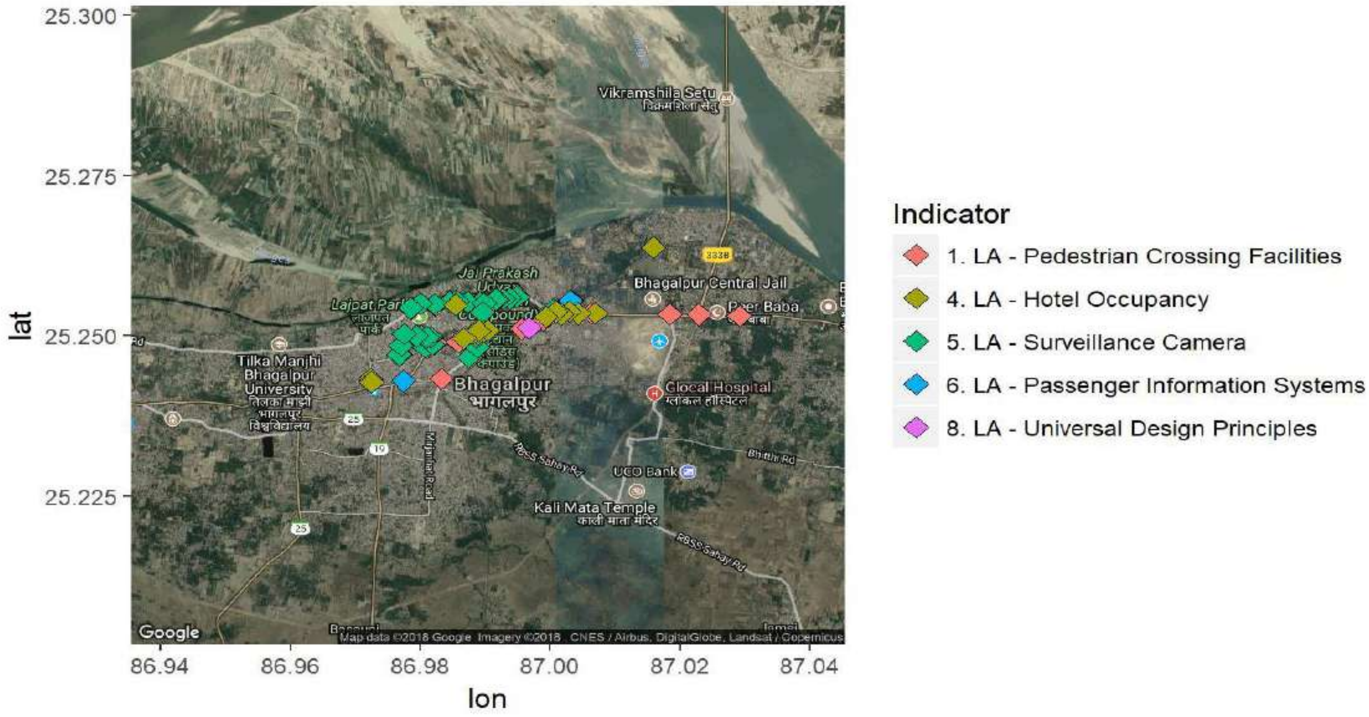
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


25.300
25.275
25.250
25.225
lat
86.94
86.96
86.98
87.00
87.02
87.04
lon
Vikramshila Setu
Jai Prakash Udyan
Lajpat Park
Bhagalpur Central Jail
Tilka Manjhi Bhagalpur University
Bhagalpur
भागलपुर
Glocal Hospital
UCO Bank
Kali Mata Temple
काली माता मंदिर
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for 74 indicators excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	38
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	0
	1.1j information	0.384615385
	1.1k Grievance redressal	1

	1.1l electricity	0.5
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	0
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	38.91
Description		
Sub Indicators	1.3a Building plan	0.535290768
	1.3b Birth/Death Certificate	0.096714491
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.535290768
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	634.33
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	NA

	1.4c street lights	1899
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	4
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	100.88
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1264.47
Denominator	Total demand raised for the year	1253.48
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	Data Unavailable
Denominator	Total O&M cost for providing water supply services during the year	66000000
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	92.43
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	30177
Denominator	Total expenditure (revenue and capital accounts) in the same year	32650
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	100
Formula:	*Numerator / Denominator*	

Numerator	Number of Wards with notified ward committees	51
Denominator	Total number of wards	51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	0
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	6
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	Non-Computable
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	0
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	7230
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	Number of cultural/sports events hosted by city	Non-Computable
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	27.82
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	25126
Denominator	Total population in the age group of 6-14 years	90323
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	33.1
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	14238
Denominator	Total female population in the age group of 6-14 years	43010
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	80.16
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	15952
Denominator	Total number of teachers available for primary grades (public and private schools)	199
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	7.09
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to	10

	digital resources such as NKN)	
Denominator	Total number of schools	141
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	41.9 41.9015792
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	54.43 9273330
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	17.59
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	704
Denominator	Total population of the city	400146
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	28.06
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1123
Denominator	Total population of the city	400146
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	Average response time in case of health emergencies	0
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	0.01
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	50
Denominator	Total population of the city	400146
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	0.18
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	728
Denominator	Total population of the city	400146
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	962.86
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	250
Denominator	Total length of road network in the city	25.964204
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	1077.61
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4312

Denominator	Total population of the city	400146
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	Data Unavailable
Denominator	Total crimes recorded in the same year	4312
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	#VALUE!
Denominator	Total population of the city	400146
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	17.5
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1667.86
Denominator	Total VAT/GST collection during preceding year	95.3254
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated	

	as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	86.17
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	-66.07
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-257
Denominator	Number of construction permits during preceding year	3.89
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	35213
Denominator	Total labour force in the city	90323
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	0
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	2258.075
Unit	Percentage	

Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	6.35
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	709
Denominator	Total number of slum and EWS households in the city	111.67
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	Non-Computable
Formula:	*Numerator / Denominator*	Data Unavailable
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	400146
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	0.02
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	9699.3924

Denominator	Total population of the city	400146
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	25964204
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	400146
Denominator	Area allocated for residential land use (in hectares)	Data Unavailable
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	81.26
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	58746
Denominator	Total number of households in the city	72297
Unit	Percentage	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	0
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	73567
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	Non-Computable
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	NC
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	NC
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	Data Unavailable
Denominator	Total energy consumption from all sources	37195328
Unit	Percentage	

Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	NC
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	NC
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	13217
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	NC
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	31070.53
Unit	Percentage	
Benchmark	80%	

Indicator No: 10.9	Total energy consumption per capita	0.81
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	37195328
Denominator	Total population of the city	400146
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	25.964204
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	Data Unavailable
Denominator	Total population of the city	400146
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	To be computed
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	Non-

Formula:	*Numerator / Denominator*	Computable
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	25.964204
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	100
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	To be computed
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	3
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	3
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	1
Numerator	Total number of signalised intersections that are synchronised	
Denominator	Total number of signalised intersections in the city	
Unit	Percentage	0
Benchmark	>=75	1
Indicator No: 11.9	Availability of paid parking spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	51.928408
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	1
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	20.56
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	22
Denominator	Total number of public right-of-way areas in the city	107
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	58.58
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	42355
Denominator	Total number of households in the city	72297
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	39.99
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	16
Denominator	Total population of the city	400146
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	24

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	16
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	0
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	42355
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	132
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	5.84
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with access to individual and/or community toilets	4221
Denominator	Total number of properties in the city	72297
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	5.83
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	4213
Denominator	Total number of properties in the city	72297
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	25.964204

Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	99.96
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	72297
Denominator	Total number of households and establishments in the city	72324
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	100
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	255
Denominator	Total quantum of MSW generated in the city	255
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	7650
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	

Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	100
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BHOPAL

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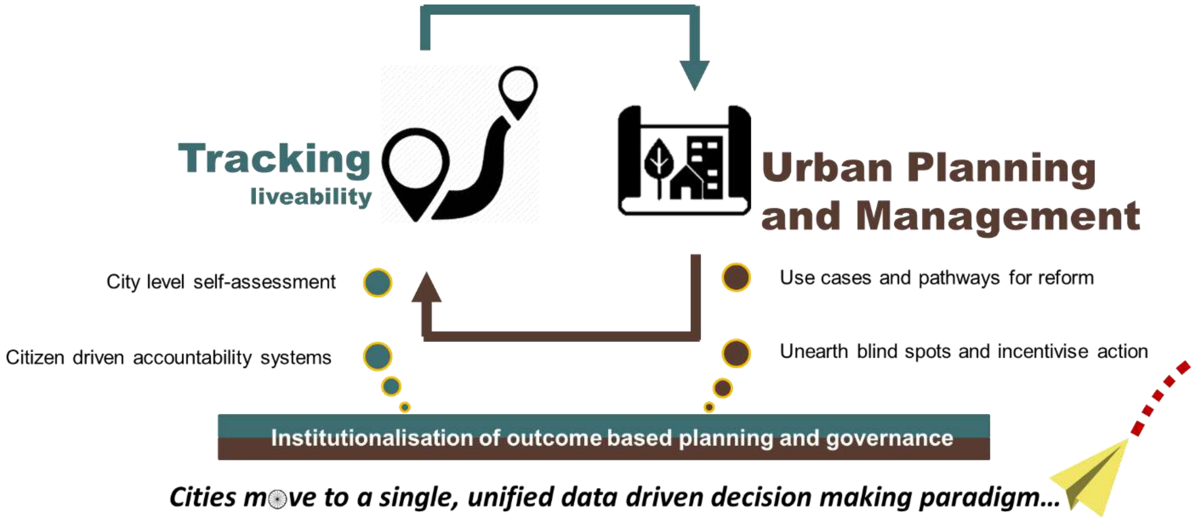
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

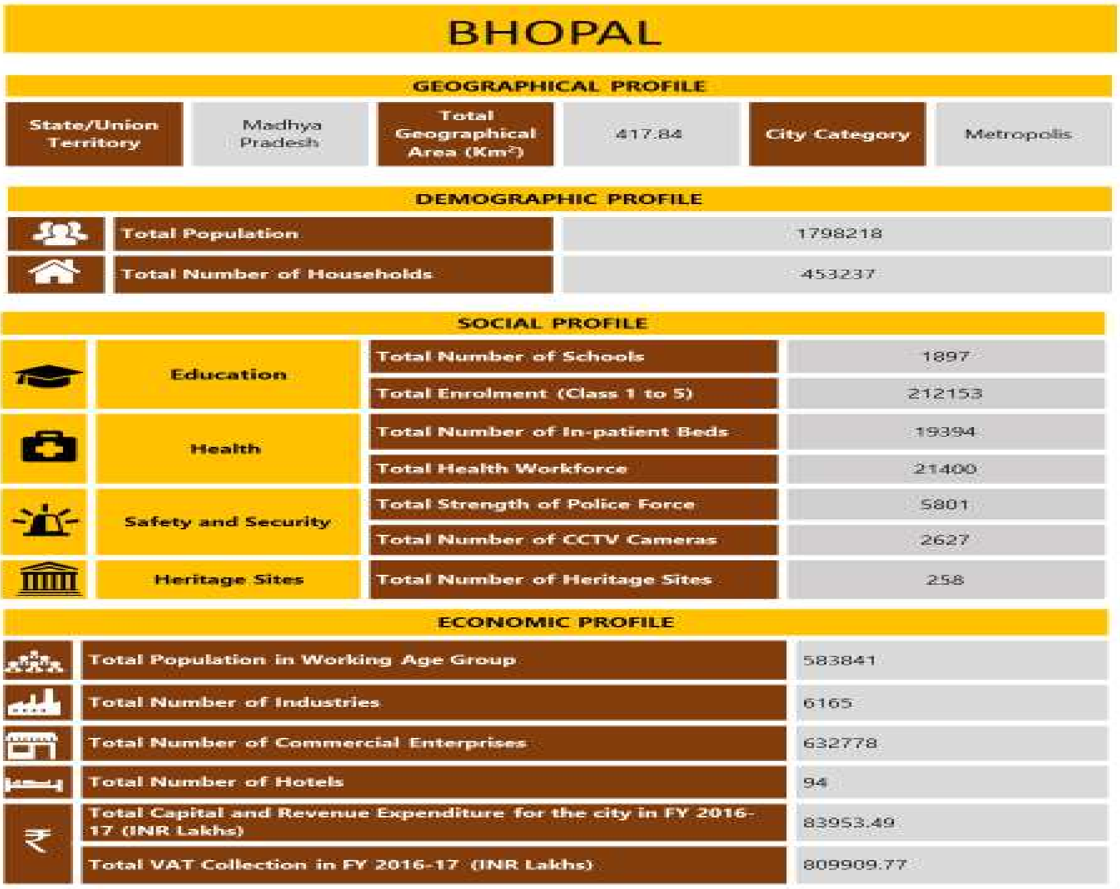

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BHOPAL

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	417.84	City Category	Metropolis

DEMOGRAPHIC PROFILE

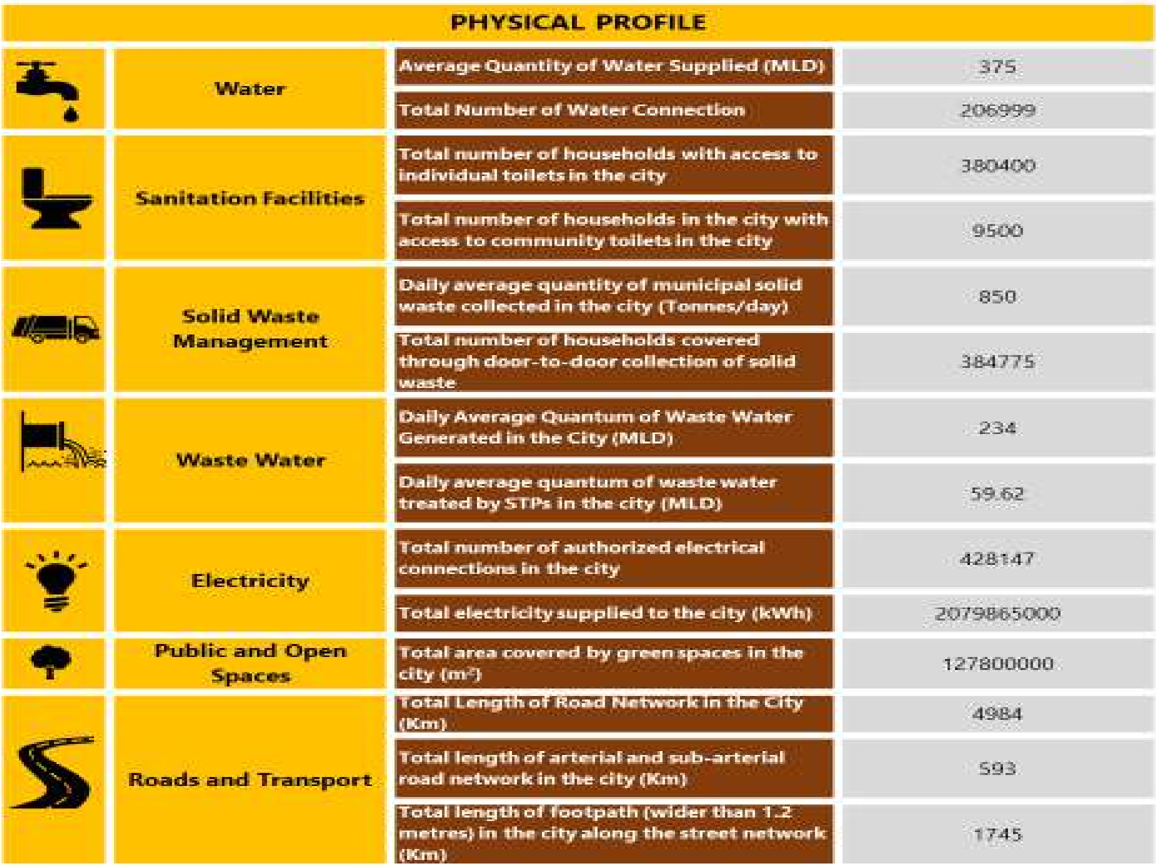
Total Population	1798218
Total Number of Households	453237

SOCIAL PROFILE

Education	Total Number of Schools	1897
	Total Enrolment (Class 1 to 5)	212153
Health	Total Number of In-patient Beds	19394
	Total Health Workforce	21400
Safety and Security	Total Strength of Police Force	5801
	Total Number of CCTV Cameras	2627
Heritage Sites	Total Number of Heritage Sites	258

ECONOMIC PROFILE

Total Population in Working Age Group	583841
Total Number of Industries	6165
Total Number of Commercial Enterprises	632778
Total Number of Hotels	94
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	83953.49
Total VAT Collection in FY 2016-17 (INR Lakhs)	809909.77



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	375
	Total Number of Water Connection	206999
Sanitation Facilities	Total number of households with access to individual toilets in the city	380400
	Total number of households in the city with access to community toilets in the city	9500
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	850
	Total number of households covered through door-to-door collection of solid waste	384775
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	234
	Daily average quantum of waste water treated by STPs in the city (MLD)	59.62
Electricity	Total number of authorized electrical connections in the city	428147
	Total electricity supplied to the city (kWh)	2079865000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	127800000
Roads and Transport	Total Length of Road Network in the City (Km)	4984
	Total length of arterial and sub-arterial road network in the city (Km)	593
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1745

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	**25 marks** (Maximum score that any city can achieve under **Social** Pillar)	**5 marks** (Maximum score that any city can achieve under **Economic** Pillar)	**45 marks** (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
	Accounts	Accounting Department, Bhopal Municipal Corporation
	Park and Recreation	Garden Department, Bhopal Municipal Corporation
	Water Supply and Drainage	Engineering Department, Bhopal Municipal Corporation

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Heritage sites	Bhopal Municipal Corporation
	Ecological sites	Bhopal Municipal Corporation
	Housing	Housing section, Bhopal Municipal Corporation
	Building plan	Building Permission Section, Bhopal Municipal Corporation
	Roads	Bhopal Municipal Corporation
	Solid waste management	Solid waste management, Bhopal Municipal Corporation
	IT services	IT Section, Bhopal Municipal Corporation
	Vendor committee	Bhopal Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Building Permission Section, Bhopal Municipal Corporation Bhopal Development Authority
	Construction planning	Building Permission Section, Bhopal Municipal Corporation Bhopal Development Authority
	Green Building	Bhopal Development Authority
	Rain water harvesting	Bhopal Development Authority
	Universal Design Principle	Bhopal Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Directorate of Health Services, Bhopal
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy		Madhya Pradesh New and Renewable Energy Department

Designated data owners	Sub categories	Data owners at city level
Development Agency		
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Bhopal
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 68 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	11
DISCOM/Electricity Department	3
Traffic and Police Department	8
Development Authority	0
Pollution Control Board	6
State Renewable Energy Department	3
Town and Country Planning	1
State Health Department	3

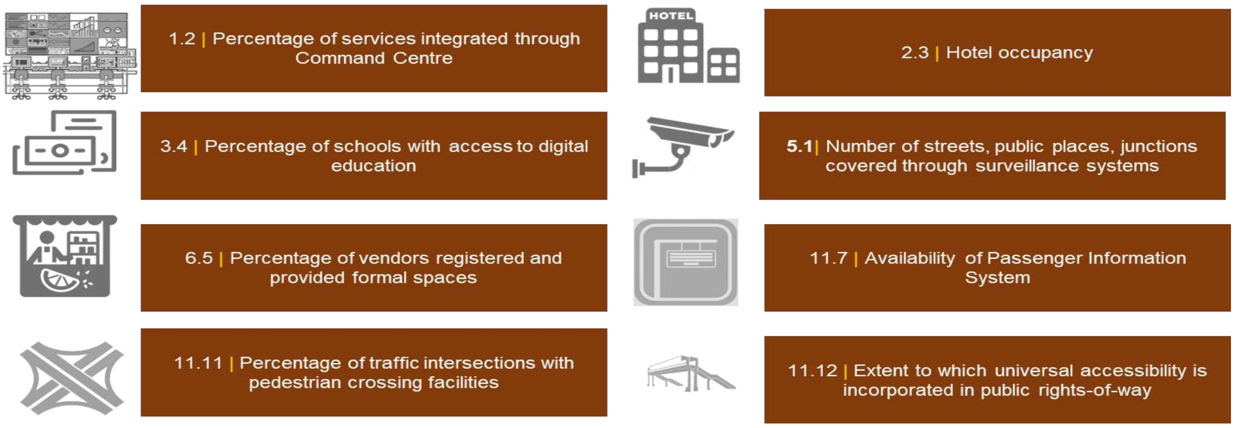
Transport Authority	1
Disaster Management	1
Urban Local Body	28
Total	68

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

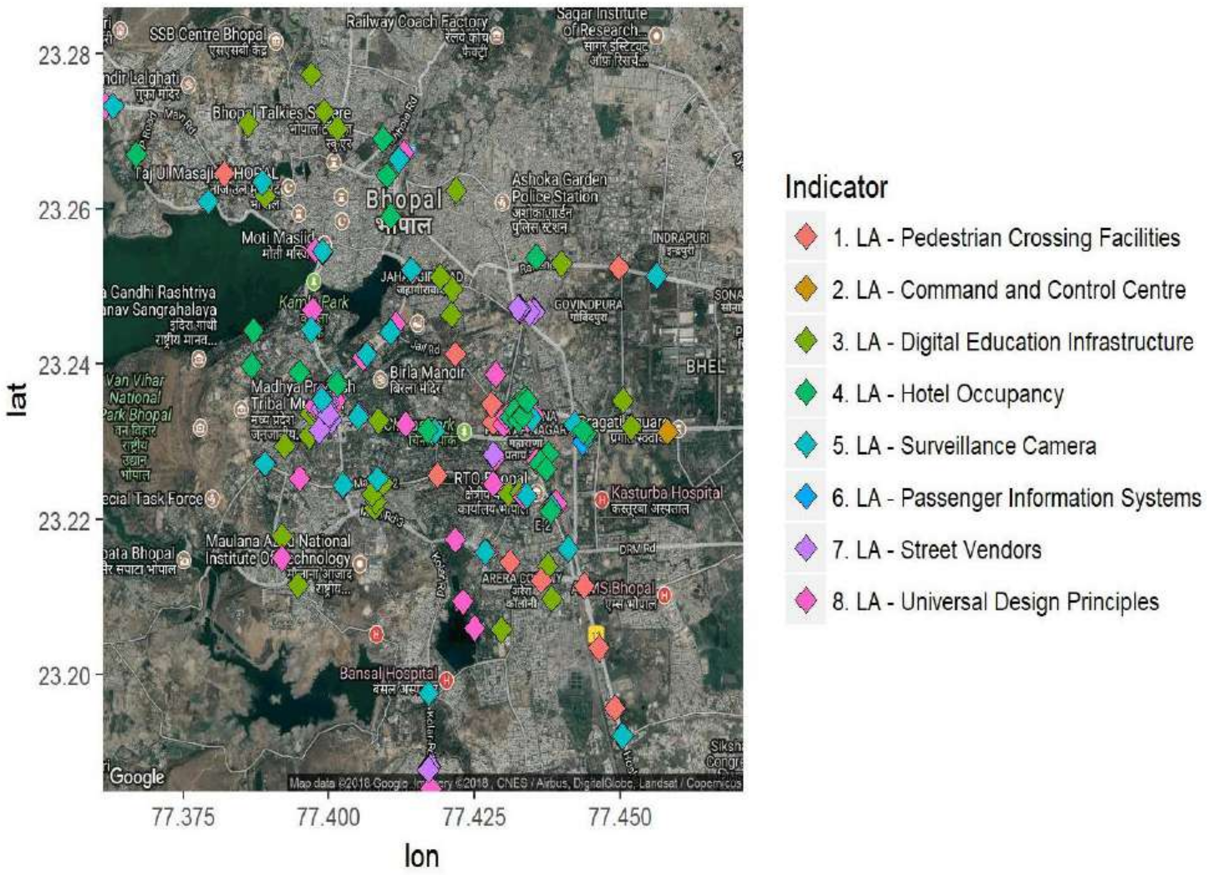
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
23.28
23.26
23.24
23.22
23.20
lon
77.375
77.400
77.425
77.450
SSB Centre Bhopal
Railway Coach Factory
Sagar Institute of Research
Bhopal Talkies Square
Taj Ul Masajid
Bhopal
Moti Masjid
Ashoka Garden Police Station
INDRAPURI
GOVINDPURA
Kamla Park
Birla Mandir
Van Vihar National Park Bhopal
Madhya Pradesh Tribal Museum
BHEL
RTO Bhopal
Kasturba Hospital
Maulana Azad National Institute Of Technology
Bansal Hospital
AIIMS Bhopal
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**98.22**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.769230769

	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**121.43**
Description	Services integrated through an integrated or a singular operations command centre	25.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**5.71**
Description		
Sub Indicators	1.3a Building plan	0.005120595
	1.3b Birth/Death Certificate	0.002834009
	1.3c water supply	0.019777236
	1.3d solid waste management	0.006027634
	1.3e property tax	0.005242032
	1.3f professional tax (RC)	0.09003059
	1.3g professional tax (EC)	0.379527218
	1.3h complaints/ grievance redressal	0.001276217
	1.3i information	0.049493443
	1.3j electricity	0.0116794
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.64**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	0

	1.4e professional tax	8.5
	1.4f parks and recreational spaces	2.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**133.37**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	29530.42
Denominator	Total demand raised for the year	22142.3631
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**29.85**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	4000
Denominator	Total O&M cost for providing water supply services during the year	13400
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-74.21**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-56708.42
Denominator	Total expenditure (revenue and capital accounts) in the same year	76416.41
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	85
Denominator	Total number of wards	85
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in	

	the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**42.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	110
Denominator	Total number of historic buildings/sites identified	258
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	3
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**72.86**
Description	Average Occupancy rate of Hotels	72.85714286
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	114
Denominator	Total budget of the ULB (capital and revenue)	83953.49
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**86**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	86
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**95.51**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	320879
Denominator	Total population in the age group of 6-14 years	335965
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**96.34**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	154451
Denominator	Total female population in the age group of 6-14 years	160313
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**57.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	212153
Denominator	Total number of teachers available for primary grades (public and private schools)	3661
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**5.54**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities	110

	for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	
Denominator	Total number of schools	1987
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**84.92**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	84.91732498
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**91.92**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1263641103
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**107.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	19394
Denominator	Total population of the city	1798218
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**119.01**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	21400
Denominator	Total population of the city	1798218
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	19730
Denominator	Total population of the city	1798218
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1819
Denominator	Total population of the city	1798218
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**52.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	2627

Denominator	Total length of road network in the city	4984
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**873.36**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	15705
Denominator	Total population of the city	1798218
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**24.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3883
Denominator	Total crimes recorded in the same year	15705
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**14.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	262
Denominator	Total population of the city	1798218
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**14.07**
Formula:	*Numerator / Denominator*	

Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	99896.55
Denominator	Total VAT/GST collection during preceding year	7100.1322
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**20.32**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	717.16
Denominator	Total Professional Tax collection during preceding year	3529.92
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-35.25**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-1370
Denominator	Number of construction permits during preceding year	38.87
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	9463
Denominator	Total labour force in the city	335965
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**85.41**
Formula:	*Numerator / Denominator*	

Numerator	Number of street vendors registered and provided formal spaces	7174
Denominator	Total number of vendors in the city	8399.125
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**1.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1957
Denominator	Total number of slum and EWS households in the city	1676.87
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.22**8495658755568
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**71.07**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	127800000
Denominator	Total population of the city	1798218
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational	**199.44**

	places	
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	358631086.9
Denominator	Total population of the city	1798218
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**4.37**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	18246495
Denominator	Total area of the city (total area of all land uses)	417840000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1798218
Denominator	Area allocated for residential land use (in hectares)	145219900
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**79.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	360137
Denominator	Total number of households in the city	453237
Unit	Percentage	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**71.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	306064
Denominator	Total number of electricity connections in the city	428147
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**3072**
Description	Total number of sustained electrical interruptions in a year	3072
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	128664
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1186
Denominator	Total energy consumption from all sources	2080615000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.05**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on water supply and sewerage services	12916124.08
Denominator	Total quantum of water and waste water handled during the period	13038.6
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	250000000
Denominator	Total number of street light installations	45000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	723081
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1923093
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	2080615000
Denominator	Total population of the city	1798218
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.61**
Formula:	*Numerator / Denominator*	

Numerator	Total length of public transport network (km)	401
Denominator	Total area of the city (sq.km)	417.84
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	395
Denominator	Total population of the city	1798218
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	23
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	12
Denominator	Total length of road network in the city	4984
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.03
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**251**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	251
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronization**	**1.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronized	1
Denominator	Total number of signalised intersections in the city	61
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**48.94**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	23
Denominator	Total available on-street parking spaces in the city	47
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**17.51**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	1745

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total length of road network in the city	9968
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**71.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	78
Denominator	Total number of junctions/ intersections on major roads in the city	109
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**48.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	11478
Denominator	Total number of public right-of-way areas in the city	23883
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**49.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	225167
Denominator	Total number of households in the city	453237
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**208.54**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	375
Denominator	Total population of the city	1798218

Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	4050
Denominator	Total number of samples tested for water quality	4100
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**14.93**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	56
Denominator	Quantum of water put into the distribution system (mld)	375
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**128.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	267000
Denominator	Total number of water connections in the city	206999
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**6.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	752
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	12306

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**113.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	466591
Denominator	Total number of properties in the city	411736
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**99.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	408217
Denominator	Total number of properties in the city	411736
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**25.48**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	59.62
Denominator	Total waste water generated in the city per day	234
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	59.2
Unit	Percentage	
Benchmark	20% or more	

Indicator No: 13.5	**Coverage of storm water drains**	**30**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1495.2
Denominator	Total length of road network in the city	4984
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**86.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	448053
Denominator	Total number of households and establishments in the city	516515
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	850
Denominator	Total quantum of MSW generated in the city	850
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**17.18**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	4380
Denominator	Average MSW generated in the city (tons per month)	25500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**25.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	25.9
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**99.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	99.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**631.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	631.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	62
Denominator	Total number of noise samples	62
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	124
Denominator	Total number of samples tested	124
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BHUBANESWAR

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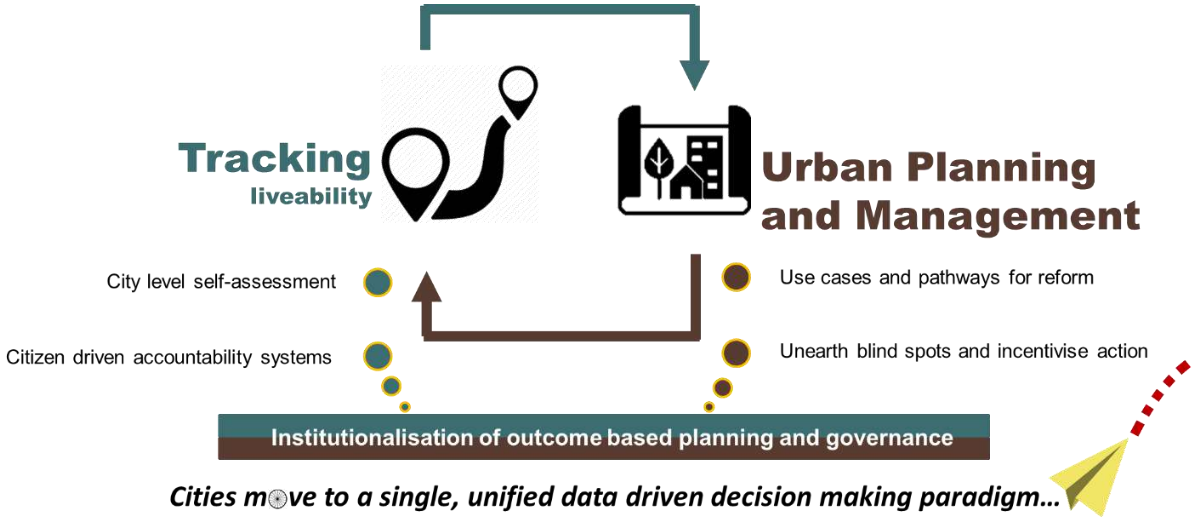
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

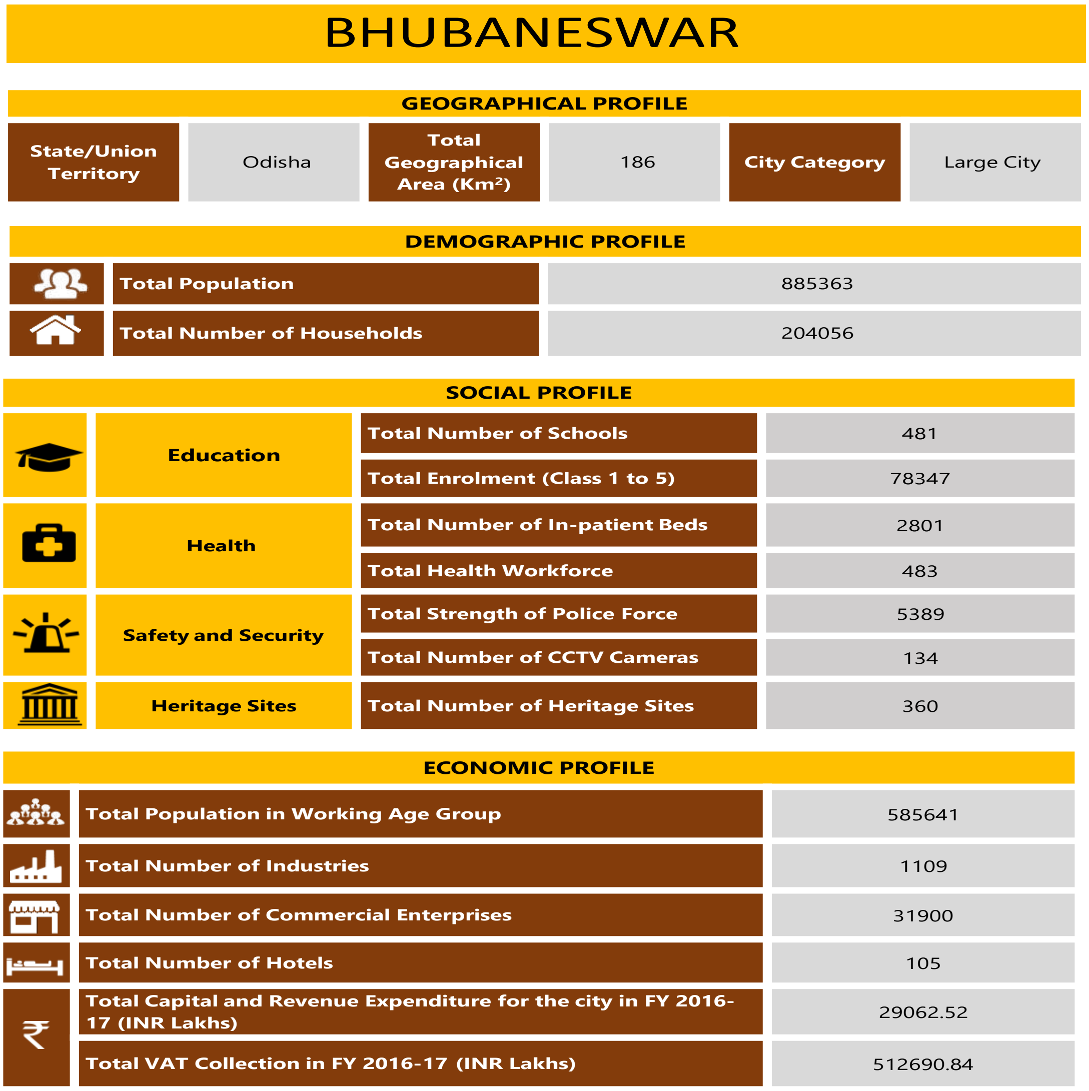

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety



BHUBANESWAR

GEOGRAPHICAL PROFILE

State/Union Territory	Odisha	**Total Geographical Area (Km²)**	186	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	885363
Total Number of Households	204056

SOCIAL PROFILE

Education	**Total Number of Schools**	481
	Total Enrolment (Class 1 to 5)	78347
Health	**Total Number of In-patient Beds**	2801
	Total Health Workforce	483
Safety and Security	**Total Strength of Police Force**	5389
	Total Number of CCTV Cameras	134
Heritage Sites	**Total Number of Heritage Sites**	360

ECONOMIC PROFILE

Total Population in Working Age Group	585641
Total Number of Industries	1109
Total Number of Commercial Enterprises	31900
Total Number of Hotels	105
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29062.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	512690.84

and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	276.45
	Total Number of Water Connections	98907
Sanitation Facilities	Total number of households with access to individual toilets in the city	147512
	Total number of households in the city with access to community toilets in the city	14851
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	520
	Total number of households covered through door-to-door collection of solid waste	104056
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	212.27
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.1
Electricity	Total number of authorized electrical connections in the city	195130
	Total electricity supplied to the city (kWh)	1708026000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	23904221
Roads and Transport	Total Length of Road Network in the City (Km)	1920
	Total length of arterial and sub-arterial road network in the city (Km)	142
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	43.08

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports

Pillars of Comprehensive Development	Category	Indicators
		activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate

Pillars of Comprehensive Development	Category	Indicators
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains

Pillars of Comprehensive Development	Category	Indicators
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Bhubaneswar Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Bhubaneswar Development Authority Bhubaneswar Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Bhubaneswar Municipal Corporation Public Health Office
Urban Local Body	For Heritage sites related data	Bhubaneswar Development Authority
Urban Local Body	For Ecological sites related data	Forest Department Bhubaneswar Development Authority
Urban Local Body	For Housing related data	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
Urban Local Body	For Building plan related data	Bhubaneswar Municipal Corporation
Urban Local Body	For Roads related data	Bhubaneswar Municipal Corporation Road & Building Superintendent Engineer
Urban Local Body	For Solid waste management related data	Bhubaneswar Municipal Corporation
Urban Local Body	For IT services related data	Bhubaneswar Municipal Corporation
Urban Local Body	For Vendor committee related data	Bhubaneswar Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution	Water Quality, Air Quality,	Public Health Officer, Odisha State

Designated data owners	Subcategories	Data owners at city level
control Board	Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Construction planning	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Green Building	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Rain water harvesting	Department of Water Resources
	Universal Design Principle	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Central Electricity Supply Corporation, Bhubaneswar Municipal Corporation
State Disaster management authority		Odisha State Disaster Management Authority
State Education Department		Odisha Primary Education Programme Authority
State Health Department	Health care professionals	National Urban Health Mission
	Citizen Services	National Urban Health Mission
	Disease Prevalence	National Urban Health Mission
	Health Infrastructure	National Urban Health Mission
State Renewable Energy Development Agency		Odisha Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country Planning Department	Land Use	Bhubaneswar Development Authority
Traffic and Police Department		Commission rate of Police , Railway (GRPF)
Transport Authorities	Buses	Dream Sahara Transport Service, Road Transport Office
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 55 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	2
Traffic and Police Department	11
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	4
Transport Authority	2
Disaster Management	0
Urban Local Body	32
Total	55*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

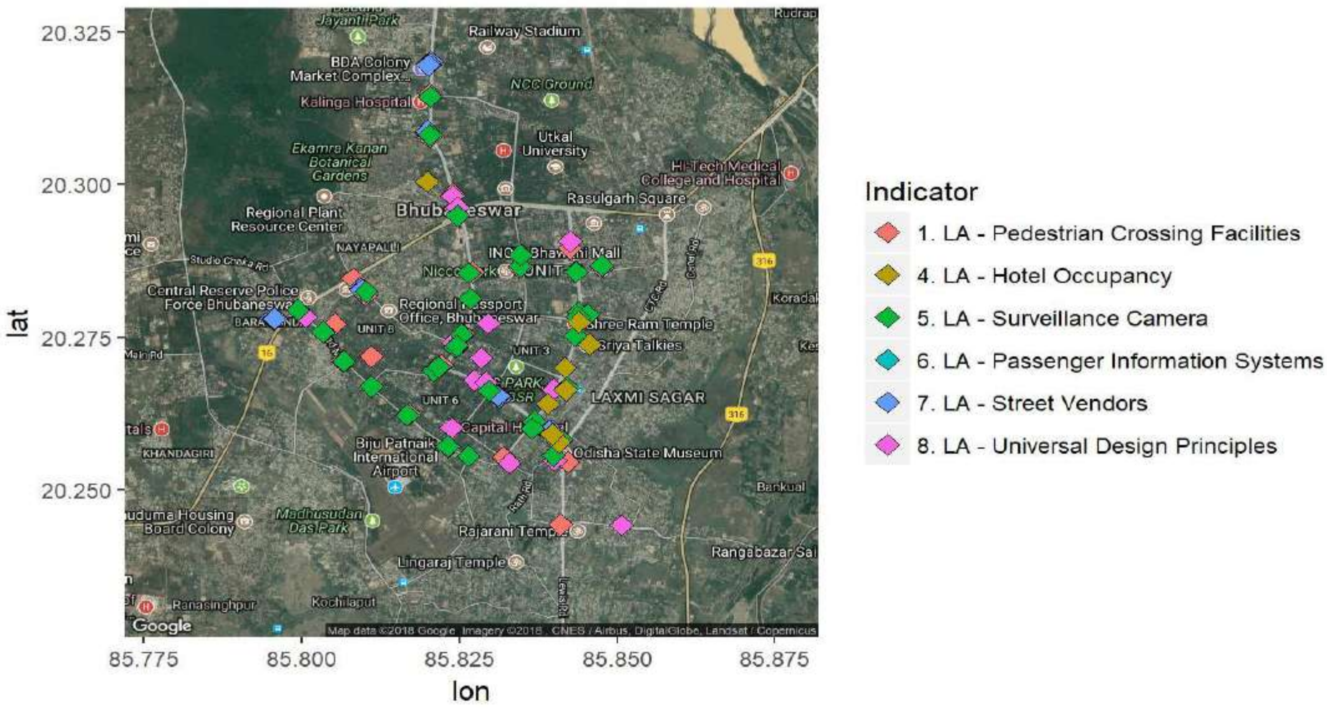
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


20.325
20.300
20.275
20.250
lat
85.775
85.800
85.825
85.850
85.875
lon
Jayanti Park
Railway Stadium
BDA Colony Market Complex
Kalinga Hospital
NCC Ground
Utkal University
Ekamra Kanan Botanical Gardens
Hi-Tech Medical College and Hospital
Rasulgarh Square
Bhubaneswar
Regional Plant Resource Center
NAYAPALLI
Nicco Park
Central Reserve Police Force Bhubaneswar
Regional Passport Office, Bhubaneswar
Shree Ram Temple
Sriya Talkies
LAXMI SAGAR
UNIT 8
UNIT 3
UNIT 6
Capital Hospital
Biju Patnaik International Airport
Odisha State Museum
KHANDAGIRI
Madhusudan Das Park
Rajarani Temple
Lingaraj Temple
Rangabazar
Koradakanta
Bankual
Ranasinghpur
Kochilaput
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**63.89**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0.75
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**26.91**
Description		
Sub Indicators	1.3a Building plan	0.000279848
	1.3b Birth/Death Certificate	0.000774541
	1.3c water supply	NA

	1.3d solid waste management	0.014119632
	1.3e property tax	0.001315365
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000500454
	1.3i information	0.003528496
	1.3j electricity	1.863278894
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**89.44**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	5086.45
Denominator	Total demand raised for the year	5686.85
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**26.64**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1906.82
Denominator	Total O&M cost for providing water supply services during the year	7157.12

Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	0.95
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	550.14
Denominator	Total expenditure (revenue and capital accounts) in the same year	57946.64
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	67
Denominator	Total number of wards	67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**53.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	191
Denominator	Total number of historic buildings/sites identified	360
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**52**
Description	Average Occupancy rate of Hotels	52

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	7.25
Denominator	Total budget of the ULB (capital and revenue)	29062.52
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**910**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	910
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**88.12**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	125223
Denominator	Total population in the age group of 6-14 years	142113
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**85.58**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	56879
Denominator	Total female population in the age group of 6-14 years	66465
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**36.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	78347

Denominator	Total number of teachers available for primary grades (public and private schools)	2173
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**8.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	40
Denominator	Total number of schools	481
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**113.87**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**113.87**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**95.79**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**95.79**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**31.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2801
Denominator	Total population of the city	885363
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**5.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	483
Denominator	Total population of the city	885363

Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**1.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	12410
Denominator	Total population of the city	885363
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	636
Denominator	Total population of the city	885363
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**6.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	134
Denominator	Total length of road network in the city	1920
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**806.34**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7139
Denominator	Total population of the city	885363

Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**13.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	933
Denominator	Total crimes recorded in the same year	7139
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**26.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	233
Denominator	Total population of the city	885363
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**20.09**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	85763.72
Denominator	Total VAT/GST collection during preceding year	4269.2712
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**-0.9**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-26.98
Denominator	Total Professional Tax collection during preceding year	3012.31
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-19.89**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-144
Denominator	Number of construction permits during preceding year	7.24
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	26577
Denominator	Total labour force in the city	142113
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**111.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	23678
Denominator	Total number of vendors in the city	21320
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**2.8**
Formula:	*Numerator / Denominator*	

Numerator	Total number of slum and EWS households covered through formal/affordable housing	2287
Denominator	Total number of slum and EWS households in the city	816.31
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.35**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**1824846543780**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**27**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	23904221
Denominator	Total population of the city	885363
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**11.32**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	10020000
Denominator	Total population of the city	885363
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	186000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	885363
Denominator	Area allocated for residential land use (in hectares)	57455177
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**124.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	254765
Denominator	Total number of households in the city	204056
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	116
Denominator	Total number of electricity connections in the city	295130
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**465**
Description	Total number of sustained electrical interruptions in a year	465
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions	12560

	in a year (in hours)	
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	13
Denominator	Total energy consumption from all sources	1708026000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	4253987.667
Denominator	Total quantum of water and waste water handled during the period	8296.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1420689
Denominator	Total number of street light installations	60000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1190.25
Unit	Percentage	
Benchmark	80%	

Indicator No: 10.9	Total energy consumption per capita	**0.48**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1708026000
Denominator	Total population of the city	885363
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	253
Denominator	Total area of the city (sq.km)	186
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	293
Denominator	Total population of the city	885363
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	23.42
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**1.11**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	21.4
Denominator	Total length of road network in the city	1920
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0.14
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**197.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	395
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	50
Denominator	Total number of signalised intersections in the city	50
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**55.97**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	75
Denominator	Total available on-street parking spaces in the city	134
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.12**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total length of footpaths (wider than 1.2 m) available in the city	43.08
Denominator	Total length of road network in the city	3840
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**629.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	359
Denominator	Total number of junctions/ intersections on major roads in the city	57
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**25.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	115
Denominator	Total number of public right-of-way areas in the city	448
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**45.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	92562
Denominator	Total number of households in the city	204056
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**312.24**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	276.45
Denominator	Total population of the city	885363
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	3853
Denominator	Total number of samples tested for water quality	3867
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**67.16**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	185.66
Denominator	Quantum of water put into the distribution system (mld)	276.45
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**1.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	1139
Denominator	Total number of water connections in the city	98907
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**4.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	26
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	581
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 13.1	Coverage of toilets	**190.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	196677
Denominator	Total number of properties in the city	103330
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**144.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	148854
Denominator	Total number of properties in the city	103330
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**25.37**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	53.86
Denominator	Total waste water generated in the city per day	212.27
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**17.71**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	340.11
Denominator	Total length of road network in the city	1920
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	235956
Denominator	Total number of households and establishments in the city	235956
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	520
Denominator	Total quantum of MSW generated in the city	520
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	8.45
Denominator	Average MSW generated in the city (tons per month)	15600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

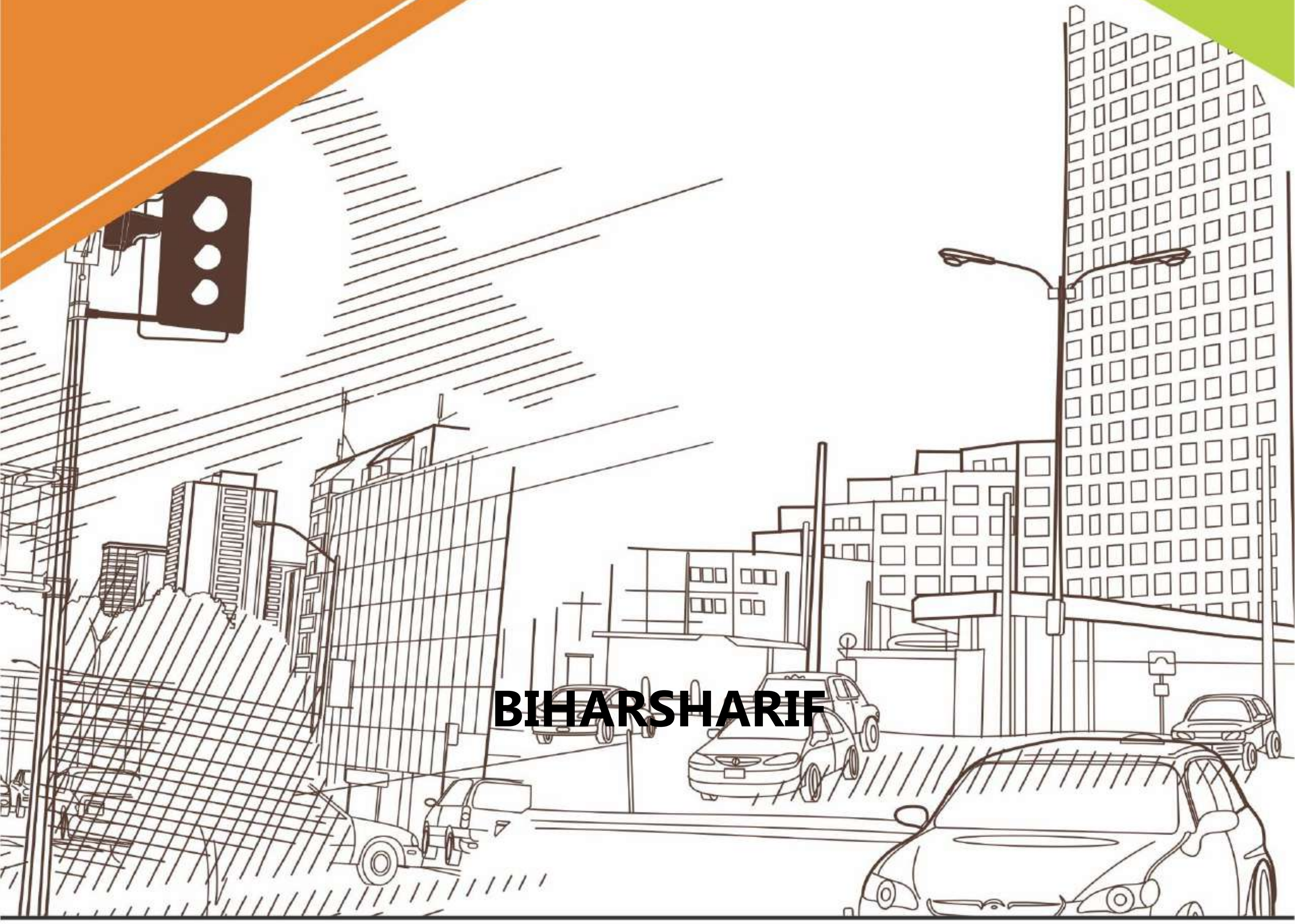
Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**17.97**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	17.97

Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	93.67
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	93.67
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	2
Denominator	Total number of noise samples	8
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	84
Denominator	Total number of samples tested	84
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India



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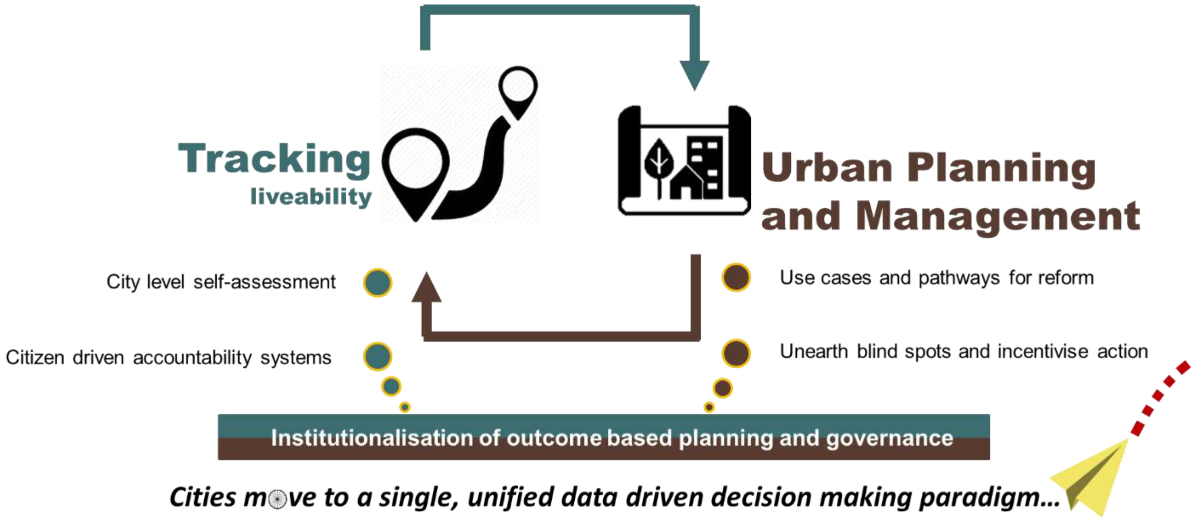
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

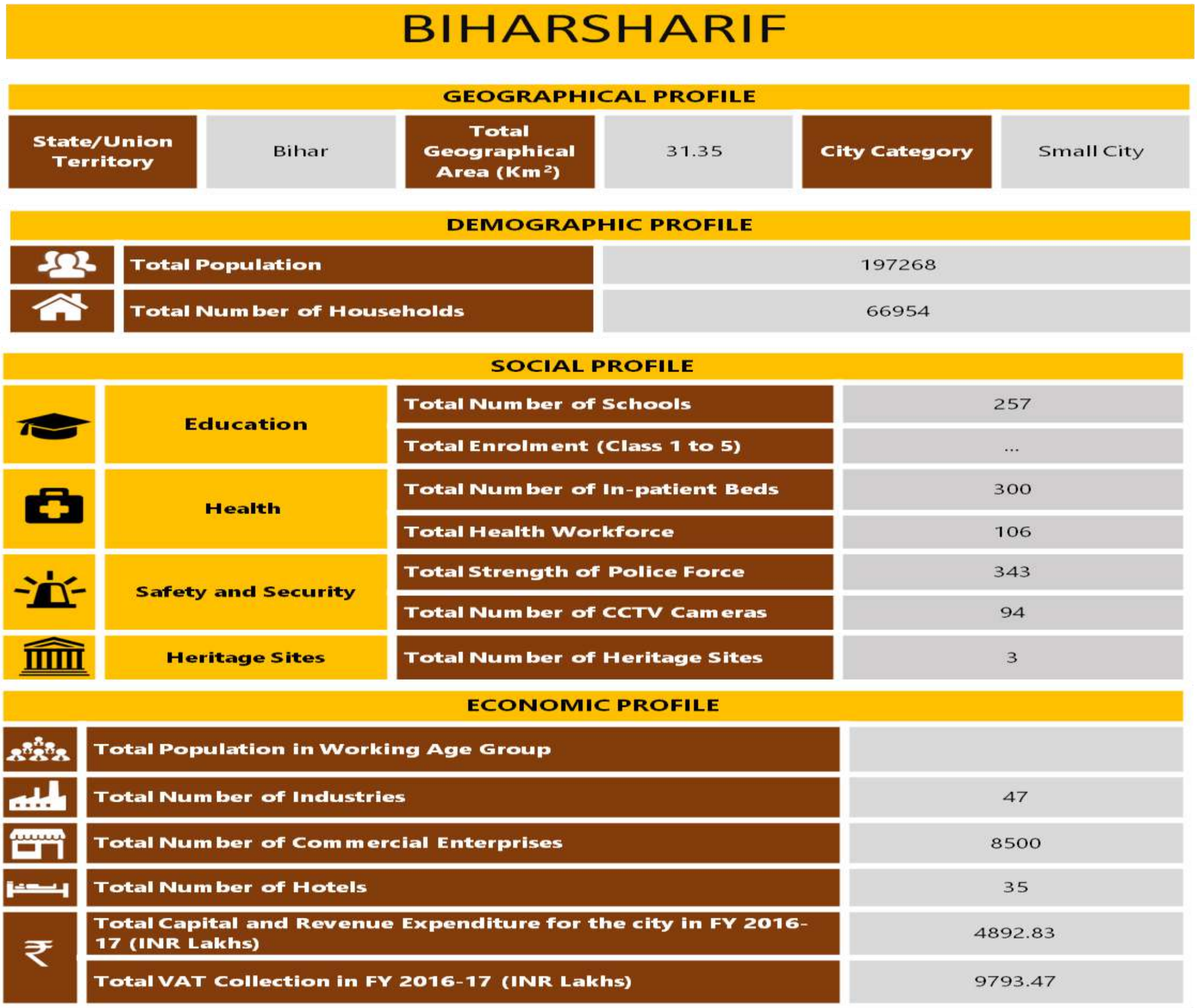
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BIHARSHARIF

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	Total Geographical Area (Km²)	31.35	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	197268
Total Number of Households	66954

SOCIAL PROFILE

Education	Total Number of Schools	257
	Total Enrolment (Class 1 to 5)	...
Health	Total Number of In-patient Beds	300
	Total Health Workforce	106
Safety and Security	Total Strength of Police Force	343
	Total Number of CCTV Cameras	94
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	47
Total Number of Commercial Enterprises	8500
Total Number of Hotels	35
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4892.83
Total VAT Collection in FY 2016-17 (INR Lakhs)	9793.47

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	11.5
		Total Number of Water Connection	28050
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	34000
		Total number of households in the city with access to community toilets in the city	400
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	160
		Total number of households covered through door-to-door collection of solid waste	44465
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	9.2
		Daily average quantity of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	50938
		Total electricity supplied to the city (kWh)	174204000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	3000
	Roads and Transport	**Total Length of Road Network in the City (Km)**	404
		Total length of arterial and sub-arterial road network in the city (Km)	404
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

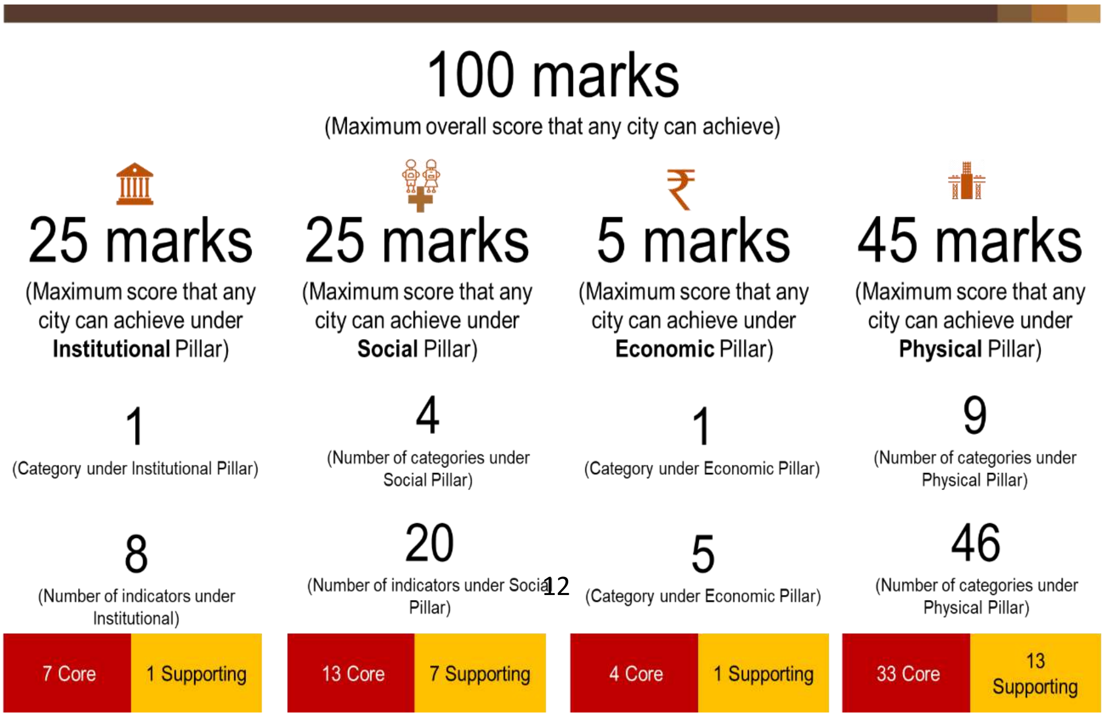
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission

of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Heritage sites related data	Bihar Sharif Municipal Corporation
Urban Local Body	For Ecological sites related data	Bihar Sharif Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Bihar Sharif Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Solid waste management related data	Bihar Sharif Municipal Corporation
Urban Local Body	For IT services related data	IT section, Bihar Sharif Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Bihar Sharif Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar
Development Authority	Building Infrastructure	Engineering Department, Bihar Sharif Municipal Corporation
	Construction planning	Engineering Department, Bihar Sharif Municipal Corporation
	Green Building	Engineering Department, Bihar Sharif Municipal Corporation
	Rain water harvesting	Engineering Department, Bihar Sharif Municipal Corporation
	Universal Design Principle	Engineering Department, Bihar Sharif Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Bihar Sharif Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 9 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	1
Total	9*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team

to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

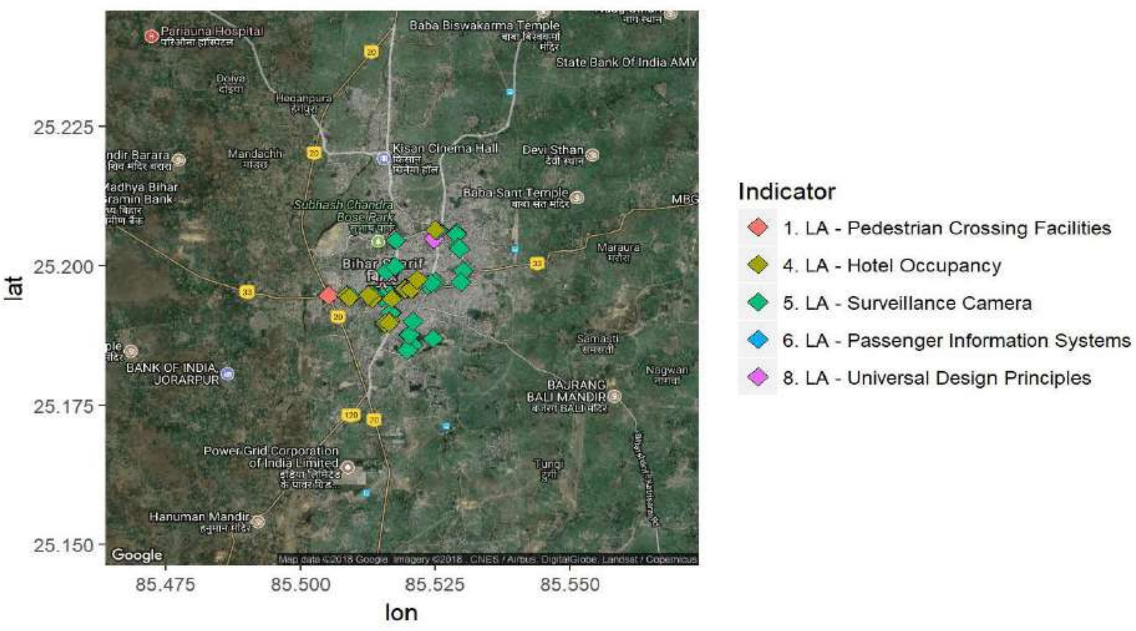
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
25.225
25.200
25.175
25.150
lon
85.475
85.500
85.525
85.550
Google
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	54.21
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75

	1.1b death certificate	0.75
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.777777778
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	14.29
Description	Services integrated through an integrated or a singular operations command centre	3
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	0.09
Description		
Sub Indicators	1.3a Building plan	0.000238257
	1.3b Birth/Death Certificate	0.001465008
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	NC
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	141.41
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	707.873
Denominator	Total demand raised for the year	500.578
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	11.59
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	38.25
Denominator	Total O&M cost for providing water supply services during the year	330

Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	264.62
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-6849.64172
Denominator	Total expenditure (revenue and capital accounts) in the same year	-2588.45728
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	0
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	46
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	66.67
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	100
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	7.14
Description	Average Occupancy rate of Hotels	7.142857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	2.08
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	102
Denominator	Total budget of the ULB (capital and revenue)	4892.83
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	67
Description	Number of cultural/sports events hosted by the city authority in the preceding year	67
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	Data Unavailable
Denominator	Total population in the age group of 6-14 years	74855
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	Non-Computable
Formula:	*Numerator / Denominator*	

Numerator	Total female enrolment in primary and secondary schools (public and private	Data Unavailable
Denominator	Total female population in the age group of 6-14 years	36107
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	Data Unavailable
Denominator	Total number of teachers available for primary grades (public and private schools)	907
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	22.96
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	59
Denominator	Total number of schools	257
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	#VALUE!
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	#VALUE!
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	Non-Computable
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	Data Unavailable

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	10.09
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	300
Denominator	Total population of the city	297268
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	3.57
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	106
Denominator	Total population of the city	297268
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	Non-Computable
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	0.02
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	66
Denominator	Total population of the city	297268
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 4.5	Period prevalence of vector borne diseases	0.01
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	35
Denominator	Total population of the city	297268
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	23.27
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	94
Denominator	Total length of road network in the city	404
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	546.64
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1625
Denominator	Total population of the city	297268
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	17.05
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	277
Denominator	Total crimes recorded in the same year	1625
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	9.42

Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	28
Denominator	Total population of the city	297268
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	-5.83
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-543.65
Denominator	Total VAT/GST collection during preceding year	93.2712
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	14.44
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	10.85038
Denominator	Total Professional Tax collection during preceding year	75.11962
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	-22.14
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-95
Denominator	Number of construction permits during preceding year	4.29
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	9141
Denominator	Total labour force in the city	74855
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this	

	document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	0
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	2458
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	99.8
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	3021
Denominator	Total number of slum and EWS households in the city	30.27
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	Non-Computable Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	0.01
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	3000
Denominator	Total population of the city	297268

Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	0.67
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	198900
Denominator	Total population of the city	297268
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	23600000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	297268
Denominator	Area allocated for residential land use (in hectares)	NA
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	64.94
Formula:	*Numerator / Denominator*	

Numerator	Number of authorized electrical connections at household level	43483
Denominator	Total number of households in the city	66954
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	95.47
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	48628
Denominator	Total number of electricity connections in the city	50938
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	16570
Description	Total number of sustained electrical interruptions in a year	16570
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	0
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	451011
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	0
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	75
Denominator	Total energy consumption from all sources	174204000
Unit	Percentage	

Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	NC
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	103968
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	0.35
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	396000
Denominator	Total number of street light installations	4146
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	NC
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	0.79
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	174204000
Denominator	Total population of the city	297268
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated	

	as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	23.6
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	297268
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	To be computed
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	404
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA

Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	To be computed
Description	Mode share of non-motorised transport	5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	1
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	0
Denominator	Total length of road network in the city	808
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	100
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	37.64
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	25200
Denominator	Total number of households in the city	66954
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	38.69

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	11.5
Denominator	Total population of the city	297268
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	90
Denominator	Total number of samples tested for water quality	90
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	11.5
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	28050
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings	Data

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

	with RWH facility	Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	988
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	73.93
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	34906
Denominator	Total number of properties in the city	47218
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	100
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	47218
Denominator	Total number of properties in the city	47218
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	9.2
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable

Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	404
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	70.2
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	52965
Denominator	Total number of households and establishments in the city	75454
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	100
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	160
Denominator	Total quantum of MSW generated in the city	160
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	4800

Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable

Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

BILASPUR

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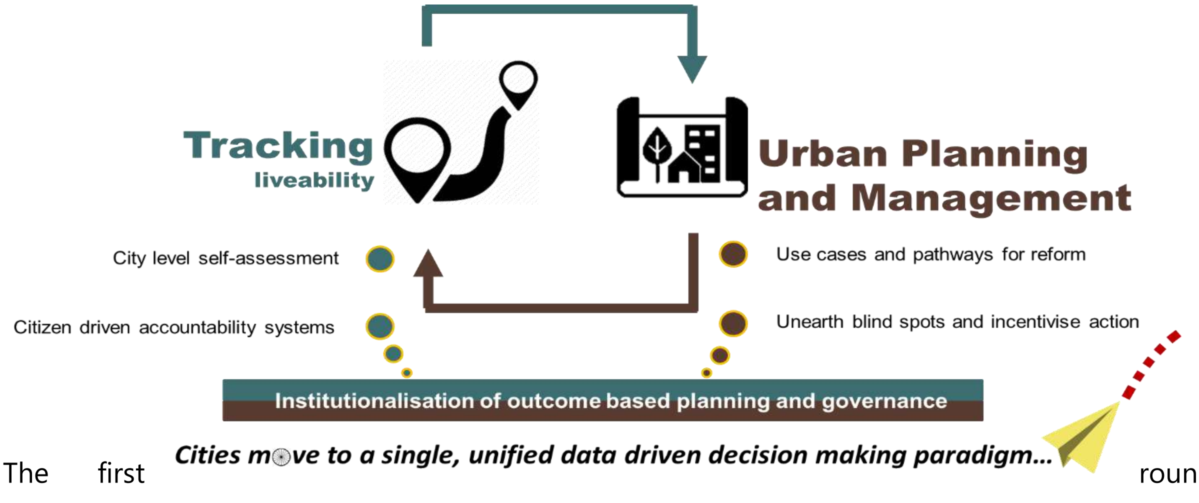
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

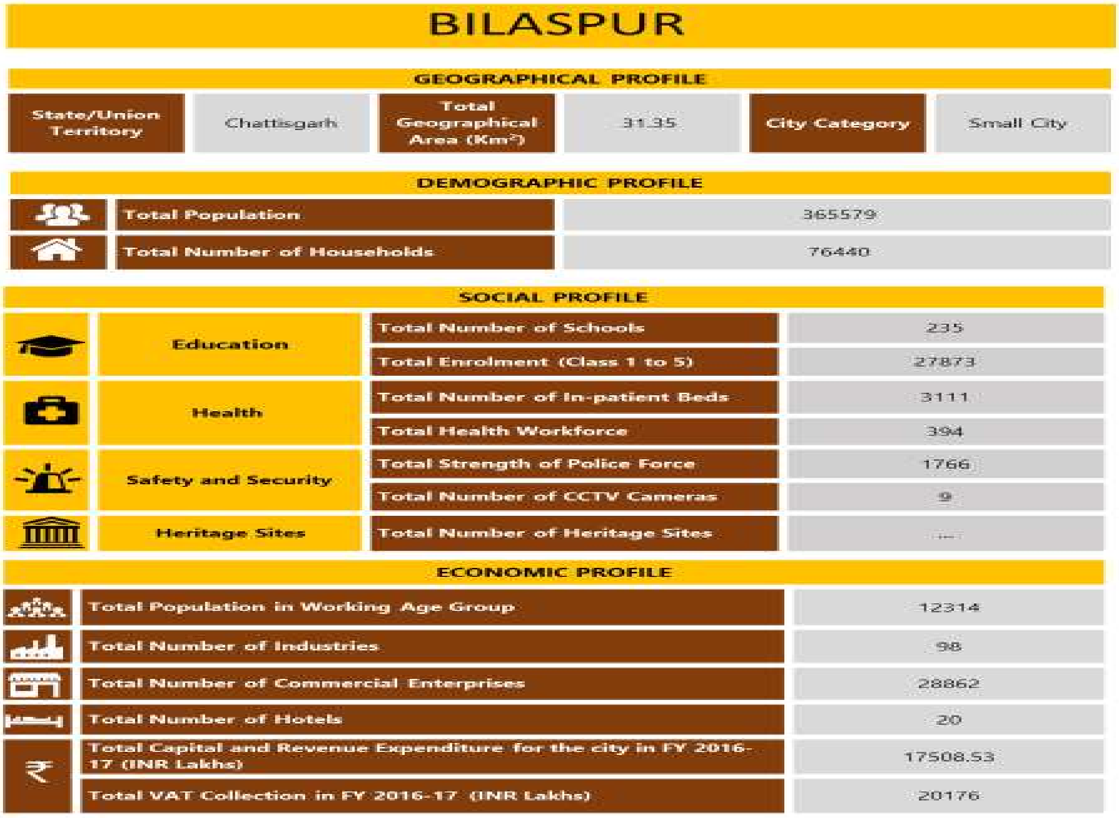
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BILASPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Chattisgarh	**Total Geographical Area (Km²)**	31.35	**City Category**	Small City

DEMOGRAPHIC PROFILE

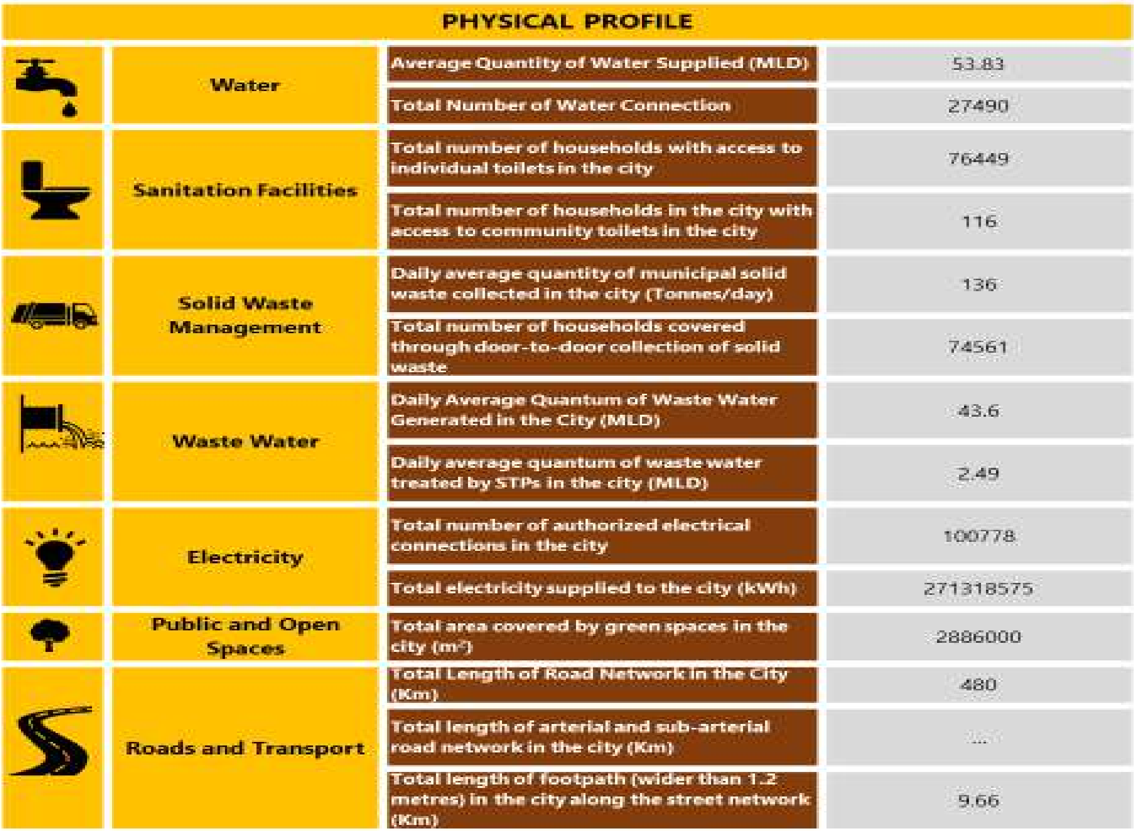
Total Population	365579
Total Number of Households	76440

SOCIAL PROFILE

Education	**Total Number of Schools**	235
	Total Enrolment (Class 1 to 5)	27873
Health	**Total Number of In-patient Beds**	3111
	Total Health Workforce	394
Safety and Security	**Total Strength of Police Force**	1766
	Total Number of CCTV Cameras	9
Heritage Sites	**Total Number of Heritage Sites**	---

ECONOMIC PROFILE

Total Population in Working Age Group	12314
Total Number of Industries	98
Total Number of Commercial Enterprises	28862
Total Number of Hotels	20
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	17508.53
Total VAT Collection in FY 2016-17 (INR Lakhs)	20176



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	53.83
	Total Number of Water Connection	27490
Sanitation Facilities	Total number of households with access to individual toilets in the city	76449
	Total number of households in the city with access to community toilets in the city	116
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	136
	Total number of households covered through door-to-door collection of solid waste	74561
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	43.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	2.49
Electricity	Total number of authorized electrical connections in the city	100778
	Total electricity supplied to the city (kWh)	271318575
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	2886000
Roads and Transport	Total Length of Road Network in the City (Km)	480
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9.66

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year

Pillars of Comprehensive Development	Category	Indicators
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport

Pillars of Comprehensive Development	Category	Indicators
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

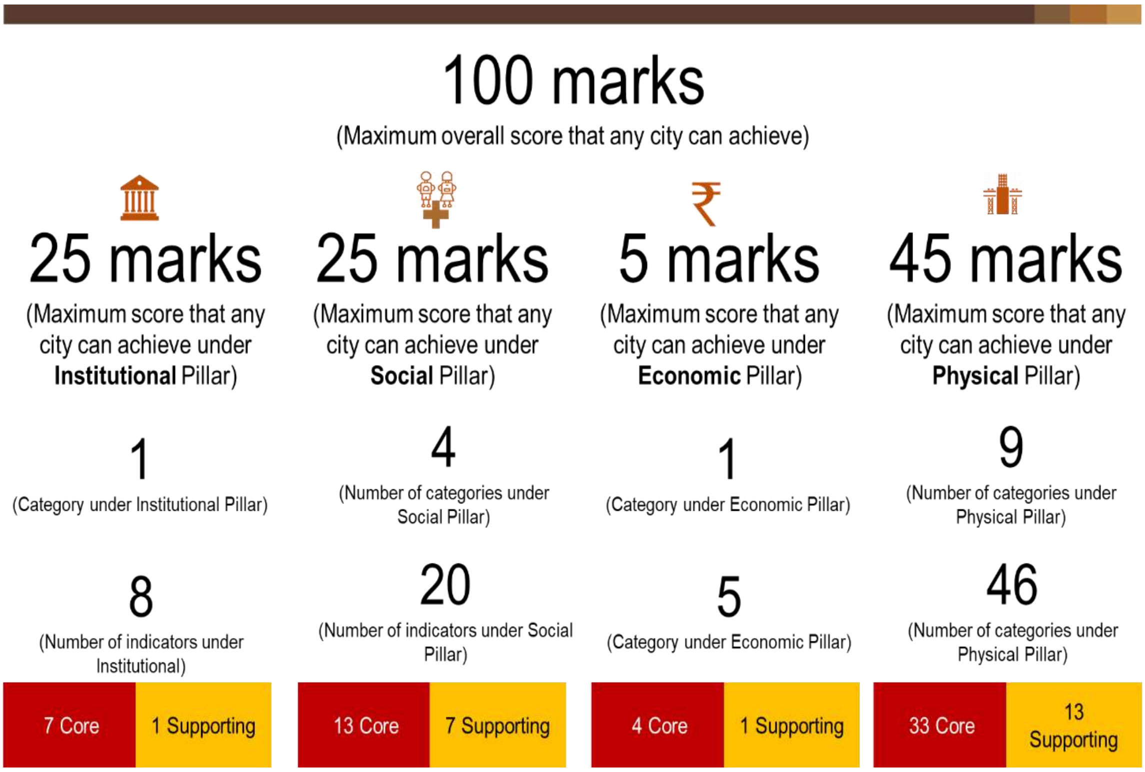
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, BMC
Urban Local Body	For Park and Recreation Related Questions	AMRUT, BMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, BMC
Urban Local Body	For Heritage sites related data	Indian National Trust for Art and Culture Heritage
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	Bilaspur Municipal Corporation
Urban Local Body	For Building plan related data	Bilaspur Development Authority
Urban Local Body	For Roads related data	Bilaspur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Bilaspur Municipal Corporation
Urban Local Body	For IT services related data	IT Section, BMC
Urban Local Body	For Vendor committee related data	Bazzar Bibhag, BMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment Exchange, Census Department
For questions under Central / state Pollution	Water Quality, Air Quality, Noise Quality	Chhattisgarh Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
control Board		
Development Authority	Building Infrastructure	Bilaspur Development Authority Bilaspur Municipal Corporation
	Construction planning	Bilaspur Development Authority Bilaspur Municipal Corporation
	Green Building	Bilaspur Development Authority Bilaspur Municipal Corporation
	Rain water harvesting	Bilaspur Development Authority Bilaspur Municipal Corporation
	Universal Design Principle	Bilaspur Development Authority Bilaspur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Chhattisgarh State Power Distribution Corporation Limited
State Disaster management authority		Bilaspur Smart city Limited
State Education Department		District Education Department
State Health Department	Health care professionals	Chhattisgarh Medical and Health organization
State Health Department	Citizen Services	Chhattisgarh Medical and Health organization
State Health Department	Disease Prevalence	Chhattisgarh Medical and Health organization
State Health Department	Health Infrastructure	Chhattisgarh Medical and Health organization
State Renewable Energy Development Agency		Chhattisgarh Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Sale Tax department
Town and Country Planning Department	Land Use	Town and country planning department, BMC
Traffic and Police Department		Police department, Bilaspur
Transport Authorities	Buses	City Bus In charge, BMC
Transport	Registered Vehicles	Road and Transport organization,

Designated data owners	Subcategories	Data owners at city level
Authorities		Bilaspur
Transport Authorities	Sub urban rail transport	
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 112 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	8
DISCOM/Electricity Department	11
Traffic and Police Department	9
Development Authority	1
Pollution Control Board	5
State Renewable Energy Department	3
Town and Country Planning	0
State Health Department	19
Transport Authority	1
Disaster Management	2
Urban Local Body	51
Total	112*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

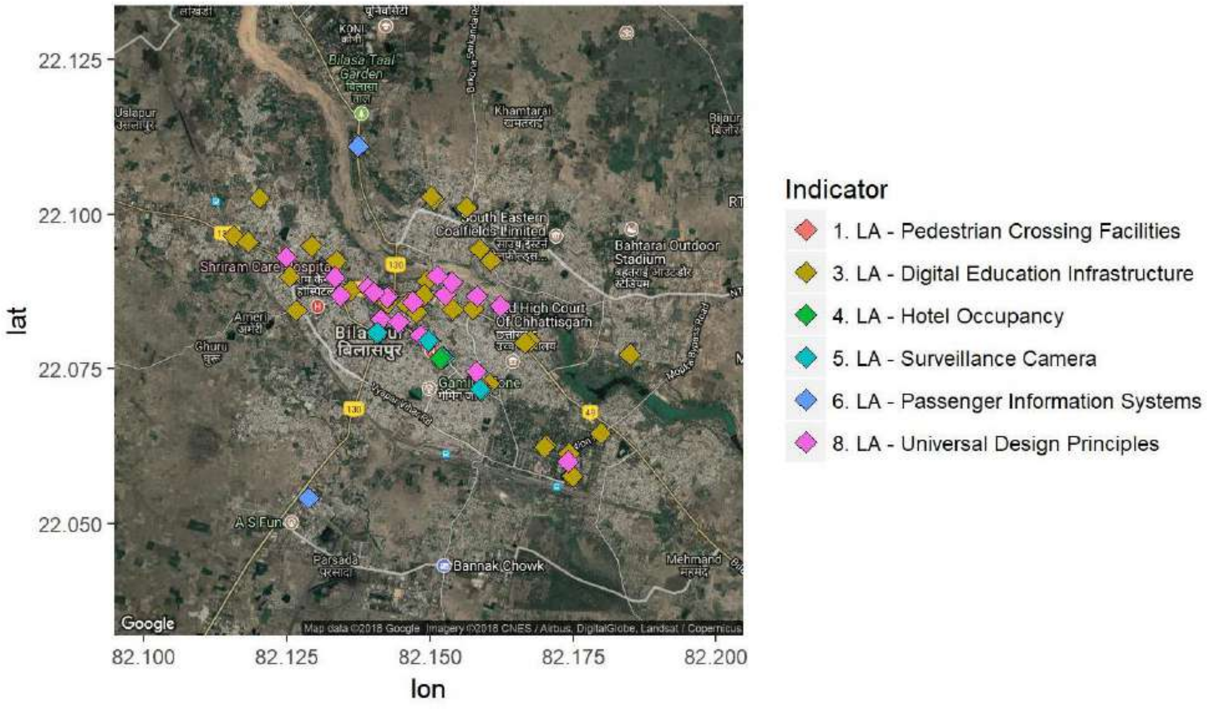
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.125
22.100
22.075
22.050
lat
82.100
82.125
82.150
82.175
82.200
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**71.15**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.25
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Builiding plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**11.9**
Description	Services integrated through an integrated or a singular operations command centre	2.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.35**
Description		
Sub Indicators	1.3a Building plan	0.000871242
	1.3b Birth/Death Certificate	0.002888113
	1.3c water supply	0
	1.3d solid waste management	0.020747909
	1.3e property tax	4.38848E-05
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	NA
	1.3j electricity	3.96912E-05
Unit	Percentage	

Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.29**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0.5
	1.4g building plan	0
Unit	Days	
Benchmark	0%	
Indicator No: 1.5	Tax collected as percentage of tax billed	**92.9**
Formula :	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1859.64
Denominator	Total demand raised for the year	2001.79
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**145.83**
Formula :	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	462.87
Denominator	Total O&M cost for providing water supply services during the year	317.41
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**24.14**
Formula :	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	7116.81
Denominator	Total expenditure (revenue and capital accounts) in the same year	29483.93
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area Sabhas	**100**
Formula :	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	66

Denominator	Total number of wards	66
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as a benchmark	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**15.29**
Description	Average Occupancy rate of Hotels	15.28571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.12**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	21.64
Denominator	Total budget of the ULB (capital and revenue)	17508.53

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**20**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	20
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**69.62**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	45610
Denominator	Total population in the age group of 6-14 years	65516
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**70.65**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	22065
Denominator	Total female population in the age group of 6-14 years	31233
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**30.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	27873
Denominator	Total number of teachers available for primary grades (public and private schools)	917
Unit	Ratio	
Benchmark	1 teacher for every 30 students	

Indicator No: 3.4	**Percentage of schools with access to digital education**	**18.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	43
Denominator	Total number of schools	235
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**65.21**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	65.21175235
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	**88.7**
Indicator No: 3.6	**Percentage of students completing secondary education**	34572191
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	**69.62**
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**85.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3111
Denominator	Total population of the city	365579
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No:	**Healthcare professionals per 10,000 population**	**10.78**

4.2		
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	394
Denominator	Total population of the city	365579
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2229
Denominator	Total population of the city	365579
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	525
Denominator	Total population of the city	365579
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**1.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	9
Denominator	Total length of road network in the city	480
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**867.12**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3170
Denominator	Total population of the city	365579
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**44.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1404
Denominator	Total crimes recorded in the same year	3170
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**72.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	266
Denominator	Total population of the city	365579
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**22.74**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	3738
Denominator	Total VAT/GST collection during preceding year	164.38
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-18.55**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-118
Denominator	Number of construction permits during preceding year	6.36
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	16734
Denominator	Total labour force in the city	65516
Unit	Per 1000 persons	

Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1637.9
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**191.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	13829
Denominator	Total number of slum and EWS households in the city	72.24
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.28**
Formula:	*Numerator / Denominator*	730158984
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	**191.43**

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**7.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	2886000
Denominator	Total population of the city	365579
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.87**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	682996.14
Denominator	Total population of the city	365579
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	31350000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	365579
Denominator	Area allocated for residential land use (in hectares)	19500000

Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**106.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	81573
Denominator	Total number of households in the city	76440
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	100778
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**34**
Description	Total number of sustained electrical interruptions in a year	34
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	215

Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1787.58
Denominator	Total energy consumption from all sources	271318575
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1161704.5
Denominator	Total quantum of water and waste water handled during the period	1689.69
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	8631323
Denominator	Total number of street light installations	18960
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	93216.52

Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	271318575
Denominator	Total population of the city	365579
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.59**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	26.6
Denominator	Total area of the city (sq.km)	31.35
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	3
Denominator	Total population of the city	365579
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	32
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated**	**0**

	bicycle tracks	
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	480
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	26
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	0
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	9

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.01**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	9.66
Denominator	Total length of road network in the city	960
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	9
Denominator	Total number of junctions/ intersections on major roads in the city	9
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**50.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	130
Denominator	Total number of public right-of-way areas in the city	256
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**32.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	25132
Denominator	Total number of households in the city	76440
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**147.25**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	53.833
Denominator	Total population of the city	365579
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	865
Denominator	Total number of samples tested for water quality	890
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Quantum of water put into the distribution system (mld)	53.833
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	27490
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**19.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	129
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	667
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**118.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	76786
Denominator	Total number of properties in the city	64563
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**68.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	44173
Denominator	Total number of properties in the city	64563
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**5.71**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	2.49
Denominator	Total waste water generated in the city per day	43.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	2.49
Denominator	Total waste water received at treatment plants per day	2.49
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**80.02**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	384.1
Denominator	Total length of road network in the city	480
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**98.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	103423
Denominator	Total number of households and establishments in the city	105302
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**97.14**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	136
Denominator	Total quantum of MSW generated in the city	140
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**99.26**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	4050
Denominator	Average MSW generated in the city (tons per month)	4080
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6.08**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6.08
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**19.23**

Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	19.23
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**75.06**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	75.06
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	60
Denominator	Total number of noise samples	90
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**97.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	44
Denominator	Total number of samples tested	45
Unit	Percentage	
Benchmark	100%	

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs

Government of India

CHANDIGARH

CHANDIGARH

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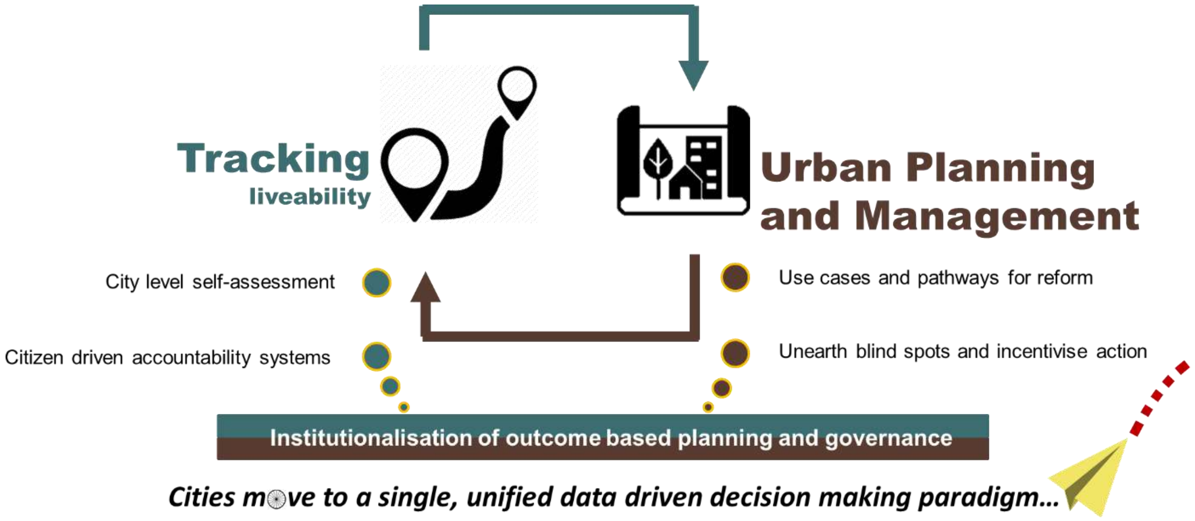
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

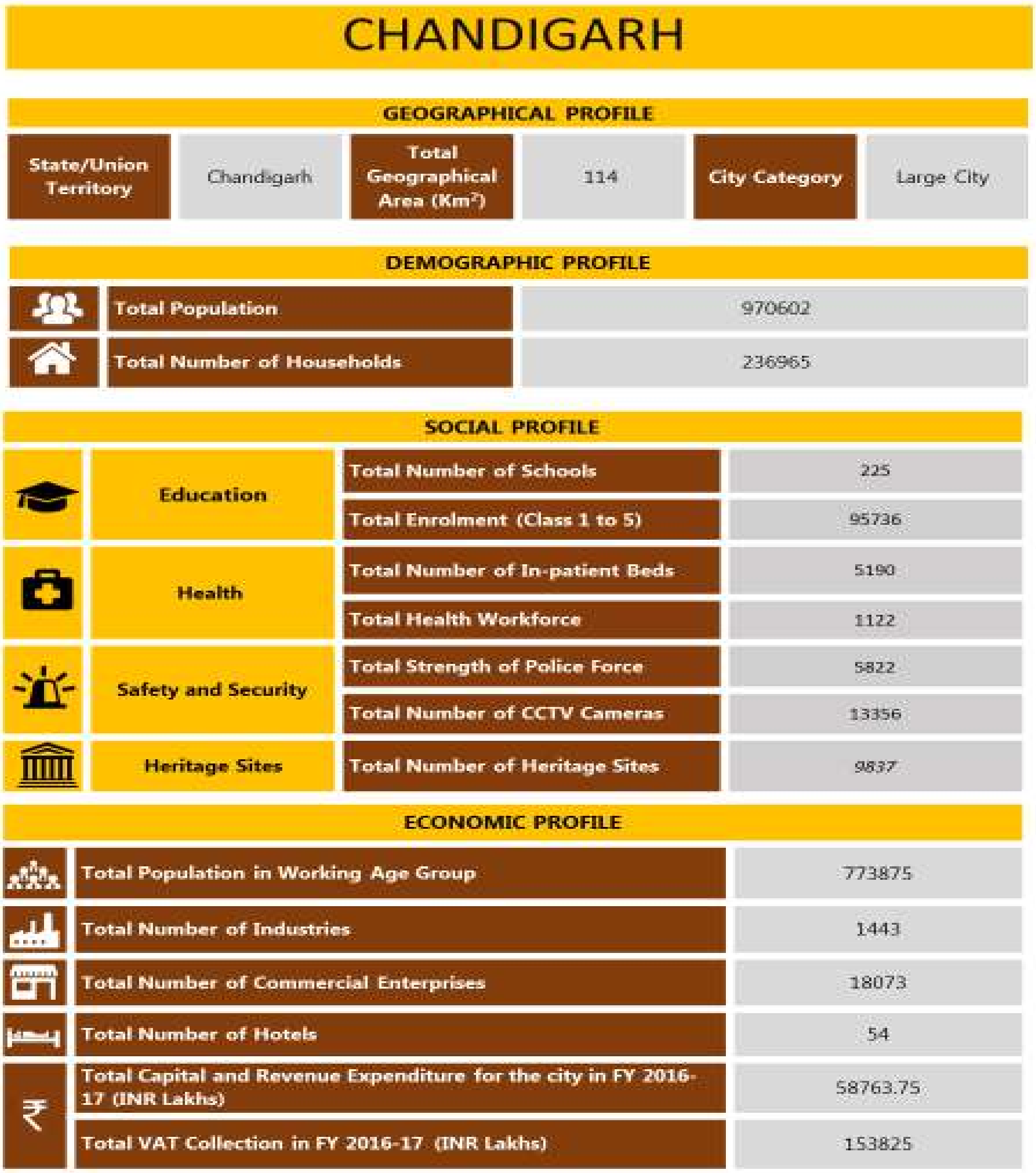
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



CHANDIGARH

GEOGRAPHICAL PROFILE

State/Union Territory	Chandigarh	Total Geographical Area (Km^2)	114	City Category	Large City

DEMOGRAPHIC PROFILE

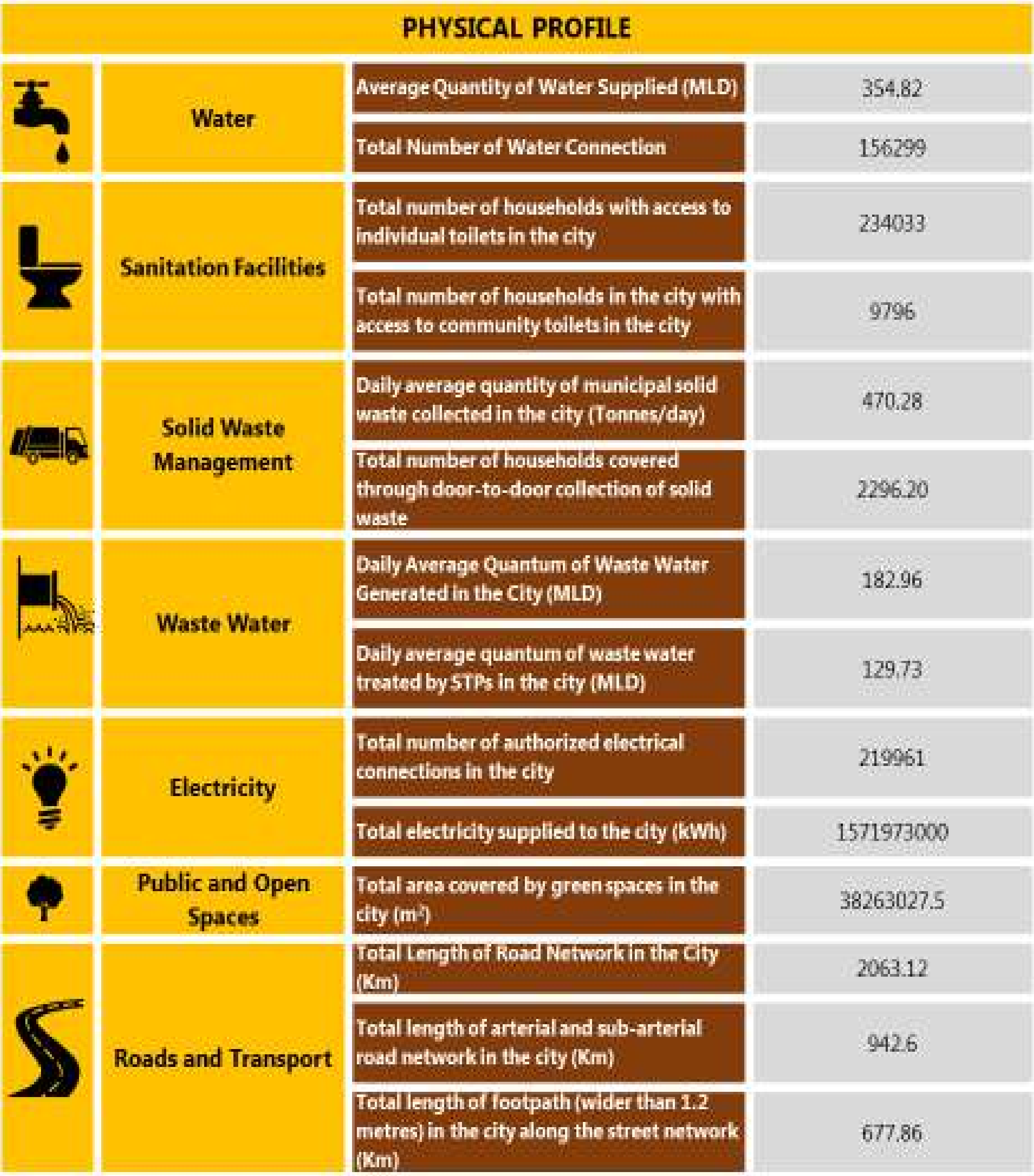
Total Population	970602
Total Number of Households	236965

SOCIAL PROFILE

Education	Total Number of Schools	225
	Total Enrolment (Class 1 to 5)	95736
Health	Total Number of In-patient Beds	5190
	Total Health Workforce	1122
Safety and Security	Total Strength of Police Force	5822
	Total Number of CCTV Cameras	13356
Heritage Sites	Total Number of Heritage Sites	9837

ECONOMIC PROFILE

Total Population in Working Age Group	773875
Total Number of Industries	1443
Total Number of Commercial Enterprises	18073
Total Number of Hotels	54
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	58763.75
Total VAT Collection in FY 2016-17 (INR Lakhs)	153825



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	354.82
	Total Number of Water Connection	156299
Sanitation Facilities	Total number of households with access to individual toilets in the city	234033
	Total number of households in the city with access to community toilets in the city	9796
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	470.28
	Total number of households covered through door-to-door collection of solid waste	2296.20
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	182.96
	Daily average quantum of waste water treated by STPs in the city (MLD)	129.73
Electricity	Total number of authorized electrical connections in the city	219961
	Total electricity supplied to the city (kWh)	1571973000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	38263027.5
Roads and Transport	Total Length of Road Network in the City (Km)	2063.12
	Total length of arterial and sub-arterial road network in the city (Km)	942.6
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	677.86

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources

Pillars of Comprehensive Development	Category	Indicators
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

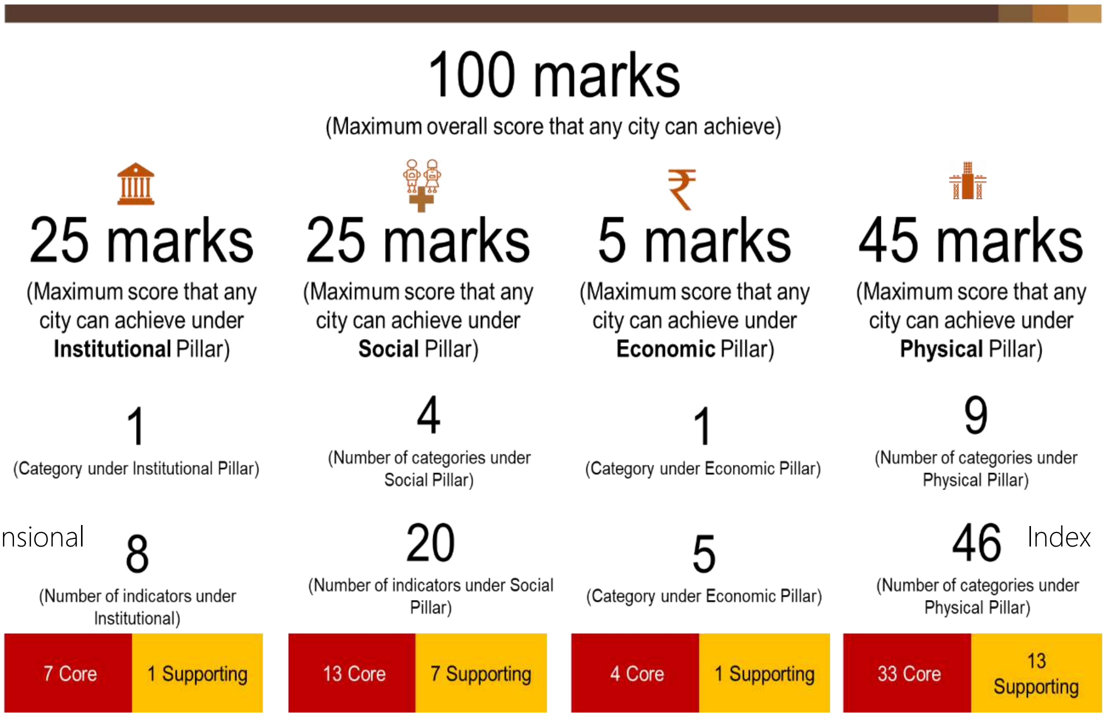
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department(ULB)
Urban Local Body	For Park and Recreation Related Questions	Sports , Horticulture department , ULB
Urban Local Body	For Water Supply and Drainage related questions	Water Supply department
Urban Local Body	For Heritage sites related data	Town and country planning department
Urban Local Body	For Ecological sites related data	Town and country planning department
Urban Local Body	For Housing related data	Housing Board
Urban Local Body	For Building plan related data	Building branch (Estate office)
Urban Local Body	For Roads related data	Roads and building department(ULB)
Urban Local Body	For Solid waste management related data	Health and sanitation department(ULB)
Urban Local Body	For IT services related data	IT department(ULB)
Urban Local Body	For Vendor committee related data	Vender cell(ULB)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism department, Excise and taxes department, architecture department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Chandigarh pollution control committee (CPCC)
Development Authority	Building Infrastructure	Building branch (Estate office)
	Construction planning	Building branch (Estate office)
	Green Building	Building branch (Estate office)
	Rain water harvesting	Building branch (Estate office)
	Universal Design Principle	Building branch (Estate office)
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board
State Disaster management authority		State Disaster Management Authority

Designated data owners	Subcategories	Data owners at city level
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Chandigarh Renewable Energy and science & technology (CREST)
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department (UT Secretariat)
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	State transport Authority(STA) and Chandigarh Transport Undertaking (CTU)
	Registered Vehicles	Registering and licensing authority(RLA) and State transport Authority(STA)
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 77 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1

State Education Department	6
DISCOM/Electricity Department	5
Traffic and Police Department	17
Development Authority	1
Pollution Control Board	5
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	6
Transport Authority	13
Disaster Management	1
Urban Local Body	22
Total	77*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

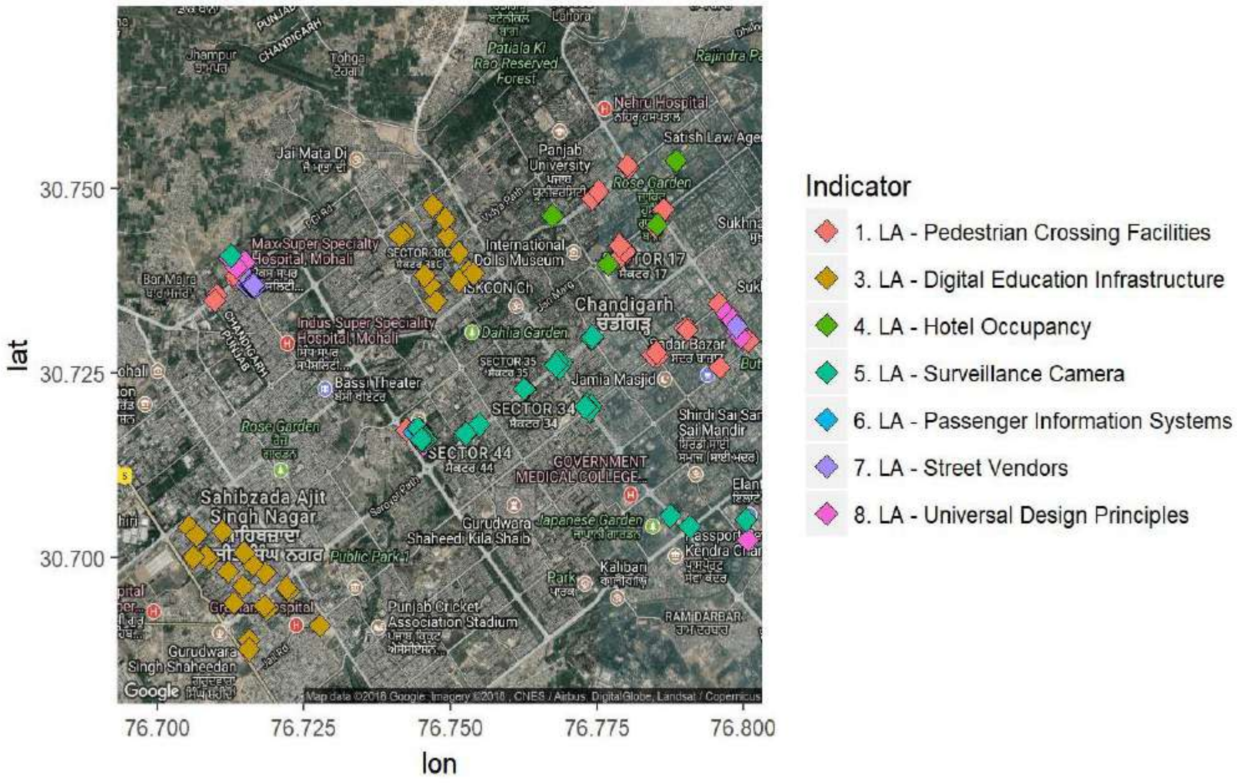
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
30.750
30.725
30.700
lon
76.700
76.725
76.750
76.775
76.800
Indicator
🟥 1. LA - Pedestrian Crossing Facilities
🟧 3. LA - Digital Education Infrastructure
🟩 4. LA - Hotel Occupancy
🟩 5. LA - Surveillance Camera
🟦 6. LA - Passenger Information Systems
🟪 7. LA - Street Vendors
🟪 8. LA - Universal Design Principles
Jhampur
Tohga
Patiala Ki Rao Reserved Forest
Nehru Hospital
Satish Law Agency
Jai Mata Di
Panjab University
Rose Garden
Max Super Specialty Hospital, Mohali
SECTOR 38C
International Dolls Museum
SECTOR 17
ISKCON Ch
Chandigarh
Indus Super Speciality Hospital Mohali
Dahlia Garden
Sadar Bazar
SECTOR 35
Jamia Masjid
Bassi Theater
SECTOR 34
Shirdi Sai Sai Mandir
Rose Garden
SECTOR 44
GOVERNMENT MEDICAL COLLEGE
Sahibzada Ajit Singh Nagar
Gurudwara Shaheedi Kila Shaib
Japanese Garden
Public Park 1
Kalibari
Punjab Cricket Association Stadium
RAM DARBAR
Gurudwara Singh Shaheedan
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for 74 indicators excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**34.12**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0
	1.1d solid waste management	0.5
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**2.14**
Description		

Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.021426526
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**3.6**
Description		
Sub Indicators	1.4a water supply	5
	1.4b solid waste	0
	1.4c street lights	6
	1.4d sewerage	7
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**110.49**

Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2060
Denominator	Total demand raised for the year	1864.4
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**50.61**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	7164
Denominator	Total O&M cost for providing water supply services during the year	14155.73
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**-22.23**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-22066.2
Denominator	Total expenditure (revenue and capital accounts) in the same year	99252.4
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	26
Denominator	Total number of wards	26
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	9837
Denominator	Total number of historic buildings/sites identified	9837
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	2
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**47.86**
Description	Average Occupancy rate of Hotels	47.85714286
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	57.75
Denominator	Total budget of the ULB (capital and revenue)	58763.75
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**188**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	188
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**96.08**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	161360
Denominator	Total population in the age group of 6-14 years	167942
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**99.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	74938
Denominator	Total female population in the age group of 6-14 years	75604
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**26.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	95736
Denominator	Total number of teachers available for primary grades (public and private schools)	3555
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**80.89**
Formula:	*Numerator / Denominator*	

Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	182
Denominator	Total number of schools	225
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	144.24
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	144.24
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	103.74
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	103.74
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**53.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5190
Denominator	Total population of the city	970602
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**11.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1122
Denominator	Total population of the city	970602
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**16**
Description	Total response time for health-related distress calls received in the city	16
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5943
Denominator	Total population of the city	970602
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1264
Denominator	Total population of the city	970602
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**647.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	13356
Denominator	Total length of road network in the city	2063.12
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	Number of recorded crimes per lakh population	**562.74**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5462
Denominator	Total population of the city	970602
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**13.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	757
Denominator	Total crimes recorded in the same year	5462
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**11.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	107
Denominator	Total population of the city	970602
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**7.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	11335
Denominator	Total VAT/GST collection during preceding year	1424.9

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-19.9**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-76
Denominator	Number of construction permits during preceding year	3.82
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	3118
Denominator	Total labour force in the city	167942
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**2.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	465
Denominator	Total number of vendors in the city	21622
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**67.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	25155
Denominator	Total number of slum and EWS households in the city	374.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**Non-Computable**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**39.42**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	38263027.5

Denominator	Total population of the city	970602
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**35.08**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	34047431
Denominator	Total population of the city	970602
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**1.85**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	2111370
Denominator	Total area of the city (total area of all land uses)	114000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	Net Density	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	970602
Denominator	Area allocated for residential land use (in hectares)	43976580
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**80.79**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	191436
Denominator	Total number of households in the city	236965
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	219961
Unit	Percentage	

Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	21413
Denominator	Total energy consumption from all sources	1571973000
Unit	Percentage	

Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.12**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	10962050.92
Denominator	Total quantum of water and waste water handled during the period	14536.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	63351724
Denominator	Total number of street light installations	48524
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1571973000
Denominator	Total population of the city	970602
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1199
Denominator	Total area of the city (sq.km)	114
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.68**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	662
Denominator	Total population of the city	970602
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**

Description	Mode share of public transport	21.26
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**4.85**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	100
Denominator	Total length of road network in the city	2063.12
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0.56
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**1**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**3.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	3
Denominator	Total number of signalised intersections in the city	95

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**16.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	677.86
Denominator	Total length of road network in the city	4126.24
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**84.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	142
Denominator	Total number of junctions/ intersections on major roads in the city	169
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	1391
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**60.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply	144128

	connection	
Denominator	Total number of households in the city	236965
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**365.57**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	354.82
Denominator	Total population of the city	970602
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	3134
Denominator	Total number of samples tested for water quality	3204
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**25.4**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	90.12
Denominator	Quantum of water put into the distribution system (mld)	354.82
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**97.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	152565
Denominator	Total number of water connections in the city	156299
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of	Data

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

	designated plot size), commercial and public buildings with RWH facility	Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	340
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**176.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	252263
Denominator	Total number of properties in the city	142534
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	142534
Denominator	Total number of properties in the city	142534
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	182.96
Denominator	Total waste water generated in the city per day	182.96
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	129.73
Denominator	Total waste water received at treatment plants per day	129.73
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**52.35**

Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1080
Denominator	Total length of road network in the city	2063.12
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**90.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	229620
Denominator	Total number of households and establishments in the city	255038
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**96.97**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	470.282
Denominator	Total quantum of MSW generated in the city	485
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	31
Denominator	Average MSW generated in the city (tons per month)	14108.46
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.2	**Concentration of NO2 - air pollution**	**14.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	14.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**107.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	107.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	NA
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**75**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	9
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

CHENNAI

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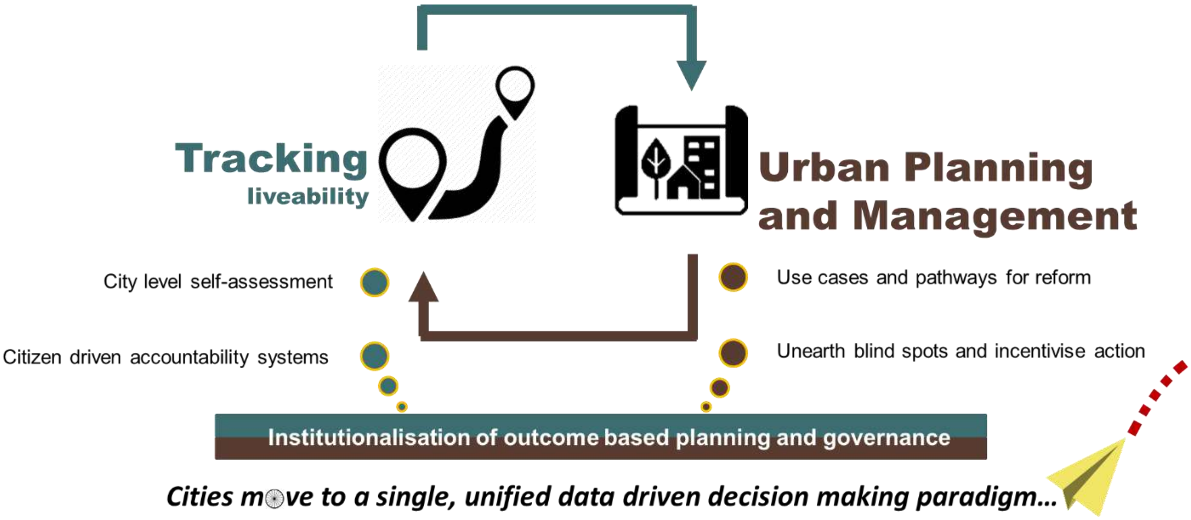
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

CHENNAI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	426	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	4646732
Total Number of Households	1211576

SOCIAL PROFILE

Education	**Total Number of Schools**	2207
	Total Enrolment (Class 1 to 5)	487622
Health	**Total Number of In-patients Beds**	32397
	Total Health Workforce	59562
Safety and Security	**Total Strength of Police Force**	22860
	Total Number of CCTV Cameras	51995
Heritage Sites	**Total Number of Heritage Sites**	41

ECONOMIC PROFILE

Total Population in Working Age Group	1906345
Total Number of Industries	24146
Total Number of Commercial Enterprises	119160
Total Number of Hotels	2827
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	455677.72
Total VAT Collection in FY 2016-17 (INR Lakhs)	5056100

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	1906345
		Total Number of Water Connections	24146
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	119160
		Total number of households in the city with access to community toilets in the city	2827
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	455677.72
		Total number of households covered through door-to-door collection of solid waste	5056100
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	1906345
		Daily average quantum of waste water treated by STPs in the city (MLD)	24146
	Electricity	**Total number of authorized electrical connections in the city**	119160
		Total electricity supplied to the city (kWh)	2827
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	455677.72
	Roads and Transport	**Total Length of Road Network in the City (Km)**	5056100
		Total length of arterial and sub-arterial road network in the city (Km)	1906345
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	24146

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Greater Chennai Corporation (GCC) – Accounts Department
Urban Local Body	For Park and Recreation Related Questions	GCC – Parks Department
Urban Local Body	For Water Supply and Drainage related questions	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
Urban Local Body	For Heritage sites related data	Archeological Survey Of India (ASI)
Urban Local Body	For Ecological sites related data	Forest Departments
Urban Local Body	For Housing related data	Tamilnadu Slum Clearance Board
Urban Local Body	For Building plan related data	Chennai Metropolitan Development Authority (CMDA)
Urban Local Body	For Roads related data	GCC – Bus Route Roads Department (BRR)
Urban Local Body	For Solid waste management related data	GCC – Solid Waste Management
Urban Local Body	For IT services related data	GCC – EDP Department
Urban Local Body	For Vendor committee related data	GCC – Revenue Department
Urban Local Body	Any other departments involved in providing data for questions	GCC – Departments of Education, Health, Works, Electrical Sports & Stadium, Storm Water Drain, Buildings

Designated data owners	Subcategories	Data owners at city level
	mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tamilnadu Pollution Control Board
Development Authority	Building Infrastructure	Chennai Metropolitan Development Authority (CMDA)
	Construction planning	Works Department
	Green Building	Chennai Metropolitan Development Authority (CMDA)
	Rain water harvesting	Chennai Metropolitan Development Authority (CMDA)
	Universal Design Principle	Building Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Generation and Distribution corporation Limited (TANGEDCO)
State Disaster management authority		Tamilnadu State Disaster Management
State Education Department		Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Tamilnadu Generation and Distribution corporation Limited (TANGEDCO)
State Sales / Commercial Taxes Department		Department of Commercial tax
Town and Country Planning Department	Land Use	Chennai Metropolitan Development Authority (CMDA)
Traffic and Police Department		
Transport Authorities	Buses	Metropolitan Transport Authority (MTC)
	Registered Vehicles	Transport Corporation
	Sub urban rail transport	Southern Railways

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 97 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	3
DISCOM/Electricity Department	6
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	10
Transport Authority	12
Disaster Management	1
Urban Local Body	48
Total	97*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

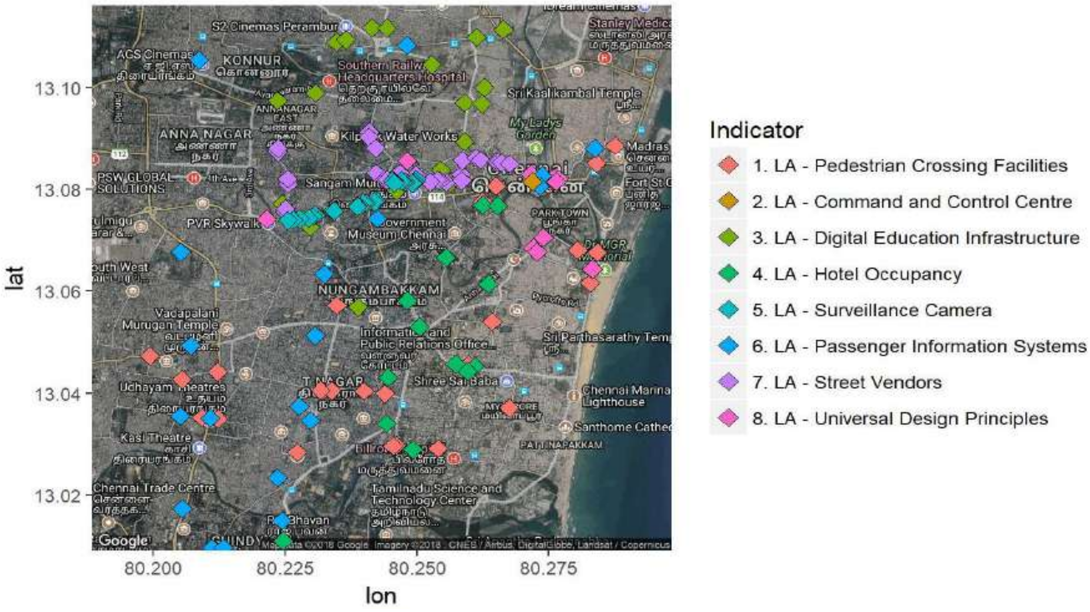
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
13.10
13.08
13.06
13.04
13.02
80.200
80.225
80.250
80.275
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
ANNA NAGAR
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T NAGAR
KONNUR
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**85.47**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.444444444
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**21.43**
Description	Services integrated through an integrated or a singular operations command centre	4.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**5.97**
Description		
Sub Indicators	1.3a Building plan	0.000227547
	1.3b Birth/Death Certificate	0.041726171
	1.3c water supply	0.005765549
	1.3d solid waste management	0.00222027
	1.3e property tax	0.01715559
	1.3f professional tax (RC)	0.005176992
	1.3g professional tax (EC)	0.005176992
	1.3h complaints/ grievance redressal	0.000987468
	1.3i information	0.33122375
	1.3j electricity	0.187450836
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.14**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	2
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	6
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**49.62**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	125173.94

Denominator	Total demand raised for the year	252265
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**23.27**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	18259.5
Denominator	Total O&M cost for providing water supply services during the year	78462
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**36.28**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	414579.71
Denominator	Total expenditure (revenue and capital accounts) in the same year	1142749.5
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	200
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	41
Denominator	Total number of historic buildings/sites identified	41
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**47.57**
Description	Average Occupancy rate of Hotels	47.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	14.97
Denominator	Total budget of the ULB (capital and revenue)	455677.72
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**4865**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	4865
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**116.5**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	780358
Denominator	Total population in the age group of 6-14 years	669820

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**117.33**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	383679
Denominator	Total female population in the age group of 6-14 years	326999
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**26.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	487622
Denominator	Total number of teachers available for primary grades (public and private schools)	18448
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**39.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	868
Denominator	Total number of schools	2207
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**95.39**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	95.39305268
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.36**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	9484222144
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**69.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	32397
Denominator	Total population of the city	4646732
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**128.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	59562
Denominator	Total population of the city	4646732
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**18**
Description	Total response time for health-related distress calls received in the city	18
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	4087
Denominator	Total population of the city	4646732
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2268

Denominator	Total population of the city	4646732
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**879.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	51995
Denominator	Total length of road network in the city	5914
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**891.83**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	41441
Denominator	Total population of the city	4646732
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**2.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	964
Denominator	Total crimes recorded in the same year	41441
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**43.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	2007

Denominator	Total population of the city	4646732
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**8.75**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	406742
Denominator	Total VAT/GST collection during preceding year	46493.58
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**6.58**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	3432.63
Denominator	Total Professional Tax collection during preceding year	52196.31
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**15.95**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	63
Denominator	Number of construction permits during preceding year	3.95
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	244222

Denominator	Total labour force in the city	669820
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	26883
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**6.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	46647
Denominator	Total number of slum and EWS households in the city	6968.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.02**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	15651428932608
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**8.71**
Formula:	*Numerator / Denominator*	

Numerator	Total area of green space (sq.m.)	40470000
Denominator	Total population of the city	4646732
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.97**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	9138963.91
Denominator	Total population of the city	4646732
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**5.7**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	24269000
Denominator	Total area of the city (total area of all land uses)	426000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	4646732
Denominator	Area allocated for residential land use (in hectares)	95230000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**172.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	2095440
Denominator	Total number of households in the city	1211576
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	2569223
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**3067**
Description	Total number of sustained electrical interruptions in a year	3067
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	89190
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.02**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	10515
Denominator	Total energy consumption from all sources	3525710
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	6651666.667
Denominator	Total quantum of water and waste water handled during the period	35970
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	93
Denominator	Total number of street light installations	277902
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	325172
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	3173555
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	3525710
Denominator	Total population of the city	4646732
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	784.18
Denominator	Total area of the city (sq.km)	426
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**2.32**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	10770
Denominator	Total population of the city	4646732
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	31
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	17
Denominator	Total length of road network in the city	5914
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**60.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with	67

	bicycle parking facility (within 250m radius)	
Denominator	Total number of major transport interchanges in the city	111
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	34
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.54**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	60
Denominator	Total number of major interchanges in the city	111
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	382
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	12000
Denominator	Total available on-street parking spaces in the city	12000
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**3.79**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	447.83

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total length of road network in the city	11828
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**442.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	230
Denominator	Total number of junctions/ intersections on major roads in the city	52
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**90.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	7786
Denominator	Total number of public right-of-way areas in the city	8643
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**49.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	605510
Denominator	Total number of households in the city	1211576
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**147.63**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	686
Denominator	Total population of the city	4646732
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	30272
Denominator	Total number of samples tested for water quality	30659
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	686
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**5.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	33649
Denominator	Total number of water connections in the city	645348
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**2057.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	8640
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	420
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**148.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1774600
Denominator	Total number of properties in the city	1195723
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**105.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	1259275
Denominator	Total number of properties in the city	1195723
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	525
Denominator	Total waste water generated in the city per day	525
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	513
Denominator	Total waste water received at treatment plants per day	513
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**32.03**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and	1894

	tertiary drains (of pucca construction)	
Denominator	Total length of road network in the city	5914
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**136.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	1819160
Denominator	Total number of households and establishments in the city	1330736
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	5249
Denominator	Total quantum of MSW generated in the city	5249
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**4.43**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	6970
Denominator	Average MSW generated in the city (tons per month)	157470
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**17**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	17
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**74**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	74
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	28
Denominator	Total number of noise samples	240
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	36
Denominator	Total number of samples tested	36
Unit	Percentage	
Benchmark	100%	

सत्यमेव जयते

Ministry of Urban Development
Government of India

LIVEABILITY ASSESSMENT DRAFT REPORT

COIMBATORE

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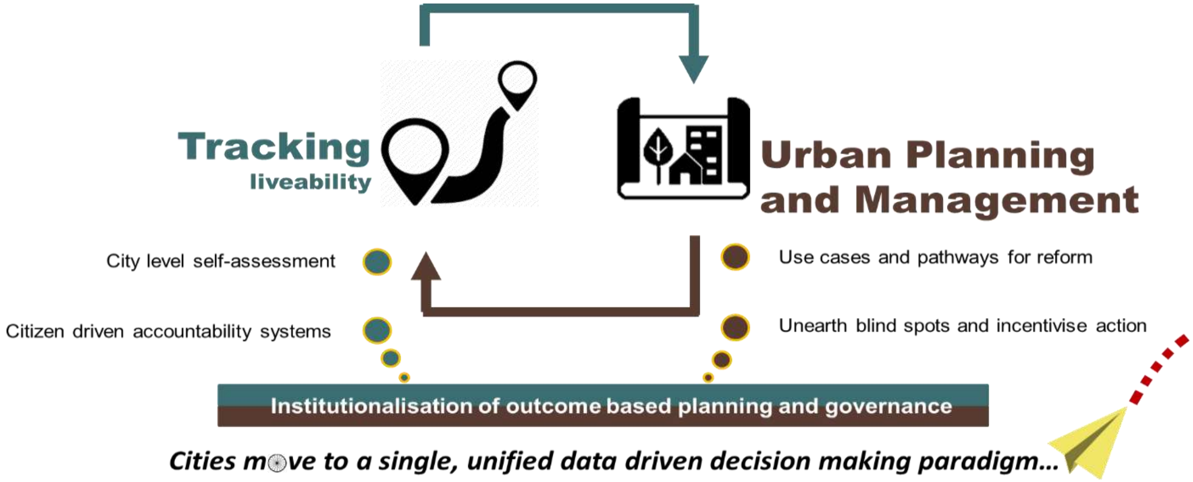
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

COIMBATORE

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	257.04	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	
Total Number of Households	

SOCIAL PROFILE

Education	**Total Number of Schools**	434
	Total Enrolment (Class 1 to 5)	135827
Health	**Total Number of In-patients Beds**	5220
	Total Health Workforce	6372
Safety and Security	**Total Strength of Police Force**	2715
	Total Number of CCTV Cameras	207
Heritage Sites	**Total Number of Heritage Sites**	15

ECONOMIC PROFILE

Total Population in Working Age Group	710000
Total Number of Industries	6810
Total Number of Commercial Enterprises	22468
Total Number of Hotels	168
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1665379.44
Total VAT Collection in FY 2016-17 (INR Lakhs)	135333.704

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	220
		Total Number of Water Connections	277684
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	482222
		Total number of households in the city with access to community toilets in the city	6400
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	940
		Total number of households covered through door-to-door collection of solid waste	521605
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	190
		Daily average quantum of waste water treated by STPs in the city (MLD)	40
	Electricity	**Total number of authorized electrical connections in the city**	715466
		Total electricity supplied to the city (kWh)	1714109741
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	379819.54
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2888.07
		Total length of arterial and sub-arterial road network in the city (Km)	40.2
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	40

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and

Pillars of Comprehensive Development	Category	Indicators
		elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range

Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board,
Development Authority	Building Infrastructure	Town planning
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country	Land Use	Town Planning

Designated data owners	Subcategories	Data owners at city level
Planning Department		
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 157 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	3
DISCOM/Electricity Department	8
Traffic and Police Department	3
Development Authority	12
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	21
Transport Authority	11
Disaster Management	1
Urban Local Body	90
Total	157*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

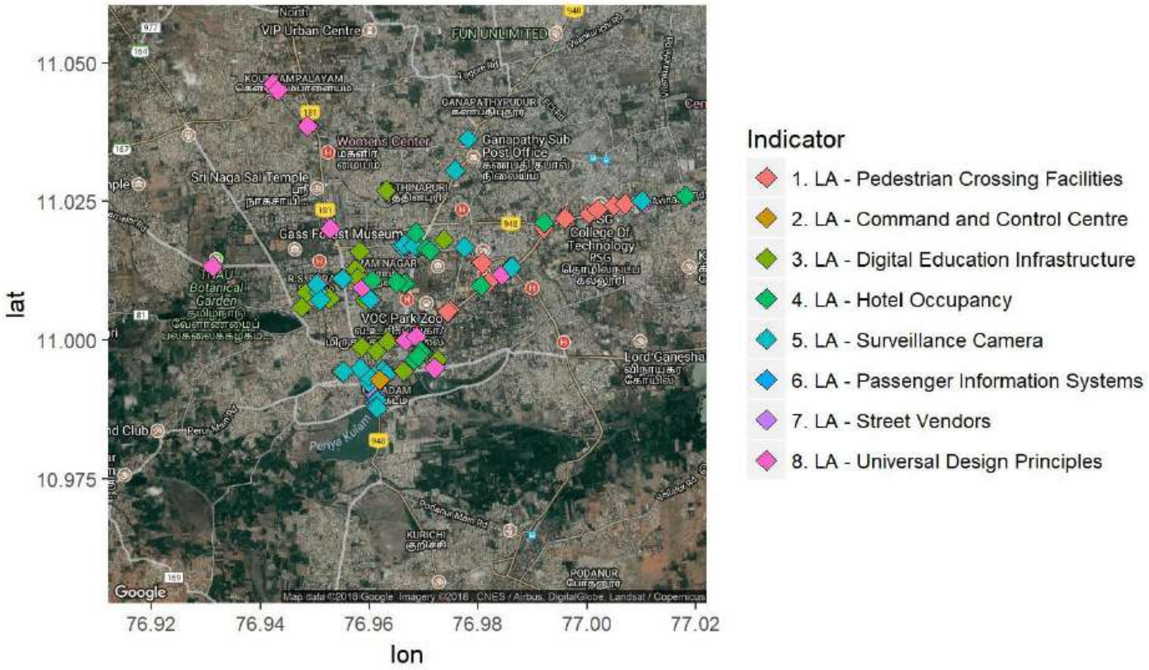
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
11.050
11.025
11.000
10.975
lon
76.92
76.94
76.96
76.98
77.00
77.02
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc.,

and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**63.23**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	1
	1.1d solid waste management	0.75
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.111111111
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**6.95**

Description		
Sub Indicators	1.3a Building plan	0.028215484
	1.3b Birth/Death Certificate	0.010124159
	1.3c water supply	0.133829588
	1.3d solid waste management	0.019034549
	1.3e property tax	0.048996948
	1.3f professional tax (RC)	0.350583333
	1.3g professional tax (EC)	0.093390805
	1.3h complaints/ grievance redressal	0.006265539
	1.3i information	0.004758637
	1.3j electricity	5.8703E-05
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.29**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0.5
	1.4d sewerage	0
	1.4e professional tax	1
	1.4f parks and recreational spaces	0.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**85.58**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	15415.61
Denominator	Total demand raised for the year	18012.47
Unit	Percentage	

Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**93.07**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	3003.32
Denominator	Total O&M cost for providing water supply services during the year	3227
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**93.44**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1618411.38
Denominator	Total expenditure (revenue and capital accounts) in the same year	1732031.89
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	100
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**93.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	14
Denominator	Total number of historic buildings/sites identified	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**33.33**

Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**47.43**
Description	Average Occupancy rate of Hotels	47.42857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	NA
Denominator	Total budget of the ULB (capital and revenue)	1665379.44
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**19**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	19
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**119.15**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	177276
Denominator	Total population in the age group of 6-14 years	148780
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**122.37**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	89116
Denominator	Total female population in the age group of 6-14 years	72823
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**30.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	135827
Denominator	Total number of teachers available for primary grades (public and private schools)	4504
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**32.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	139
Denominator	Total number of schools	434
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**108.89**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	108.8874308
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**86.92**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	184869750
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**49.68**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5220
Denominator	Total population of the city	1050721
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**60.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	6372
Denominator	Total population of the city	1050721
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2771
Denominator	Total population of the city	1050721
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	233
Denominator	Total population of the city	1050721
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be	

	treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**7.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	207
Denominator	Total length of road network in the city	2888.07
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**1119.42**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	11762
Denominator	Total population of the city	1050721
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**2.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	323
Denominator	Total crimes recorded in the same year	11762
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**34.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	359
Denominator	Total population of the city	1050721
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**8.39**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	10471.848
Denominator	Total VAT/GST collection during preceding year	1248.61856
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**9.71**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	208.88
Denominator	Total Professional Tax collection during preceding year	2151.73
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**18.16**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	451
Denominator	Number of construction permits during preceding year	24.83
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	118792
Denominator	Total labour force in the city	148780
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	6129
Denominator	Total number of vendors in the city	6129
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**22.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	20795
Denominator	Total number of slum and EWS households in the city	928.61
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.11**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	28873308000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.36**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	379819.54
Denominator	Total population of the city	1050721
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	

Indicator No: 8.2	Per capita availability of public and recreational places	**1.78**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1874818.43
Denominator	Total population of the city	1050721
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**31.36**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	80614000
Denominator	Total area of the city (total area of all land uses)	257040000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1050721
Denominator	Area allocated for residential land use (in hectares)	70712100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**113.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	557745
Denominator	Total number of households in the city	493282

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	715466
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**2909**
Description	Total number of sustained electrical interruptions in a year	2909
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	22840
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	2688
Denominator	Total energy consumption from all sources	1727230915
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	172250
Denominator	Total quantum of water and waste water handled during the period	7800
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	32992488
Denominator	Total number of street light installations	74273
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1727230915
Denominator	Total population of the city	1050721
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	8858
Denominator	Total area of the city (sq.km)	257.04
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	672
Denominator	Total population of the city	1050721
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	42
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	1.6
Denominator	Total length of road network in the city	2888.07
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	5
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be**

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

		computed
Description	Mode share of non-motorised transport	0.2
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	55
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.69**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	40
Denominator	Total length of road network in the city	5776.14
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**240**
Formula:	*Numerator / Denominator*	

Numerator	Total number of intersections with pedestrian crossing facilities on major roads	36
Denominator	Total number of junctions/ intersections on major roads in the city	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**181.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	6888
Denominator	Total number of public right-of-way areas in the city	3786
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**52.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	258637
Denominator	Total number of households in the city	493282
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**209.38**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	220
Denominator	Total population of the city	1050721
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	28
Denominator	Total number of samples tested for water quality	28
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**11.36**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	25
Denominator	Quantum of water put into the distribution system (mld)	220
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**46.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	129107
Denominator	Total number of water connections in the city	277684
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**3.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	583
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	17983
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**104.62**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	516007
Denominator	Total number of properties in the city	493228
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**85.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	422209
Denominator	Total number of properties in the city	493228
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**22.11**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	42
Denominator	Total waste water generated in the city per day	190
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**325**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	130
Denominator	Total waste water received at treatment plants per day	40
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**25.45**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	735
Denominator	Total length of road network in the city	2888.07
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**105.49**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	544073
Denominator	Total number of households and establishments in the city	515750
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**94.95**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	940
Denominator	Total quantum of MSW generated in the city	990
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**57.94**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	16340
Denominator	Average MSW generated in the city (tons per month)	28200
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**24.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	24.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**47**

Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	47
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1
Denominator	Total number of noise samples	12
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	28
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DAHOD

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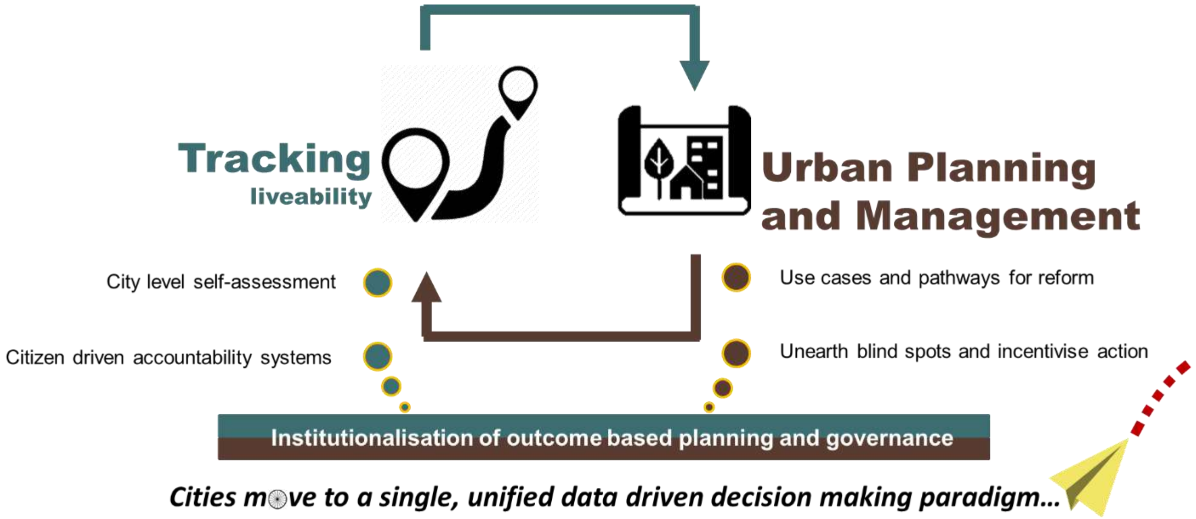
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

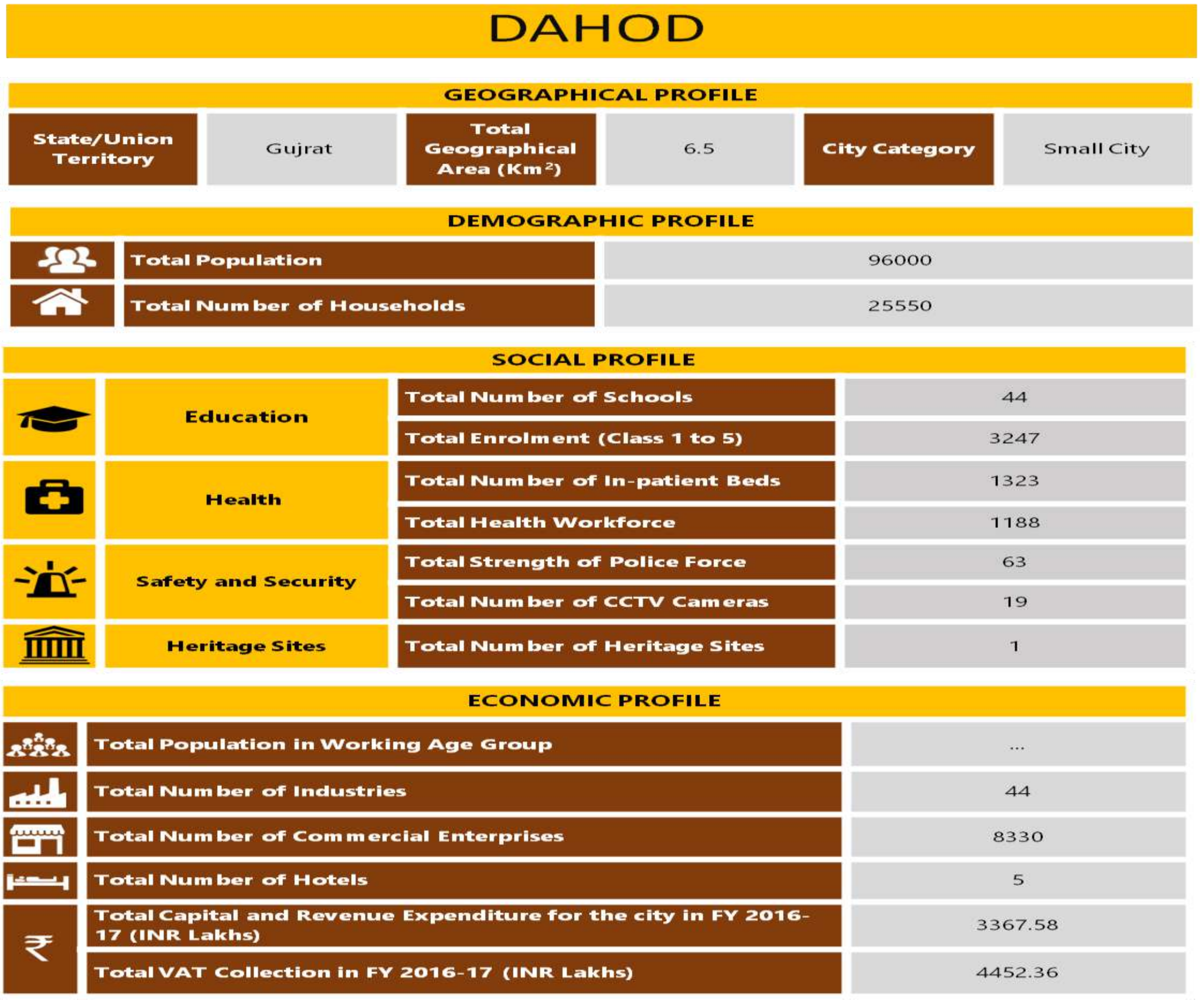

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DAHOD

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	Total Geographical Area (Km²)	6.5	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	96000
Total Number of Households	25550

SOCIAL PROFILE

Education	Total Number of Schools	44
	Total Enrolment (Class 1 to 5)	3247
Health	Total Number of In-patient Beds	1323
	Total Health Workforce	1188
Safety and Security	Total Strength of Police Force	63
	Total Number of CCTV Cameras	19
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	44
Total Number of Commercial Enterprises	8330
Total Number of Hotels	5
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	3367.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	4452.36

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	10
	Total Number of Water Connection	13569
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	25550
	Total number of households in the city with access to community toilets in the city	6952
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	35
	Total number of households covered through door-to-door collection of solid waste	25550
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	…
	Daily average quantum of waste water treated by STPs in the city (MLD)	…
Electricity	**Total number of authorized electrical connections in the city**	38337
	Total electricity supplied to the city (kWh)	103566836
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	57.32
Roads and Transport	**Total Length of Road Network in the City (Km)**	102
	Total length of arterial and sub-arterial road network in the city (Km)	14
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing

Pillars of Comprehensive Development	Category	Indicators
		facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million

Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning
Urban Local Body	For Water Supply and Drainage related questions	Water Management
Urban Local Body	For Heritage sites related data	…….
Urban Local Body	For Ecological sites related data	……..
Urban Local Body	For Housing related data	Twon and Country Planning Dev.
Urban Local Body	For Building plan related data	Unban local body.
Urban Local Body	For Roads related data	Transport AUTHORITIES .
Urban Local Body	For Solid waste management related data	STATe DISASTER Management
Urban Local Body	For IT services related data	…….
Urban Local Body	For Vendor committee related data	…
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	…
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Traffic and Police Department
	Construction planning	Bandhkam dep.
	Green Building	……
	Rain water harvesting	Bandhkam dep.
	Universal Design Principle	Town planing
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MGVCL
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	health Department
	Citizen Services	…
	Disease Prevalence	Fier dep.
	Health Infrastructure	State Health Dipart ment
State Renewable Energy Development Agency		MGVCL
State Sales / Commercial		

Designated data owners	Subcategories	Data owners at city level
Taxes Department		
Town and Country Planning Department	Land Use	Town planning
Traffic and Police Department		Traffic and police dep.
Transport Authorities	Buses	N.A.
	Registered Vehicles	R.T.O
	Sub urban rail transport	N.A.
	Mono Rail Authority	N.A.
	Tramways	N.A.
	Marine Transport Authority	N.A.

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	2
DISCOM/Electricity Department	1
Traffic and Police Department	2
Development Authority	1
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	4
State Health Department	2
Transport Authority	2
Disaster Management	1
Urban Local Body	40

Total	60*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

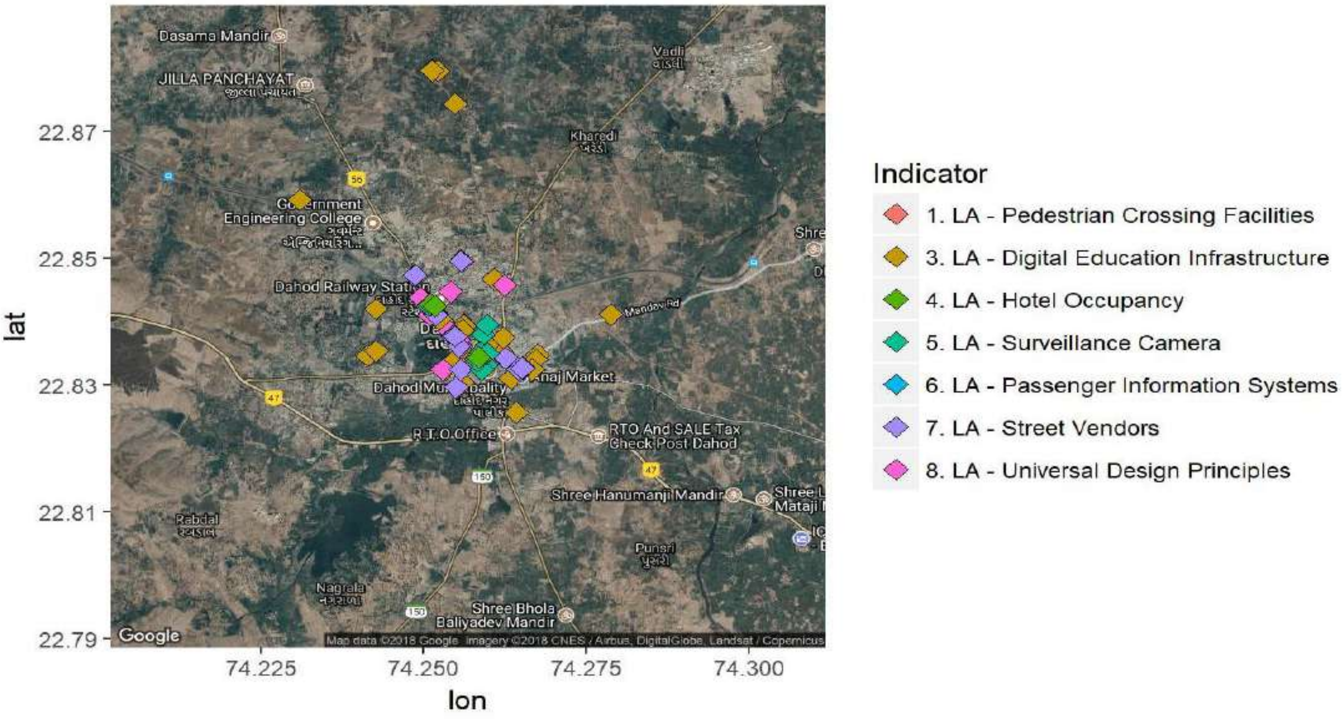
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Dasama Mandir
JILLA PANCHAYAT
Vadli
Kharedi
Government Engineering College
Dahod Railway Station
Mandav Rd
Dahod Municipality
Anaj Market
R.T.O.Office
RTO And SALE Tax Check Post Dahod
Shree Hanumanji Mandir
Rabdal
Punsri
Nagrala
Shree Bhola Baliyadev Mandir
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
22.87
22.85
22.83
22.81
22.79
lat
74.225
74.250
74.275
74.300
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc.,

and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	15.68
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.538461538
	1.1k Grievance redressal	0
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	0
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	0
Description		

Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	31.64
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	221.5
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	77.69
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	554.29
Denominator	Total demand raised for the year	713.44
Unit	Percentage	
Benchmark	90%	

Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	32.04
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	78
Denominator	Total O&M cost for providing water supply services during the year	243.42
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	-3.33
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-101.68
Denominator	Total expenditure (revenue and capital accounts) in the same year	3049.68
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	0
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	9
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	0
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for	0

	restoration	
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	10
Description	Average Occupancy rate of Hotels	10
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	0.13
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	4.45
Denominator	Total budget of the ULB (capital and revenue)	3367.58
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	19
Description	Number of cultural/sports events hosted by the city authority in the preceding year	19
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	21.41
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	5186
Denominator	Total population in the age group of 6-14 years	24222
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	23.51
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	2682
Denominator	Total female population in the age group of 6-14 years	11406
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	6.55
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	3247
Denominator	Total number of teachers available for primary grades (public and private schools)	496
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	79.55
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	35
Denominator	Total number of schools	44
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	109.32
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	109.3192022
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	36.98
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	278756

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	111.32
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1323
Denominator	Total population of the city	118846
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	99.96
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1188
Denominator	Total population of the city	118846
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	0
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	0.11
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	133
Denominator	Total population of the city	118846
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	0.04

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	48
Denominator	Total population of the city	118846
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	18.63
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	19
Denominator	Total length of road network in the city	102
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	10.1
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	12
Denominator	Total population of the city	118846
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	8.33
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1
Denominator	Total crimes recorded in the same year	12
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.4	Transport-related fatality per lakh population	15.99
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	19
Denominator	Total population of the city	118846
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	2.82
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	122.21
Denominator	Total VAT/GST collection during preceding year	43.3015
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	-1.9
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-1.46
Denominator	Total Professional Tax collection during preceding year	76.75
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	-31.93
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-38
Denominator	Number of construction permits during preceding year	1.19
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated	

	as a benchmark	
Indicator No: 6.4	Unemployment Rate	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	308
Denominator	Total labour force in the city	24222
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	200
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	3454
Denominator	Total number of vendors in the city	1727
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	0
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	43.04
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	Non-Compuatble NA
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	

Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	0
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	57.32
Denominator	Total population of the city	118846
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	0.61
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	72697.0303
Denominator	Total population of the city	118846
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	101.8
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	6617200
Denominator	Total area of the city (total area of all land uses)	6500000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	0.06
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	118846

Denominator	Area allocated for residential land use (in hectares)	2021300
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	115.61
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	29538
Denominator	Total number of households in the city	25550
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	99.67
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	38209
Denominator	Total number of electricity connections in the city	38337
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	248
Description	Total number of sustained electrical interruptions in a year	248
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	0.81
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	125.62
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	0
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	205.2
Denominator	Total energy consumption from all sources	103566836
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	0.34
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	29200
Denominator	Total quantum of water and waste water handled during the period	300
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	0.34
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	940198
Denominator	Total number of street light installations	4537
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	NC
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	0.78
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	103566836
Denominator	Total population of the city	118846
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	6.5
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	118846
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	To be computed
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	0

Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	102
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	To be computed
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	Non-Computable
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	3000
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	60
Denominator	Total number of signalised intersections in the city	2

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	0
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	11
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	0.49
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	1
Denominator	Total length of road network in the city	204
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	2
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	60.78
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	31
Denominator	Total number of public right-of-way areas in the city	51
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	72.99
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	18648
Denominator	Total number of households in the city	25550
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	84.14
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	10
Denominator	Total population of the city	118846
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	3650
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	14
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	1.4
Denominator	Quantum of water put into the distribution system (mld)	10
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	0
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	13569
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	0
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	81
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	126.96
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	32566
Denominator	Total number of properties in the city	25650
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	169.93
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	43588
Denominator	Total number of properties in the city	25650
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	Non-

Formula:	*Numerator / Denominator*	Computable
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	9.8
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	10
Denominator	Total length of road network in the city	102
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	96.52
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	32700
Denominator	Total number of households and establishments in the city	33880
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	100
Formula:	*Numerator / Denominator*	

Numerator	Total quantum of MSW collected by the ULB or private operator	35
Denominator	Total quantum of MSW generated in the city	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	30
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	315
Denominator	Average MSW generated in the city (tons per month)	1050
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	NA
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed

Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	16
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DAVANAGERE

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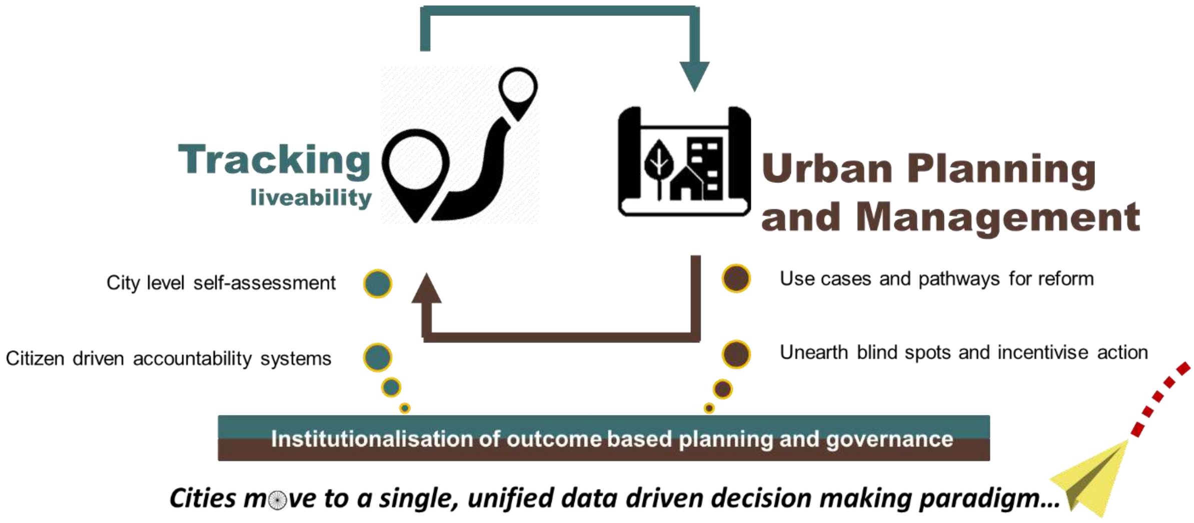
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

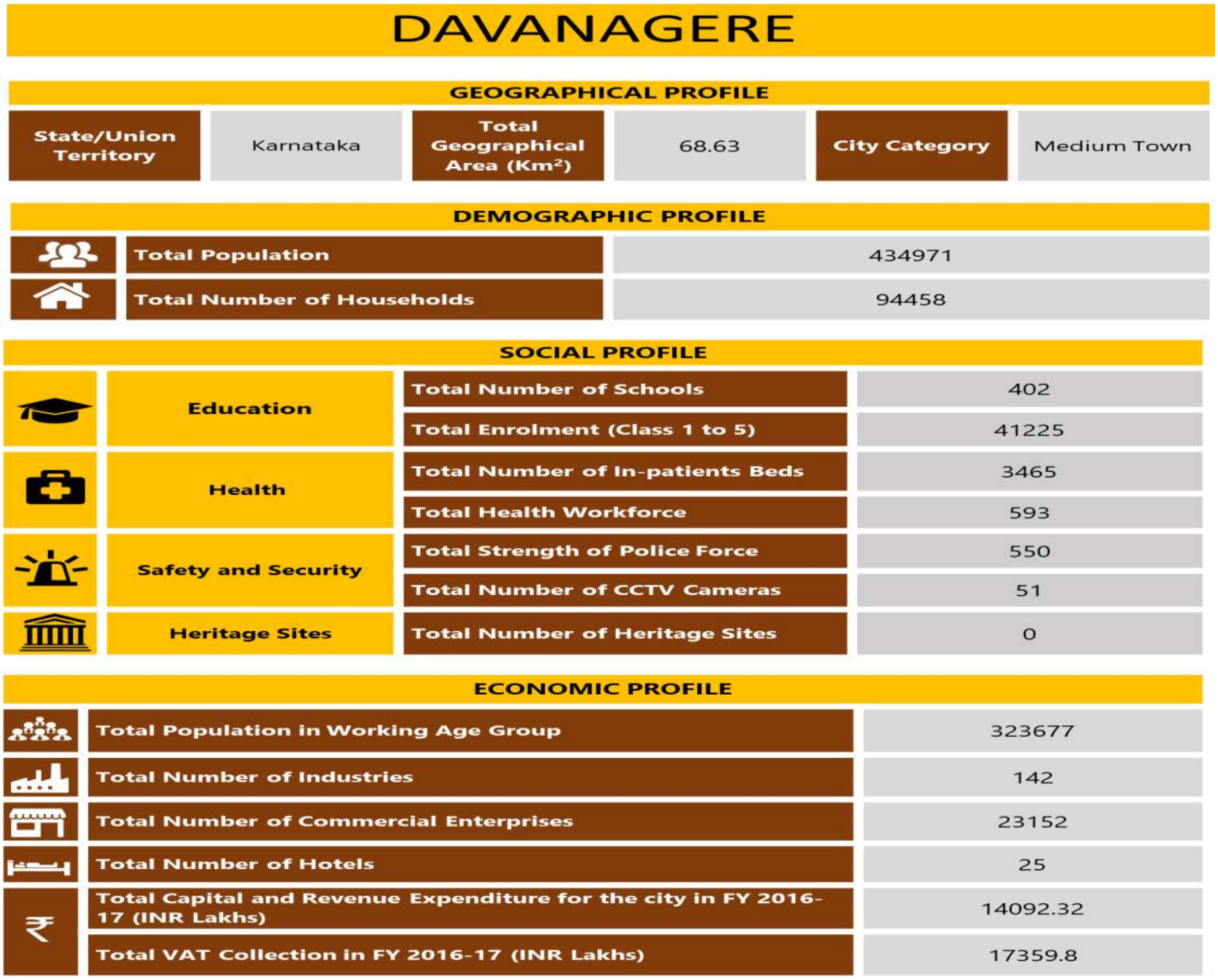

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DAVANAGERE

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km²)	68.63	City Category	Medium Town

DEMOGRAPHIC PROFILE

Total Population	434971
Total Number of Households	94458

SOCIAL PROFILE

Education	Total Number of Schools	402
	Total Enrolment (Class 1 to 5)	41225
Health	Total Number of In-patients Beds	3465
	Total Health Workforce	593
Safety and Security	Total Strength of Police Force	550
	Total Number of CCTV Cameras	51
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

Total Population in Working Age Group	323677
Total Number of Industries	142
Total Number of Commercial Enterprises	23152
Total Number of Hotels	25
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	14092.32
Total VAT Collection in FY 2016-17 (INR Lakhs)	17359.8

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	56
	Total Number of Water Connections	46349
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	88835
	Total number of households in the city with access to community toilets in the city	0
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	90
	Total number of households covered through door-to-door collection of solid waste	64000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	44.8
	Daily average quantum of waste water treated by STPs in the city (MLD)	10
Electricity	**Total number of authorized electrical connections in the city**	153065
	Total electricity supplied to the city (kWh)	1516467200
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	386080.4
Roads and Transport	**Total Length of Road Network in the City (Km)**	1227.7
	Total length of arterial and sub-arterial road network in the city (Km)	692.7
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	18

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open	8.1 Per capita availability of green spaces

Pillars of Comprehensive Development	Category	Indicators
	Spaces	8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

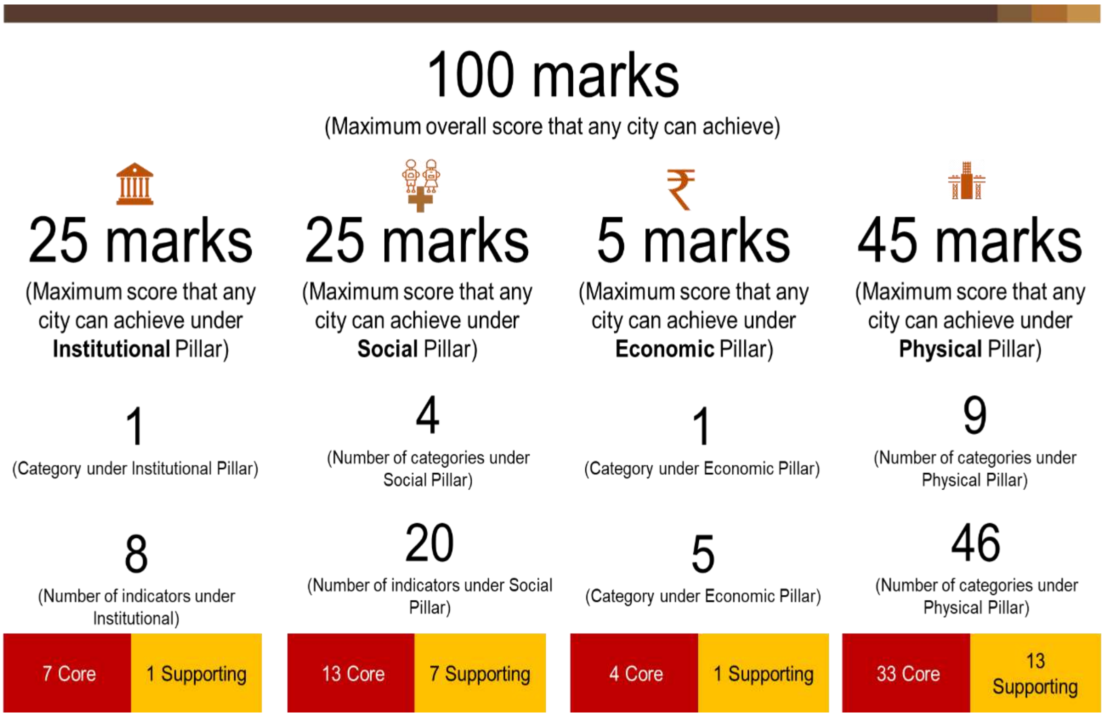
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department DCC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department DCC
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department DCC
Urban Local Body	For Heritage sites related data	Town Planning Department DCC
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. MCC
Urban Local Body	For Building plan related data	Town Planning Department DCC
Urban Local Body	For Roads related data	Engineering Department DCC
Urban Local Body	For Solid waste management related data	Environment Department DCC
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. DCC (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, ,Karnataka Pollution Control Board, Slum Board, Hotel owners Association, Police, Road Transport
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Karnataka State Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, DCC
	Green Building	Town Planning Department, DCC
	Rain water harvesting	Town Planning Department, DCC
	Universal Design	Development Authority

Designated data owners	Subcategories	Data owners at city level
	Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bangalore Electricity Supply Company (BESCOM)
State Disaster management authority		Deputy Commissioner's Office (Office of District Collector)
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy Development Agency	Renewable Energy	Bangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Superintendent of Police
Transport Authorities	Buses	Regional Transport Officer's Office
	Registered Vehicles	Regional Transport Officer's Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 66 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	3
DISCOM/Electricity Department	1
Traffic and Police Department	2
Development Authority	2
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	2
Disaster Management	2
Urban Local Body	40
Total	66*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

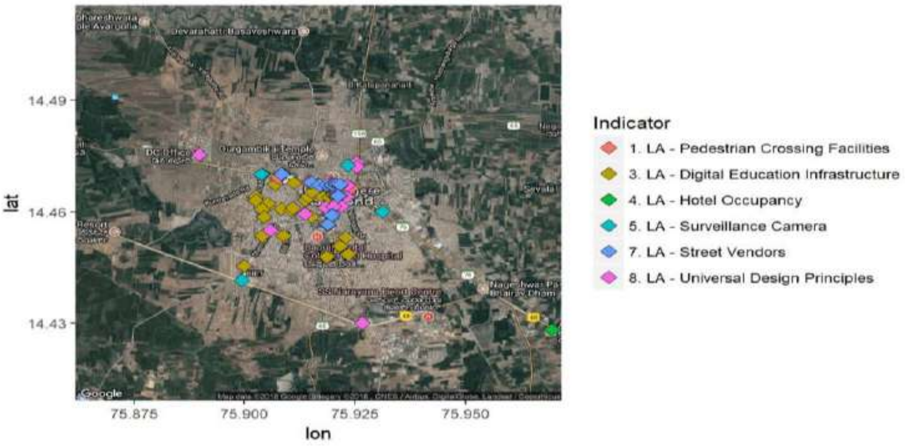
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
14.49
14.46
14.43
lon
75.875
75.900
75.925
75.950
Indicator
🟥 1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
🟩 4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles
Devarahatti Basaveshwara
DC Office
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport

Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**61.05**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0.75
	1.1d solid waste management	0.25
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	1
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.2	Percentage of services integrated through Command Centre	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**3.62**
Description		
Sub Indicators	1.3a Building plan	0.002804203
	1.3b Birth/Death Certificate	0.009958135
	1.3c water supply	0.002363844
	1.3d solid waste management	0
	1.3e property tax	NA
	1.3f professional tax (RC)	0.083333333
	1.3g professional tax (EC)	0.083333333
	1.3h complaints/ grievance redressal	7.66335E-07
	1.3i information	0.000383934
	1.3j electricity	0.143360664
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.79**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	2
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	3.5
Unit	Days	
Benchmark	0	

Indicator No: 1.5	Tax collected as percentage of tax billed	**97.52**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	19658937.45
Denominator	Total demand raised for the year	20159522.3
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**36.41**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	837.69
Denominator	Total O&M cost for providing water supply services during the year	2300.56
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**11.16**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	2165.87
Denominator	Total expenditure (revenue and capital accounts) in the same year	19402.23
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0

Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**22.86**
Description	Average Occupancy rate of Hotels	22.85714286
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	14092.32
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**12**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	12
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**85.05**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	65619

Denominator	Total population in the age group of 6-14 years	77155
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**83.48**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	31367
Denominator	Total female population in the age group of 6-14 years	37575
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**95.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	41225
Denominator	Total number of teachers available for primary grades (public and private schools)	430
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**44.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	178
Denominator	Total number of schools	402
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**86.14**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	86.14264958
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**96.74**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	64720080
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**79.66**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3465
Denominator	Total population of the city	434971
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**13.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	593
Denominator	Total population of the city	434971
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**8786**
Description	Total response time for health-related distress calls received in the city	8786
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1520
Denominator	Total population of the city	434971
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	322
Denominator	Total population of the city	434971
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**4.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	51
Denominator	Total length of road network in the city	1227.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**444.17**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1932
Denominator	Total population of the city	434971
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**9.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	188
Denominator	Total crimes recorded in the same year	1932
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**11.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	48
Denominator	Total population of the city	434971
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**4.15**

Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	691.69
Denominator	Total VAT/GST collection during preceding year	166.6811
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**-19.76**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-4840492
Denominator	Total Professional Tax collection during preceding year	24498302
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-11.87**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-121
Denominator	Number of construction permits during preceding year	10.19
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2137
Denominator	Total labour force in the city	77155
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**121.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	3005

Denominator	Total number of vendors in the city	2474
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**29.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	15428
Denominator	Total number of slum and EWS households in the city	516.65
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.02**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	277746000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	386080.4
Denominator	Total population of the city	434971
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.41**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1483552.08
Denominator	Total population of the city	434971
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated	

	as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	68630000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	434971
Denominator	Area allocated for residential land use (in hectares)	28080200
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**131.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	123870
Denominator	Total number of households in the city	94458
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	Data Unavailable
Denominator	Total number of electricity connections in the city	153065

Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**3607**
Description	Total number of sustained electrical interruptions in a year	3607
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.6**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	119095
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1651.3
Denominator	Total energy consumption from all sources	1516468923
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1626846.083
Denominator	Total quantum of water and waste water handled during the period	1980
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	3096
Denominator	Total number of street light installations	24460
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.69**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1516468923
Denominator	Total population of the city	434971
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	120
Denominator	Total area of the city (sq.km)	68.63
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	85
Denominator	Total population of the city	434971
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	19

Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1227.7
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	4
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	8
Denominator	Total number of signalised intersections in the city	10

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.73**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	18
Denominator	Total length of road network in the city	2455.4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	8
Denominator	Total number of junctions/ intersections on major roads in the city	10
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**6.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	42
Denominator	Total number of public right-of-way areas in the city	607
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**47.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	44439

Denominator	Total number of households in the city	94458
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**128.74**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	56
Denominator	Total population of the city	434971
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**37.5**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	21
Denominator	Quantum of water put into the distribution system (mld)	56
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	46349
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	895
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**73.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	101661
Denominator	Total number of properties in the city	138334
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**59.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	82918
Denominator	Total number of properties in the city	138334
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**22.32**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	10
Denominator	Total waste water generated in the city per day	44.8
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	10
Denominator	Total waste water received at treatment plants per day	10
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**0.98**
Formula:	*Numerator / Denominator*	

Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	12
Denominator	Total length of road network in the city	1227.7
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**64.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	75415
Denominator	Total number of households and establishments in the city	117610
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**75**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	90
Denominator	Total quantum of MSW generated in the city	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**1.85**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	50
Denominator	Average MSW generated in the city (tons per month)	2700
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**5.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	5.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.2	**Concentration of NO2 - air pollution**	**10**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	10
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**207**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	207
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	24
Denominator	Total number of samples tested	24
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DEHRADUN

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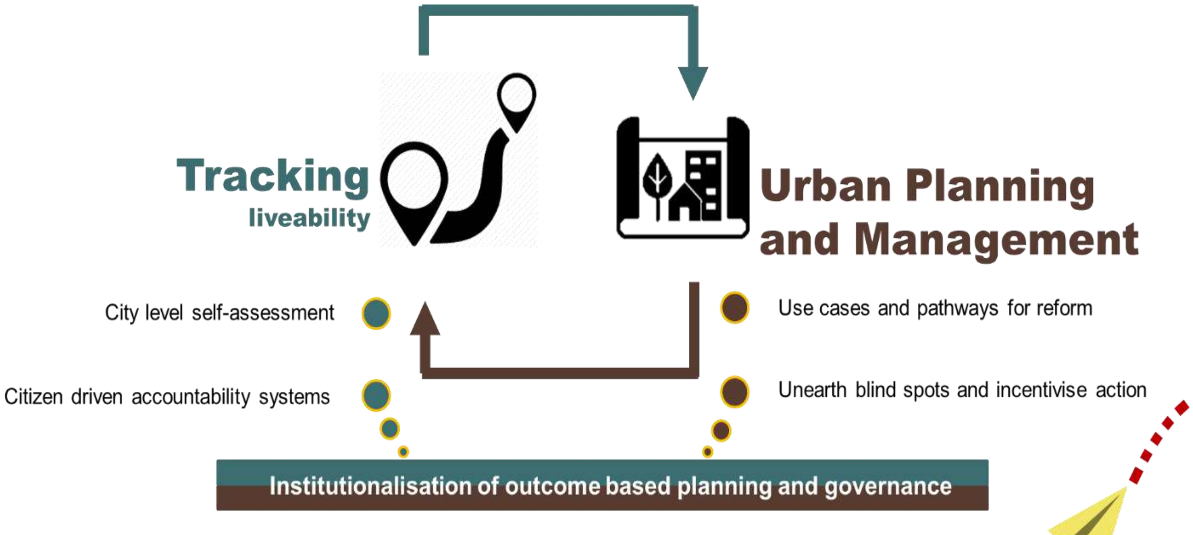
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

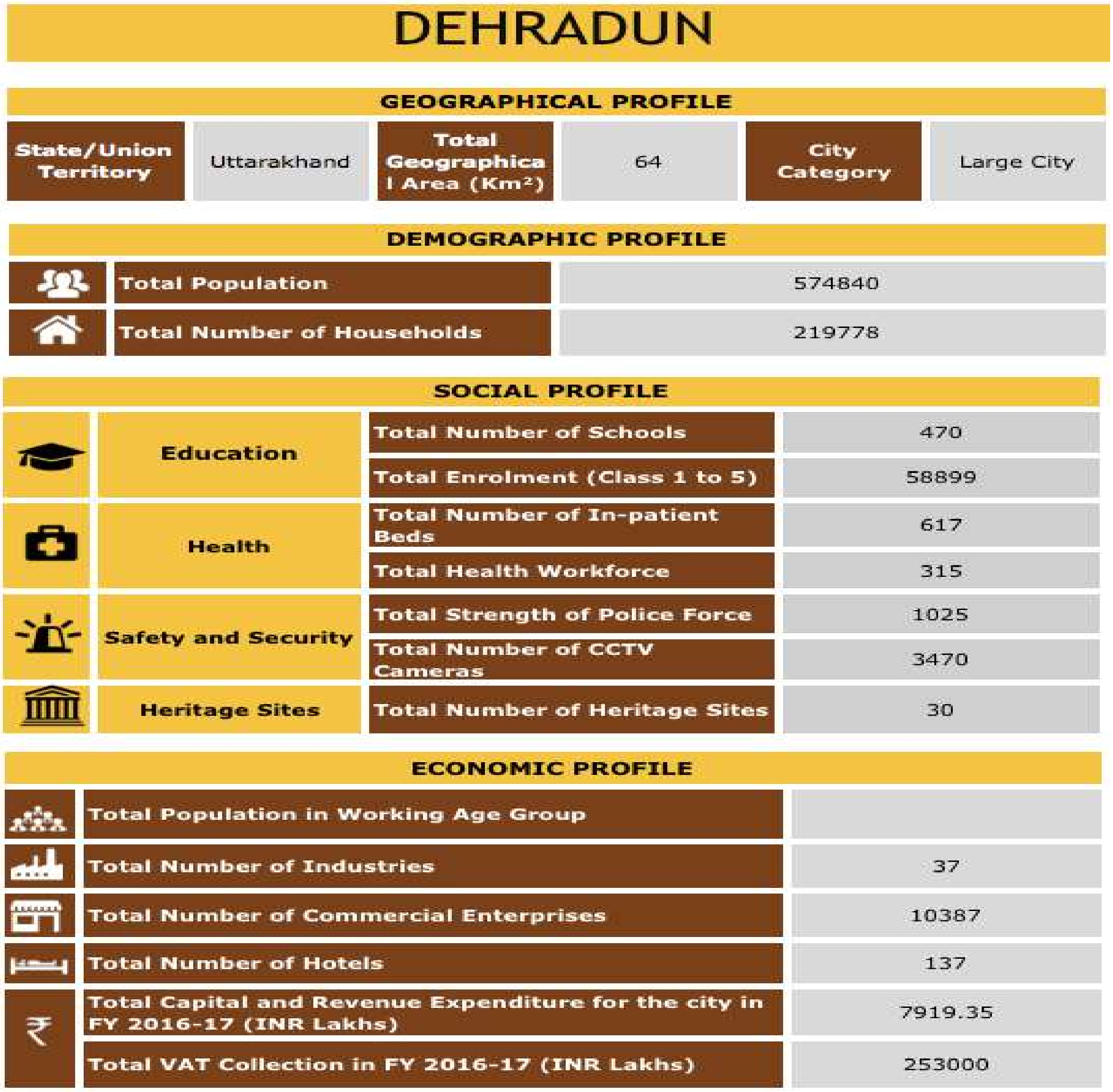

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DEHRADUN

GEOGRAPHICAL PROFILE

State/Union Territory	Uttarakhand	Total Geographical Area (Km^2)	64	City Category	Large City

DEMOGRAPHIC PROFILE

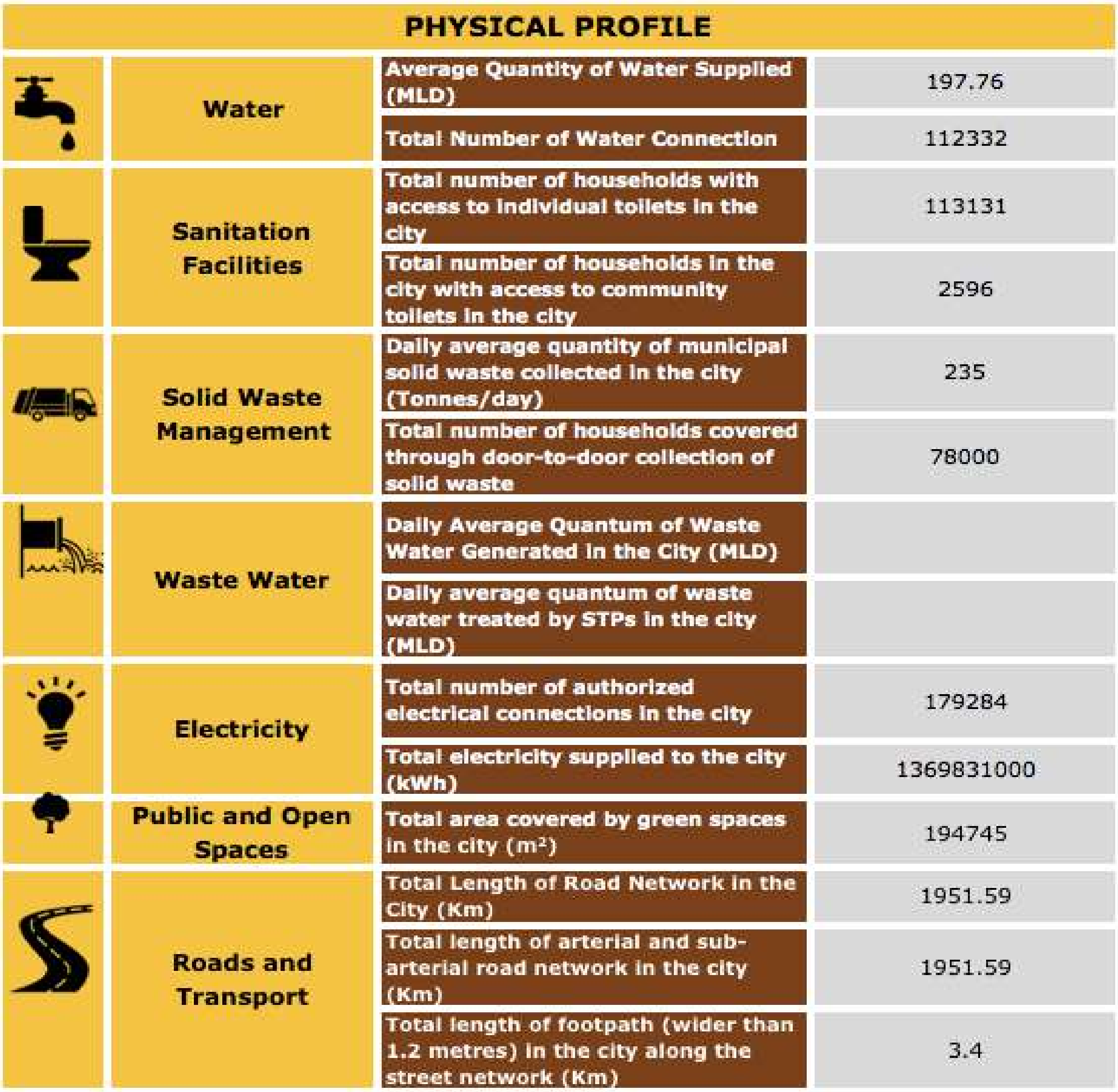
Total Population	574840
Total Number of Households	219778

SOCIAL PROFILE

Education	Total Number of Schools	470
	Total Enrolment (Class 1 to 5)	58899
Health	Total Number of In-patient Beds	617
	Total Health Workforce	315
Safety and Security	Total Strength of Police Force	1025
	Total Number of CCTV Cameras	3470
Heritage Sites	Total Number of Heritage Sites	30

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	37
Total Number of Commercial Enterprises	10387
Total Number of Hotels	137
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7919.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	253000



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	197.76
	Total Number of Water Connection	112332
Sanitation Facilities	Total number of households with access to individual toilets in the city	113131
	Total number of households in the city with access to community toilets in the city	2596
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	235
	Total number of households covered through door-to-door collection of solid waste	78000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	
	Daily average quantum of waste water treated by STPs in the city (MLD)	
Electricity	Total number of authorized electrical connections in the city	179284
	Total electricity supplied to the city (kWh)	1369831000
Public and Open Spaces	Total area covered by green spaces in the city (m²)	194745
Roads and Transport	Total Length of Road Network in the City (Km)	1951.59
	Total length of arterial and sub-arterial road network in the city (Km)	1951.59
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3.4

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections

Pillars of Comprehensive Development	**Category**	Indicators
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts section
Urban Local Body	For Park and Recreation Related Questions	Lok Nirman Anubhag, Nagar Nigam, MDDA
Urban Local Body	For Water Supply and Drainage related questions	Jal Sansthan
Urban Local Body	For Heritage sites related data	ASI website.
Urban Local Body	For Ecological sites related data	Website of forest department
Urban Local Body	For Housing related data	Project Cell, PMAY
Urban Local Body	For Building plan related data	MDDA
Urban Local Body	For Roads related data	Public Works Department, Nagar Nigam
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Land Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Statistics Department

Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttarakhand Environment protection and pollution control board
Development Authority	Building Infrastructure	IT Department
	Construction planning	IT Department
	Green Building	IT Department
	Rain water harvesting	IT Department
	Universal Design Principle	IT Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttarakhand Power Corporation Limited
State Disaster management authority		Disaster management Authority
State Education Department		State Education Department
State Health Department	Health care professionals	CMO Office Dehradun
	Citizen Services	CMO Office Dehradun
	Disease Prevalence	NHM and IDSP
	Health Infrastructure	CMO Office Dehradun
State Renewable Energy Development Agency		Uttarakhand Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Tax Office, Uttarakhand
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffice Police Department
Transport Authorities	Buses	RTO Dehradun
	Registered Vehicles	RTO Dehradun
	Sub urban rail transport	N/A
	Mono Rail Authority	N/A
	Tramways	N/A
	Marine Transport Authority	N/A

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	10
Transport Authority	0
Disaster Management	0
Urban Local Body	21
Total	32

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

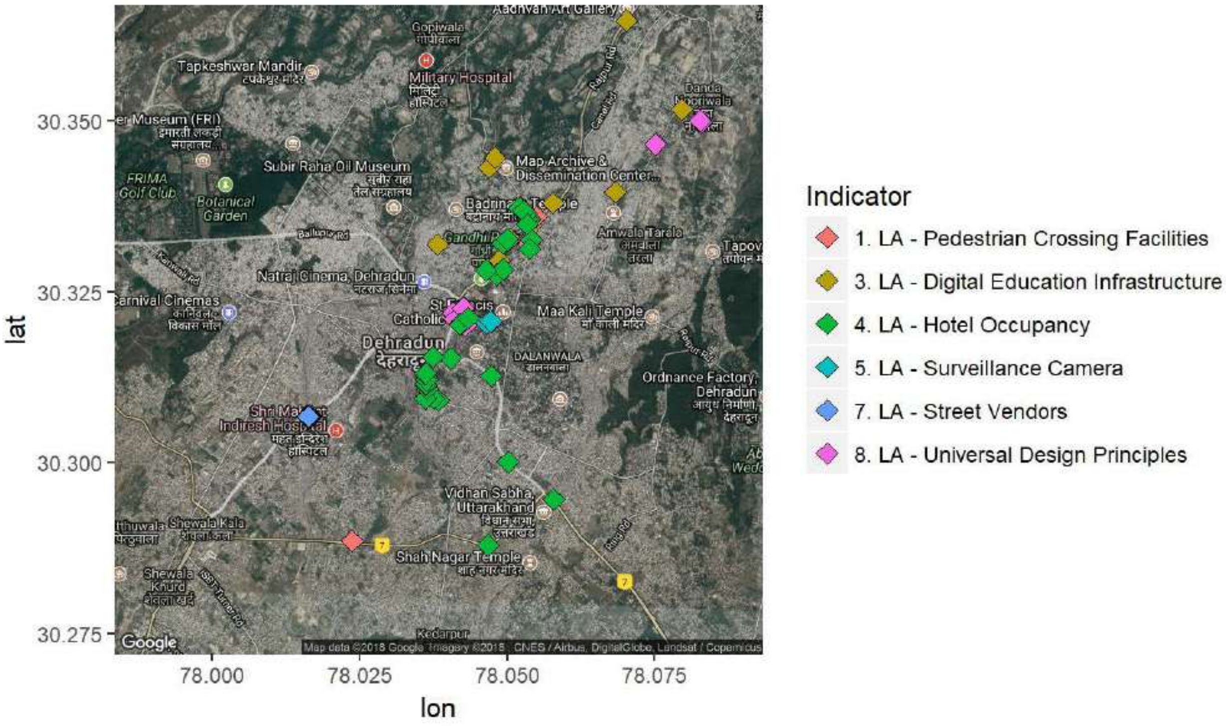
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
30.350
30.325
30.300
30.275
lon
78.000
78.025
78.050
78.075
Tapkeshwar Mandir
Gopiwala
Military Hospital
Museum (FRI)
Subir Raha Oil Museum
FRIMA Golf Club
Botanical Garden
Map Archive & Dissemination Center
Natraj Cinema, Dehradun
Carnival Cinemas
Dehradun
Maa Kali Temple
DALANWALA
Ordnance Factory, Dehradun
Shri Mahant Indiresh Hospital
Vidhan Sabha, Uttarakhand
Shah Nagar Temple
Shewala Kala
Shewala Khurd
Kedarpur
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**55.37**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0.25
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	0.333333333333333
	1.1i professional tax	0.25
	1.1j information	0.615384615384615
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command	**0**

	Centre	
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**26.7**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.267017866035857
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0

	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**100.58**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1083.68432
Denominator	Total demand raised for the year	1077.42432
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**108.12**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	4006.61
Denominator	Total O&M cost for providing water supply services during the year	3705.77
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**-360.65**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-14242.750293
Denominator	Total expenditure (revenue and capital accounts) in the same year	3949.1579374
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	13.33
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-**

		Computable
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**1.49**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	118.00207
Denominator	Total budget of the ULB (capital and revenue)	7919.35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**98**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	98
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**91.49**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	91274
Denominator	Total population in the age group of 6-14 years	99769
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**92.61**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	41909
Denominator	Total female population in the age group of 6-14 years	45252
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**31.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	58899
Denominator	Total number of teachers available for primary grades (public and private schools)	1853
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**11.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	53
Denominator	Total number of schools	470
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**102.97**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	102.973020686873
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**103.82**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	115268040
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**10.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	617
Denominator	Total population of the city	574840
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**5.48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	315
Denominator	Total population of the city	574840
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	
Description	Total response time for health-related distress calls received in the city	**0.02**
Unit	Minutes and seconds	0.0161689814814815
Benchmark	8 minutes	

Indicator No: 4.4	Period prevalence of water borne diseases	**9.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	56471
Denominator	Total population of the city	574840
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1524
Denominator	Total population of the city	574840
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**177.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	3470
Denominator	Total length of road network in the city	1951.59
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**268.77**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1545

Denominator	Total population of the city	574840
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**28.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	436
Denominator	Total crimes recorded in the same year	1545
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**37.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	213
Denominator	Total population of the city	574840
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**3.69**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	9000
Denominator	Total VAT/GST collection during preceding year	2440
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	6.26
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-8.13**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-204
Denominator	Number of construction permits during preceding year	25.08
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	174416
Denominator	Total labour force in the city	99769
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in	

	the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**61.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1700
Denominator	Total number of vendors in the city	2758
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**28.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	19534
Denominator	Total number of slum and EWS households in the city	674.12
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.2**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	71578653120
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	194745
Denominator	Total population of the city	574840
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.19**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	683807.76
Denominator	Total population of the city	574840
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**82.91**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	53060000
Denominator	Total area of the city (total area of all land uses)	64000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	574840
Denominator	Area allocated for residential land use (in hectares)	10825000
Unit		

Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**99.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	218940
Denominator	Total number of households in the city	218940
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**145.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	261525
Denominator	Total number of electricity connections in the city	179284
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	
Description	Total number of sustained electrical interruptions in a year	**41858**
Unit	Number	41858
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.05**

Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2200737
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	0
Denominator	Total energy consumption from all sources	1369831000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3743014.33333333
Denominator	Total quantum of water and waste water handled during the period	6115.8
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	42000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated	

	as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1369831000
Denominator	Total population of the city	574840
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	440
Denominator	Total area of the city (sq.km)	64
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	273
Denominator	Total population of the city	574840

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be comput-ed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1951.59
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport	**To be comput-ed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-**

		Computable
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	28
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	3.4
Denominator	Total length of road network in the city	3903.18
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**13.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	5
Denominator	Total number of junctions/ intersections on major roads in the city	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**4.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1
Denominator	Total number of public right-of-way areas in the city	22
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**49.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	107733
Denominator	Total number of households in the city	219778
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**344.03**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	197.76

Denominator	Total population of the city	574840
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	8
Denominator	Total number of samples tested for water quality	228
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	197.76
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	112332
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**196.61**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	126335
Denominator	Total number of properties in the city	64256
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**64.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	41497
Denominator	Total number of properties in the city	64256
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**16.63**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	18.42
Denominator	Total waste water generated in the city per day	110.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**

Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	6.1
Denominator	Total waste water received at treatment plants per day	6.1
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	1951.59
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**33.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	78137
Denominator	Total number of households and establishments in the city	230165
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**94**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	235
Denominator	Total quantum of MSW generated in the city	250
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	7050
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**25.81**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	25.81
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.99**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.99
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**234.86**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	234.86
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	36
Denominator	Total number of noise samples	84
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

NCT DELHI

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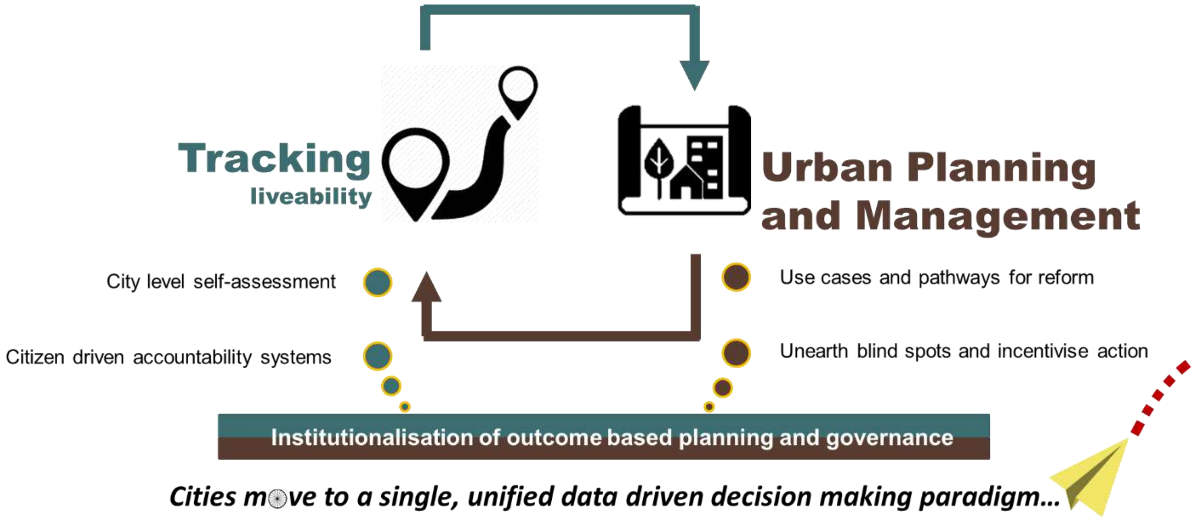
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

DELHI

GEOGRAPHICAL PROFILE

State/Union Territory	Delhi	**Total Geographical Area (Km^2)**	2293.71	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	11292358
Total Number of Households	4924559

SOCIAL PROFILE

Education	**Total Number of Schools**	6952
	Total Enrolment (Class 1 to 5)	2288144
Health	**Total Number of In-patient Beds**	30031
	Total Health Workforce	3485
Safety and Security	**Total Strength of Police Force**	84596
	Total Number of CCTV Cameras	221810
Heritage Sites	**Total Number of Heritage Sites**	391

ECONOMIC PROFILE

Total Population in Working Age Group	8194739
Total Number of Industries	35320
Total Number of Commercial Enterprises	145919
Total Number of Hotels	78
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1339332.89
Total VAT Collection in FY 2016-17 (INR Lakhs)	1889114.89

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	4157.52
	Total Number of Water Connections	2516154
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	3007680
	Total number of households in the city with access to community toilets in the city	641
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	9800
	Total number of households covered through door-to-door collection of solid waste	2065850
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	3380.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	2052.11
Electricity	**Total number of authorized electrical connections in the city**	3509320
	Total electricity supplied to the city (kWh)	8333123361
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	151441026
Roads and Transport	**Total Length of Road Network in the City (Km)**	11537.36
	Total length of arterial and sub-arterial road network in the city (Km)	2126.46
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2892

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

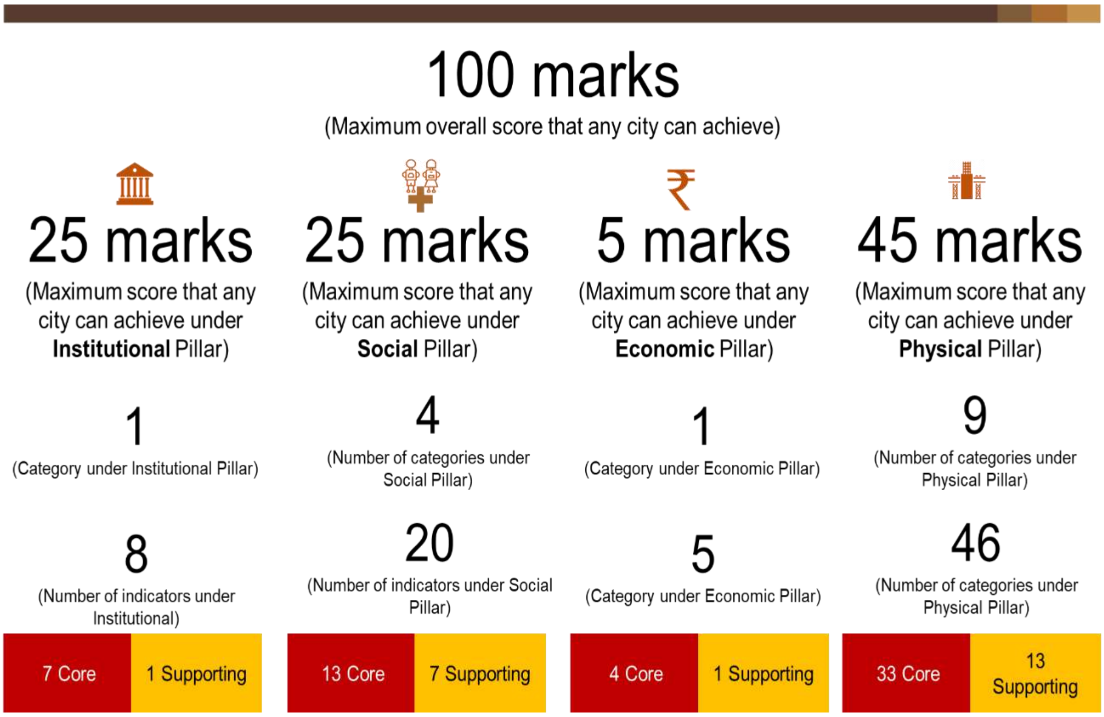
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

EAST DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

NDMC

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes

Designated data owners	Subcategories	Data owners at city level
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

NORTH DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

SOUTH DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and	Delhi Jal Board

Designated data owners	Subcategories	Data owners at city level
	Drainage related questions	
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police		Delhi Police

Designated data owners	Subcategories	Data owners at city level
Department		
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, North Delhi, South Delhi, East Delhi and NDMC have submitted 15,10,12, and 1 documents respectively. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city –

NORTH DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	1
Transport Authority	0
Disaster Management	0
Urban Local Body	13
Total	15*

* The count of documents is based on first round of submission.

SOUTH DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	0
Development Authority	2
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	2
Transport Authority	0
Disaster Management	0
Urban Local Body	3
Total	10*

* The count of documents is based on first round of submission.

EAST DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	11
Total	12*

* The count of documents is based on first round of submission.

NDMC

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	1
Total	1*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

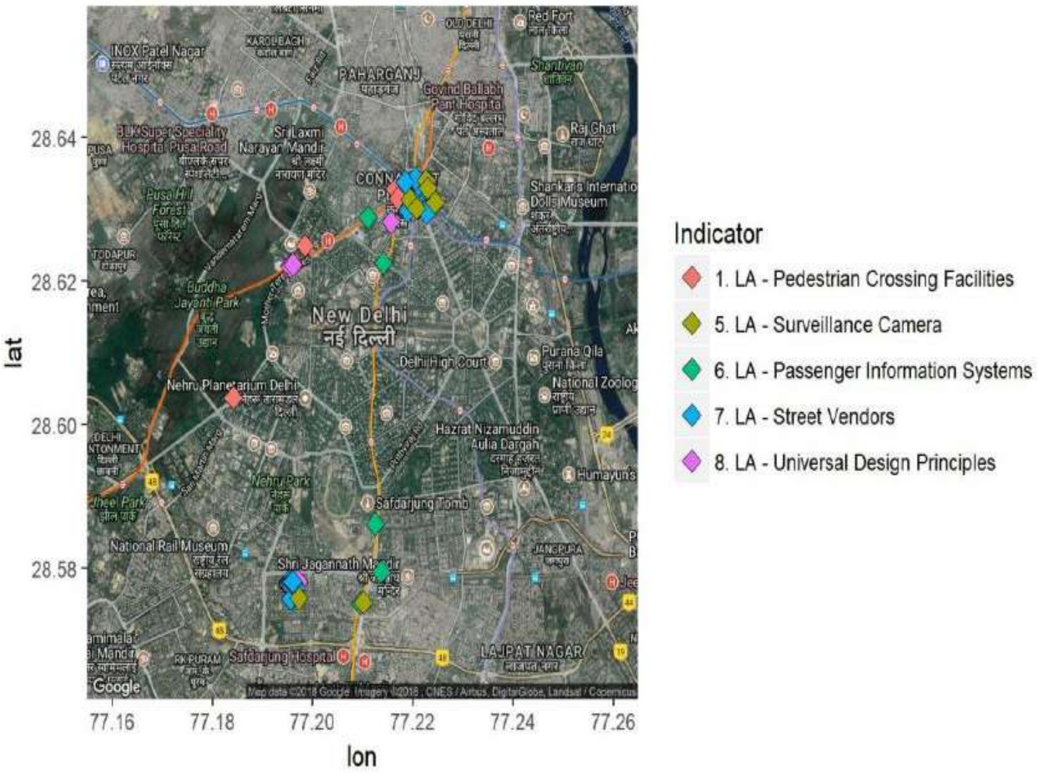
12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5-Physical Audit

The following map presents the indicators audited at city level.

NEW DELHI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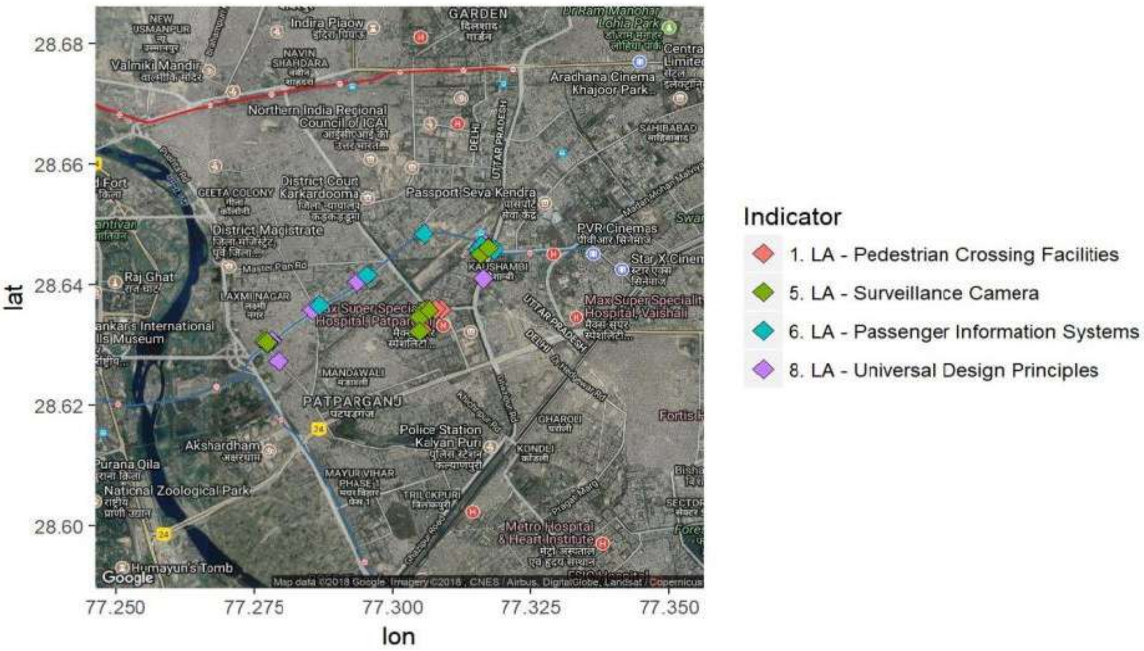
28.64
28.62
28.60
28.58
lon
77.16
77.18
77.20
77.22
77.24
77.26
New Delhi
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

EAST DELHI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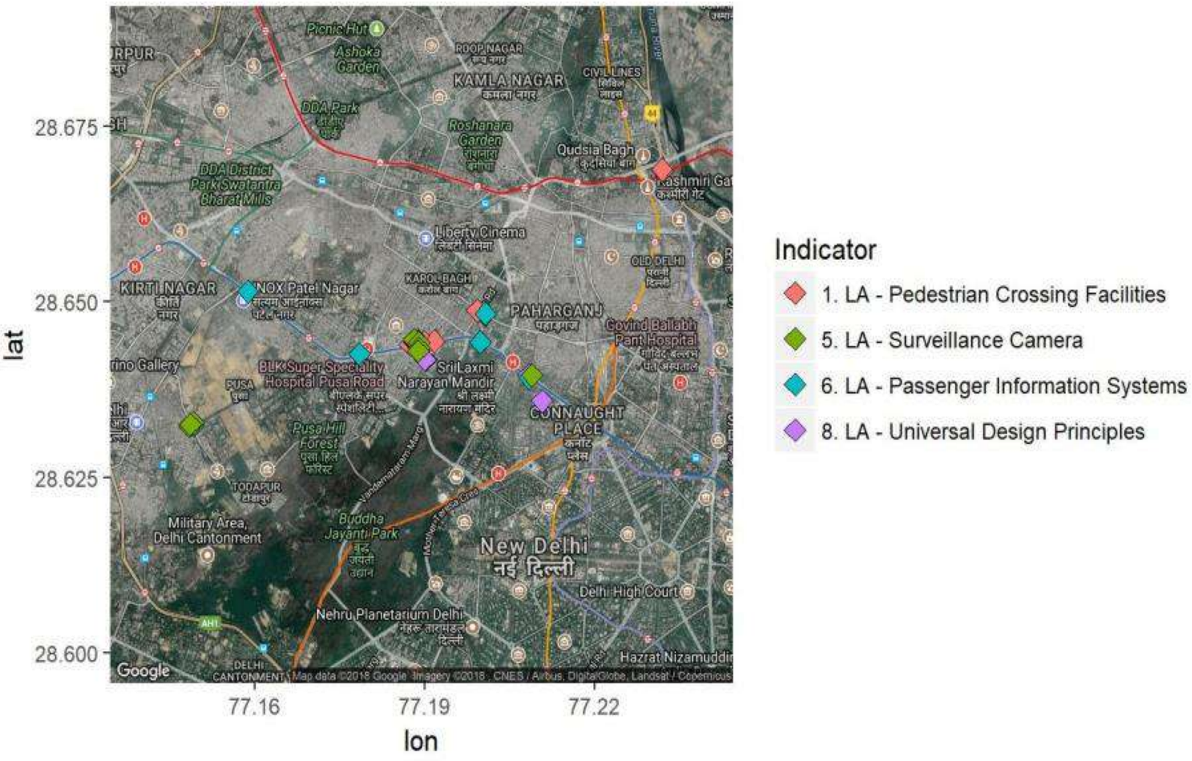
28.66
28.64
28.62
28.60
lat
77.250
77.275
77.300
77.325
77.350
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
PATPARGANJ
Akshardham
Raj Ghat
KAUSHAMBI
Google

NORTH DELHI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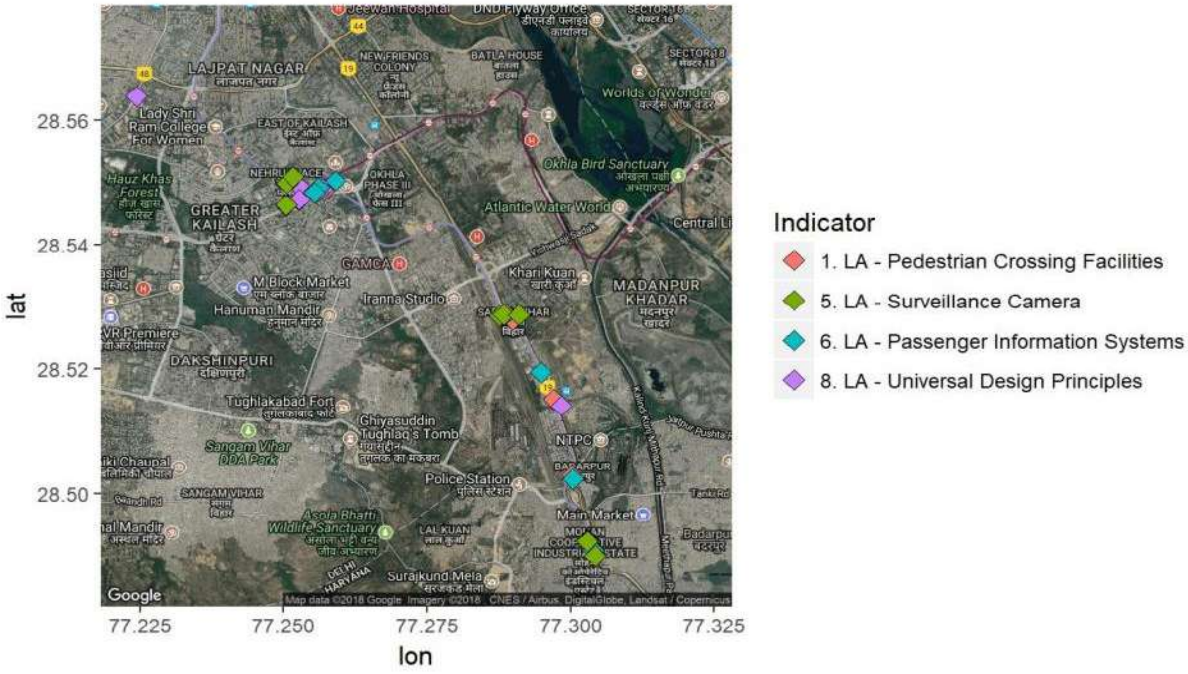
28.650
28.625
28.600
lat
77.16
77.19
77.22
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
KAMLA NAGAR
KIRTI NAGAR
PAHARGANJ
CONNAUGHT PLACE
New Delhi
Google

SOUTH DELHI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28.52
28.50
lat
77.225
77.250
77.275
77.300
77.325
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**71.9**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.6875
	1.1e water supply	0.583333333
	1.1f sewerage/drainage	0.416666667
	1.1g fogging	0.5
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.673076923
	1.1k Grievance redressal	0.875
	1.1l electricity	1
	1.1m Building plan	0.611111111
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**42.86**
Description	Services integrated through an integrated or a singular operations command centre	9
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**1994.39**
Description		
Sub Indicators	1.3a Building plan	0.008256556
	1.3b Birth/Death Certificate	0.100976004
	1.3c water supply	0.000262676
	1.3d solid waste management	0.012633678

	1.3e property tax	0.023896247
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.004843492
	1.3i information	155.1572325
	1.3j electricity	4.243080568
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.6**
Description		
Sub Indicators	1.4a water supply	2.5
	1.4b solid waste	0.125
	1.4c street lights	0
	1.4d sewerage	1
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**90.48**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	266992.48
Denominator	Total demand raised for the year	295074.81
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**68.38**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	196680
Denominator	Total O&M cost for providing water supply services during the year	287613.67
Unit	Percentage	

Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**6.22**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	219515.91
Denominator	Total expenditure (revenue and capital accounts) in the same year	3529322.32
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**93.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	272
Denominator	Total number of wards	291
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**66.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	260
Denominator	Total number of historic buildings/sites identified	391
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	11
Denominator	Total number of ecologically important sites identified in the city	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data

		Unavailable
Unit	Percentage	Data Unavailable
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	100
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	167.22337
Denominator	Total budget of the ULB (capital and revenue)	1339332.89
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**309**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	309
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**171.36**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	3417535
Denominator	Total population in the age group of 6-14 years	1994312
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**8945.48**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	1631298
Denominator	Total female population in the age group of 6-14 years	18236
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**35.34**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	2288144
Denominator	Total number of teachers available for primary grades (public and private schools)	64739
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**18.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1301
Denominator	Total number of schools	6952
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**126.63**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	126.6337133
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**98.51**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1.38544E+11
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**26.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	30031
Denominator	Total population of the city	11292358
Unit	Number per 10,000 population	

Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**3.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3845
Denominator	Total population of the city	11292358
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**8.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	939603
Denominator	Total population of the city	11292358
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	12598
Denominator	Total population of the city	11292358
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**1922.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	221810
Denominator	Total length of road network in the city	11537.366

Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**2167.08**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	244714
Denominator	Total population of the city	11292358
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**8.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	20459
Denominator	Total crimes recorded in the same year	244714
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**14.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1584
Denominator	Total population of the city	11292358
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**4**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	72668
Denominator	Total VAT/GST collection during preceding year	18164.46
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**48.14**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	519
Denominator	Number of construction permits during preceding year	10.78
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	1297364
Denominator	Total labour force in the city	7894193
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	917
Denominator	Total number of vendors in the city	NA
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	16092.35
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**13.41**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	151441026
Denominator	Total population of the city	11292358
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.63**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	7082144.72
Denominator	Total population of the city	11292358
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data

		Unavailable
Denominator	Total area of the city (total area of all land uses)	2293711985
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	11292358
Denominator	Area allocated for residential land use (in hectares)	977909000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**62.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	3062523
Denominator	Total number of households in the city	4924559
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**54.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	1928588
Denominator	Total number of electricity connections in the city	3509320
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**91994**
Description	Total number of sustained electrical interruptions in a year	91994
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	626042
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	96318
Denominator	Total energy consumption from all sources	8333123361
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1031315.833
Denominator	Total quantum of water and waste water handled during the period	0
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	220497197
Denominator	Total number of street light installations	626641
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0.11**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	61734
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	240000
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.39**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	8333123361
Denominator	Total population of the city	11292358
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	3952
Denominator	Total area of the city (sq.km)	2293.711985
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.91**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	10297
Denominator	Total population of the city	11292358
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	0.33
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	11537.366
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**51.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	101
Denominator	Total number of major transport interchanges in the city	196
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.94**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	185
Denominator	Total number of major interchanges in the city	196
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**66.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	990
Denominator	Total number of signalised intersections in the city	1480
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**5.84**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	13262

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total available on-street parking spaces in the city	227228
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**12.53**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2892
Denominator	Total length of road network in the city	23074.732
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	52
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**7.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	490
Denominator	Total number of public right-of-way areas in the city	6586
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**40.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	1986899
Denominator	Total number of households in the city	4924559
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**368.17**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	4157.52
Denominator	Total population of the city	11292358
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	155787
Denominator	Total number of samples tested for water quality	186162
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	4157.52
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**83.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	2110062
Denominator	Total number of water connections in the city	2516154
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**4.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	13
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	296
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

	and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**124.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	3011576
Denominator	Total number of properties in the city	2423135
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**120.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	2919543
Denominator	Total number of properties in the city	2423135
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**60.7**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	2052.11
Denominator	Total waste water generated in the city per day	3380.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**158.69**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	1821.978
Denominator	Total waste water received at treatment plants per day	1148.11
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**366.88**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	42327.9
Denominator	Total length of road network in the city	11537.366
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**41.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	2095850
Denominator	Total number of households and establishments in the city	5070478
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**96.08**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	9800
Denominator	Total quantum of MSW generated in the city	10200
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**111.27**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	327132.915
Denominator	Average MSW generated in the city (tons per month)	294000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**23.36**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	23.36
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**73.55**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	73.55
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**263**

Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	263
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	105120
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**92.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	8112
Denominator	Total number of samples tested	8760
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DHANBAD

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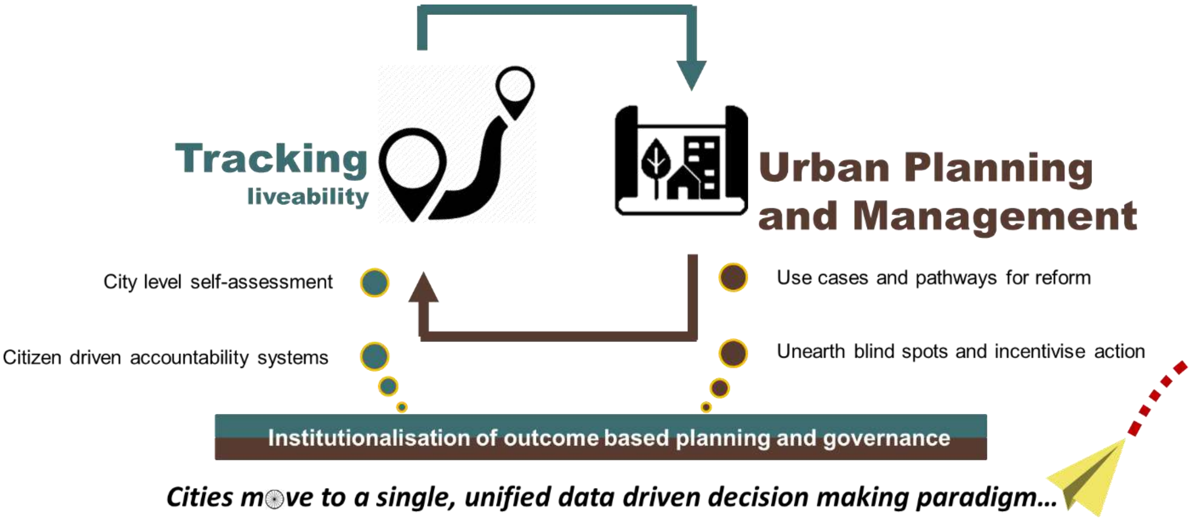
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

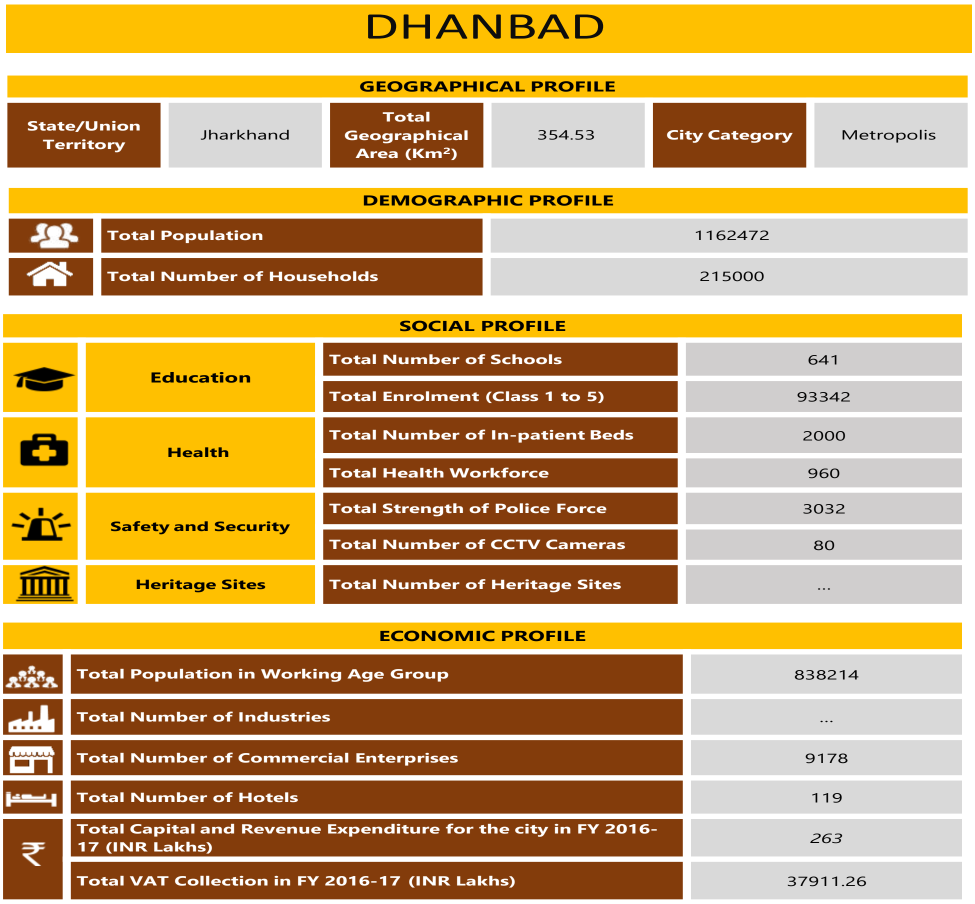
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DHANBAD

GEOGRAPHICAL PROFILE

State/Union Territory	Jharkhand	Total Geographical Area (Km²)	354.53	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1162472
Total Number of Households	215000

SOCIAL PROFILE

Education	Total Number of Schools	641
	Total Enrolment (Class 1 to 5)	93342
Health	Total Number of In-patient Beds	2000
	Total Health Workforce	960
Safety and Security	Total Strength of Police Force	3032
	Total Number of CCTV Cameras	80
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	838214
Total Number of Industries	...
Total Number of Commercial Enterprises	9178
Total Number of Hotels	119
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	*263*
Total VAT Collection in FY 2016-17 (INR Lakhs)	37911.26

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	119
	Total Number of Water Connection	131385
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	204000
	Total number of households in the city with access to community toilets in the city	11304
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	502
	Total number of households covered through door-to-door collection of solid waste	197000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.6
Electricity	**Total number of authorized electrical connections in the city**	212567
	Total electricity supplied to the city (kWh)	1776244000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	412531
Roads and Transport	**Total Length of Road Network in the City (Km)**	322
	Total length of arterial and sub-arterial road network in the city (Km)	150
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Urban Local Body
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body
Urban Local Body	For Water Supply and Drainage related questions	Urban Local Body
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related data	Urban Local Body

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Housing related data	Urban Local Body
Urban Local Body	For Building plan related data	Building plan department
Urban Local Body	For Roads related data	ULB, Transport Authority
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Urban Local Body
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Regional Pollution Control Board, Dhanbad
Development Authority	Building Infrastructure	Urban Local Body
	Construction planning	Urban Local Body
	Green Building	Urban Local Body
	Rain water harvesting	Revenue Department
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jharkhand Vidut Vitran Nigam Limited
State Disaster management authority		District Disaster Management Authority
State Education Department		District Superintendent of Education, Dhanbad
State Health Department	Health care professionals	Civil Surgeon Office Dhanbad
	Citizen Services	Civil Surgeon Office Dhanbad
	Disease Prevalence	Civil Surgeon Office Dhanbad
	Health Infrastructure	Civil Surgeon Office Dhanbad
State Renewable Energy Development Agency		Electricity Board
State Sales / Commercial Taxes Department		Divisional Sales and Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning Department
Traffic and Police Department		SP Office Dhanbad
Transport Authorities	Buses	District Transport Office
	Registered Vehicles	District Transport Office
	Sub urban rail transport	

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 10 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	1
Transport Authority	0
Disaster Management	0
Urban Local Body	2
Total	10*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that

data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

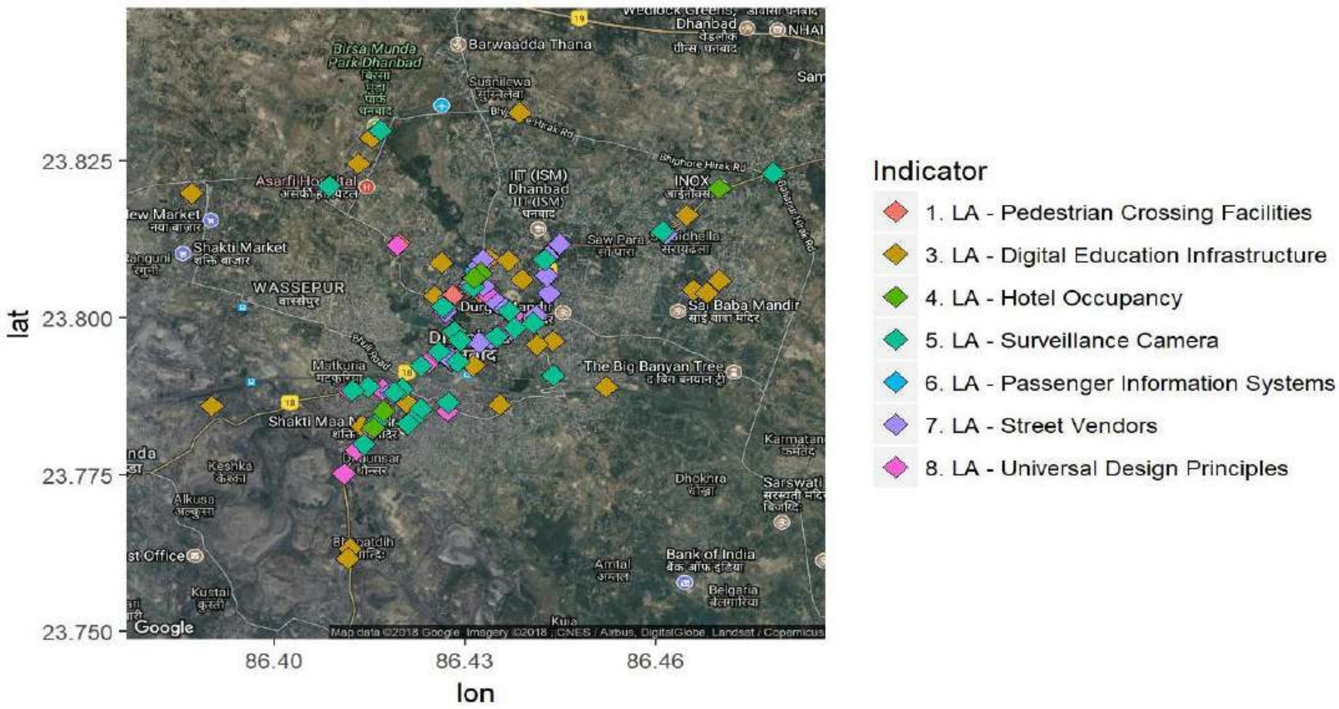
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
lat
23.825
23.800
23.775
23.750
lon
86.40
86.43
86.46
Barwaadda Thana
Birsa Munda Park Dhanbad
Asarfi Hospital
IIT (ISM) Dhanbad
INOX
Shakti Market
WASSEPUR
Saw Para
Sai Baba Mandir
The Big Banyan Tree
Matkuria
Shakti Maa Mandir
Dhokhra
Karmatand
Sarswati Mandir
Bank of India
Belgaria
Amtal
Kustai
Alkusa
Keshka
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**82.15**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1

	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**7.53**
Description		
Sub Indicators	1.3a Building plan	0.0000681481481481482
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.150540771
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.4	Average delay in grievance redressal	**0.07**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0.5
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**91.67**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1100
Denominator	Total demand raised for the year	1200
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**2.36**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	47
Denominator	Total O&M cost for providing water supply services during the year	1991
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**126.36**
Formula:	*Numerator / Denominator*	

Numerator	Total capital expenditure during a year	-13862
Denominator	Total expenditure (revenue and capital accounts) in the same year	-10970
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	55
Denominator	Total number of wards	55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.3	Hotel Occupancy	**47**
Description	Average Occupancy rate of Hotels	47
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**15.97**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	42
Denominator	Total budget of the ULB (capital and revenue)	263
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**14**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	14
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**59.27**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	149064
Denominator	Total population in the age group of 6-14 years	251497
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**60.1**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	71696
Denominator	Total female population in the age group of 6-14 years	119297
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**17.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	93342
Denominator	Total number of teachers available for primary grades (public and private schools)	5411
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**8.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	57
Denominator	Total number of schools	641
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**160.63**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**160.63**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**132.92**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**132.92**

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**17.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2000
Denominator	Total population of the city	1162472
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**8.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	960
Denominator	Total population of the city	1162472
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3705
Denominator	Total population of the city	1162472
Unit	Percentage	

Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2679
Denominator	Total population of the city	1162472
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**24.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	80
Denominator	Total length of road network in the city	322
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**461.26**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5362
Denominator	Total population of the city	1162472
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**11.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	622

Denominator	Total crimes recorded in the same year	5362
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**17.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	200
Denominator	Total population of the city	1162472
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**15.61**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	5118.98
Denominator	Total VAT/GST collection during preceding year	327.9228
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	Increase in issuance of Construction Permits	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	50
Denominator	Number of construction permits during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	27889
Denominator	Total labour force in the city	251497
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**126.54**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	7956
Denominator	Total number of vendors in the city	6287.425
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**26.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	9671
Denominator	Total number of slum and EWS households in the city	363.65
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.04**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0.04**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	412531
Denominator	Total population of the city	1162472
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.44**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	509221
Denominator	Total population of the city	1162472
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1297616
Denominator	Total area of the city (total area of all land uses)	354530000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1162472
Denominator	Area allocated for residential land use (in hectares)	182050000
Unit		

Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**98.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	212454
Denominator	Total number of households in the city	215000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	212567
Denominator	Total number of electricity connections in the city	212567
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**190**
Description	Total number of sustained electrical interruptions in a year	190
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	3712
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	24
Denominator	Total energy consumption from all sources	1776281560
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1302241.667
Denominator	Total quantum of water and waste water handled during the period	3588
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	3732264
Denominator	Total number of street light installations	32000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1776281560
Denominator	Total population of the city	1162472

Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	0
Denominator	Total area of the city (sq.km)	354.53
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	0
Denominator	Total population of the city	1162472
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	16
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**6.21**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	20
Denominator	Total length of road network in the city	322
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0

Denominator	Total number of major transport interchanges in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	18
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	0
Denominator	Total number of major interchanges in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**64.91**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	37
Denominator	Total available on-street parking spaces in the city	57
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.86**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	12
Denominator	Total length of road network in the city	644

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**166.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	15
Denominator	Total number of junctions/ intersections on major roads in the city	9
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**11.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	127
Denominator	Total number of public right-of-way areas in the city	1153
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**60.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	130895
Denominator	Total number of households in the city	215000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**102.37**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	119

Denominator	Total population of the city	1162472
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	168
Denominator	Total number of samples tested for water quality	168
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	119
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**99.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	130895
Denominator	Total number of water connections in the city	131385
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**771.43**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	756
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	98
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**96.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	216253
Denominator	Total number of properties in the city	225000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	225000
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	Collection efficiency of sewerage network	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	322
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**91.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	206145
Denominator	Total number of households and establishments in the city	224178
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**92.45**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	502
Denominator	Total quantum of MSW generated in the city	543
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0.93**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	140
Denominator	Average MSW generated in the city (tons per month)	15060
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**14.48**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	14.48
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.2	**Concentration of NO2 - air pollution**	**36.83**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	36.83
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**155**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	155
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	60
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	168
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DHARAMSHALA

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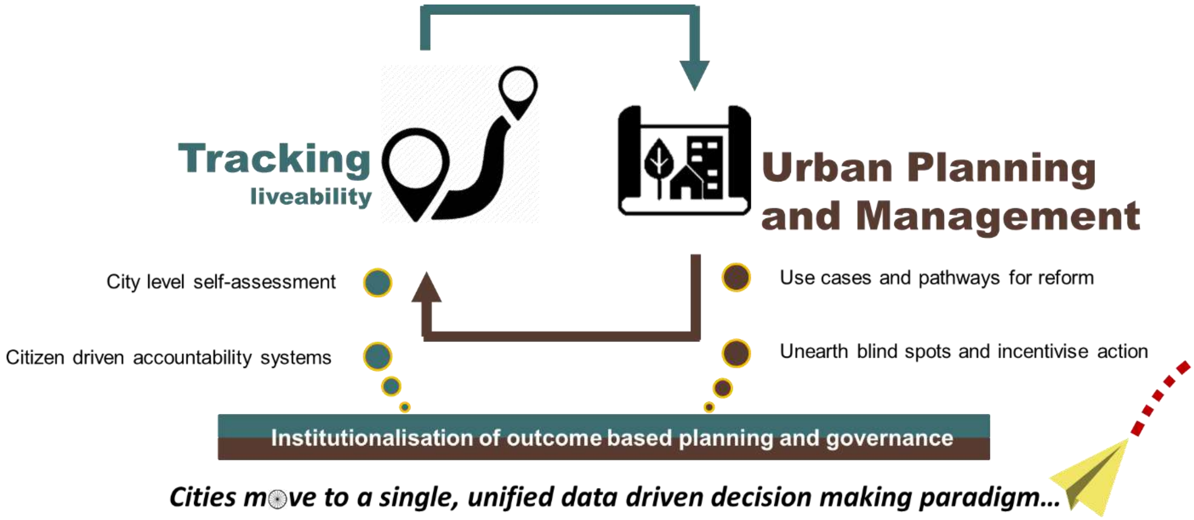
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

DHARAMSHALA

GEOGRAPHICAL PROFILE

State/Union Territory	Himachal Pradesh	**Total Geographical Area (Km^2)**	27.6	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	22580
Total Number of Households	10978

SOCIAL PROFILE

Education	**Total Number of Schools**	112
	Total Enrolment (Class 1 to 5)	4019
Health	**Total Number of In-patient Beds**	292
	Total Health Workforce	88
Safety and Security	**Total Strength of Police Force**	104
	Total Number of CCTV Cameras	11
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	650
Total Number of Hotels	236
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	985.06
Total VAT Collection in FY 2016-17 (INR Lakhs)	*2503224282*

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	3.42
	Total Number of Water Connection	5823
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	20
	Total number of households covered through door-to-door collection of solid waste	...
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	2.73
	Daily average quantum of waste water treated by STPs in the city (MLD)	2.7
Electricity	Total number of authorized electrical connections in the city	25631
	Total electricity supplied to the city (kWh)	27663300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	303400
Roads and Transport	Total Length of Road Network in the City (Km)	136.98
	Total length of arterial and sub-arterial road network in the city (Km)	20
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

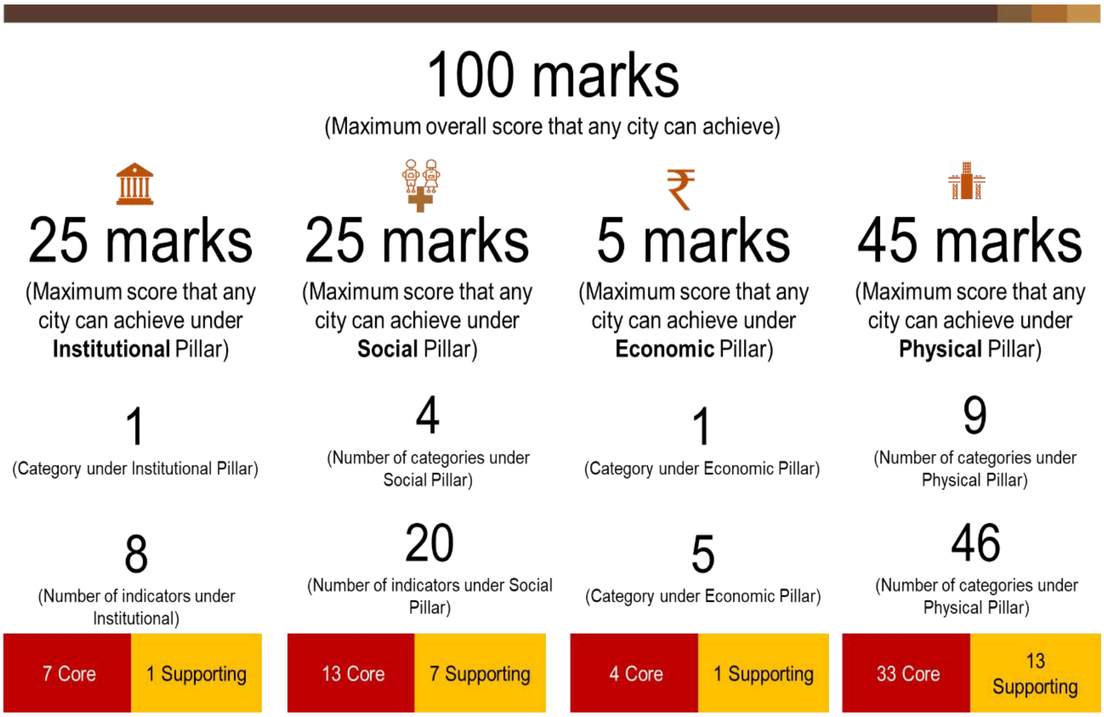
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MC Dharamshala
Urban Local Body	For Park and Recreation Related Questions	Town and Country Planning
Urban Local Body	For Water Supply and Drainage related questions	Irrigation and Public Health Department
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	MC Dharamshala
Urban Local Body	For Housing related data	MC Dharamshala
Urban Local Body	For Building plan related data	MC Dharamshala
Urban Local Body	For Roads related data	Public Work Department
Urban Local Body	For Solid waste management related data	MC Dharamshala
Urban Local Body	For IT services related data	MC Dharamshala
Urban Local Body	For Vendor committee related data	MC Dharamshala
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, PWD, Education, Irrigation & Public Health, RTO and electricity board.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board Department
Development Authority	Building Infrastructure	MC Dharamshala
	Construction planning	MC Dharamshala
	Green Building	MC Dharamshala

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	MC Dharamshala
	Universal Design Principle	MC Dharamshala
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	State Electricity Board Department
State Disaster management authority		DC office
State Education Department		Directory of state elementary & secondary
State Health Department	Health care professionals	Zonal Hospital – Chief Medical Officer
	Citizen Services	Zonal Hospital – CMO
	Disease Prevalence	Zonal Hospital – CMO
	Health Infrastructure	Zonal Hospital - CMO
State Renewable Energy Development Agency		State Renewable Energy Development department
State Sales / Commercial Taxes Department		State Taxation Department
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		Police Department – SP office
Transport Authorities	Buses	Regional transportation Office
	Registered Vehicles	RTO
	Sub urban rail transport	RTO
	Mono Rail Authority	RTO
	Tramways	RTO
	Marine Transport Authority	RTO

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	5
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	1
Transport Authority	9
Disaster Management	0
Urban Local Body	9
Total	31*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

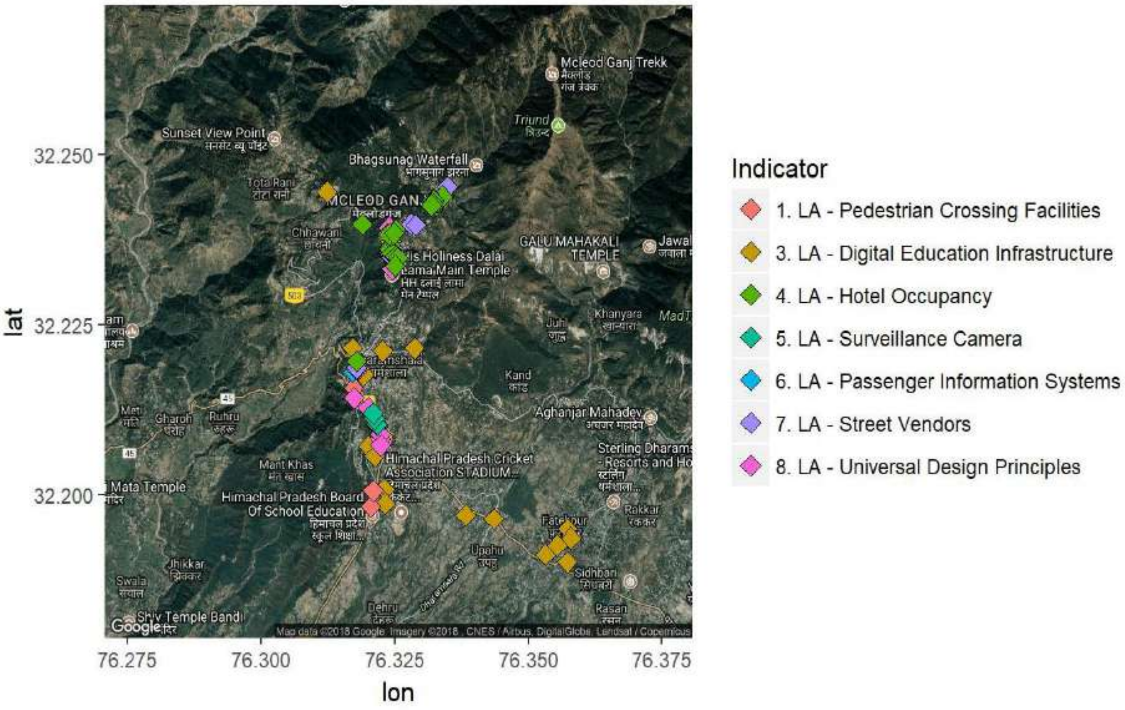
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
32.250
32.225
32.200
lon
76.275
76.300
76.325
76.350
76.375
Mcleod Ganj Trekk
Triund
Sunset View Point
Bhagsunag Waterfall
Tota Rani
MCLEOD GANJ
Chhawani
His Holiness Dalai Lama Main Temple
GALU MAHAKALI TEMPLE
Jawal
Khanyara
Juh
Kand
Aghanjar Mahadev
Dharamshala
Gharoh
Ruhru
Mant Khas
Himachal Pradesh Cricket Association STADIUM
Sterling Dharamshala Resorts and Ho
Mata Temple
Himachal Pradesh Board Of School Education
Fatehpur
Rakkar
Upahu
Sidhbari
Jhikkar
Swala
Dehru
Rasan
Shiv Temple Bandi
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**23.96**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0.5
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.615384615
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**33.69**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.336916234
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	

Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**96.25**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	201.20339
Denominator	Total demand raised for the year	209.0389
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**193.89**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	98.1087
Denominator	Total O&M cost for providing water supply services during the year	50.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**129.48**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-6938.54561
Denominator	Total expenditure (revenue and capital accounts) in the same year	-5358.75561
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	17
Denominator	Total number of wards	17
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	985.06
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**16**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	16
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**45.22**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6518
Denominator	Total population in the age group of 6-14 years	14414
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**48.44**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3206
Denominator	Total female population in the age group of 6-14 years	6619
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**35.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	4019
Denominator	Total number of teachers available for primary grades (public and private schools)	112
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**25.89**

Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	29
Denominator	Total number of schools	112
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**83.77**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**83.77**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**112.06**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**112.06**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**129.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	292
Denominator	Total population of the city	22579
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**38.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	88

Denominator	Total population of the city	22579
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**920**
Description	Total response time for health-related distress calls received in the city	920
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**39.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	8970
Denominator	Total population of the city	22579
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	0
Denominator	Total population of the city	22579
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**8.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	11
Denominator	Total length of road network in the city	136.986
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1213.52**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	274
Denominator	Total population of the city	22579
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**17.88**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	49
Denominator	Total crimes recorded in the same year	274
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**44.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	10
Denominator	Total population of the city	22579
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**19.71**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	412116080
Denominator	Total VAT/GST collection during preceding year	20911082.02
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**32.69**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	34
Denominator	Number of construction permits during preceding year	1.04
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	60619
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1515.475
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**71.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1439
Denominator	Total number of slum and EWS households in the city	20.09
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	

Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**NA**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**13.44**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	303400
Denominator	Total population of the city	22579
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**60.67**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1369782
Denominator	Total population of the city	22579
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**2.2**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	608300
Denominator	Total area of the city (total area of all land uses)	27600000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	22579
Denominator	Area allocated for residential land use (in hectares)	6813700
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**3.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	431
Denominator	Total number of households in the city	10978

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	25631
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**401**
Description	Total number of sustained electrical interruptions in a year	401
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	661
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	8
Denominator	Total energy consumption from all sources	34009290
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	121666.6667
Denominator	Total quantum of water and waste water handled during the period	183.6
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.3**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	792022
Denominator	Total number of street light installations	3470
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	11291.05
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	34009290
Denominator	Total population of the city	22579
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.74**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	136.986
Denominator	Total area of the city (sq.km)	27.6
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**32.51**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	734
Denominator	Total population of the city	22579
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	64
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	136.986
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	NA
Denominator	Total length of road network in the city	273.972

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.41**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1
Denominator	Total number of public right-of-way areas in the city	245
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	5061
Denominator	Total number of households in the city	10978
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**151.47**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	3.42
Denominator	Total population of the city	22579
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	NA
Denominator	Total number of samples tested for water quality	131
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	3.42
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**55.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	3218
Denominator	Total number of water connections in the city	5823
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**5.8**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	8
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	138
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**5.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	657
Denominator	Total number of properties in the city	10978
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**25.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	2850
Denominator	Total number of properties in the city	10978
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**98.9**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	2.7
Denominator	Total waste water generated in the city per day	2.73
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**95.24**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	2.6
Denominator	Total waste water received at treatment plants per day	2.73
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**198.56**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	272
Denominator	Total length of road network in the city	136.986
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	0
Denominator	Total number of households and establishments in	11628

	the city	
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	20
Denominator	Total quantum of MSW generated in the city	25
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**7**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	7
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	**Concentration of PM10 - air pollution**	**35**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	35
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	12
Denominator	Total number of noise samples	12
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DINDIGUL

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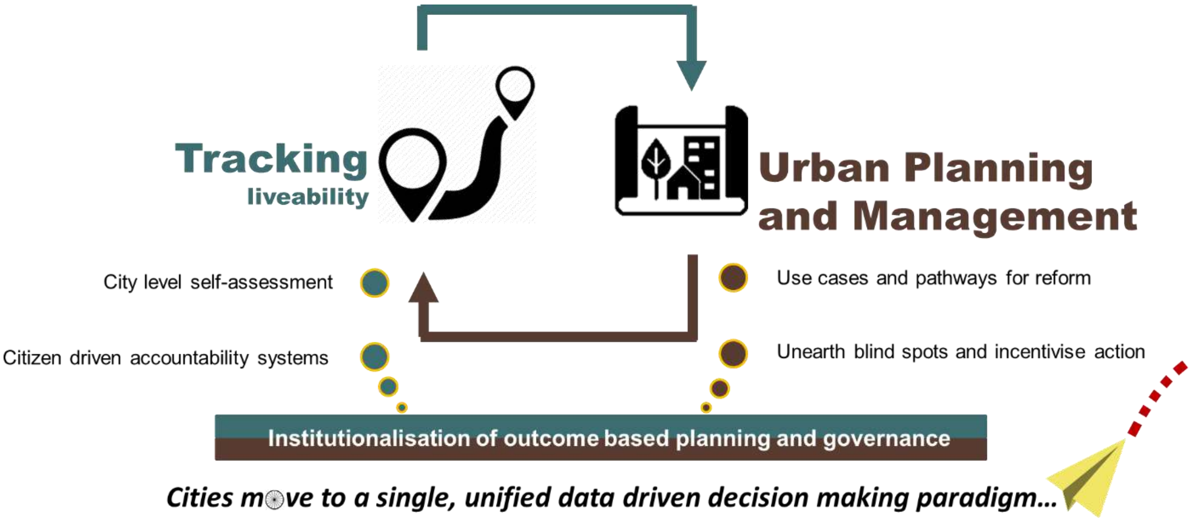
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

DINDIGUL

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	14.01	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	207327
Total Number of Households	58175

SOCIAL PROFILE

Education	**Total Number of Schools**	93
	Total Enrolment (Class 1 to 5)	17749
Health	**Total Number of In-patients Beds**	1560
	Total Health Workforce	456
Safety and Security	**Total Strength of Police Force**	214
	Total Number of CCTV Cameras	98
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	146783
Total Number of Industries	133
Total Number of Commercial Enterprises	6786
Total Number of Hotels	104
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	5787.78
Total VAT Collection in FY 2016-17 (INR Lakhs)	5792.7

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	15.5
		Total Number of Water Connections	27785
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	53113
		Total number of households in the city with access to community toilets in the city	1335
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	2.367
		Total number of households covered through door-to-door collection of solid waste	54448
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	13.65
		Daily average quantum of waste water treated by STPs in the city (MLD)	1.4
	Electricity	**Total number of authorized electrical connections in the city**	79435
		Total electricity supplied to the city (kWh)	139002590
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	0
	Roads and Transport	**Total Length of Road Network in the City (Km)**	210
		Total length of arterial and sub-arterial road network in the city (Km)	181.733
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

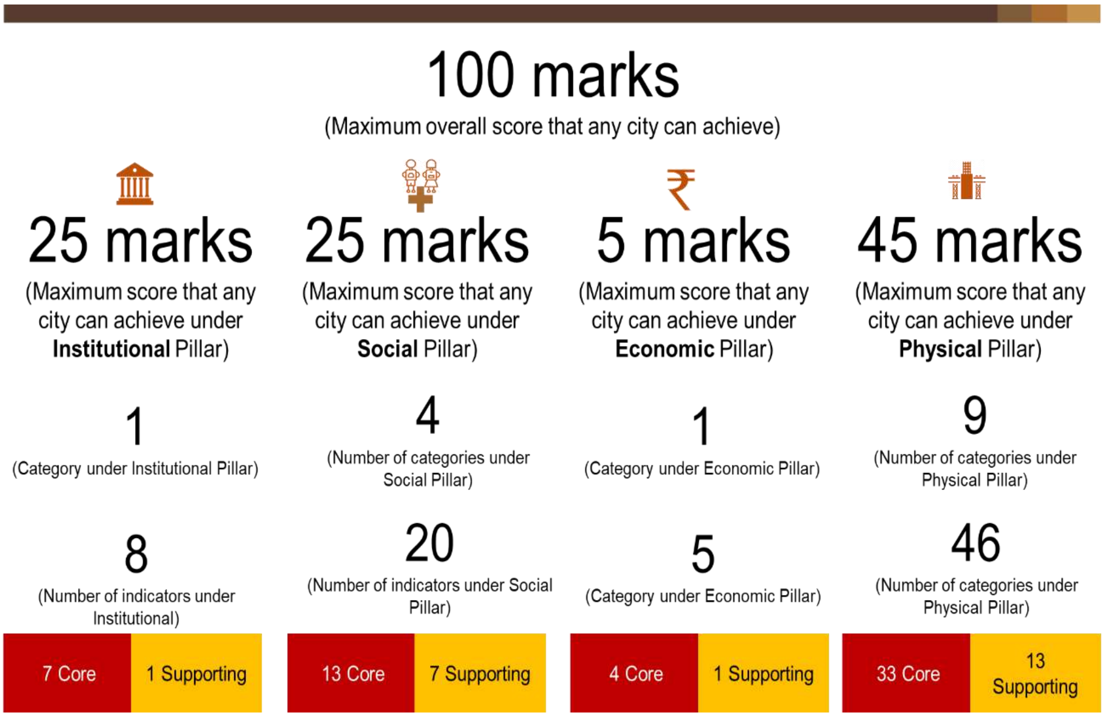
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Dindigul Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Section, Dindigul Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Dindigul Corporation
Urban Local Body	For Heritage sites related data	Town planning, Dindigul Corporation
Urban Local Body	For Ecological sites related data	Town planning, Dindigul Corporation
Urban Local Body	For Housing related data	Town planning, Dindigul Corporation
Urban Local Body	For Building plan related data	Town planning, Dindigul Corporation
Urban Local Body	For Roads related data	Engineering Section, Dindigul Corporation
Urban Local Body	For Solid waste management related data	Health Department , ULB , Dindigul corporation
Urban Local Body	For IT services related data	IT department, Dindigul Corporation
Urban Local Body	For Vendor committee related data	Town planning, Dindigul Corporation
Urban Local Body	Any other departments involved in providing data for questions	Revenue Section , Dindigul Corporation

Designated data owners	Subcategories	Data owners at city level
	mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning, Dindigul Corporation
	Construction planning	Town planning, Dindigul Corporation
	Green Building	Town planning, Dindigul Corporation
	Rain water harvesting	Town planning, Dindigul Corporation
	Universal Design Principle	Engineering Department, Dindigul Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board , Dindigul
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		District Education Department , Dindigul
State Health Department	Health care professionals	Joint Director, Health Services, Dindigul
	Citizen Services	Joint Director, Health Services, Dindigul
	Disease Prevalence	Joint Director, Health Services, Dindigul
	Health Infrastructure	Joint Director, Health Services, Dindigul
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department, Dindigul
Town and Country Planning Department	Land Use	Local Planning Authority & Town Planning Department
Traffic and Police Department		Police Department, Dindigul
Transport Authorities	Buses	Tamilnadu State Transport Corporation, Dindigul
	Registered Vehicles	Regional Transport Office, Dindigul
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 180 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	2
Traffic and Police Department	2
Development Authority	15
Pollution Control Board	7
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	12
Transport Authority	8
Disaster Management	1
Urban Local Body	123
Total	180*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

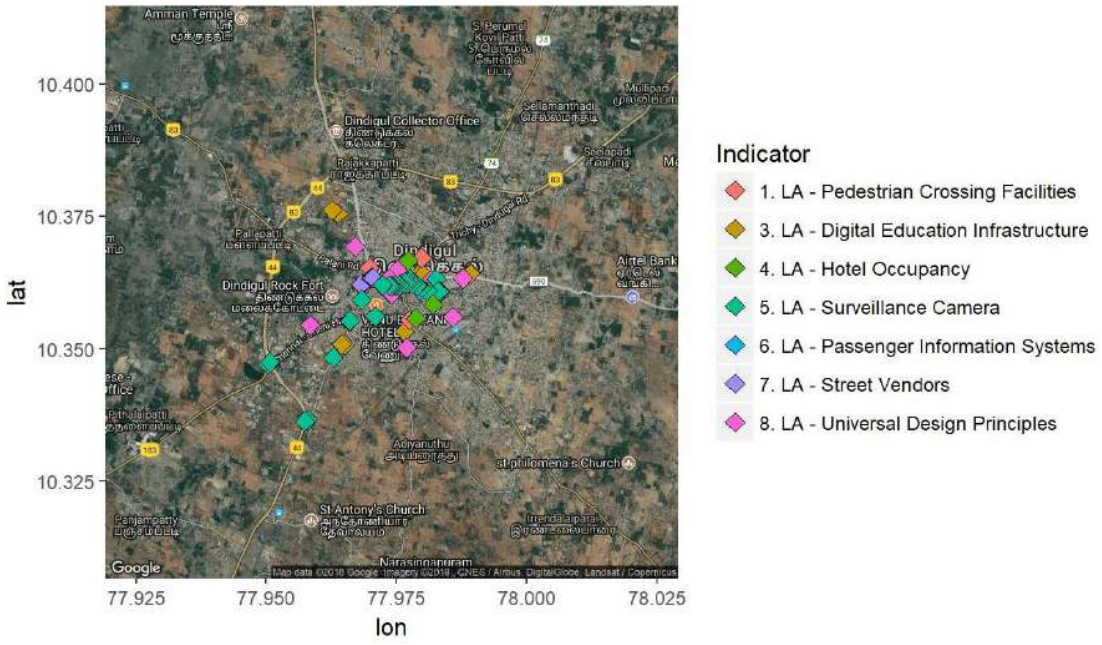
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
10.400
10.375
10.350
10.325
lon
77.925
77.950
77.975
78.000
78.025
Dindigul Collector Office
Dindigul Rock Fort
Dindigul
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**67.24**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0.75
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**8.17**
Description		
Sub Indicators	1.3a Building plan	5.0972E-05
	1.3b Birth/Death Certificate	0.000106515
	1.3c water supply	0.000435222
	1.3d solid waste management	NA
	1.3e property tax	0.00012547
	1.3f professional tax (RC)	0.001977401
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	4.42136E-06
	1.3i information	0.001041832
	1.3j electricity	0.650135331
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.14**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	14
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**19.4**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	188

Denominator	Total demand raised for the year	969.19
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**31.31**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	167.4
Denominator	Total O&M cost for providing water supply services during the year	534.62
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-42.51**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-3874.3
Denominator	Total expenditure (revenue and capital accounts) in the same year	9113.98
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	48
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**29.76**
Description	Average Occupancy rate of Hotels	29.76
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	NA
Denominator	Total budget of the ULB (capital and revenue)	5787.78
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	NA
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**102.6**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	34114

Denominator	Total population in the age group of 6-14 years	33251
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**108.91**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	17466
Denominator	Total female population in the age group of 6-14 years	16037
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**26.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	17749
Denominator	Total number of teachers available for primary grades (public and private schools)	662
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**25.81**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	24
Denominator	Total number of schools	93
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**72.62**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	72.61778707
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.57**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	30483422

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**75.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1560
Denominator	Total population of the city	207327
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**21.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	456
Denominator	Total population of the city	207327
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**21.52**
Description	Total response time for health-related distress calls received in the city	21.52
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2524
Denominator	Total population of the city	207327
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.25**
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	523
Denominator	Total population of the city	207327
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**46.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	98
Denominator	Total length of road network in the city	210
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1220.29**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2530
Denominator	Total population of the city	207327
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	22
Denominator	Total crimes recorded in the same year	2530
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**13.51**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	28
Denominator	Total population of the city	207327
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**8.2**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	438.88
Denominator	Total VAT/GST collection during preceding year	53.5382
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-8.35**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-11.61
Denominator	Total Professional Tax collection during preceding year	139.09
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-14.91**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-17
Denominator	Number of construction permits during preceding year	1.14
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	111448
Denominator	Total labour force in the city	33251
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	1299
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**5.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1215
Denominator	Total number of slum and EWS households in the city	220.89
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**46.52**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	4231314559836
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**

Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	0
Denominator	Total population of the city	207327
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.96**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	198649.71
Denominator	Total population of the city	207327
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	14.01
Denominator	Total area of the city (total area of all land uses)	14010000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**18250.62**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	207327
Denominator	Area allocated for residential land use (in hectares)	11.36
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**103.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	60375
Denominator	Total number of households in the city	58175
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	79435
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**721**
Description	Total number of sustained electrical interruptions in a year	721
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	4958
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.02**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	285937
Denominator	Total energy consumption from all sources	139002746
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2303404.25
Denominator	Total quantum of water and waste water handled during the period	507
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1879046
Denominator	Total number of street light installations	6791
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.79**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	139002746
Denominator	Total population of the city	207327
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	25.4
Denominator	Total area of the city (sq.km)	14.01
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.55**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	113
Denominator	Total population of the city	207327
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	210
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**200**

Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than**	**2.86**

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

	1.2m	
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	12
Denominator	Total length of road network in the city	420
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	10
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	5
Denominator	Total number of public right-of-way areas in the city	170
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**38.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	22217
Denominator	Total number of households in the city	58175
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**74.76**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	15.5
Denominator	Total population of the city	207327
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	59
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**15.48**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	2.4
Denominator	Quantum of water put into the distribution system (mld)	15.5
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	27785
Denominator	Total number of water connections in the city	27785
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**3.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	4

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	101
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**139.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	59196
Denominator	Total number of properties in the city	42507
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**130.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	55651
Denominator	Total number of properties in the city	42507
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**10.26**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	1.4
Denominator	Total waste water generated in the city per day	13.65
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	1.4
Denominator	Total waste water received at treatment plants per day	1.4

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**5.57**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	11.7
Denominator	Total length of road network in the city	210
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**90.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	58800
Denominator	Total number of households and establishments in the city	64961
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**2.28**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	2.366666667
Denominator	Total quantum of MSW generated in the city	104
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1056.34**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	750
Denominator	Average MSW generated in the city (tons per month)	71
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**17.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	17.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**54**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	54
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	2
Denominator	Total number of noise samples	2
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DIU

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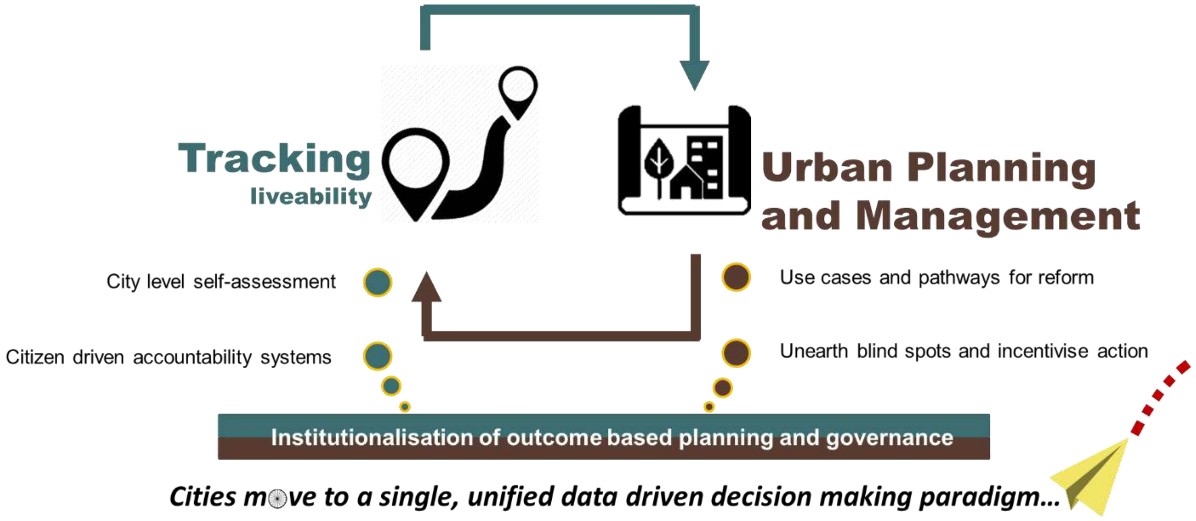
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

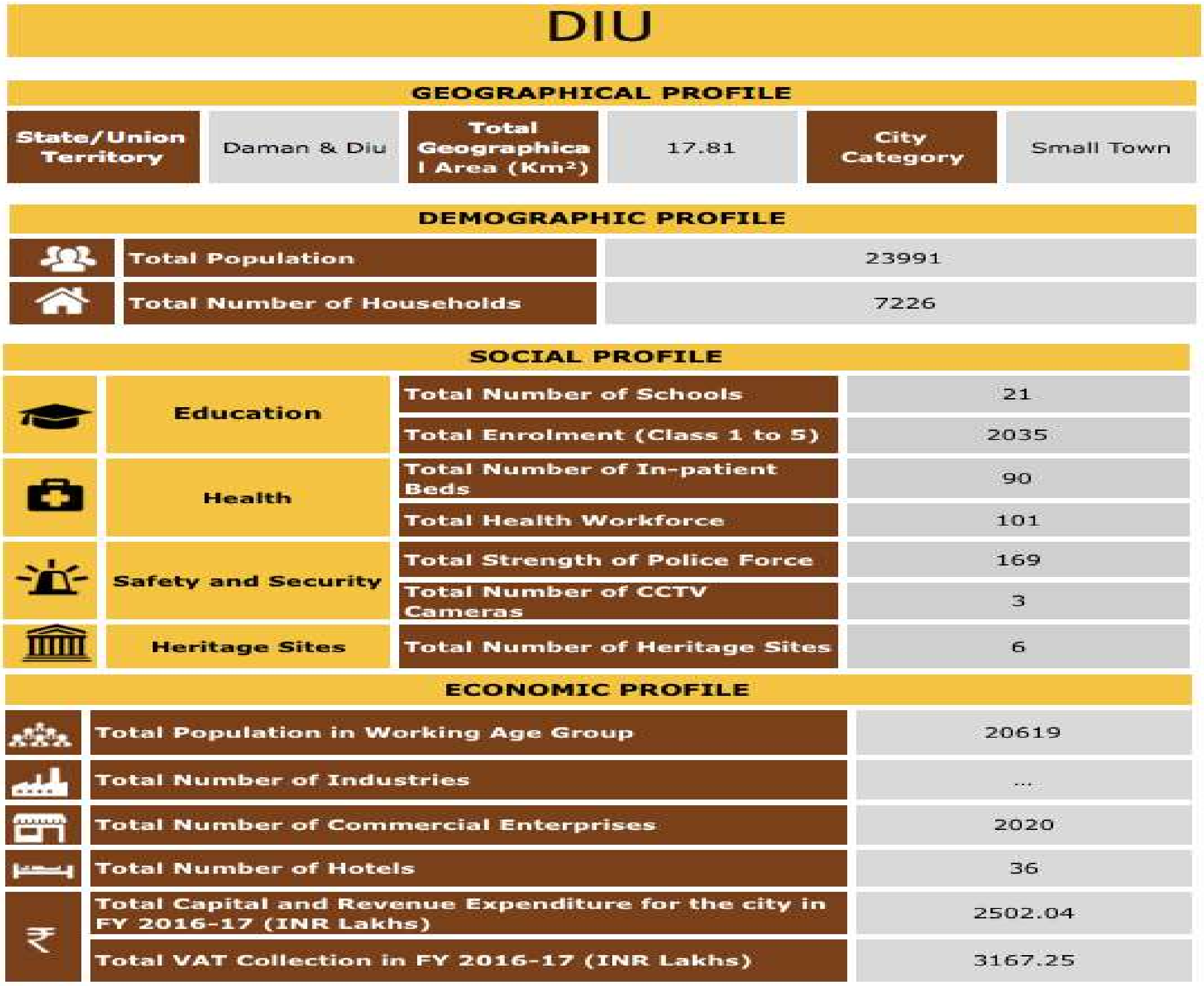

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity,

Open space and roads).



DIU

GEOGRAPHICAL PROFILE

State/Union Territory	Daman & Diu	Total Geographical Area (Km^2)	17.81	City Category	Small Town

DEMOGRAPHIC PROFILE

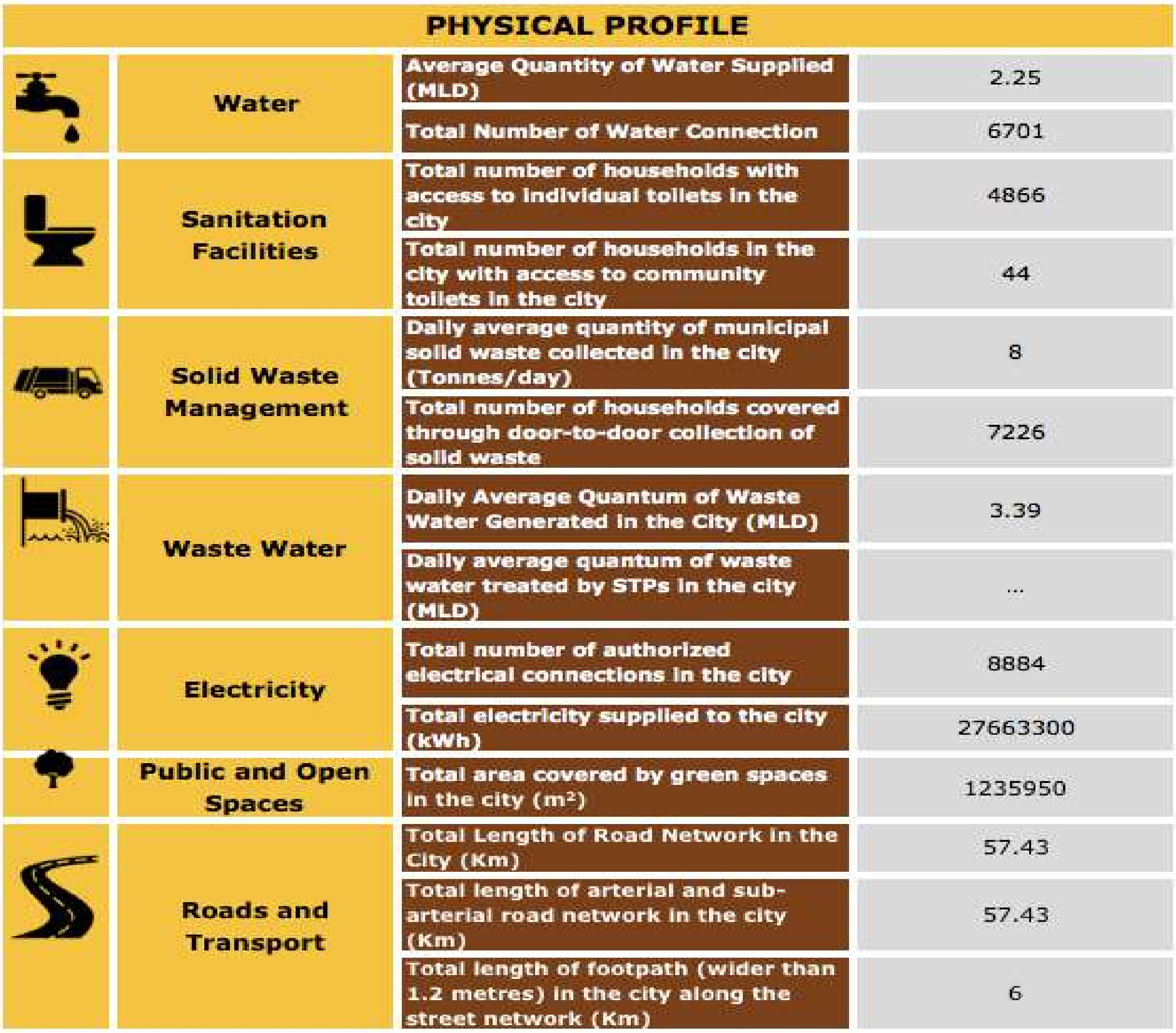
Total Population	23991
Total Number of Households	7226

SOCIAL PROFILE

Education	Total Number of Schools	21
	Total Enrolment (Class 1 to 5)	2035
Health	Total Number of In-patient Beds	90
	Total Health Workforce	101
Safety and Security	Total Strength of Police Force	169
	Total Number of CCTV Cameras	3
Heritage Sites	Total Number of Heritage Sites	6

ECONOMIC PROFILE

Total Population in Working Age Group	20619
Total Number of Industries	...
Total Number of Commercial Enterprises	2020
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2502.04
Total VAT Collection in FY 2016-17 (INR Lakhs)	3167.25



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	2.25
	Total Number of Water Connection	6701
Sanitation Facilities	Total number of households with access to individual toilets in the city	4866
	Total number of households in the city with access to community toilets in the city	44
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	8
	Total number of households covered through door-to-door collection of solid waste	7226
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	3.39
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	8884
	Total electricity supplied to the city (kWh)	27663300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1235950
Roads and Transport	Total Length of Road Network in the City (Km)	57.43
	Total length of arterial and sub-arterial road network in the city (Km)	57.43
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport

Pillars of Comprehensive Development	**Category**	Indicators
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through re-use

Pillars of Comprehensive Development	**Category**	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department – ULB
Urban Local Body	For Park and Recreation Related Questions	Technical Department – ULB
Urban Local Body	For Water Supply and Drainage related questions	P.W.D
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	Forest
Urban Local Body	For Housing related data	Technical Department – ULB
Urban Local Body	For Building plan related data	Technical Department – ULB
Urban Local Body	For Roads related data	Technical Department – ULB
Urban Local Body	For Solid waste management related data	D.M.C. – ULB
Urban Local Body	For IT services related data	Computer Division- ULB
Urban Local Body	For Vendor committee related data	Tax Section- ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	PCC
Development Authority	Building Infrastructure	Technical Department- ULB
	Construction planning	Technical Department- ULB
	Green Building	Technical Department- ULB
	Rain water harvesting	Technical Department- ULB
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electrical Department

State Disaster management authority		Department of Disaster Management
State Education Department		Asst. Director Education
State Health Department	Health care professionals	C.H.C & Hospital – Diu
	Citizen Services	C.H.C & Hospital – GAD
	Disease Prevalence	C.H.C & Hospita, NRHM AYUSH
	Health Infrastructure	GAD & Establishment CHC & Hospital
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		VAT & TAX Department
Town and Country Planning Department	Land Use	ATPO
Traffic and Police Department		Police Department
Transport Authorities	Buses	RTO
	Registered Vehicles	RTO
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	7
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	16
Transport Authority	1
Disaster Management	0
Urban Local Body	24
Total	62

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

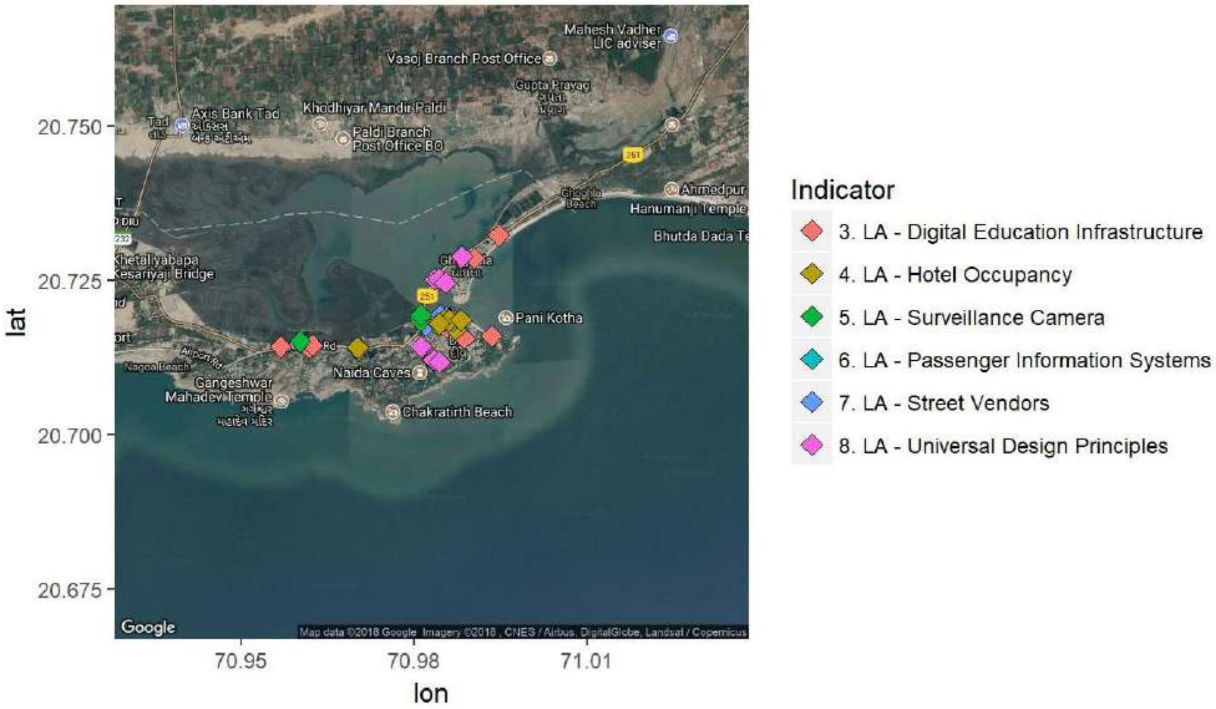
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Mahesh Vadher LIC adviser
Vasoj Branch Post Office
Gupta Prayag
Axis Bank Tad
Khodhiyar Mandir Paldi
Paldi Branch Post Office BO
Ghogla Beach
Ahmedpur
Hanumanji Temple
Bhutda Dada T
Khetaliyabapa Kesariyaji Bridge
Pani Kotha
Nagoa Beach
Naida Caves
Gangeshwar Mahadev Temple
Chakratirth Beach
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
20.750
20.725
20.700
20.675
lat
70.95
70.98
71.01
lon
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**24.7**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0.25
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.461538461538462
	1.1k Grievance redressal	1.5
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.91**
Description		0
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0.0816636650157587
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0

	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**34.34**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	33.97
Denominator	Total demand raised for the year	98.93
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**21.23**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	46.32
Denominator	Total O&M cost for providing water supply services during the year	218.14
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**42.25**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1127.13
Denominator	Total expenditure (revenue and capital accounts) in the same year	2667.62
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**0**
Formula:	*Numerator / Denominator*	

Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	13
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites re-stored/preserved/brought under adaptive reuse	6
Denominator	Total number of historic buildings/sites identified	6
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**389.29**

Description	Average Occupancy rate of Hotels	389.28571428 5714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	
Denominator	Total budget of the ULB (capital and revenue)	7.29
Unit	Percentage	2502.04
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**2**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	2
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**79.55**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	3318
Denominator	Total population in the age group of 6-14 years	4171
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**77.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	1557
Denominator	Total female population in the age group of 6-14 years	2019
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**29.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	2035
Denominator	Total number of teachers available for primary grades (public and private schools)	69
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	14
Denominator	Total number of schools	21
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**93.45**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	

Numerator	Percentage	93.448309904102
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**99.51**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	189125
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**37.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	90
Denominator	Total population of the city	23991
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**42.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	101
Denominator	Total population of the city	23991
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**0**
Description	Total response time for health-related distress calls received in the city	0.00450231481481481
Unit	Minutes and seconds	

Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**8.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1923
Denominator	Total population of the city	23991
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	7
Denominator	Total population of the city	23991
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**5.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	3
Denominator	Total length of road network in the city	57.433
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**370.97**
Formula:	Numerator / Denominator	89
Numerator	Total number of crimes recorded in a year	23991

Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**6.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	6
Denominator	Total crimes recorded in the same year	89
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**16.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	4
Denominator	Total population of the city	23991
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**30.38**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	738.01
Denominator	Total VAT/GST collection during preceding year	24.2924
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**23.14**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	1.18
Denominator	Total Professional Tax collection during preceding year	5.1
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**70.15**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	47
Denominator	Number of construction permits during preceding year	0.67
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	102
Denominator	Total labour force in the city	16627
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this doc-	

	ument) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	415.675
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	0.77
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**51.52**

Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1235950
Denominator	Total population of the city	23991
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**101.67**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2439156
Denominator	Total population of the city	23991
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**23.05**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	4104700
Denominator	Total area of the city (total area of all land uses)	17810000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	23991
Denominator	Area allocated for residential land use (in hectares)	3681800
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	7226
Denominator	Total number of households in the city	7226
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	8884
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**81**
Description	Total number of sustained electrical interruptions in a year	81
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2414

Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	9786
Denominator	Total energy consumption from all sources	27663300
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3.31166666666667
Denominator	Total quantum of water and waste water handled during the period	67.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	526053
Denominator	Total number of street light installations	1896
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings follow-	**0**

	ing green building norms	
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	8238
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	27663300
Denominator	Total population of the city	23991
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	30
Denominator	Total area of the city (sq.km)	17.81
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	6
Denominator	Total population of the city	23991
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**2.61**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	1.5
Denominator	Total length of road network in the city	57.433
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0**

Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	0
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	2
Denominator	Total available on-street parking spaces in the city	4
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**5.22**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	6
Denominator	Total length of road network in the city	114.866
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**80**

Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	8
Denominator	Total number of junctions/ intersections on major roads in the city	10
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**56.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	183
Denominator	Total number of public right-of-way areas in the city	326
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**92.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	6701
Denominator	Total number of households in the city	7226
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**93.79**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	2.25
Denominator	Total population of the city	23991

Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	350
Denominator	Total number of samples tested for water quality	350
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**22.22**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0.5
Denominator	Quantum of water put into the distribution system (mld)	2.25
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	6701
Denominator	Total number of water connections in the city	6701
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments	114

	(of designated plot size), commercial and public buildings in the city	
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**62.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	5098
Denominator	Total number of properties in the city	8145
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**59.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	4866
Denominator	Total number of properties in the city	8145
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	3.39
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	57.433
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	9246
Denominator	Total number of households and establishments in the city	9246
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	8
Denominator	Total quantum of MSW generated in the city	8
Unit	Percentage	
Benchmark	100%	

Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	240
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	**0**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	0
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

DURGAPUR

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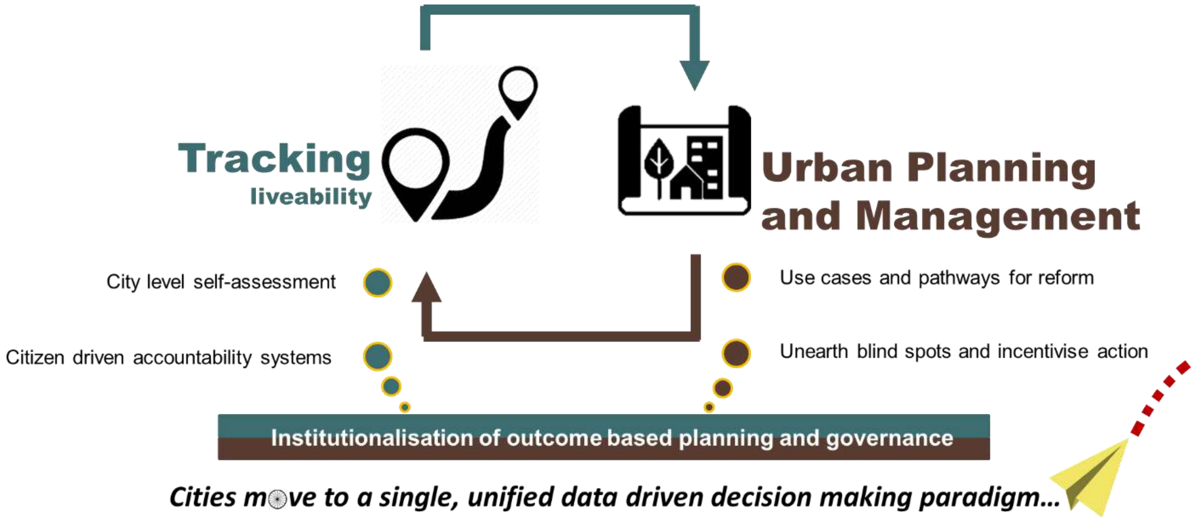
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed

Pillars of Comprehensive Development	Category	Indicators
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water

Pillars of Comprehensive Development	Category	Indicators
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

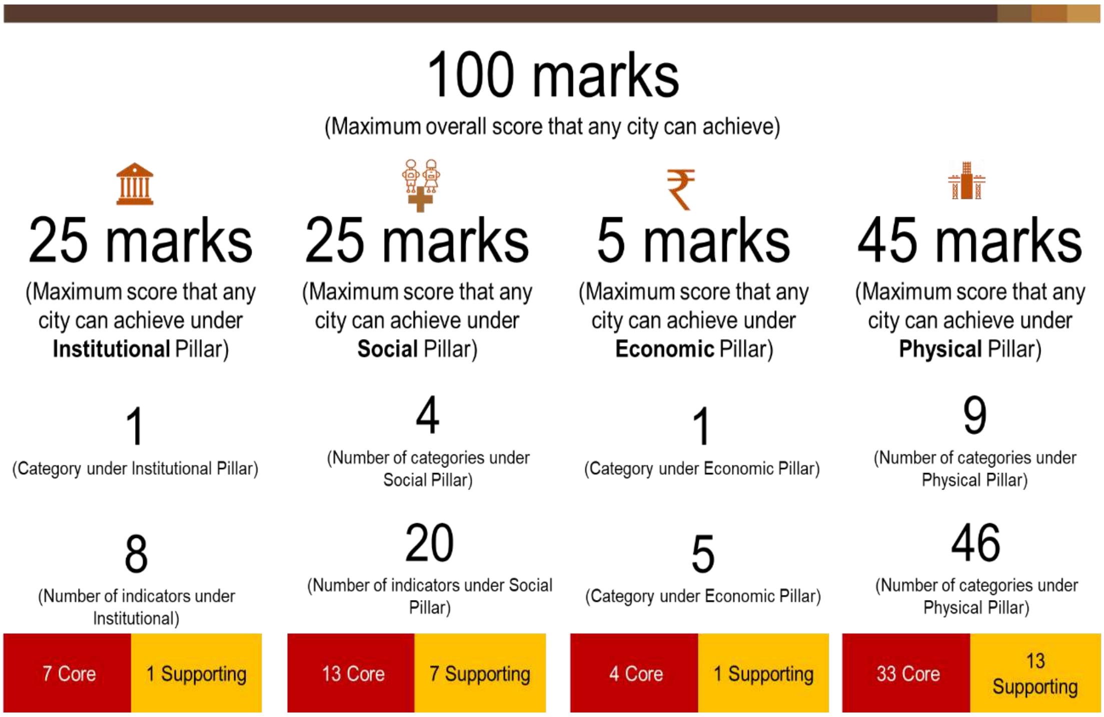
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks

awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\text{indicator value for the city} - \text{indicator value for the worst performing city}}{\text{benchmark} - \text{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

Municipal commissioner, Durgapur Municipal corporation was contacted and log in to smart net portal was done. However, state level workshop was necessary to make cities understand the importance and process of liveability assessment. City level assessments didn’t happen as State level workshop could not be conducted despite several meetings and follow ups with Urban development department and SUDA at state level.

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
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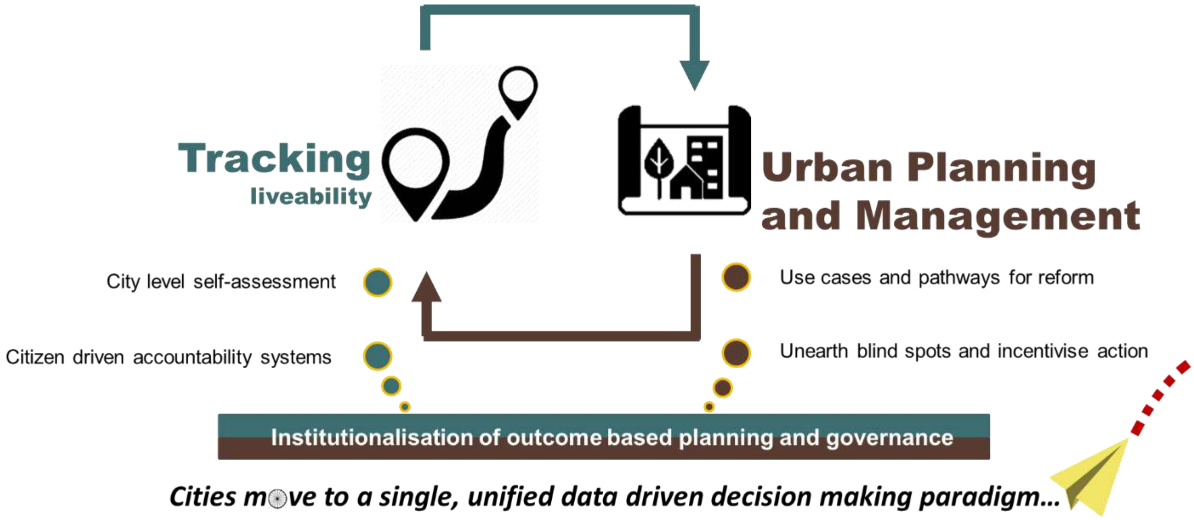
Tracking
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Urban Planning
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Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

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2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	109.52	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	157101
Total Number of Households	133665

SOCIAL PROFILE

Education	**Total Number of Schools**	184
	Total Enrolment (Class 1 to 5)	34792
Health	**Total Number of In-patients Beds**	7206
	Total Health Workforce	1993
Safety and Security	**Total Strength of Police Force**	1637
	Total Number of CCTV Cameras	123
Heritage Sites	**Total Number of Heritage Sites**	3

ECONOMIC PROFILE

Total Population in Working Age Group	221010
Total Number of Industries	2461
Total Number of Commercial Enterprises	16890
Total Number of Hotels	114
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	21080.46
Total VAT Collection in FY 2016-17 (INR Lakhs)	24139.45

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	54.09
		Total Number of Water Connections	72484
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	124430
		Total number of households in the city with access to community toilets in the city	11785
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	238
		Total number of households covered through door-to-door collection of solid waste	138226
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	43.27
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	478995
		Total electricity supplied to the city (kWh)	87684.005
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	217860.83
	Roads and Transport	**Total Length of Road Network in the City (Km)**	806.7
		Total length of arterial and sub-arterial road network in the city (Km)	806.7
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW

Pillars of Comprehensive Development	Category	Indicators
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

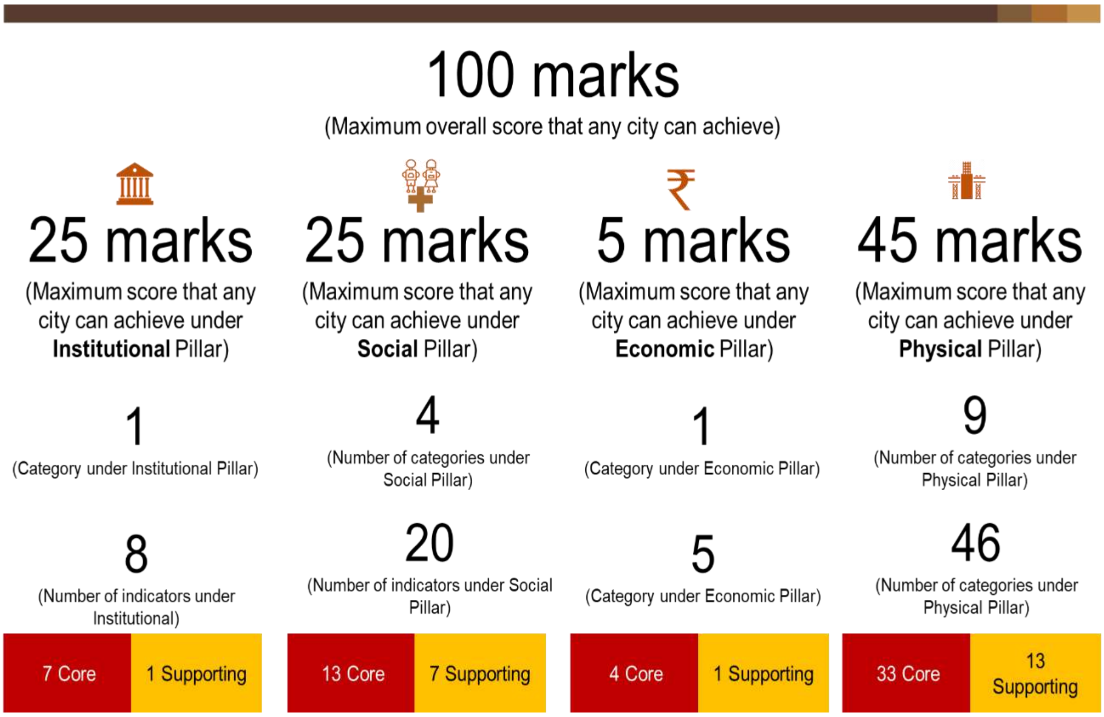
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Engineering department
Urban Local Body	For Water Supply and Drainage related questions	Engineering department
Urban Local Body	For Heritage sites related data	Not Applicable
Urban Local Body	For Ecological sites related data	Not Applicable
Urban Local Body	For Housing related data	Engineering department
Urban Local Body	For Building plan related data	Engineering department
Urban Local Body	For Roads related data	Engineering department
Urban Local Body	For Solid waste management related data	City Health Office
Urban Local Body	For IT services related data	Assistant Programmer
Urban Local Body	For Vendor committee related data	Not Applicable
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Engineering department
	Construction planning	Engineering department
	Green Building	Engineering department
	Rain water harvesting	Engineering department
	Universal Design Principle	Engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		District Disaster management authority
State Education Department		Department of school Education
State Health Department	Health care professionals	District Health Department
	Citizen Services	District Health Department
	Disease Prevalence	District Health Department
	Health Infrastructure	District Health Department
State Renewable Energy Development Agency		Tamilnadu Energy Development Agency
State Sales / Commercial Taxes Department		Department of sales / commercial tax
Town and Country Planning Department	Land Use	local planning authority
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 110 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	3
Traffic and Police Department	3
Development Authority	5
Pollution Control Board	10
State Renewable Energy Department	3
Town and Country Planning	3
State Health Department	5
Transport Authority	7
Disaster Management	1
Urban Local Body	63
Total	110*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

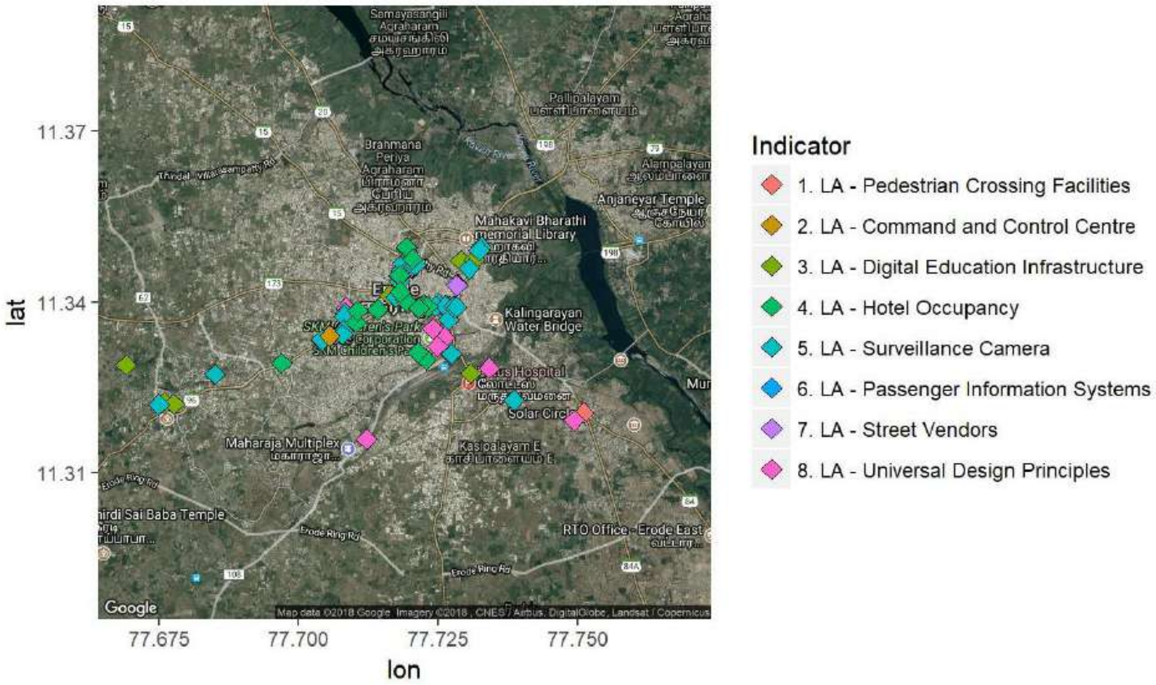
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
lat
11.37
11.34
11.31
lon
77.675
77.700
77.725
77.750
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**76.28**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.5
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**66.67**
Description	Services integrated through an integrated or a singular operations command centre	14
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.06**
Description		
Sub Indicators	1.3a Building plan	2.59409E-06
	1.3b Birth/Death Certificate	0.000209526
	1.3c water supply	0.000540869
	1.3d solid waste management	0
	1.3e property tax	0.000197151
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	9.548E-06
	1.3i information	0.005435993
	1.3j electricity	2.0877E-05
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**63.94**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2545.89

Denominator	Total demand raised for the year	3981.58
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**43.34**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	550.74
Denominator	Total O&M cost for providing water supply services during the year	1270.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**50.59**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	21426.18
Denominator	Total expenditure (revenue and capital accounts) in the same year	42351.72
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**9.14**
Description	Average Occupancy rate of Hotels	9.142857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	6.54
Denominator	Total budget of the ULB (capital and revenue)	21080.46
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**18**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	18
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**246.92**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	56308
Denominator	Total population in the age group of 6-14 years	22804

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**247.85**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	27945
Denominator	Total female population in the age group of 6-14 years	11275
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	34792
Denominator	Total number of teachers available for primary grades (public and private schools)	1628
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**27.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	50
Denominator	Total number of schools	184
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**103.11**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	103.1055048
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.19**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	52219752
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**458.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	7206
Denominator	Total population of the city	157101
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**126.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1993
Denominator	Total population of the city	157101
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**8**
Description	Total response time for health-related distress calls received in the city	8
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	408
Denominator	Total population of the city	157101
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.04**
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	58
Denominator	Total population of the city	157101
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**15.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	123
Denominator	Total length of road network in the city	806.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**11859.89**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	18632
Denominator	Total population of the city	157101
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**1.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	283
Denominator	Total crimes recorded in the same year	18632
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**450.03**

Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	707
Denominator	Total population of the city	157101
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.9**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2945.42
Denominator	Total VAT/GST collection during preceding year	211.9403
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-5.84**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-20.56
Denominator	Total Professional Tax collection during preceding year	352.15
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-34.64**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-539
Denominator	Number of construction permits during preceding year	15.56
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	103913
Denominator	Total labour force in the city	22804
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	964
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**35.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	12198
Denominator	Total number of slum and EWS households in the city	341.91
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**1.39**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	217860.83
Denominator	Total population of the city	157101
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**35.12**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	5517338.77
Denominator	Total population of the city	157101
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**18.1**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	19820000
Denominator	Total area of the city (total area of all land uses)	109520000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	157101
Denominator	Area allocated for residential land use (in hectares)	19820000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**284.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	380369
Denominator	Total number of households in the city	133665
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	478995
Denominator	Total number of electricity connections in the city	478995
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**5**
Description	Total number of sustained electrical interruptions in a year	5
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	0
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	160
Denominator	Total energy consumption from all sources	101317.005
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	769889.5
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	4888025
Denominator	Total number of street light installations	21079
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	3600
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	259394.1135
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	101317.005
Denominator	Total population of the city	157101
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	11
Denominator	Total area of the city (sq.km)	109.52
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**3.74**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	588
Denominator	Total population of the city	157101
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	75
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	806.7
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**38**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	76
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.12**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2
Denominator	Total length of road network in the city	1613.4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**233.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	7
Denominator	Total number of junctions/ intersections on major roads in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**1.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	8
Denominator	Total number of public right-of-way areas in the city	577
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	Data Unavailable
Denominator	Total number of households in the city	133665
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**344.3**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	54.09
Denominator	Total population of the city	157101

Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	13
Denominator	Total number of samples tested for water quality	13
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	54.09
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**87.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	63603
Denominator	Total number of water connections in the city	72484
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**5856.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	116318
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1986
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**121.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	155915
Denominator	Total number of properties in the city	128497
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**95.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	123095
Denominator	Total number of properties in the city	128497
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	43.27
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**68.18**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and	550

	tertiary drains (of pucca construction)	
Denominator	Total length of road network in the city	806.7
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**102.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	154558
Denominator	Total number of households and establishments in the city	150555
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**96.75**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	238
Denominator	Total quantum of MSW generated in the city	246
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**56.93**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	4065
Denominator	Average MSW generated in the city (tons per month)	7140
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11.7**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11.7
Unit	µg/m3	

Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**21.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	21.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**75.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	75.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	4
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	13
Denominator	Total number of samples tested	13
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

FARIDABAD

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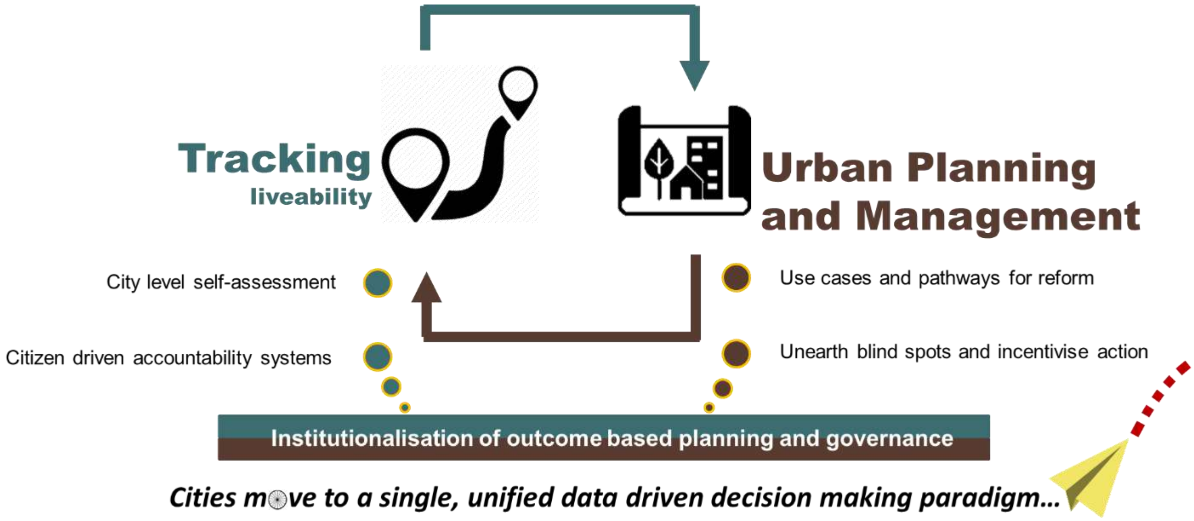
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

FARIDABAD

GEOGRAPHICAL PROFILE

State/Union Territory	HARYANA	**Total Geographical Area (Km^2)**	208	**City Category**	METROPOLIS

DEMOGRAPHIC PROFILE

Total Population	1725000
Total Number of Households	245000

SOCIAL PROFILE

Education	**Total Number of Schools**	859
	Total Enrolment (Class 1 to 5)	179905
Health	**Total Number of In-patient Beds**	3411
	Total Health Workforce	4817
Safety and Security	**Total Strength of Police Force**	2892
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	6

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	7954
Total Number of Commercial Enterprises	26770
Total Number of Hotels	52
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	52312.42
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	220
	Total Number of Water Connection	158060
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	24000
	Total number of households in the city with access to community toilets in the city	14500
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	650
	Total number of households covered through door-to-door collection of solid waste	50000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	200
	Daily average quantum of waste water treated by STPs in the city (MLD)	145
Electricity	**Total number of authorized electrical connections in the city**	501517
	Total electricity supplied to the city (kWh)	1049272
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	53140000
Roads and Transport	**Total Length of Road Network in the City (Km)**	1440
	Total length of arterial and sub-arterial road network in the city (Km)	1440
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

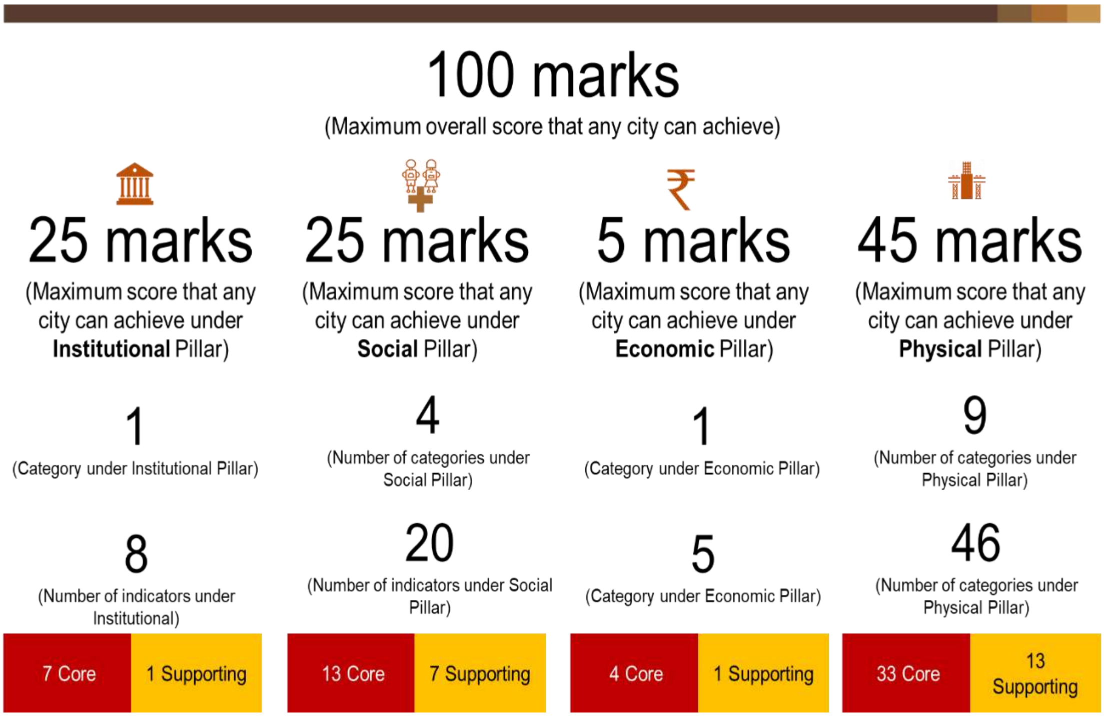
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Faridabad
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Faridabad
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Faridabad
Urban Local Body	For Heritage sites related data	Municipal Corporation Faridabad
Urban Local Body	For Ecological sites related data	Municipal Corporation Faridabad
Urban Local Body	For Housing related data	Municipal Corporation Faridabad
Urban Local Body	For Building plan related data	Municipal Corporation Faridabad
Urban Local Body	For Roads related data	Municipal Corporation Faridabad
Urban Local Body	For Solid waste management related data	Municipal Corporation Faridabad
Urban Local Body	For IT services related data	Municipal Corporation Faridabad
Urban Local Body	For Vendor committee related data	Municipal Corporation Faridabad
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Faridabad

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board - Faridabad Region
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Dakshin Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Faridabad
	Citizen Services	Civil Hospital Faridabad
	Disease Prevalence	Civil Hospital Faridabad
	Health Infrastructure	Civil Hospital Faridabad
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Agency Development Authority
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town & Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Faridabad Smart City Limited
	Sub urban rail transport	Data Unavailable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 17 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**3**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**8**
Total	**17***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

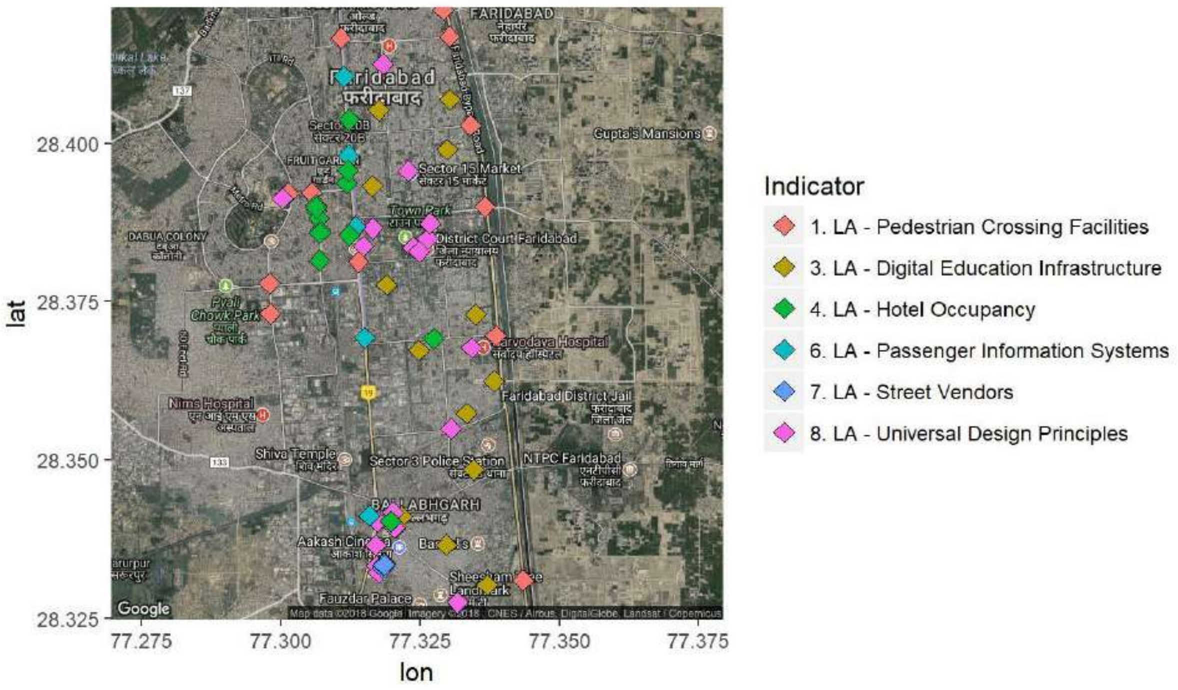
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.400
28.375
28.350
28.325
lat
77.275
77.300
77.325
77.350
77.375
lon
Faridabad
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**68.2**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0.75
	1.1d solid waste management	0
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.615384615
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.666666667
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	2
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	2
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**183.43**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	7230.78

Denominator	Total demand raised for the year	3942.04
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**88.86**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2156.42
Denominator	Total O&M cost for providing water supply services during the year	2426.65
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-22.31**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-13563.34
Denominator	Total expenditure (revenue and capital accounts) in the same year	60782.84
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	N
Denominator	Total number of wards	40
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	6
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	52312.41
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**95.57**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools	275188

	(public and private)	
Denominator	Total population in the age group of 6-14 years	287938
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**94.38**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	123290
Denominator	Total female population in the age group of 6-14 years	130628
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**33.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	179905
Denominator	Total number of teachers available for primary grades (public and private schools)	5365
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**82.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	705
Denominator	Total number of schools	859
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**139.36**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	139.3562456
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**108.02**

Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	955239792
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**24.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3411
Denominator	Total population of the city	1414050
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**34.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4817
Denominator	Total population of the city	1414050
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	8840
Denominator	Total population of the city	1414050
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	314
Denominator	Total population of the city	1414050
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	0
Denominator	Total length of road network in the city	1440
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1085.32**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	15347
Denominator	Total population of the city	1414050
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**19.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3062
Denominator	Total crimes recorded in the same year	15347
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**33.66**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	476
Denominator	Total population of the city	1414050
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**159.61**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	407
Denominator	Number of construction permits during preceding year	2.55
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be**
Formula:	*Numerator / Denominator*	

		computed
Numerator	Number of unemployed persons (seeking or available for work)	11038
Denominator	Total labour force in the city	287938
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	7198.45
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**27.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	27921
Denominator	Total number of slum and EWS households in the city	999.86
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**37.58**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	53140000
Denominator	Total population of the city	1414050
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.61**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2282426.784
Denominator	Total population of the city	1414050
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**3.17**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	6584881.2
Denominator	Total area of the city (total area of all land uses)	208000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1414050
Denominator	Area allocated for residential land use (in hectares)	145517684.5
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**169.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	415352
Denominator	Total number of households in the city	245000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	501517
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**17430**
Description	Total number of sustained electrical interruptions in a year	17430
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	82965
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**

Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	287981
Denominator	Total energy consumption from all sources	1049272
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3667.833333
Denominator	Total quantum of water and waste water handled during the period	10950
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	6000
Denominator	Total number of street light installations	54000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	

Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1049272
Denominator	Total population of the city	1414050
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.48**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	157.875
Denominator	Total area of the city (sq.km)	208
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**750.21**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	1060834
Denominator	Total population of the city	1414050
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	1440
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**72.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	8
Denominator	Total number of major transport interchanges in the city	11
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.82**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	9
Denominator	Total number of major interchanges in the city	11
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	46
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	2880
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	2
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	2
Denominator	Total number of public right-of-way areas in the city	355
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**59.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	145000
Denominator	Total number of households in the city	245000
Unit	Percentage	

Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**155.58**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	220
Denominator	Total population of the city	1414050
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	6
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**31.82**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	70
Denominator	Quantum of water put into the distribution system (mld)	220
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	158060
Denominator	Total number of water connections in the city	158060
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**600**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	186

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	31
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**22.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	57750
Denominator	Total number of properties in the city	260000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	260000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**57.2**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	114.4
Denominator	Total waste water generated in the city per day	200
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**75**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	90
Denominator	Total waste water received at treatment plants per day	120

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**60.97**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	878
Denominator	Total length of road network in the city	1440
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**20.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	55000
Denominator	Total number of households and establishments in the city	271770
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	650
Denominator	Total quantum of MSW generated in the city	650
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	19500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**15.72**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	15.72
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**44.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	44.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	24
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	5
Denominator	Total number of samples tested	5
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GANDHINAGAR

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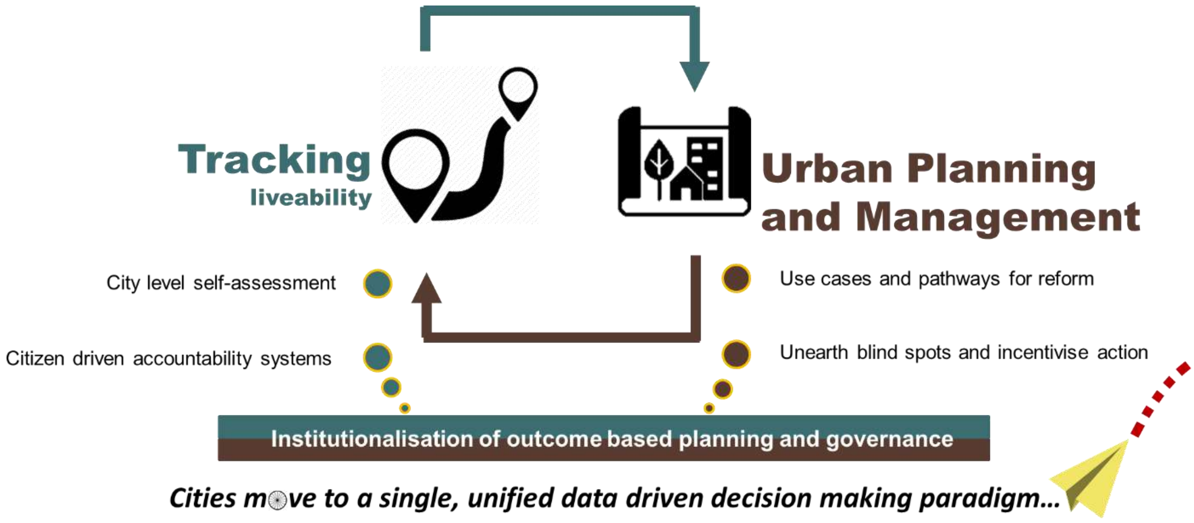
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

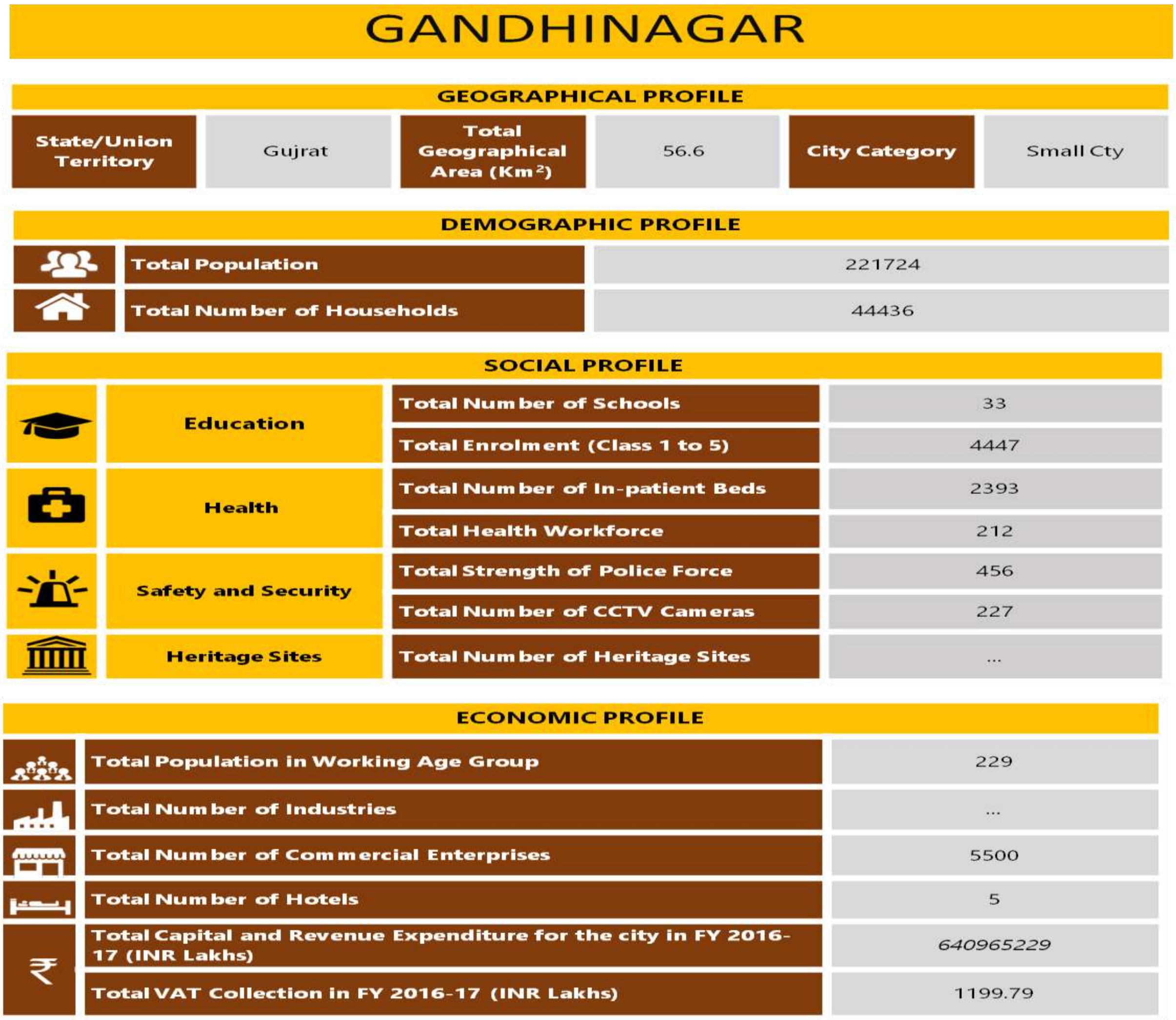
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GANDHINAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km²)**	56.6	**City Category**	Small Cty

DEMOGRAPHIC PROFILE

Total Population	221724
Total Number of Households	44436

SOCIAL PROFILE

Education	**Total Number of Schools**	33
	Total Enrolment (Class 1 to 5)	4447
Health	**Total Number of In-patient Beds**	2393
	Total Health Workforce	212
Safety and Security	**Total Strength of Police Force**	456
	Total Number of CCTV Cameras	227
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	229
Total Number of Industries	...
Total Number of Commercial Enterprises	5500
Total Number of Hotels	5
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	*640965229*
Total VAT Collection in FY 2016-17 (INR Lakhs)	1199.79

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	62
	Total Number of Water Connection	43464
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	42781
	Total number of households in the city with access to community toilets in the city	…
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	65
	Total number of households covered through door-to-door collection of solid waste	42000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	49
	Daily average quantum of waste water treated by STPs in the city (MLD)	49
Electricity	**Total number of authorized electrical connections in the city**	66574
	Total electricity supplied to the city (kWh)	304310000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	2142000
Roads and Transport	**Total Length of Road Network in the City (Km)**	515.59
	Total length of arterial and sub-arterial road network in the city (Km)	515.59
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	70

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year

Pillars of Comprehensive Development	Category	Indicators
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

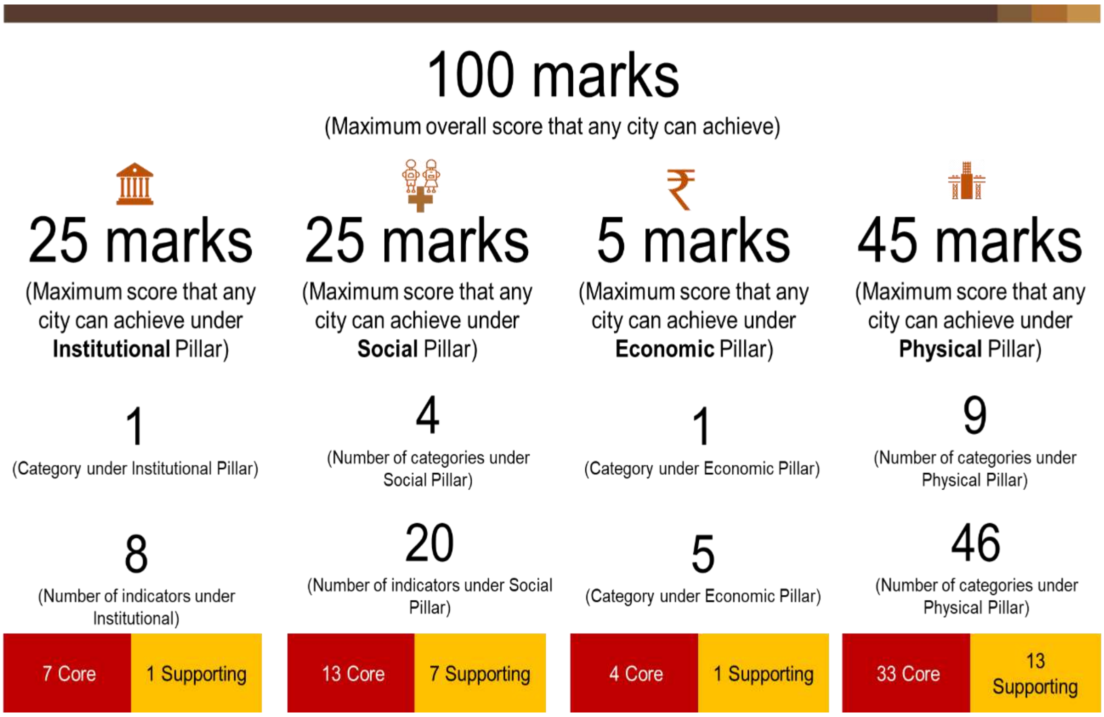
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Ass.Account
Urban Local Body	For Park and Recreation Related Questions	-
Urban Local Body	For Water Supply and Drainage related questions	City engineer
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	-
Urban Local Body	For Housing related data	-
Urban Local Body	For Building plan related data	Town planing
Urban Local Body	For Roads related data	City engineer
Urban Local Body	For Solid waste management related data	Solid waste department
Urban Local Body	For IT services related data	Tex department
Urban Local Body	For Vendor committee related data	-
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	-
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	-
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	
	Rain water harvesting	
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Ugvcl , torrent power
State Disaster management authority		Fire department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	-
	Disease Prevalence	
	Health Infrastructure	

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Tex department
Town and Country Planning Department	Land Use	City engineer
Traffic and Police Department		Traffic and police department
Transport Authorities	Buses	Tex department
	Registered Vehicles	-
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 53 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	12
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	3
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	1

State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	29
Total	53*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

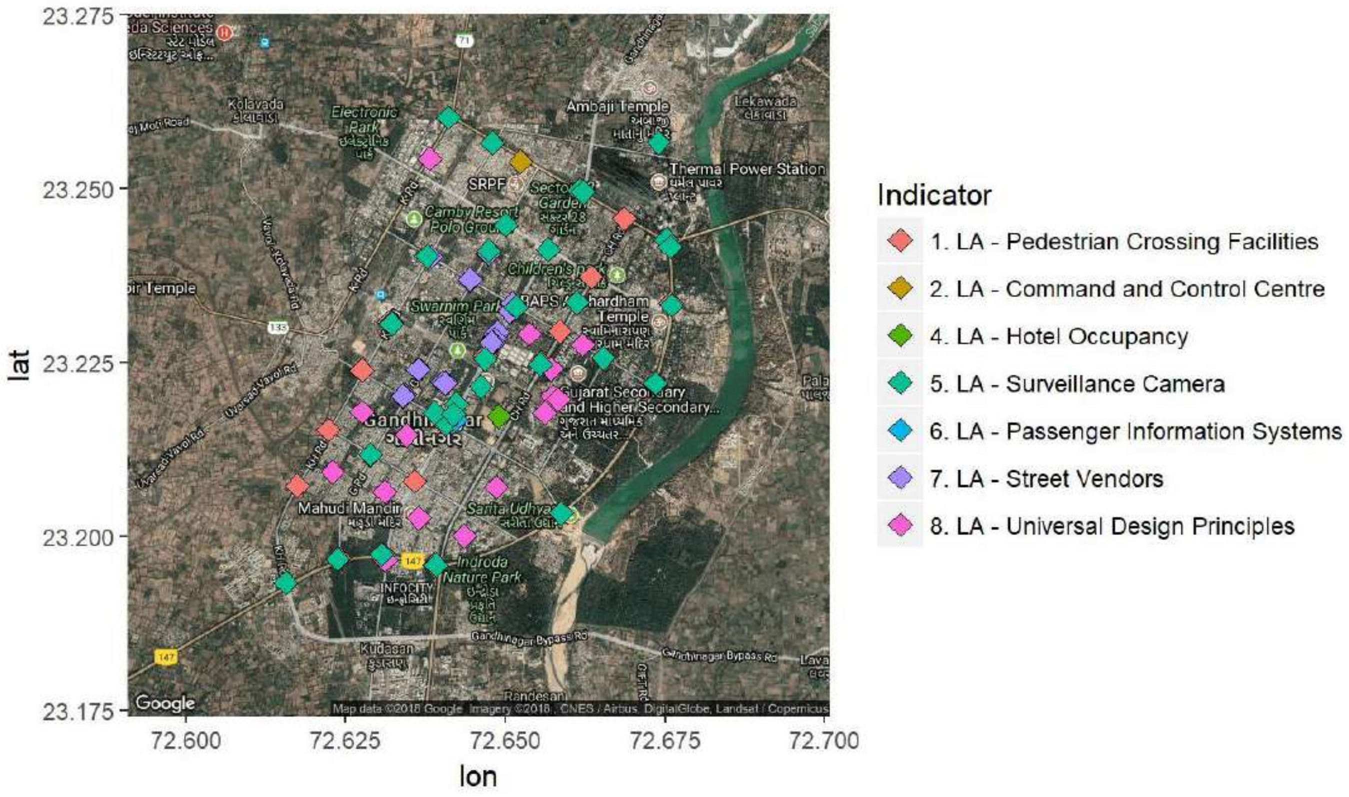
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.275
23.250
23.225
23.200
23.175
lat
72.600
72.625
72.650
72.675
72.700
lon
Kolavada
Electronic Park
Ambaji Temple
Lekawada
Thermal Power Station
SRPF
Camby Resort
Polo Ground
Sector 28 Garden
Children's park
Swarnim Park
BAPS Akshardham Temple
Gujarat Secondary and Higher Secondary...
Gandhinagar
Mahudi Mandir
Sarita Udhyan
Indroda Nature Park
INFOCITY
Kudasan
Randesan
Gandhinagar Bypass Rd
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	60.45
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0.5
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	35.71
Description	Services integrated through an integrated or a singular operations command centre	7.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	3586.57
Description		

Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	35.86574338
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressed	0
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	3.9
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	322460284
Denominator	Total demand raised for the year	8273313454
Unit	Percentage	
Benchmark	90%	

Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	4.38
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	11614411
Denominator	Total O&M cost for providing water supply services during the year	265054521
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	286.83
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-1145784025
Denominator	Total expenditure (revenue and capital accounts) in the same year	-399460374
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabah's*	86.49
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	32
Denominator	Total number of wards	37
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	Non-Computable
Formula:	*Numerator / Denominator*	

Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	10
Description	Average Occupancy rate of Hotels	10
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	0
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	640965229
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	8
Description	Number of cultural/sports events hosted by the city authority in the preceding year	8
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	15.29
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	7404
Denominator	Total population in the age group of 6-14 years	48433
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	17.53
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3691
Denominator	Total female population in the age group of 6-14 years	21053
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	32.94
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	4447
Denominator	Total number of teachers available for primary grades (public and private schools)	135
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	0
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	33
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	102.92
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	102.9165884
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	86.1
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	992802

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	81.73
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2393
Denominator	Total population of the city	292797
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	7.24
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	212
Denominator	Total population of the city	292797
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	0
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	2
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5865
Denominator	Total population of the city	292797
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	0.09
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	259
Denominator	Total population of the city	292797
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	44.03
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	227
Denominator	Total length of road network in the city	515.59
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	214.48
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	628
Denominator	Total population of the city	292797
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	13.06
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	82
Denominator	Total crimes recorded in the same year	628
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	15.03
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	44
Denominator	Total population of the city	292797
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	-5.5
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-69.81
Denominator	Total VAT/GST collection during preceding year	12.696
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	13.58
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	7271808
Denominator	Total Professional Tax collection during preceding year	53549154
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	To be computed

Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	16796
Denominator	Total labour force in the city	48433
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	0
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	3126
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	Non-Compuatble
Formula:	*Numerator / Denominator*	NA
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	7.32
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	2142000
Denominator	Total population of the city	292797
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	292797
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	56600000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	292797
Denominator	Area allocated for residential land use (in hectares)	NA

Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	128.66
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	57171
Denominator	Total number of households in the city	44436
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	66574
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	4
Description	Total number of sustained electrical interruptions in a year	4
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	0.81
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	0.13
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	0
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1832
Denominator	Total energy consumption from all sources	304310000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	0.34
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	565828
Denominator	Total quantum of water and waste water handled during the period	3330
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	NC
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	5693392
Denominator	Total number of street light installations	Data Unavailable
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	NC
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable

Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	0.78
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	304310000
Denominator	Total population of the city	292797
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	0.67
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	40634
Denominator	Total area of the city (sq.km)	56.6
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	0.45
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	131
Denominator	Total population of the city	292797
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	To be computed
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	0

Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	515.59
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	100
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	To be computed
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	8
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	8
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	6.79
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	70
Denominator	Total length of road network in the city	1031.18
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	67.92
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	72
Denominator	Total number of junctions/ intersections on major roads in the city	106
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	120
Unit	Percentage	

Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	96.28
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	42781
Denominator	Total number of households in the city	44436
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	211.75
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	62
Denominator	Total population of the city	292797
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	1050
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	62
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	0
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	43464
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	75.08
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	43547
Denominator	Total number of properties in the city	58000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	73.76
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	42781
Denominator	Total number of properties in the city	58000

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	100
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	49
Denominator	Total waste water generated in the city per day	49
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	100
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	49
Denominator	Total waste water received at treatment plants per day	49
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	23.37
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	120.49
Denominator	Total length of road network in the city	515.59
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	96.12
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	48000
Denominator	Total number of households and establishments in the city	49936
Unit	Percentage	

Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	100
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	65
Denominator	Total quantum of MSW generated in the city	65
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	75.38
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1470
Denominator	Average MSW generated in the city (tons per month)	1950
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	13.96
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	13.955
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	14.76
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	14.76
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	71
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	71

Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Results of sample collected is attached as an Annexure- 2.
Denominator	Total number of noise samples	Navratri festival - 36 No. samples were collected from different locations. Diwali festival - 4 No. of samples were collected from different locations.
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Results of sample collected is attached as an Annexure- 3.
Denominator	Total number of samples tested	River Sabarmati at Mahudi Jain Temple = 11 No., River Sabarmati at Chiloda Bridge = 7 No., Narmada Canal at Limbdiya = 12 No.
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GANGTOK

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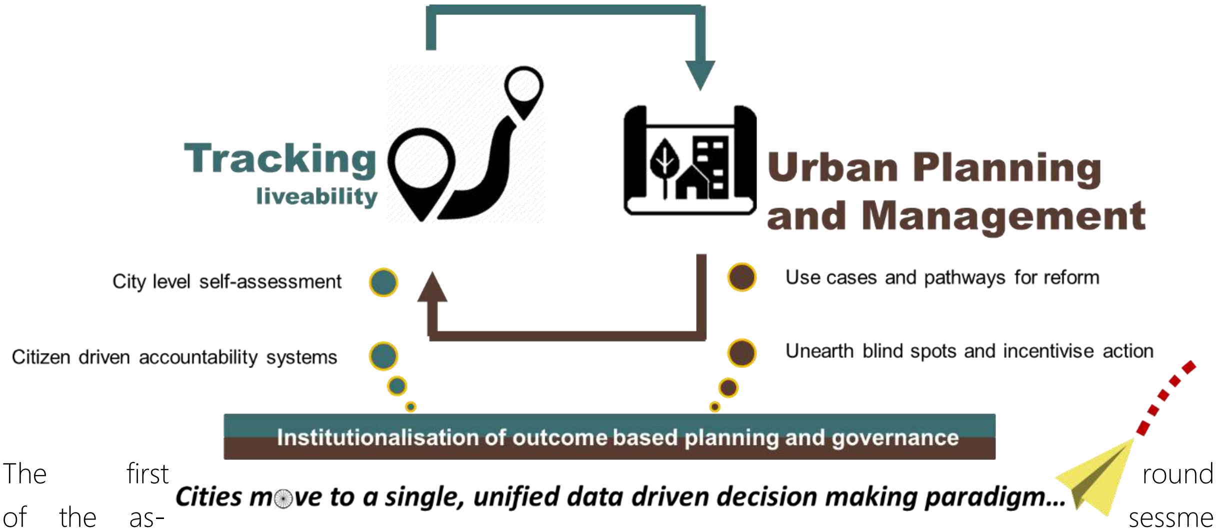
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

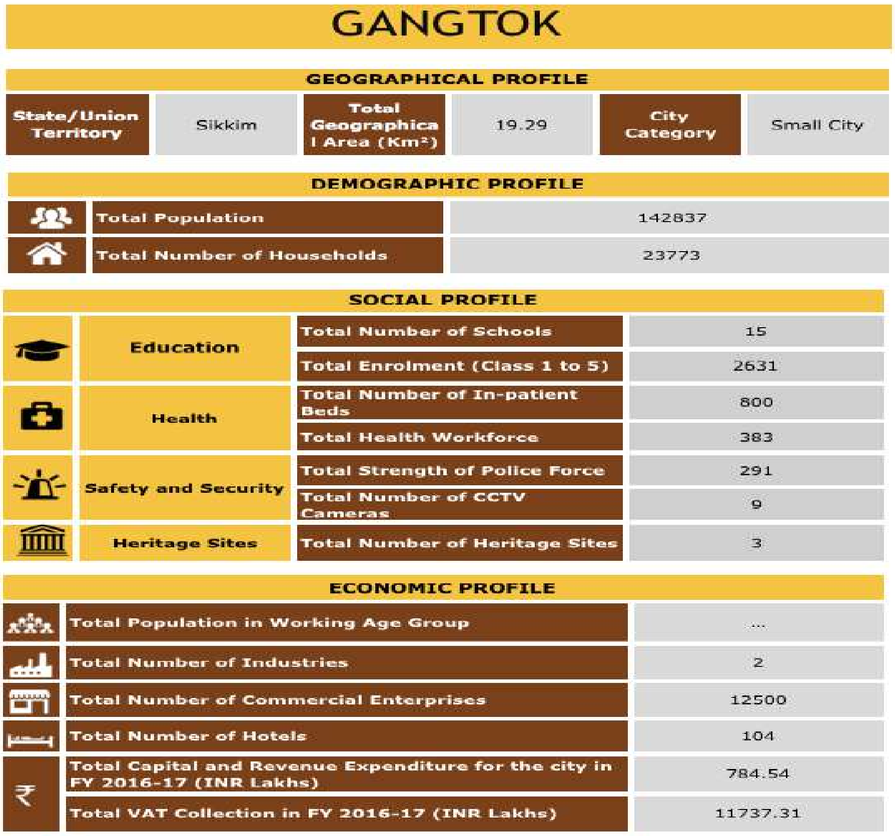
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment

commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Elec-



GANGTOK

GEOGRAPHICAL PROFILE

State/Union Territory	Sikkim	Total Geographical Area (Km²)	19.29	City Category	Small City

DEMOGRAPHIC PROFILE

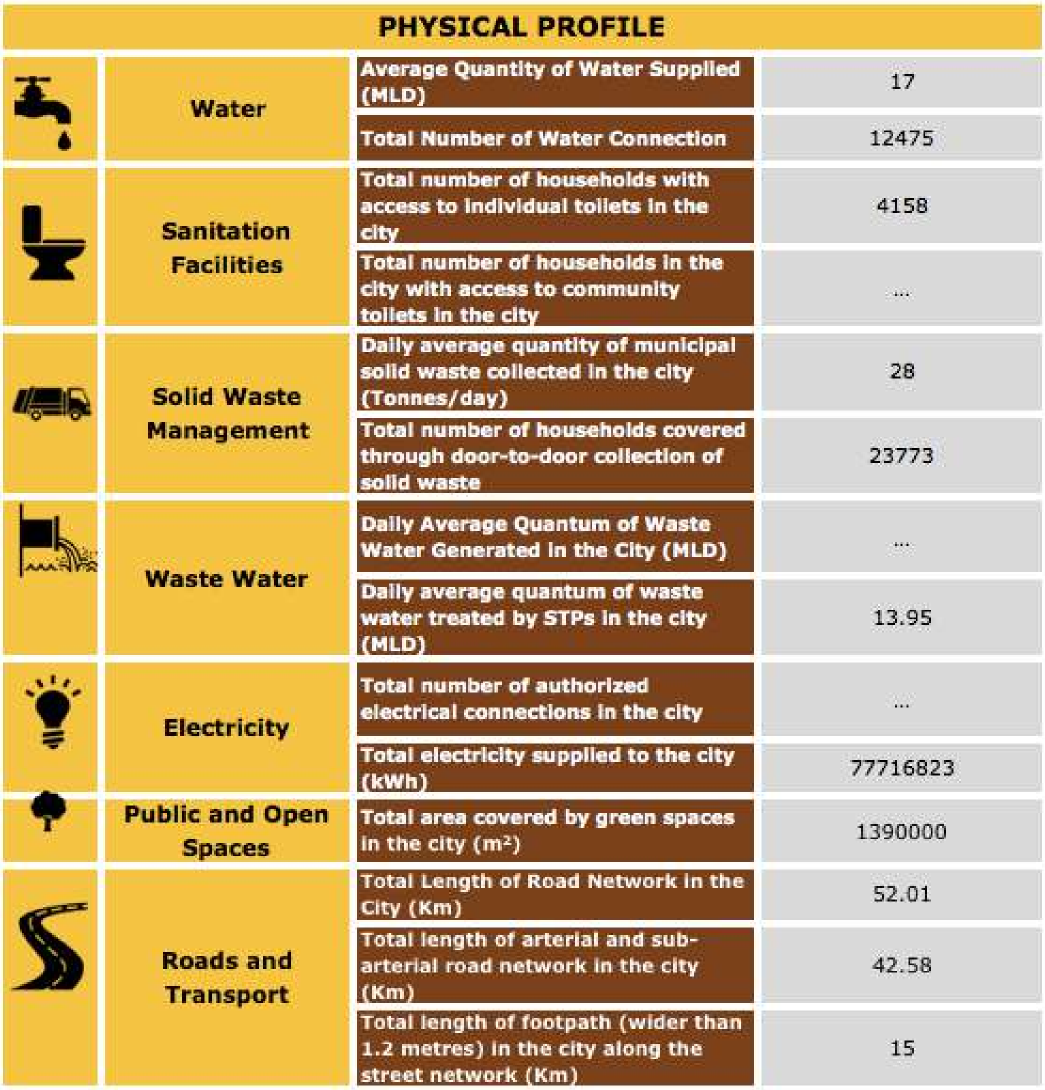
Total Population	142837
Total Number of Households	23773

SOCIAL PROFILE

Education	Total Number of Schools	15
	Total Enrolment (Class 1 to 5)	2631
Health	Total Number of In-patient Beds	800
	Total Health Workforce	383
Safety and Security	Total Strength of Police Force	291
	Total Number of CCTV Cameras	9
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	2
Total Number of Commercial Enterprises	12500
Total Number of Hotels	104
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	784.54
Total VAT Collection in FY 2016-17 (INR Lakhs)	11737.31



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	17
	Total Number of Water Connection	12475
Sanitation Facilities	Total number of households with access to individual toilets in the city	4158
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	28
	Total number of households covered through door-to-door collection of solid waste	23773
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	13.95
Electricity	Total number of authorized electrical connections in the city	...
	Total electricity supplied to the city (kWh)	77716823
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1390000
Roads and Transport	Total Length of Road Network in the City (Km)	52.01
	Total length of arterial and sub-arterial road network in the city (Km)	42.58
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	15

tricity, Open space and roads).

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the perfor-

mance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	**Category**	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open	8.1 Per capita availability of green spaces

Pillars of Comprehensive Development	**Category**	Indicators
	Spaces	8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	**Category**	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollu-	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	**Category**	Indicators
	tion	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

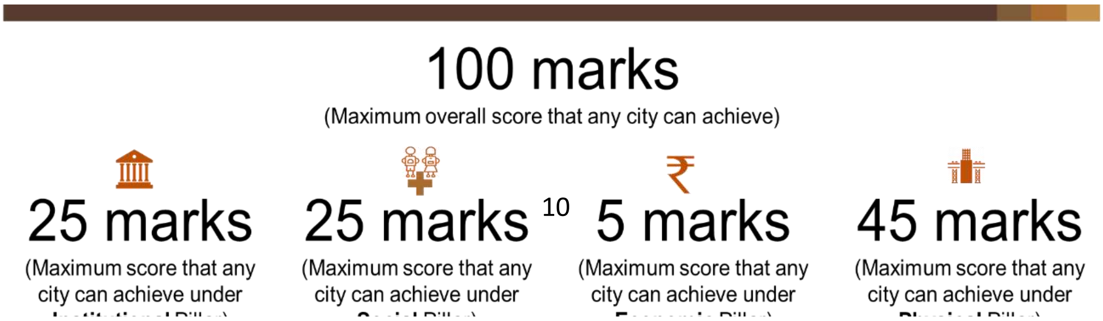
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under
25 marks
(Maximum score that any city can achieve under
5 marks
(Maximum score that any city can achieve under
45 marks
(Maximum score that any city can achieve under

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by

the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Park and Recreation Related Questions	GANGTOK MUNICIPAL CORPORATION

Urban Local Body	For Water Supply and Drainage related questions	WATER SECURITY & PUBLIC HEALTH ENGINEERING DEPARTMENT
Urban Local Body	For Heritage sites related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Ecological sites related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Housing related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Building plan related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Roads related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Solid waste management related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For IT services related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Vendor committee related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	GANGTOK MUNICIPAL CORPORATION
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	STATE POLLUTION CONTROL BOARD
Development Authority	Building Infrastructure	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Construction planning	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Green Building	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Rain water harvesting	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Universal Design Principle	URBAN DEVELOPMENT AND HOUSING DEPARTMENT

DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ENERGY AND POWER DEPARTMENT
State Disaster management authority		LAND REVENUE DEPARTMENT
State Education Department		HUMAN RESOURCE DEVELOPMENT DEPARTMENT
State Health Department	Health care professionals	HEALTH DEPARTMENT
	Citizen Services	HEALTH DEPARTMENT
	Disease Prevalence	HEALTH DEPARTMENT
	Health Infrastructure	HEALTH DEPARTMENT
State Renewable Energy Development Agency		STATE RENEWABLE ENERGY DEVELOPMENT AGENCY
State Sales / Commercial Taxes Department		COMMERCIAL TAX AND FINANCE DEPARTMENT
Town and Country Planning Department	Land Use	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
Traffic and Police Department		SIKKIM POLICE HEADQUARTER EAST SIKKIM
Transport Authorities	Buses	SIKKIM NATIONALISED TRANSPORT
	Registered Vehicles	SIKKIM NATIONALISED TRANSPORT
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	7
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	16
Transport Authority	1
Disaster Management	0
Urban Local Body	24
Total	62

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators

(Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

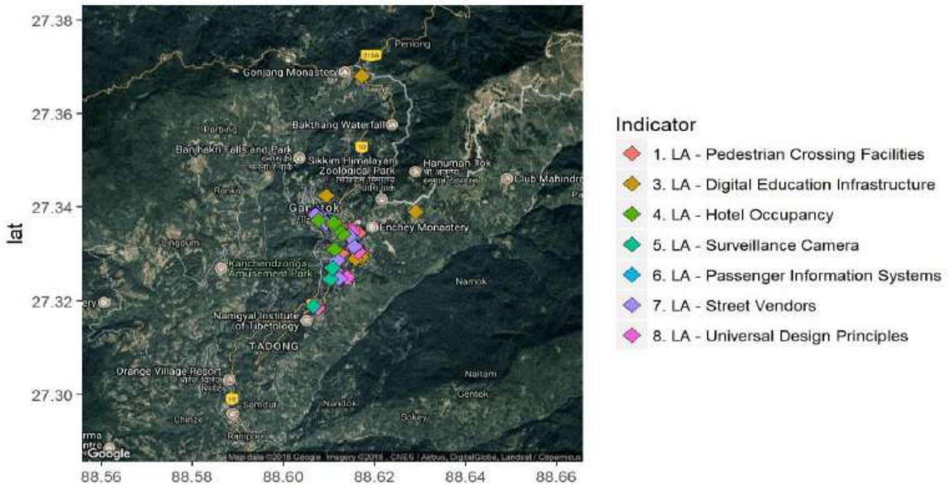
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level


27.38
27.36
27.34
27.32
27.30
lat
88.56
88.58
88.60
88.62
88.64
88.66
Gonjang Monastery
Bakthang Waterfall
Banjhakri Falls and Park
Sikkim Himalayan Zoological Park
Hanuman Tok
Gangtok
Enchey Monastery
Kanchendzonga Amusement Park
Namgyal Institute of Tibetology
TADONG
Orange Village Resort
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**27.22**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	1

	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.538461538461538
	1.1k Grievance redressal	0.5
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**Non-Computable**
Description		NA
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA

	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	NA
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**301.95**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	288.36
Denominator	Total O&M cost for providing water supply services during the year	95.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**16.22**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	338.78
Denominator	Total expenditure (revenue and capital accounts) in the same year	2088.84
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	17
Denominator	Total number of wards	17
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	3

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable** Data Unavailable
Description	Average Occupancy rate of Hotels	
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	
Denominator	Total budget of the ULB (capital and revenue)	Data Unavailable
Unit	Percentage	784.54
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**4**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	4

Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**35.99**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6096
Denominator	Total population in the age group of 6-14 years	16937
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**39.28**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3310
Denominator	Total female population in the age group of 6-14 years	8427
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**0.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	2631
Denominator	Total number of teachers available for primary grades (public and private schools)	2941
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**60**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for	9

	using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	
Denominator	Total number of schools	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**72.78**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	72.7777288238298
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**12608.62**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	1785002
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**79.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	800
Denominator	Total population of the city	100286
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**38.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	383

Denominator	Total population of the city	100286
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**5.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5188
Denominator	Total population of the city	100286
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	322
Denominator	Total population of the city	100286
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**17.3**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	9
Denominator	Total length of road network in the city	52.01
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**326.07**
Formula:	Numerator / Denominator	327
Numerator	Total number of crimes recorded in a year	100286
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**6.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	21
Denominator	Total crimes recorded in the same year	327
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**7.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	8
Denominator	Total population of the city	100286
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**16.52**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1663.87
Denominator	Total VAT/GST collection during preceding year	100.7344
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-9.06**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-23
Denominator	Number of construction permits during preceding year	2.54
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	16937
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	423.425
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**5.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	520
Denominator	Total number of slum and EWS households in the city	88.61
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic ser-	**Non-**

	vices	**Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**13.86**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1390000
Denominator	Total population of the city	100286
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.09**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	109631
Denominator	Total population of the city	100286
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	19290000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	100286
Denominator	Area allocated for residential land use (in hectares)	NA
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**43.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	10367
Denominator	Total number of households in the city	23773
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**3243**
Description	Total number of sustained electrical interruptions in a	3243

	year	
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.57**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	135615
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	Data Unavailable
Denominator	Total energy consumption from all sources	77723538
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	928.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	1350
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	77723538
Denominator	Total population of the city	100286
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.39**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	13
Denominator	Total area of the city (sq.km)	19.29

Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**2.2**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	221
Denominator	Total population of the city	100286
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	1.33
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	52.01
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	

Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		

Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**14.42**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	15
Denominator	Total length of road network in the city	104.02
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**40**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	10
Denominator	Total number of public right-of-way areas in the city	25
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**43.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	10283

Denominator	Total number of households in the city	23773
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**169.52**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	17
Denominator	Total population of the city	100286
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	312
Denominator	Total number of samples tested for water quality	312
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	17
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	5

Denominator	Total number of water connections in the city	12475
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**6.49** 5
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	77
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	4773
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	6061
Denominator	Total number of properties in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	13.95
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	13.95
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**52.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	27.169
Denominator	Total length of road network in the city	52.01
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**65.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments cov-	23790

	ered through doorstep collection	
Denominator	Total number of households and establishments in the city	36273
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**56**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	28
Denominator	Total quantum of MSW generated in the city	50
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through re-use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	840
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4.48**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4.48
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**3.67**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	3.67

Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**40.04**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	40.04
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	6
Denominator	Total number of noise samples	6
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GHAZIABAD

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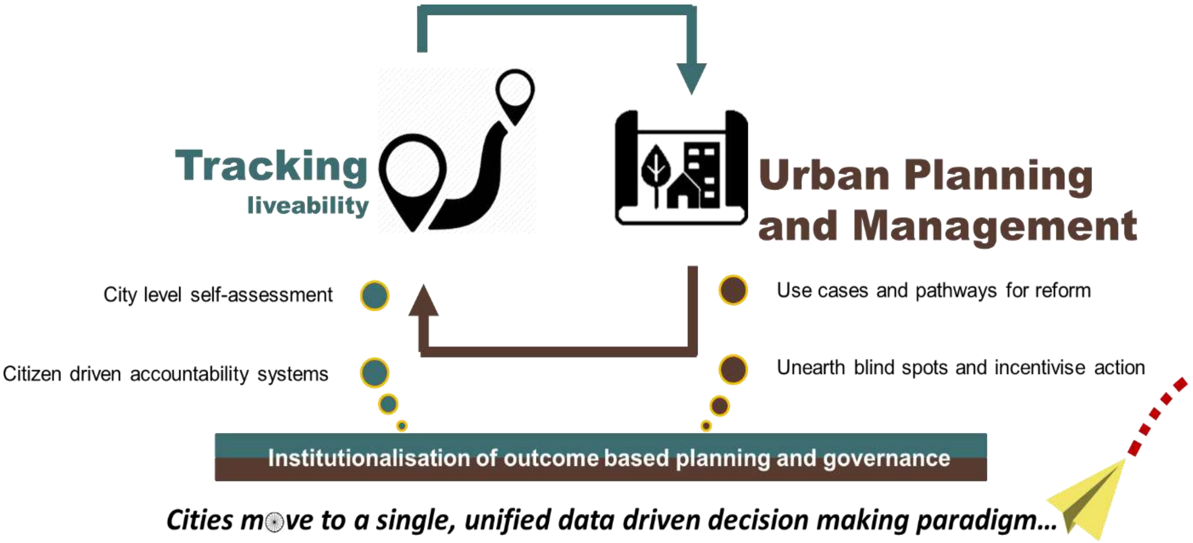
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

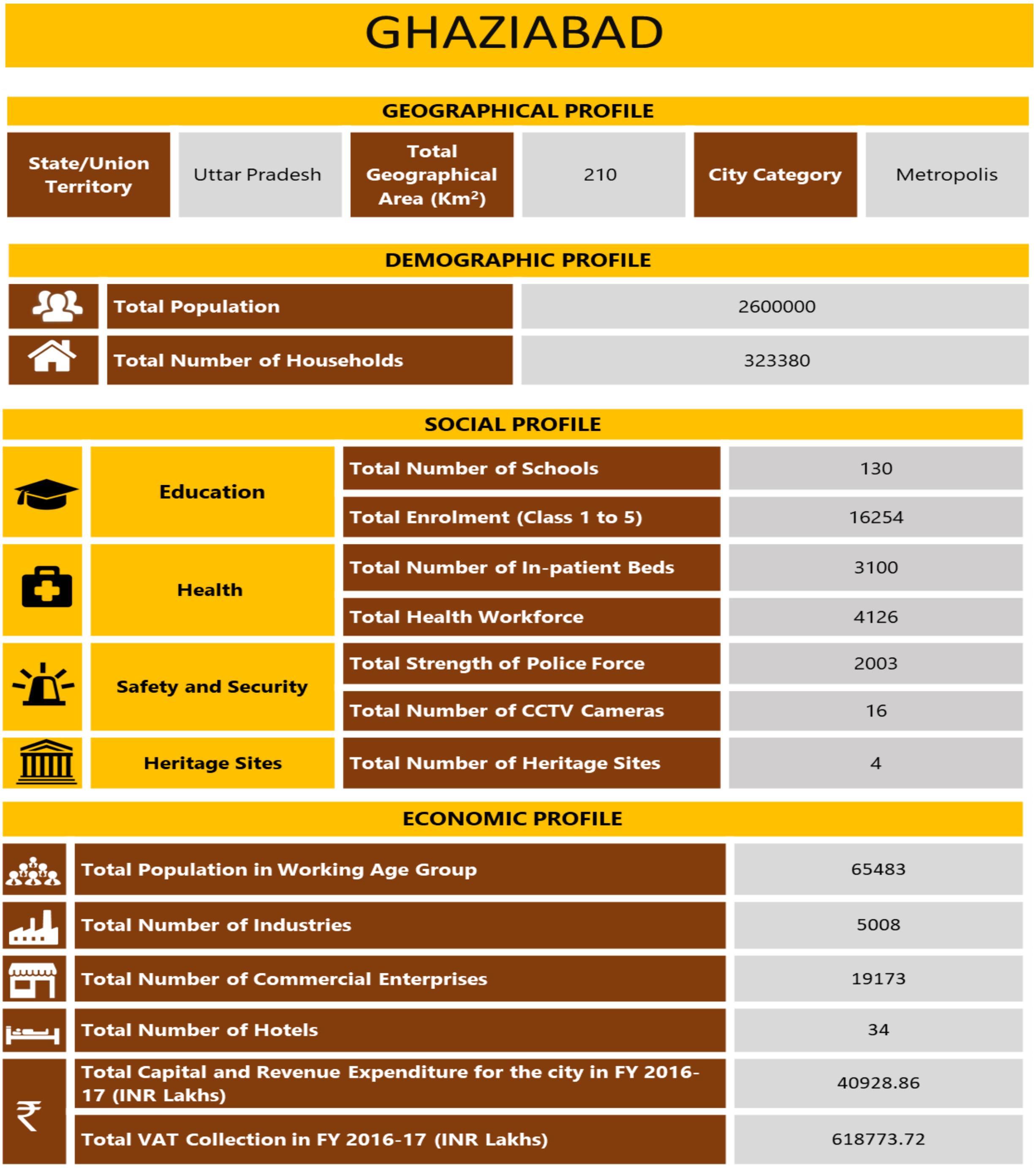
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GHAZIABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	210	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2600000
Total Number of Households	323380

SOCIAL PROFILE

Education	**Total Number of Schools**	130
	Total Enrolment (Class 1 to 5)	16254
Health	**Total Number of In-patient Beds**	3100
	Total Health Workforce	4126
Safety and Security	**Total Strength of Police Force**	2003
	Total Number of CCTV Cameras	16
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	65483
Total Number of Industries	5008
Total Number of Commercial Enterprises	19173
Total Number of Hotels	34
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40928.86
Total VAT Collection in FY 2016-17 (INR Lakhs)	618773.72

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	325
	Total Number of Water Connection	237552
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	292620
	Total number of households in the city with access to community toilets in the city	1990
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	850
	Total number of households covered through door-to-door collection of solid waste	265172
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	260
	Daily average quantum of waste water treated by STPs in the city (MLD)	227
Electricity	**Total number of authorized electrical connections in the city**	463641
	Total electricity supplied to the city (kWh)	3844000000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
Roads and Transport	**Total Length of Road Network in the City (Km)**	3258.97
	Total length of arterial and sub-arterial road network in the city (Km)	3076.7
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2466

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

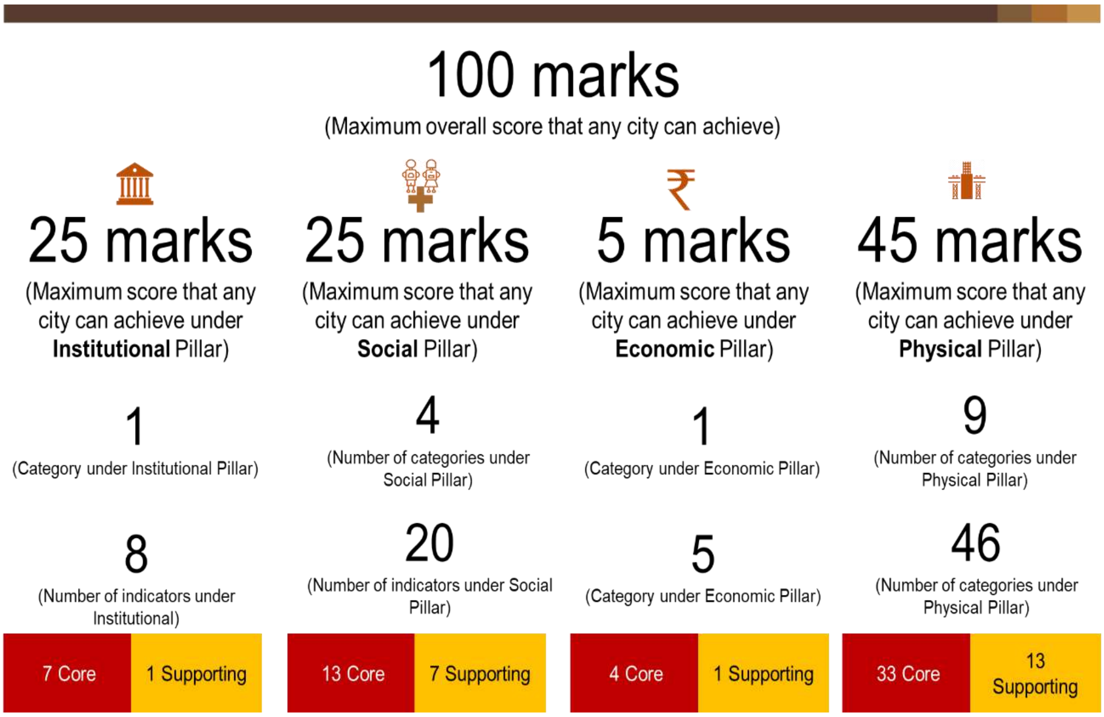
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Zonal officer (Ghaziabad Nagar Nigam)/ GDA website
Urban Local Body	For Water Supply and Drainage related questions	Jal-Kal
Urban Local Body	For Heritage sites related data	Sankhyaki
Urban Local Body	For Ecological sites related data	N/A
Urban Local Body	For Housing related data	Planning Department (Ghaziabad Development Authority) District Urban Development Authority
Urban Local Body	For Building plan related data	National Capital Planning
Urban Local Body	For Roads related data	
Urban Local Body	For Solid waste management related data	Swach Bharat Mission
Urban Local Body	For IT services related data	Information technology Cell
Urban Local Body	For Vendor committee related data	District Urban Development Authority
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Nirman, prakash, zonal head
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Zonal officer Ghaziabad Development Authority
	Construction planning	Town Planning Ghaziabad Development Authority

Designated data owners	Subcategories	Data owners at city level
	Green Building	Town Planning Ghaziabad Development Authority
	Rain water harvesting	Town Planning Ghaziabad Development Authority
	Universal Design Principle	Town Planning Ghaziabad Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Purvanchal Vidhut Vitran Nigam
State Disaster management authority		District disaster management authority
State Education Department		Basic Shiksha Adhikari
State Health Department	Health care professionals	Additional Medical Officer
	Citizen Services	Additional Medical Officer
	Disease Prevalence	Additional Medical Officer
	Health Infrastructure	Additional Medical Officer
State Renewable Energy Development Agency	Renewable Energy	Uttar Pradesh New & Renewable Energy Development Agency
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	National Capital Region Planning
Traffic and Police Department		Office of Superintendent of police
Transport Authorities	Buses	Uttar Pradesh State Road Transport corporation
	Registered Vehicles	Regional Transport office
	Sub urban rail transport	Delhi Metro Authority
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 54 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**3**
State Education Department	**5**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**4**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**37**
Total	**54***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

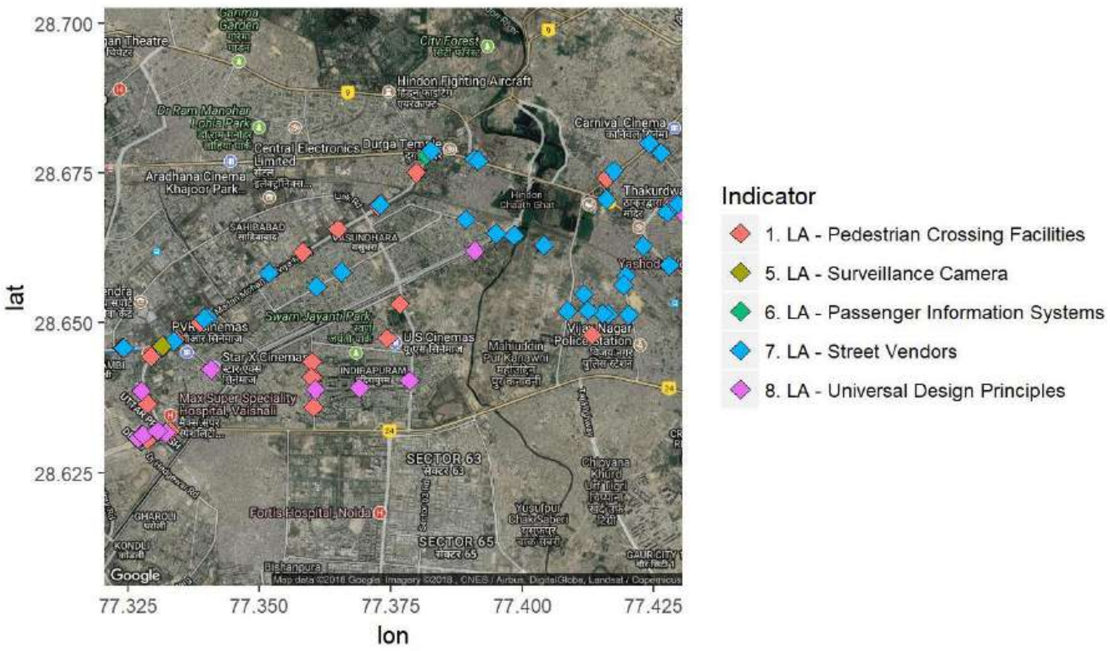
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.700
28.675
28.650
28.625
lat
77.325
77.350
77.375
77.400
77.425
lon
City Forest
Hindon Fighting Aircraft
Carnival Cinema
Dr Ram Manohar Lohia Park
Central Electronics Limited
Durga Temple
Aradhana Cinema Khajoor Park
SAHIBABAD
VASUNDHARA
Thakurdwara
Swarn Jayanti Park
PVR Cinemas
Star X Cinemas
U S Cinemas
INDIRAPURAM
Mahiuddin Pur Kanawni
Vijay Nagar Police Station
Max Super Speciality Hospital, Vaishali
SECTOR 63
Fortis Hospital, Noida
SECTOR 65
Yusufpur Chak Saberi
Chhoyana Khurd
GAUR CITY
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**62.33**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**5.83**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.073218205
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.00629912
	1.3i information	0.008969195
	1.3j electricity	0.144542868
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**3.07**
Description		

Sub Indicators	1.4a water supply	0
	1.4b solid waste	1.5
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	20
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**89.24**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	8180
Denominator	Total demand raised for the year	9166
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**52.06**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1675
Denominator	Total O&M cost for providing water supply services during the year	3217.64
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**50.7**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	49315.49
Denominator	Total expenditure (revenue and capital accounts) in the same year	97269.44
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	100
Denominator	Total number of wards	100
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**38.01**
Description	Average Occupancy rate of Hotels	38.01
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	40928.86
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**6.34**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	20040
Denominator	Total population in the age group of 6-14 years	316138
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**6.92**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	9896
Denominator	Total female population in the age group of 6-14 years	142936
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**71.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	16254
Denominator	Total number of teachers available for primary grades (public and private schools)	226
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	Data Unavailable
Denominator	Total number of schools	130
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**#VALUE!**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	#VALUE!

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**Non-Computable**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1382728
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**18.8**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3100
Denominator	Total population of the city	1648643
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**25.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4126
Denominator	Total population of the city	1648643
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**3000**
Description	Total response time for health-related distress calls received in the city	3000
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**2.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	38790

Denominator	Total population of the city	1648643
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	693
Denominator	Total population of the city	1648643
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	16
Denominator	Total length of road network in the city	3258.97
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**407.97**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	6726
Denominator	Total population of the city	1648643
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**16.37**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1101

Denominator	Total crimes recorded in the same year	6726
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**20.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	338
Denominator	Total population of the city	1648643
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**8.63**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	49167.1
Denominator	Total VAT/GST collection during preceding year	5696.0662
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-44.02**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-372
Denominator	Number of construction permits during preceding year	8.45

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	26217
Denominator	Total labour force in the city	316138
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	23262
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**73.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	67687
Denominator	Total number of slum and EWS households in the city	921.29
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	1648643
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.93**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	4830672
Denominator	Total population of the city	1648643
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	415400
Denominator	Total area of the city (total area of all land uses)	210000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1648643
Denominator	Area allocated for residential land use (in hectares)	4910000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**125.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	404702
Denominator	Total number of households in the city	323380
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**2.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	11579
Denominator	Total number of electricity connections in the city	463641
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**19124**
Description	Total number of sustained electrical interruptions in a year	19124
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	197629
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	4000
Denominator	Total energy consumption from all sources	3844703125
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3443141
Denominator	Total quantum of water and waste water handled during the period	16560
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	49560
Denominator	Total number of street light installations	50214
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3844703125
Denominator	Total population of the city	1648643
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be	

	treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	210
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	Data Unavailable
Denominator	Total population of the city	1648643
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**2.41**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	78.54
Denominator	Total length of road network in the city	3258.97
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**11.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	9

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.56**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	5
Denominator	Total number of major interchanges in the city	9
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**13.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	4
Denominator	Total number of signalised intersections in the city	29
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**71.15**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	37
Denominator	Total available on-street parking spaces in the city	52
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**37.83**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2466
Denominator	Total length of road network in the city	6517.94
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian**	**102.5**

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

	crossing facilities	
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	41
Denominator	Total number of junctions/ intersections on major roads in the city	40
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**21.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	422
Denominator	Total number of public right-of-way areas in the city	1934
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**70.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	227676
Denominator	Total number of households in the city	323380
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**197.13**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	325
Denominator	Total population of the city	1648643
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	4901
Denominator	Total number of samples tested for water quality	5214

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**23.54**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	76.5
Denominator	Quantum of water put into the distribution system (mld)	325
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	Data Unavailable
Denominator	Total number of water connections in the city	237552
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	56
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**90.65**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	294610
Denominator	Total number of properties in the city	325000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**90.04**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	292620
Denominator	Total number of properties in the city	325000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**87.31**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	227
Denominator	Total waste water generated in the city per day	260
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**101.32**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	230
Denominator	Total waste water received at treatment plants per day	227
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**61.15**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1993
Denominator	Total length of road network in the city	3258.97
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**83.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	284345
Denominator	Total number of households and establishments in the city	342553
Unit	Percentage	
Benchmark	100% door to door collection	

Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	850
Denominator	Total quantum of MSW generated in the city	850
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**11.76**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	3000
Denominator	Average MSW generated in the city (tons per month)	25500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**21.64**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	21.64
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**33.44**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	33.44
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**275.85**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	275.85
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of noise samples meeting acceptable noise levels	96
Denominator	Total number of noise samples	96
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	36
Denominator	Total number of samples tested	36
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GREATER MUMBAI

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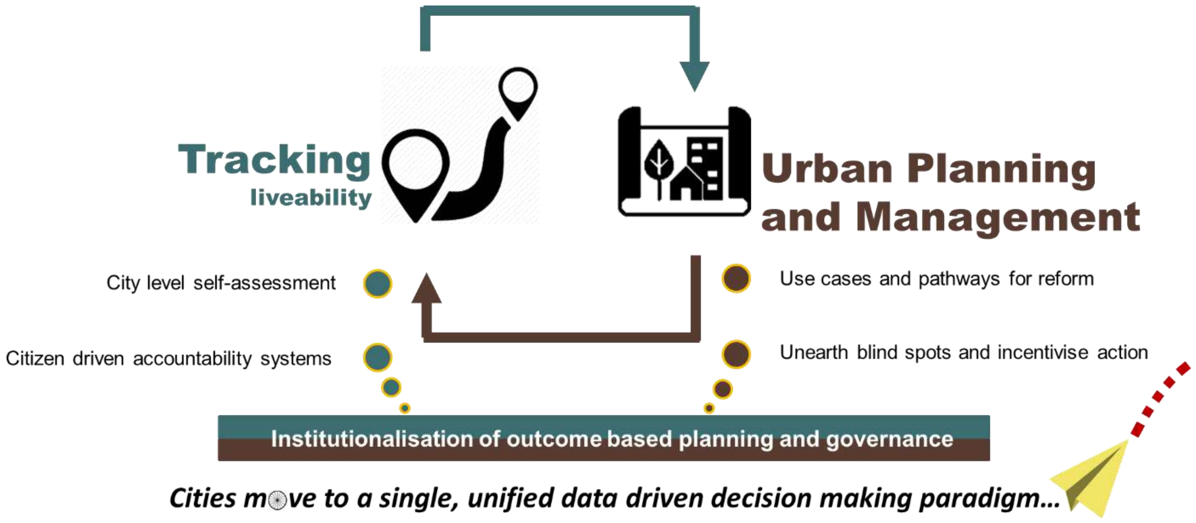
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

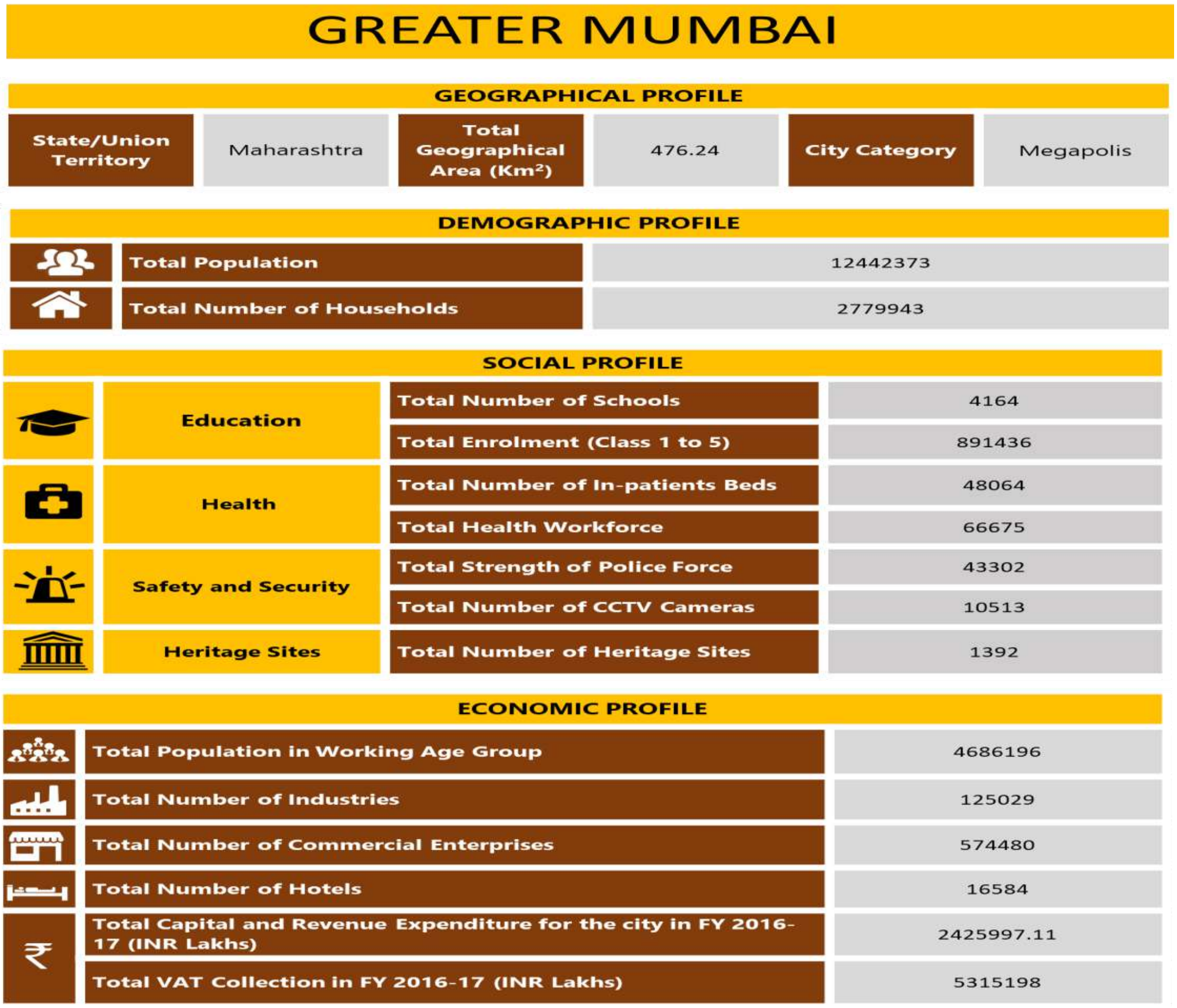

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GREATER MUMBAI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km^2)	476.24	City Category	Megapolis

DEMOGRAPHIC PROFILE

Total Population	12442373
Total Number of Households	2779943

SOCIAL PROFILE

Education	Total Number of Schools	4164
	Total Enrolment (Class 1 to 5)	891436
Health	Total Number of In-patients Beds	48064
	Total Health Workforce	66675
Safety and Security	Total Strength of Police Force	43302
	Total Number of CCTV Cameras	10513
Heritage Sites	Total Number of Heritage Sites	1392

ECONOMIC PROFILE

Total Population in Working Age Group	4686196
Total Number of Industries	125029
Total Number of Commercial Enterprises	574480
Total Number of Hotels	16584
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2425997.11
Total VAT Collection in FY 2016-17 (INR Lakhs)	5315198

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	3615
		Total Number of Water Connections	510559
	Sanitation Facilities	Total number of households with access to individual toilets in the city	1541000
		Total number of households in the city with access to community toilets in the city	1071417
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	7970.7
		Total number of households covered through door-to-door collection of solid waste	3484278
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	2290
		Daily average quantum of waste water treated by STPs in the city (MLD)	1769
	Electricity	Total number of authorized electrical connections in the city	4315021
		Total electricity supplied to the city (kWh)	17830049797
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	128416000
	Roads and Transport	Total Length of Road Network in the City (Km)	2260.062
		Total length of arterial and sub-arterial road network in the city (Km)	1941
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2300

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

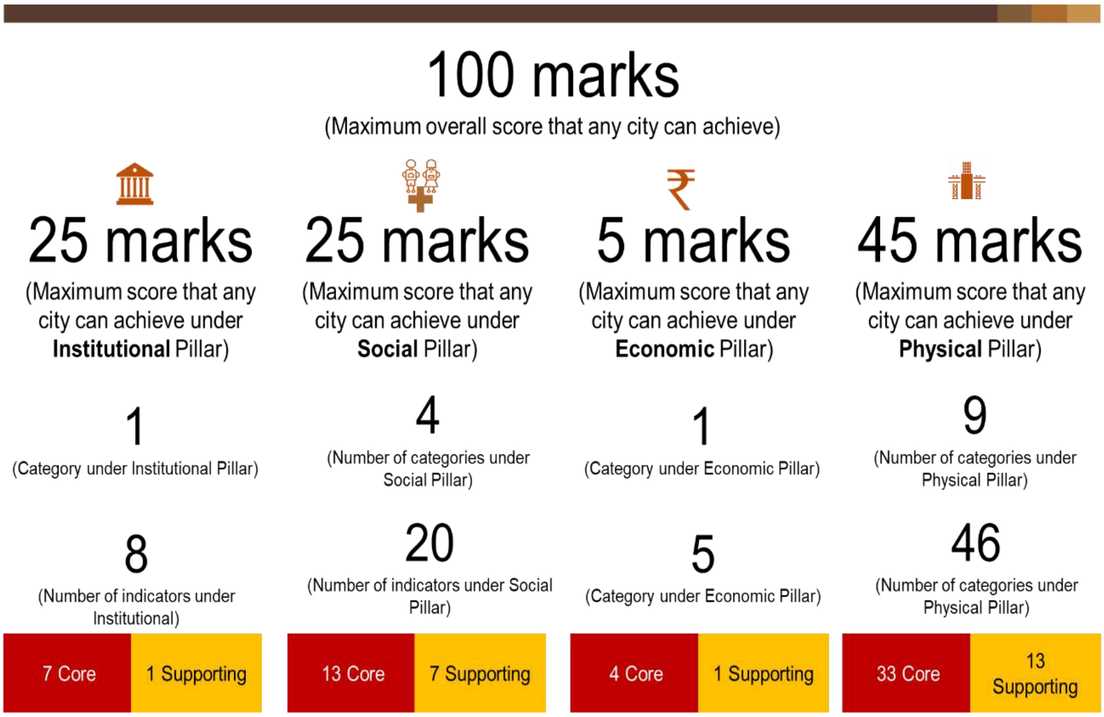
Table 2 Details on Population Range

Category	Population range

Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\text{indicator value for the city} - \text{indicator value for the worst performing city}}{\text{benchmark} - \text{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the

questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, MCGM
Urban Local Body	For Park and Recreation Related Questions	Garden Department, MCGM Development and Planning Department, MCGM
Urban Local Body	For Water Supply and Drainage related questions	Hydraulic Department, MCGM
Urban Local Body	For Heritage sites related data	Development and Planning, MCGM Archaeological Survey of India
Urban Local Body	For Ecological sites related data	Environment and Forest Department
Urban Local Body	For Housing related data	Development and Planning, MCGM
Urban Local Body	For Building plan related data	Development and Planning, MCGM
Urban Local Body	For Roads related data	Department of Roads and Traffic, MCGM
Urban Local Body	For Solid waste management related data	Solid waste management Department, MCGM
Urban Local Body	For IT services related data	IT Department, MCGM
Urban Local Body	For Vendor committee related data	Licence and Establishment, MCGM
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board Environment Department, MCGM
Development Authority	Building Infrastructure	Development and Planning, MCGM
	Construction planning	Development and Planning, MCGM
	Green Building	Development and Planning, MCGM

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Development and Planning, MCGM
	Universal Design Principle	Development and Planning, MCGM
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bombay Electricity Supply and Transport, MCGM Maharashtra State Electricity Development Corporation
State Disaster management authority		District Disaster management Office
State Education Department		State Education Department Education Department, MCMG
State Health Department	Health care professionals	Health Department, MCMG
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Development and Planning, MCMG
Traffic and Police Department		State Police Department
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Bombay Electricity Supply and Transport
	Sub urban rail transport	Western Railways, central Railways and Harbour Railways
	Mono Rail Authority	MMRDA
	Tramways	NA
	Marine Transport Authority	Mumbai Maritime Board

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 97 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping

of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	12
State Education Department	1
DISCOM/Electricity Department	14
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	3
Town and Country Planning	0
State Health Department	0
Transport Authority	4
Disaster Management	0
Urban Local Body	59
Total	97*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

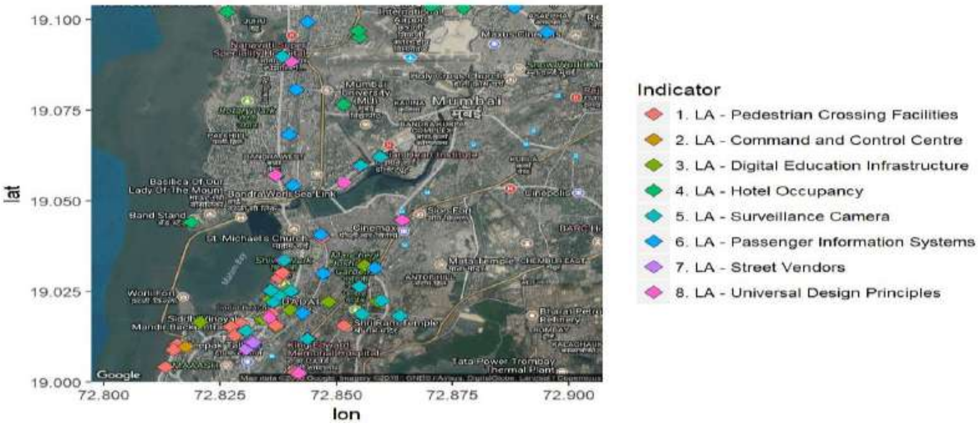
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.100
19.075
19.050
19.025
19.000
lat
72.800
72.825
72.850
72.875
72.900
lon
Mumbai
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**80.28**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.25
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	0.75
	1.1j information	0.769230769

	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**52.38**
Description	Services integrated through an integrated or a singular operations command centre	11
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**14.99**
Description		
Sub Indicators	1.3a Building plan	0.018514428
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.320993934
	1.3d solid waste management	0.001209174
	1.3e property tax	0.043731913
	1.3f professional tax (RC)	0.458945112
	1.3g professional tax (EC)	0.03337704
	1.3h complaints/ grievance redressal	0.000622416
	1.3i information	0.001209174
	1.3j electricity	0.470789366
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0

	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**118.1**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	582600
Denominator	Total demand raised for the year	493320
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**506.44**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	146078.19
Denominator	Total O&M cost for providing water supply services during the year	28844.26
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**18.35**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1382088.92
Denominator	Total expenditure (revenue and capital accounts) in the same year	7531457.35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**70.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	17
Denominator	Total number of wards	24
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	1392
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**77**
Description	Average Occupancy rate of Hotels	77
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**1.7**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	41180.11
Denominator	Total budget of the ULB (capital and revenue)	2425997.11
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**2735**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	2735
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**73.62**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	1404629
Denominator	Total population in the age group of 6-14 years	1907833
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**73.88**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	665670
Denominator	Total female population in the age group of 6-14 years	900991
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**22.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	891436
Denominator	Total number of teachers available for primary grades (public and private schools)	39484
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**36.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1507
Denominator	Total number of schools	4164
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**166.07**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	166.0727145
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.6	Percentage of students completing secondary education	**79.65**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	27837032020
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**38.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	48064
Denominator	Total population of the city	12442373
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**53.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	66675
Denominator	Total population of the city	12442373
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	6325
Denominator	Total population of the city	12442373
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	11458

Denominator	Total population of the city	12442373
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**465.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	10513
Denominator	Total length of road network in the city	2260.062
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**320.45**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	39872
Denominator	Total population of the city	12442373
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**17.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	6931
Denominator	Total crimes recorded in the same year	39872
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**13.45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1674
Denominator	Total population of the city	12442373
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**16.06**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	735428
Denominator	Total VAT/GST collection during preceding year	45797.7
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**9.28**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	8314
Denominator	Total Professional Tax collection during preceding year	89580
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**18.2**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	107
Denominator	Number of construction permits during preceding year	5.88
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	368149
Denominator	Total labour force in the city	1907833
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal	**11.64**

	spaces	
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	11573
Denominator	Total number of vendors in the city	99435
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**93.9**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1256724
Denominator	Total number of slum and EWS households in the city	13384.35
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	0
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**10.32**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	128416000
Denominator	Total population of the city	12442373
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**7.65**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	95204222.64

Denominator	Total population of the city	12442373
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**56.4**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	268620000
Denominator	Total area of the city (total area of all land uses)	476240000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	12442373
Denominator	Area allocated for residential land use (in hectares)	219090000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**127.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	3547976
Denominator	Total number of households in the city	2779943
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**7.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and	326645

	commercial) with smart meters	
Denominator	Total number of electricity connections in the city	4315021
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**6775**
Description	Total number of sustained electrical interruptions in a year	6775
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.6**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	163840
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	6411.91
Denominator	Total energy consumption from all sources	17830176522
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	563692.39
Denominator	Total quantum of water and waste water handled during the period	161520
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	87879253
Denominator	Total number of street light installations	177517
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in	

	the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	2497358
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	5196080.64
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	17830176522
Denominator	Total population of the city	12442373
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	6606.97
Denominator	Total area of the city (sq.km)	476.24
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**1.27**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	15842
Denominator	Total population of the city	12442373
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	67
Unit	Percentage	

Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**1.06**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	24
Denominator	Total length of road network in the city	2260.062
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**16.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	58
Denominator	Total number of major transport interchanges in the city	361
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	46
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.35**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	119
Denominator	Total number of major interchanges in the city	344
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	618
Denominator	Total number of signalised intersections in the city	618
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**7.27**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total available on-street paid parking spaces in the city	10906
Denominator	Total available on-street parking spaces in the city	149958
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**50.88**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2300
Denominator	Total length of road network in the city	4520.124
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**690.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	1727
Denominator	Total number of junctions/ intersections on major roads in the city	250
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**270.7**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	18148
Denominator	Total number of public right-of-way areas in the city	6704
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**67.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	1868260
Denominator	Total number of households in the city	2779943
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**290.54**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	3615
Denominator	Total population of the city	12442373
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	35595
Denominator	Total number of samples tested for water quality	36121
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**24.32**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	879
Denominator	Quantum of water put into the distribution system (mld)	3615
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**77.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	397708
Denominator	Total number of water connections in the city	510559
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**11.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1373
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	12225
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**964.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	3316797
Denominator	Total number of properties in the city	344047
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**87.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	300133
Denominator	Total number of properties in the city	344047
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**77.25**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	1769
Denominator	Total waste water generated in the city per day	2290
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**93.54**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	1654.7
Denominator	Total waste water received at treatment plants per day	1769
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**122.6**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	2770.93
Denominator	Total length of road network in the city	2260.062
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**113.04**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	3791723
Denominator	Total number of households and establishments in the city	3354423
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	7970.7
Denominator	Total quantum of MSW generated in the city	7970.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**1.77**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	4226.77
Denominator	Average MSW generated in the city (tons per month)	239121
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**15**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	15
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**39**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	39
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**97**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	97
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	

Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1740
Denominator	Total number of noise samples	7116
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**61.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	88
Denominator	Total number of samples tested	144
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GURGAON

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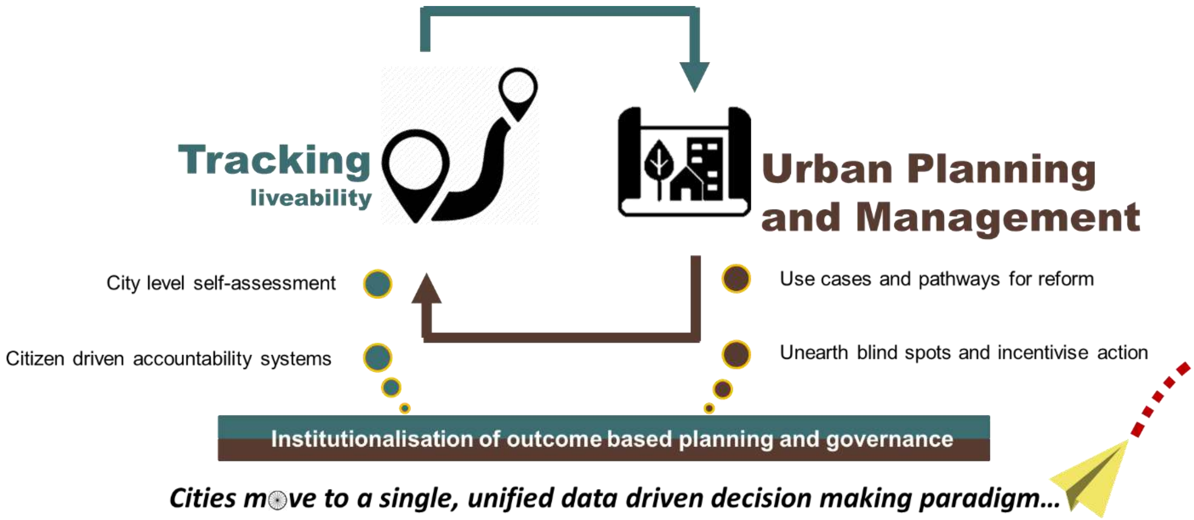
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

GURGAON

GEOGRAPHICAL PROFILE

State/Union Territory	Haryana	**Total Geographical Area (Km^2)**	232	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	876000
Total Number of Households	380000

SOCIAL PROFILE

Education	**Total Number of Schools**	1067
	Total Enrolment (Class 1 to 5)	178809
Health	**Total Number of In-patient Beds**	5744
	Total Health Workforce	870
Safety and Security	**Total Strength of Police Force**	4777
	Total Number of CCTV Cameras	56911
Heritage Sites	**Total Number of Heritage Sites**	12

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	3957
Total Number of Commercial Enterprises	49779
Total Number of Hotels	5474
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	34533.18
Total VAT Collection in FY 2016-17 (INR Lakhs)	569842

PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	181.6
		Total Number of Water Connection	268241
	Sanitation Facilities	Total number of households with access to individual toilets in the city	30826
		Total number of households in the city with access to community toilets in the city	3187
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	784
		Total number of households covered through door-to-door collection of solid waste	312589
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	40
		Daily average quantum of waste water treated by STPs in the city (MLD)	40
	Electricity	Total number of authorized electrical connections in the city	259086
		Total electricity supplied to the city (kWh)	4129224000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10.04
	Roads and Transport	Total Length of Road Network in the City (Km)	3400
		Total length of arterial and sub-arterial road network in the city (Km)	28.04
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	500

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Gurgaon
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Gurgaon
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Gurgaon
Urban Local Body	For Heritage sites related data	Municipal Corporation Gurgaon
Urban Local Body	For Ecological sites related data	Municipal Corporation Gurgaon
Urban Local Body	For Housing related data	Municipal Corporation Gurgaon
Urban Local Body	For Building plan related data	Municipal Corporation Gurgaon
Urban Local Body	For Roads related data	Municipal Corporation Gurgaon
Urban Local Body	For Solid waste management related data	Municipal Corporation Gurgaon
Urban Local Body	For IT services related data	Municipal Corporation Gurgaon
Urban Local Body	For Vendor committee related data	Municipal Corporation Gurgaon
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Gurgaon

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Dakshin Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Gurgaon
	Citizen Services	Civil Hospital Gurgaon
	Disease Prevalence	Civil Hospital Gurgaon
	Health Infrastructure	Civil Hospital Gurgaon
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town and Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Transport Authority
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**3**
Total	**7***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

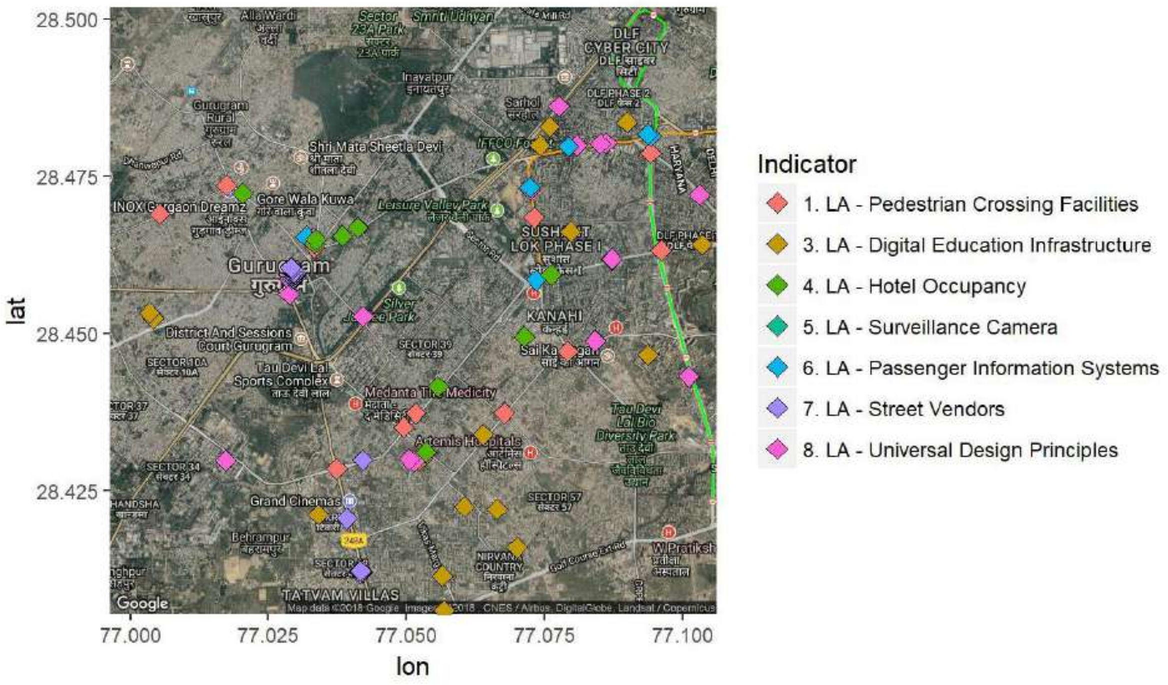
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.500
28.475
28.450
28.425
lat
77.000
77.025
77.050
77.075
77.100
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Gurugram
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**58.86**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0.5
	1.1d solid waste management	0.5
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0.25
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.888888889
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.19**
Description		
Sub Indicators	1.3a Building plan	3.28046E-05
	1.3b Birth/Death Certificate	5.63064E-05
	1.3c water supply	0.000170408
	1.3d solid waste management	3.38402E-06
	1.3e property tax	0.001657842
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.009489127
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	5
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**29.43**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4510356254

Denominator	Total demand raised for the year	15325500000
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**67**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	326.36
Denominator	Total O&M cost for providing water supply services during the year	487.1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**9.61**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	10076.67
Denominator	Total expenditure (revenue and capital accounts) in the same year	104828.01
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	35
Denominator	Total number of wards	35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	12
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**30.43**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	7
Denominator	Total number of ecologically important sites identified in the city	23
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**79.57**
Description	Average Occupancy rate of Hotels	79.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**1.55**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	536.17
Denominator	Total budget of the ULB (capital and revenue)	34533.18
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**31**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	31
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**180.2**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	279486
Denominator	Total population in the age group of 6-14 years	155094

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**181.13**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	125527
Denominator	Total female population in the age group of 6-14 years	69304
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**109.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	178809
Denominator	Total number of teachers available for primary grades (public and private schools)	1626
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**43.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	463
Denominator	Total number of schools	1067
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**154.36**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	154.3593643
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**109.7**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1057514394
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**64.79**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5744
Denominator	Total population of the city	886519
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**9.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	870
Denominator	Total population of the city	886519
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**5.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	49381
Denominator	Total population of the city	886519
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	113
Denominator	Total population of the city	886519
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**1673.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	56911
Denominator	Total length of road network in the city	3400
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**2170.51**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	19242
Denominator	Total population of the city	886519
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	0
Denominator	Total crimes recorded in the same year	19242
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	#VALUE!
Denominator	Total population of the city	886519
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**9.71**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	50426
Denominator	Total VAT/GST collection during preceding year	5194.16
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	29256254
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**16.14**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	173
Denominator	Number of construction permits during preceding year	10.72
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	28683
Denominator	Total labour force in the city	155094
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**26.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	3744
Denominator	Total number of vendors in the city	14172
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**138.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	26375
Denominator	Total number of slum and EWS households in the city	190.42
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**

Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	10.046
Denominator	Total population of the city	886519
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.82**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	3382440.056
Denominator	Total population of the city	886519
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	232000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	886519
Denominator	Area allocated for residential land use (in hectares)	152114611
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**26.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	102089
Denominator	Total number of households in the city	380000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	259086
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1304**
Description	Total number of sustained electrical interruptions in a year	1304
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	54676
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	21272.13
Denominator	Total energy consumption from all sources	4129224000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	75500
Denominator	Total quantum of water and waste water handled during the period	6648
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	7200
Denominator	Total number of street light installations	53820
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	

Indicator No: 10.9	**Total energy consumption per capita**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	4129224000
Denominator	Total population of the city	886519
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.51**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	186.4
Denominator	Total area of the city (sq.km)	232
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	278
Denominator	Total population of the city	886519
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	10
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.59**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	20
Denominator	Total length of road network in the city	3400
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**

Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	18
Denominator	Total number of major transport interchanges in the city	18
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	30
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.61**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	11
Denominator	Total number of major interchanges in the city	18
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**178.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	50
Denominator	Total number of signalised intersections in the city	28
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	151
Unit		

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**7.35**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	500
Denominator	Total length of road network in the city	6800
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**127.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	264
Denominator	Total number of junctions/ intersections on major roads in the city	207
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	393
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**8.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	30597
Denominator	Total number of households in the city	380000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**204.85**

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	181.6
Denominator	Total population of the city	886519
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	45
Denominator	Total number of samples tested for water quality	50
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0.33
Denominator	Quantum of water put into the distribution system (mld)	181.6
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**10.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	28000
Denominator	Total number of water connections in the city	268241
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**10.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	41062
Denominator	Total number of properties in the city	378504
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**8.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	30826
Denominator	Total number of properties in the city	378504
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	40
Denominator	Total waste water generated in the city per day	40
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**139.25**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	55.7
Denominator	Total waste water received at treatment plants per day	40

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**19.12**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	650
Denominator	Total length of road network in the city	3400
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**80.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	344709
Denominator	Total number of households and establishments in the city	429779
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	784
Denominator	Total quantum of MSW generated in the city	784
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**34.02**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	8001.55
Denominator	Average MSW generated in the city (tons per month)	23520
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.34**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.34
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**18.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	18.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**134.32**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	134.32
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	20
Denominator	Total number of noise samples	20
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**69.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	18
Denominator	Total number of samples tested	26
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GUWAHATI

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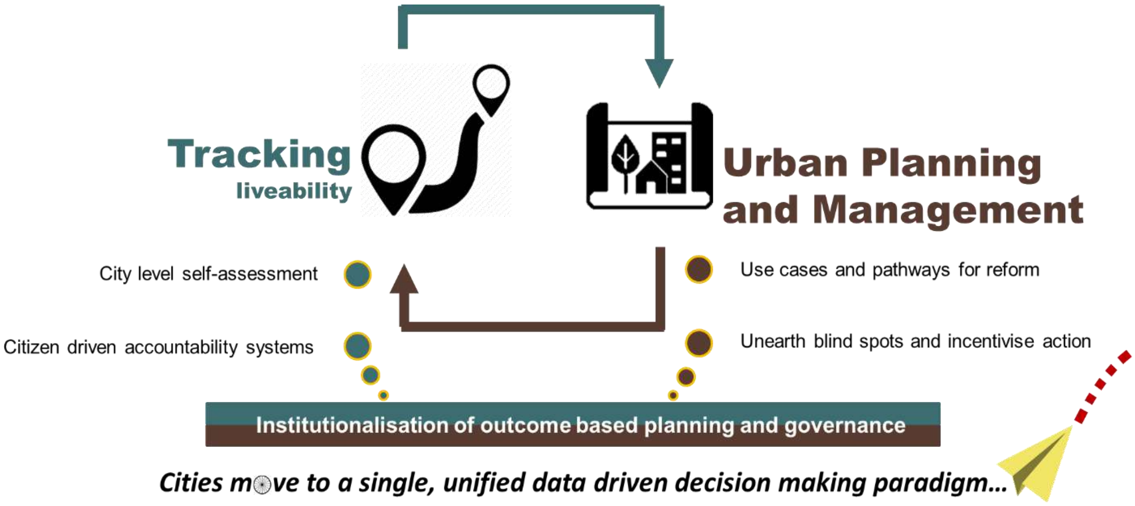
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

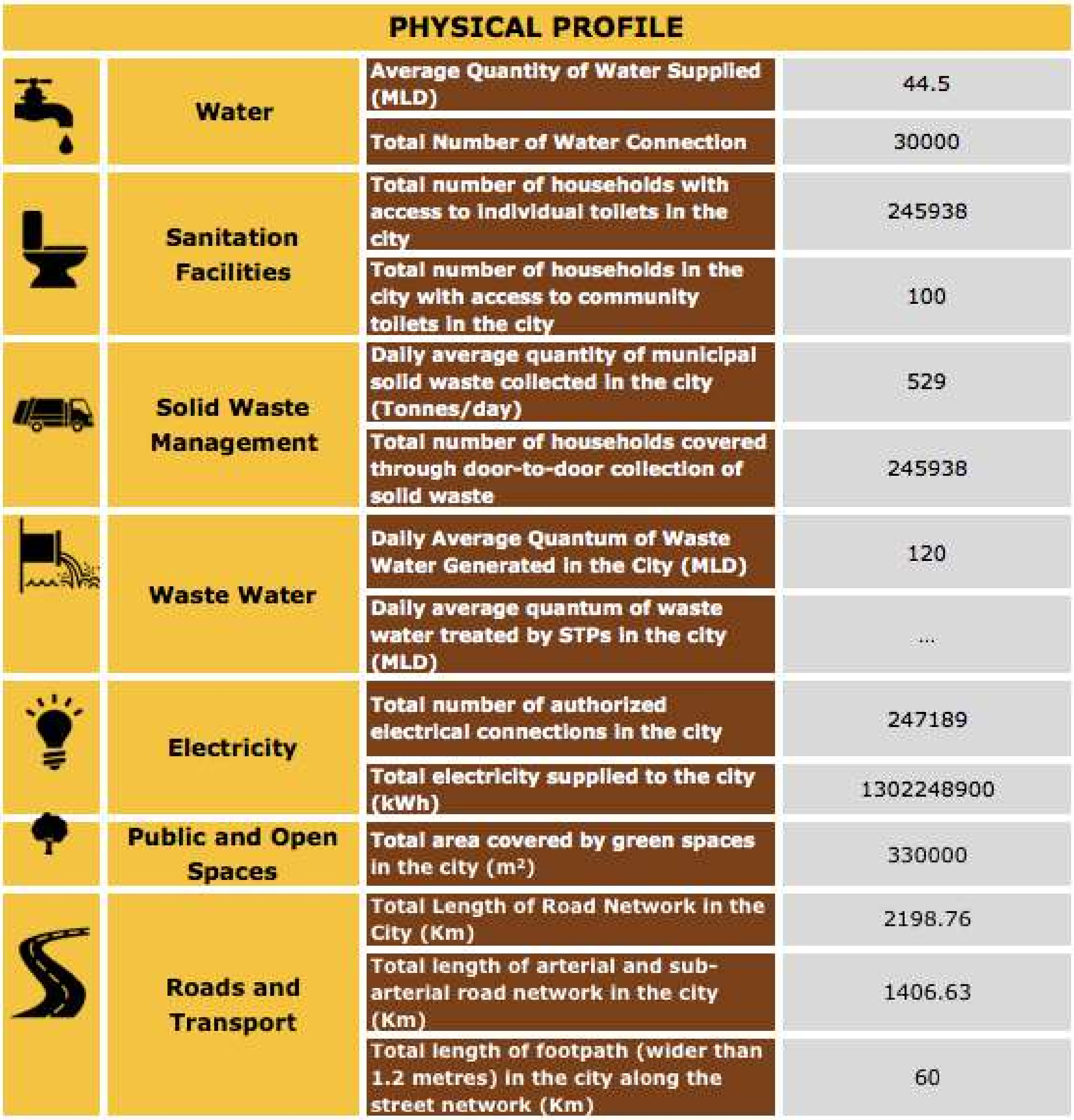
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	44.5
	Total Number of Water Connection	30000
Sanitation Facilities	Total number of households with access to individual toilets in the city	245938
	Total number of households in the city with access to community toilets in the city	100
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	529
	Total number of households covered through door-to-door collection of solid waste	245938
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	247189
	Total electricity supplied to the city (kWh)	1302248900
Public and Open Spaces	Total area covered by green spaces in the city (m²)	330000
Roads and Transport	Total Length of Road Network in the City (Km)	2198.76
	Total length of arterial and sub-arterial road network in the city (Km)	1406.63
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	60

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the perfor-

mance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	**Category**	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open	8.1 Per capita availability of green spaces

Pillars of Comprehensive Development	**Category**	Indicators
	Spaces	8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	**Category**	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollu-	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	**Category**	Indicators
	tion	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under	(Maximum score that any city can achieve under	(Maximum score that any city can achieve under	(Maximum score that any city can achieve under

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Guwahati Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Guwahati Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Water Division, Guwahati Municipal Corporation
Urban Local Body	For Heritage sites related data	Department of Culture, Guwahati
Urban Local Body	For Ecological sites related data	Department of Environment and Forest, Guwahati

Urban Local Body	For Housing related data	Guwahati Metropolitan Development authority, Guwahati
Urban Local Body	For Building plan related data	Guwahati Metropolitan Development authority, Guwahati
Urban Local Body	For Roads related data	Guwahati Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Guwahati Municipal Corporation
Urban Local Body	For IT services related data	Directorate of Information and Technology IT section, Guwahati Municipal Corporation
Urban Local Body	For Vendor committee related data	Guwahati Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Assam Pollution Control Board
Development Authority	Building Infrastructure	Guwahati Metropolitan Development authority, Guwahati
	Construction planning	Guwahati Metropolitan Development authority, Guwahati
	Green Building	Guwahati Metropolitan Development authority, Guwahati
	Rain water harvesting	Guwahati Metropolitan Development authority, Guwahati
	Universal Design Principle	Guwahati Metropolitan Development authority, Guwahati
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Assam Power Distribution

State Disaster management authority		District Disaster management Office
State Education Department		Office of Inspector of School, Guwahati
State Health Department	Health care professionals	State Health Department
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Assam Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Guwahati Metropolitan Development authority, Guwahati
Traffic and Police Department		Office of Commissioner of Police, Guwahati Department of Home Affaires
Transport Authorities	Buses	District Transport Office
	Registered Vehicles	District Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA

	Tramways	NA
	Marine Transport Authority	State transport authority

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 39 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	1
DISCOM/Electricity Department	11
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	6
State Renewable Energy Department	4
Town and Country Planning	0
State Health Department	1
Transport Authority	5

Disaster Management	1
Urban Local Body	0
Total	39

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

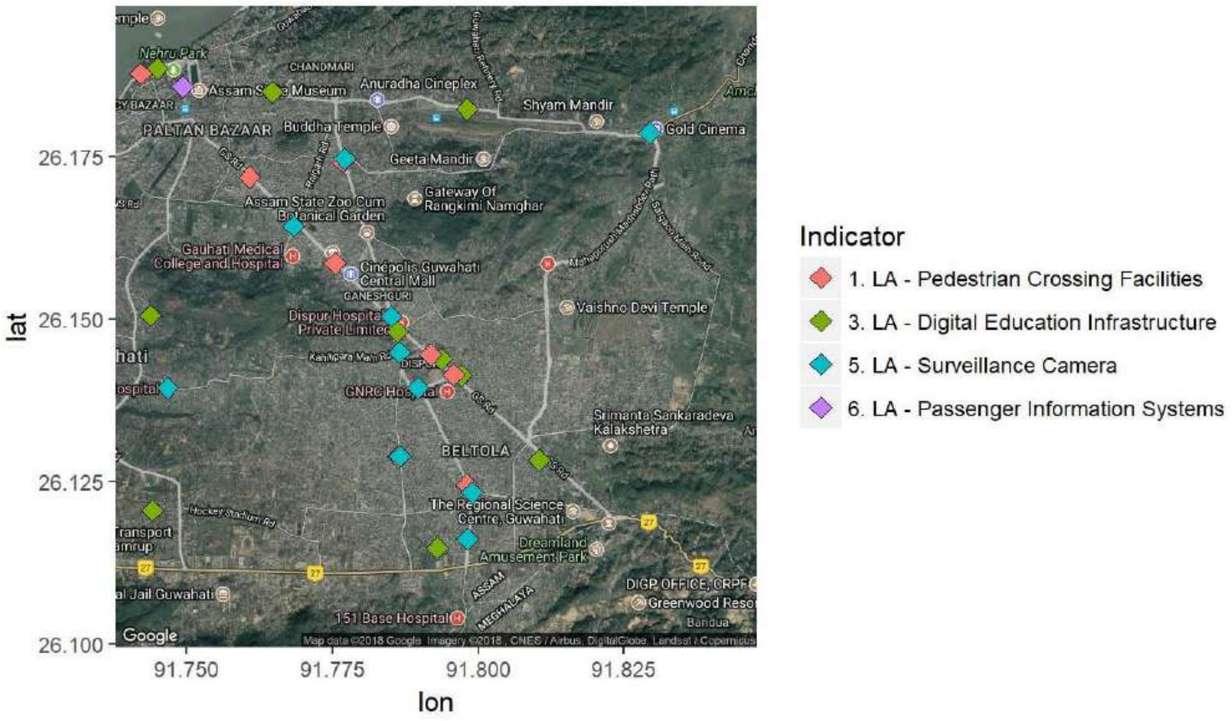
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
26.175
26.150
26.125
26.100
lon
91.750
91.775
91.800
91.825
Nehru Park
CHANDMARI
Assam State Museum
Anuradha Cineplex
Shyam Mandir
Gold Cinema
PALTAN BAZAAR
Buddha Temple
Geeta Mandir
Assam State Zoo Cum Botanical Garden
Gateway Of Rangkimi Namghar
Gauhati Medical College and Hospital
Cinépolis Guwahati Central Mall
GANESHGURI
Dispur Hospital Private Limited
Vaishno Devi Temple
GNRC Hospital
BELTOLA
Srimanta Sankaradeva Kalakshetra
The Regional Science Centre, Guwahati
Dreamland Amusement Park
DIGP OFFICE, CRPF
Greenwood Resort
151 Base Hospital
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
5. LA - Surveillance Camera
6. LA - Passenger Information Systems

5. Indicator Values

In this chapter, indicator values for 74 indicators excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**41.12**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0.25
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0

	1.1g fogging	0
	1.1h property tax	0.666666666666667
	1.1i professional tax	0
	1.1j information	0.846153846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**11.55**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.00038578082038045
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0.0918635170603675
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.485458495321394
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.5**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	1.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**107.11**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	5792.86
Denominator	Total demand raised for the year	5408.08
Unit	Percentage	
Benchmark	90%	

Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**51.41**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	620
Denominator	Total O&M cost for providing water supply services during the year	1206
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**11.51**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	3501.01
Denominator	Total expenditure (revenue and capital accounts) in the same year	30426.42
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	31
Denominator	Total number of wards	31
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Number of historic buildings/sites re-stored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	27
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**66.8**
Description	Average Occupancy rate of Hotels	66.8
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	13430.53
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**0**

Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**103.62**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	155624
Denominator	Total population in the age group of 6-14 years	150188
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**106.59**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	77532
Denominator	Total female population in the age group of 6-14 years	72741
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**47.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	100395
Denominator	Total number of teachers available for primary grades (public and private schools)	2097

Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**18.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	226
Denominator	Total number of schools	1228
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**65.94**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	65.9427864211996
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**81.18**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	332967244
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**51.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospi-	5000

	tals	
Denominator	Total population of the city	962334
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	962334
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2215
Denominator	Total population of the city	962334
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**23**
Description	Total response time for health-related distress calls received in the city	23
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	4004
Denominator	Total population of the city	962334
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	4231
Denominator	Total population of the city	962334

Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**169.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	3722
Denominator	Total length of road network in the city	2198.76
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**1666.57**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	16038
Denominator	Total population of the city	962334
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**10.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1744
Denominator	Total crimes recorded in the same year	16038
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classifi-	

	cation) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**28.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	279
Denominator	Total population of the city	962334
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**23.43**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	107762.02
Denominator	Total VAT/GST collection during preceding year	4598.5858
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	Increase in issuance of Construction Permits	**61.63**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	967
Denominator	Number of construction permits during preceding year	15.69
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	0
Denominator	Total labour force in the city	150188
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	7183
Unit	Percentage	
Benchmark	100%	

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**7.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	3685
Denominator	Total number of slum and EWS households in the city	501.48
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.03**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	1825882560
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.34**
Formula:	*Numerator / Denominator*	

Numerator	Total area of green space (sq.m.)	330000
Denominator	Total population of the city	962334
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**4.81**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	4630000
Denominator	Total population of the city	962334
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**5.14**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	11140000
Denominator	Total area of the city (total area of all land uses)	216790000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**

Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	962334
Denominator	Area allocated for residential land use (in hectares)	86460000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**84.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at house-hold level	207526
Denominator	Total number of households in the city	245938
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**5.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	13314
Denominator	Total number of electricity connections in the city	247189
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**23280**
Description	Total number of sustained electrical interruptions in a year	23280

Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2332262
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	24074
Denominator	Total energy consumption from all sources	1302278422.625
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	25000
Denominator	Total quantum of water and waste water handled during the period	1335
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.33**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	4100000
Denominator	Total number of street light installations	9500
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	174287.49
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1302278422.625
Denominator	Total population of the city	962334
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	24.5

Denominator	Total area of the city (sq.km)	216.79
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	**2.87**
Denominator	Total population of the city	2766
Unit	Number per 1000 persons	962334
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	13
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	2198.76
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**266.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	8
Denominator	Total number of major transport interchanges in the	3

	city	
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport	**To be computed**
Description	Mode share of non-motorised transport	25
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**2.67**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	8
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**64.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	168
Denominator	Total number of signalised intersections in the city	260
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	49
Denominator	Total available on-street parking spaces in the city	49
Unit		

Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.36**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	60
Denominator	Total length of road network in the city	4397.52
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	15
Denominator	Total number of junctions/ intersections on major roads in the city	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	4482
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**12.2**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	30000
Denominator	Total number of households in the city	245938
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**46.24**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	44.5
Denominator	Total population of the city	962334
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	5
Denominator	Total number of samples tested for water quality	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	44.5
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through me-	**0.05**

	ters	
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	15
Denominator	Total number of water connections in the city	30000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2504
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**112.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	286088
Denominator	Total number of properties in the city	254000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**96.83**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	245938
Denominator	Total number of properties in the city	254000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**9.02**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	198.39
Denominator	Total length of road network in the city	2198.76
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**100**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	283938
Denominator	Total number of households and establishments in the city	283938
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	529
Denominator	Total quantum of MSW generated in the city	529
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through re-use	**9.45**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1500
Denominator	Average MSW generated in the city (tons per month)	15870
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**16**

Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	16
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**107**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	107
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	8
Denominator	Total number of noise samples	282
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	27
Denominator	Total number of samples tested	108
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GWALIOR

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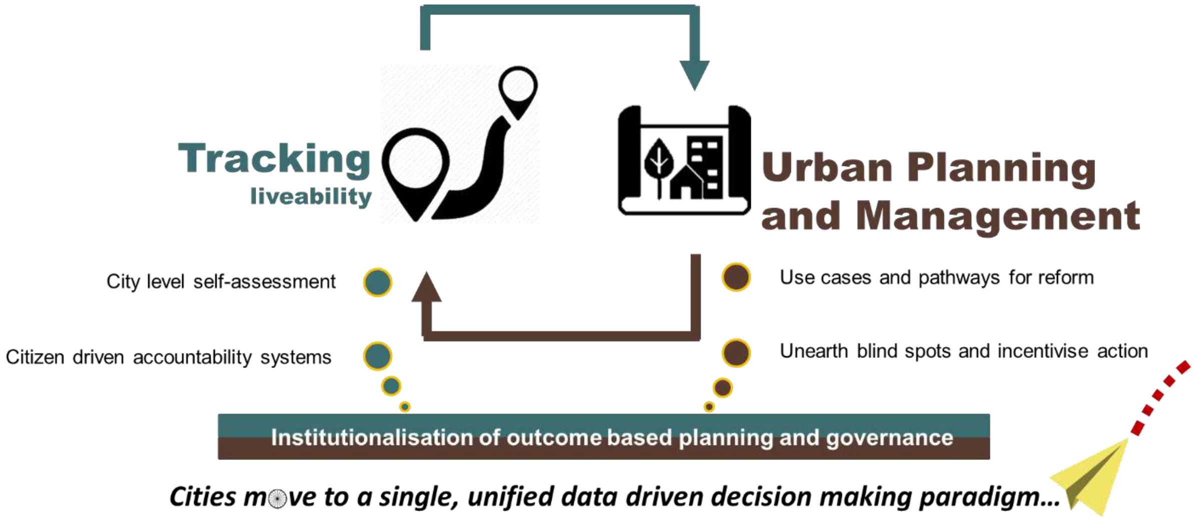
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

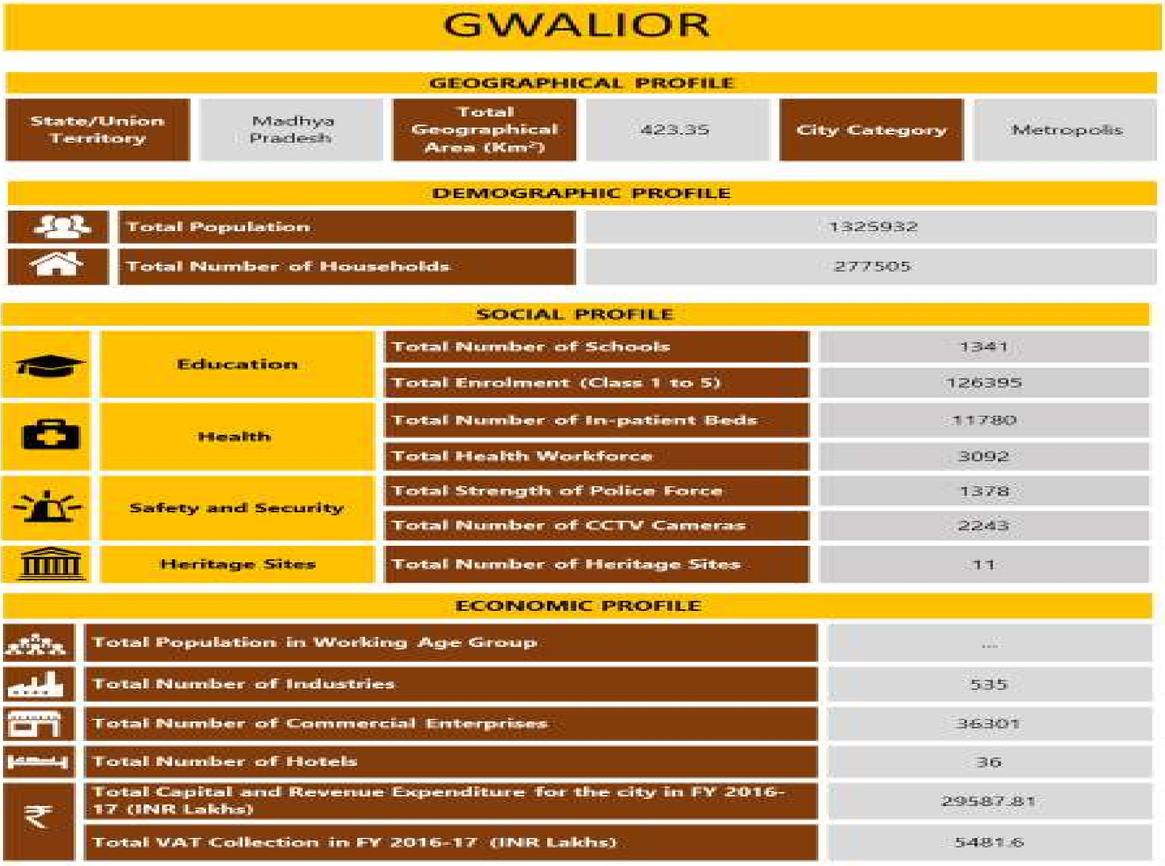

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GWALIOR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	423.35	City Category	Metropolis

DEMOGRAPHIC PROFILE

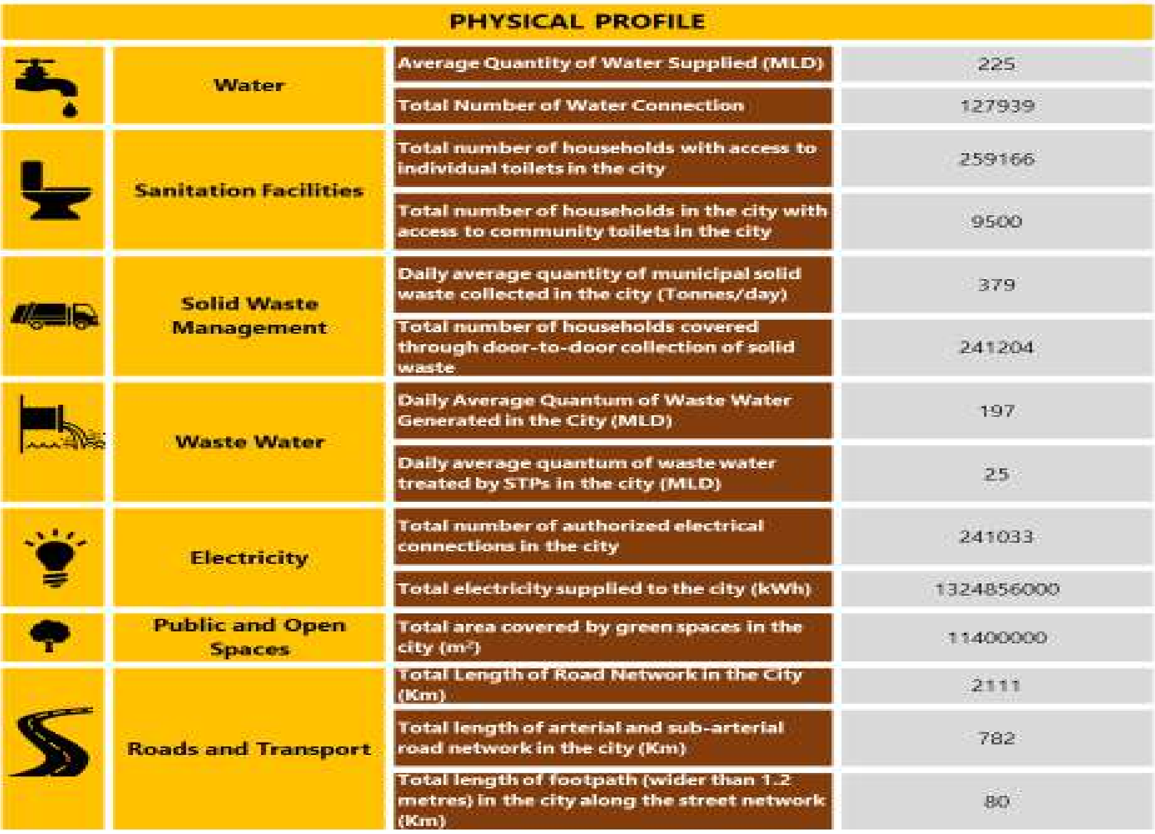
Total Population	1325932
Total Number of Households	277505

SOCIAL PROFILE

Education	Total Number of Schools	1341
	Total Enrolment (Class 1 to 5)	126395
Health	Total Number of In-patient Beds	11780
	Total Health Workforce	3092
Safety and Security	Total Strength of Police Force	1378
	Total Number of CCTV Cameras	2243
Heritage Sites	Total Number of Heritage Sites	11

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	535
Total Number of Commercial Enterprises	36301
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29587.81
Total VAT Collection in FY 2016-17 (INR Lakhs)	5481.6



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	225
	Total Number of Water Connection	127939
Sanitation Facilities	Total number of households with access to individual toilets in the city	259166
	Total number of households in the city with access to community toilets in the city	9500
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	379
	Total number of households covered through door-to-door collection of solid waste	241204
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	197
	Daily average quantum of waste water treated by STPs in the city (MLD)	25
Electricity	Total number of authorized electrical connections in the city	241033
	Total electricity supplied to the city (kWh)	1324856000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	11400000
Roads and Transport	Total Length of Road Network in the City (Km)	2111
	Total length of arterial and sub-arterial road network in the city (Km)	782
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	80

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year

Pillars of Comprehensive Development	Category	Indicators
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport

Pillars of Comprehensive Development	Category	Indicators
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Section, Gwalior Municipal Corporation
	Park and Recreation	Garden Section, Gwalior Municipal Corporation
	Water Supply and Drainage	Public Health and Engineering Department
	Heritage sites	Gwalior Municipal Corporation
	Ecological sites	Zoo section, Gwalior Municipal Corporation
	Housing	Gwalior Municipal Corporation
	Building plan	Building Permission Section, Gwalior Municipal Corporation
	Roads	Roads section, Gwalior Municipal Corporation
	Solid waste management	Gwalior Municipal Corporation
	IT services	IT Section, Satna Municipal Corporation
	Vendor committee	Dukan Sansthan, Gwalior Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Gwalior Development Authority
	Construction planning	Gwalior Development Authority
	Green Building	Gwalior Development Authority
	Rain water harvesting	Gwalior Development Authority
	Universal Design Principle	Gwalior Development Authority
DISCOM/Electricity	Electrical Connection/ Grievance	Madhya Pradesh Madhya

Designated data owners	Sub categories	Data owners at city level
Board	Redressal/ Power supply	Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Gwalior
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 117 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	4
DISCOM/Electricity Department	7
Traffic and Police Department	8
Development Authority	8
Pollution Control Board	10
State Renewable Energy Department	1
Town and Country Planning	4
State Health Department	4
Transport Authority	7
Disaster Management	0
Urban Local Body	57
Total	117

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

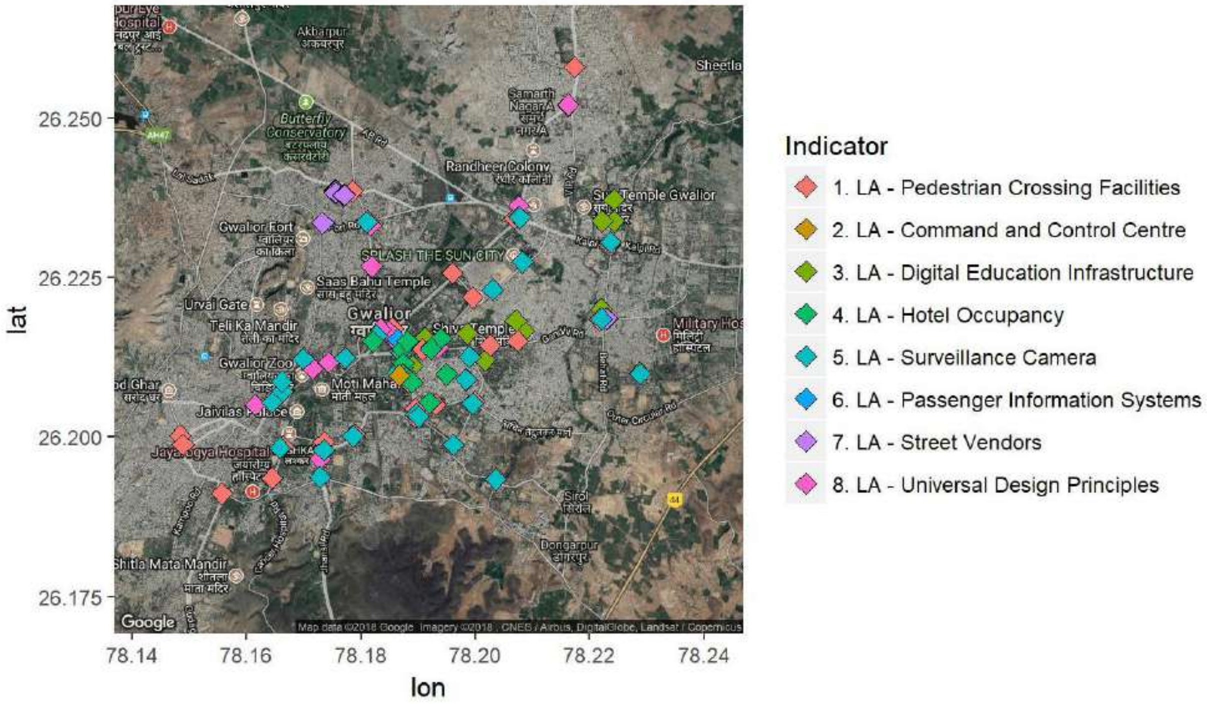
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
26.250
26.225
26.200
26.175
lon
78.14
78.16
78.18
78.20
78.22
78.24
Akbarpur
Butterfly Conservatory
Samarth Nagar A
Randheer Colony
Sheetla
Sun Temple Gwalior
Gwalior Fort
SPLASH THE SUN CITY
Saas Bahu Temple
Urvai Gate
Teli Ka Mandir
Gwalior
Shiv Temple
Military Hos
Gwalior Zoo
Moti Mahal
Jaivilas Palace
Jayarogya Hospital
Sirol
Dongarpur
Shitla Mata Mandir
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**88.76**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	

Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**4.94**
Description		
Sub Indicators	1.3a Building plan	0.000385579
	1.3b Birth/Death Certificate	0.001889823
	1.3c water supply	0.000726113
	1.3d solid waste management	0.018513496
	1.3e property tax	0.054803817
	1.3f professional tax (RC)	0.013567387
	1.3g professional tax (EC)	0.000243502
	1.3h complaints/ grievance redressal	0.000633761
	1.3i information	0.031432446
	1.3j electricity	0.371851572
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.64**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	2
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**63.95**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	6557.52901
Denominator	Total demand raised for the year	10254.92468
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**26.86**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1903.84053
Denominator	Total O&M cost for providing water supply services during the year	7089
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total**	**23.53**

	expenditure	
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	21039.58526
Denominator	Total expenditure (revenue and capital accounts) in the same year	89398.13318
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**90.91**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	60
Denominator	Total number of wards	66
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**36.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	11
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**32**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	8
Denominator	Total number of ecologically important sites identified in the city	25
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**13.57**
Description	Average Occupancy rate of Hotels	13.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.94**

Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	279.07692
Denominator	Total budget of the ULB (capital and revenue)	29587.81568
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**34**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	34
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**98.16**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	193991
Denominator	Total population in the age group of 6-14 years	197624
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**98.81**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	86684
Denominator	Total female population in the age group of 6-14 years	87731
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**71.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	126395
Denominator	Total number of teachers available for primary grades (public and private schools)	1770
Unit	Ratio	

Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**8.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	111
Denominator	Total number of schools	1341
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.18**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.17647811
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**91.88**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	498835422
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**111.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	11780
Denominator	Total population of the city	1054420
Unit	Number per 10,000 population	

Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**29.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3092
Denominator	Total population of the city	1054420
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**2.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	22913
Denominator	Total population of the city	1054420
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	903
Denominator	Total population of the city	1054420
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**106.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	2243
Denominator	Total length of road network in the city	2111
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1222.57**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	12891
Denominator	Total population of the city	1054420
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**23.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3020
Denominator	Total crimes recorded in the same year	12891
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**32.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	340
Denominator	Total population of the city	1054420
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**28.63**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1220.23
Denominator	Total VAT/GST collection during preceding year	42.6137
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**10.19**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	143.31
Denominator	Total Professional Tax collection during preceding year	1405.87
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**2.44**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	23
Denominator	Number of construction permits during preceding year	9.41
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	136764
Denominator	Total labour force in the city	197624
Unit	Per 1000 persons	

Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	4942
Denominator	Total number of vendors in the city	4942
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6370
Denominator	Total number of slum and EWS households in the city	1530.72
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0** 412360000
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**10.81**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	11400000
Denominator	Total population of the city	1054420

Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**3.31**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	3490091
Denominator	Total population of the city	1054420
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	2120000
Denominator	Total area of the city (total area of all land uses)	423350000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1054420
Denominator	Area allocated for residential land use (in hectares)	64000000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**74.49**

Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	206713
Denominator	Total number of households in the city	277505
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	241033
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**26534**
Description	Total number of sustained electrical interruptions in a year	26534
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.65**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	806626
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	272
Denominator	Total energy consumption from all sources	1324856000

Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3696676.917
Denominator	Total quantum of water and waste water handled during the period	7500
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	17456340
Denominator	Total number of street light installations	43335
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	3999
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1324856000
Denominator	Total population of the city	1054420
Unit	kWh per capita	

Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	110
Denominator	Total area of the city (sq.km)	423.35
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	25
Denominator	Total population of the city	1054420
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	10
Denominator	Total length of road network in the city	2111
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

		computed
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	41
Denominator	Total number of signalised intersections in the city	41
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**92.31**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	24
Denominator	Total available on-street parking spaces in the city	26
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.89**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	80
Denominator	Total length of road network in the city	4222
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**101.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	69
Denominator	Total number of junctions/ intersections on major roads in the city	68
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	5
Denominator	Total number of public right-of-way areas in the city	785
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	127939
Denominator	Total number of households in the city	277505
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**213.39**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	225
Denominator	Total population of the city	1054420
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	1026
Denominator	Total number of samples tested for water quality	1037
Unit	Percentage	
Benchmark	100%	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.4	**Level of non-revenue water – NRW**	**58.09**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	130.7
Denominator	Quantum of water put into the distribution system (mld)	225
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**4.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	5900
Denominator	Total number of water connections in the city	127939
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	108
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**97.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	270682
Denominator	Total number of properties in the city	277505

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**51.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	141666
Denominator	Total number of properties in the city	277505
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**70**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	137.9
Denominator	Total waste water generated in the city per day	197
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**711.6**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	177.9
Denominator	Total waste water received at treatment plants per day	25
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**2.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	45
Denominator	Total length of road network in the city	2111
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**88.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	277505
Denominator	Total number of households and establishments in the city	313806
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**92.89**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	379
Denominator	Total quantum of MSW generated in the city	408
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**19.87**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2258.85
Denominator	Average MSW generated in the city (tons per month)	11370
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11.65**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11.65
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**16.35**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	16.35
Unit	µg/m3	

Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**112.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	112.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	79
Denominator	Total number of noise samples	1728
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	11
Denominator	Total number of samples tested	11
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

HOWRAH

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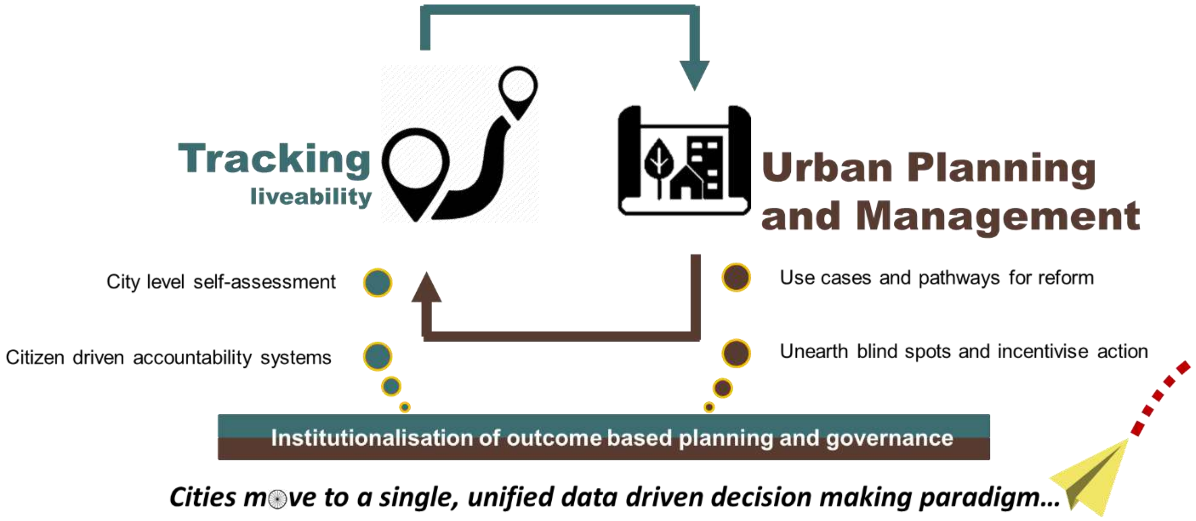
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed

Pillars of Comprehensive Development	Category	Indicators
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water

Pillars of Comprehensive Development	Category	Indicators
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

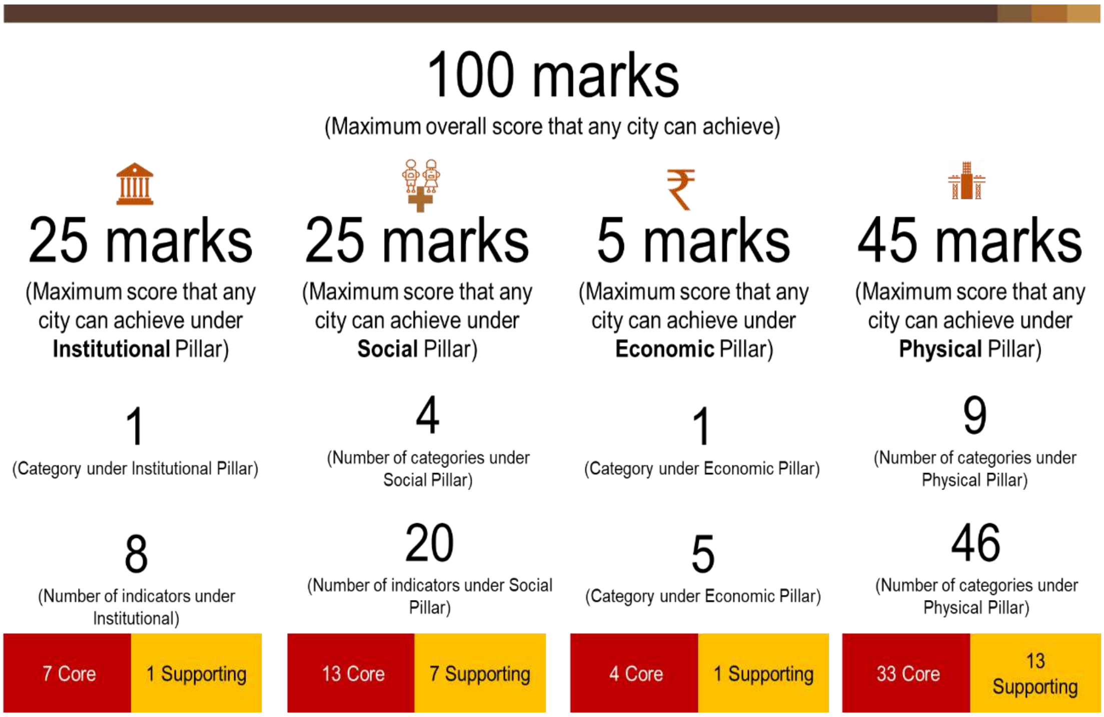
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core / 1 Supporting	13 Core / 7 Supporting	4 Core / 1 Supporting	33 Core / 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks

awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to make cities understand the importance and process of liveability assessment. City level assessments didn't happen as State level workshop could not be conducted despite several meetings and follow ups with Urban development department and SUDA at state level.

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

HUBLI-DHARWAD

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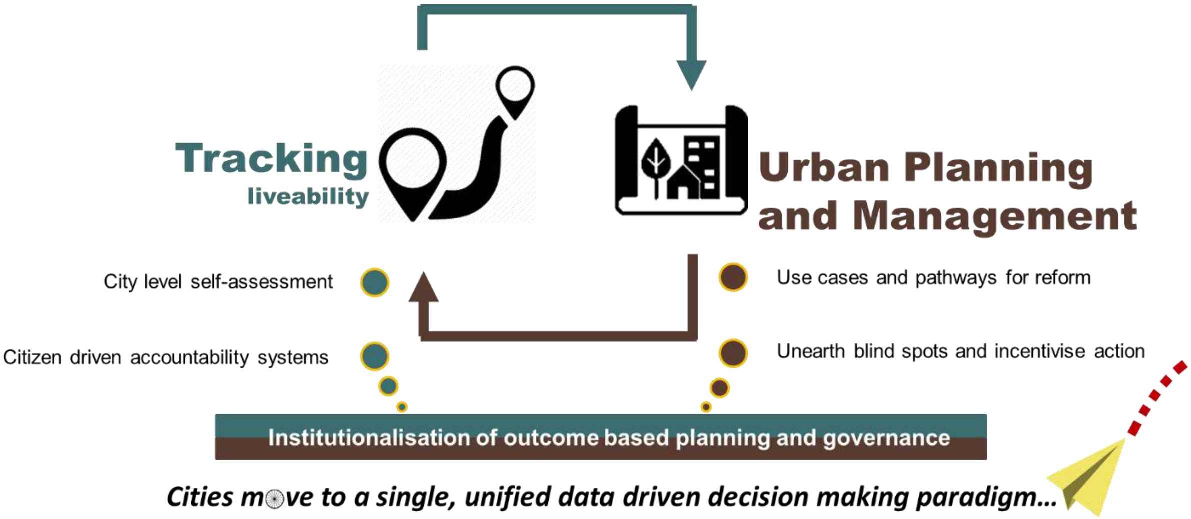
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

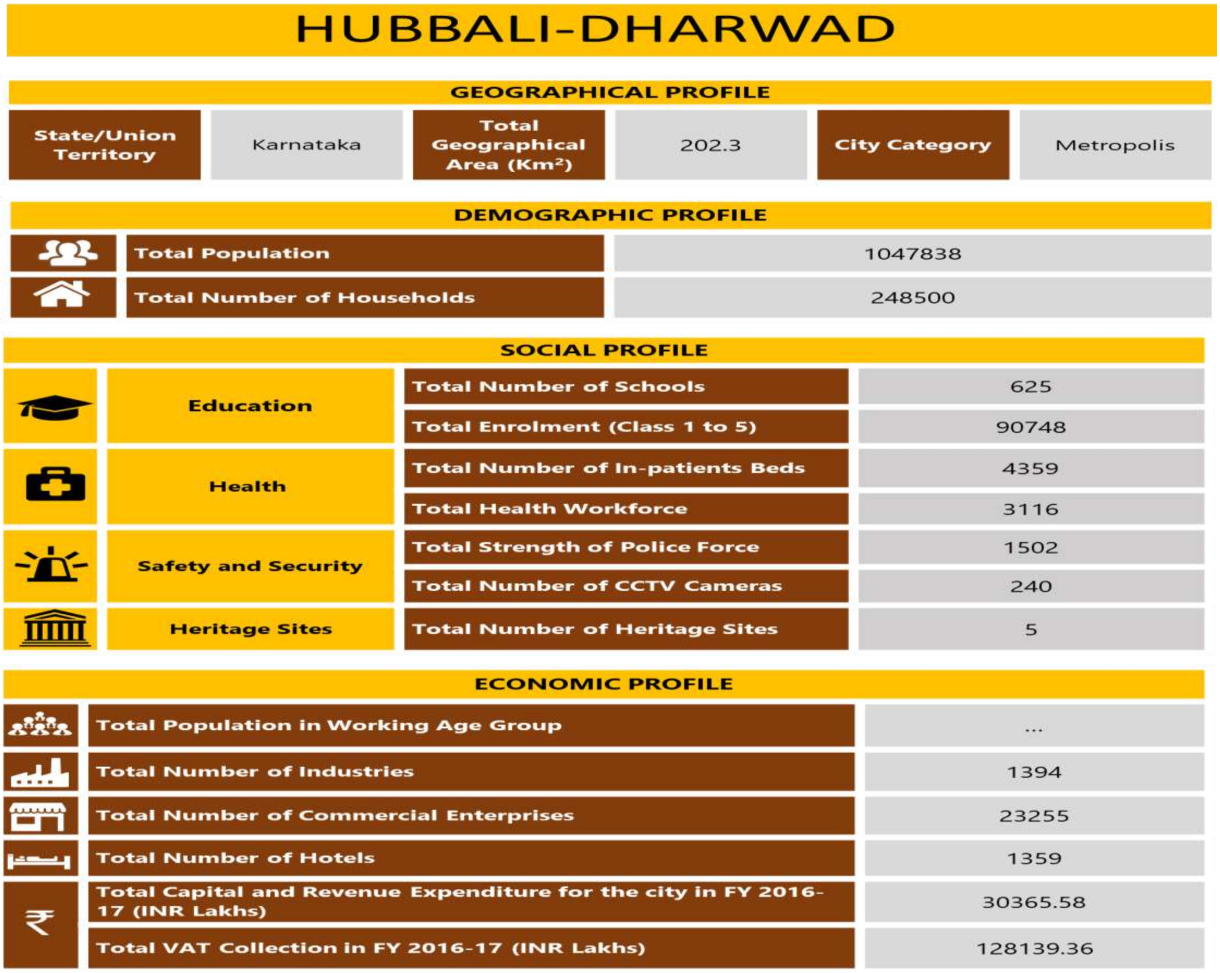
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



HUBBALI-DHARWAD

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km²)	202.3	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1047838
Total Number of Households	248500

SOCIAL PROFILE

Education	Total Number of Schools	625
	Total Enrolment (Class 1 to 5)	90748
Health	Total Number of In-patients Beds	4359
	Total Health Workforce	3116
Safety and Security	Total Strength of Police Force	1502
	Total Number of CCTV Cameras	240
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	1394
Total Number of Commercial Enterprises	23255
Total Number of Hotels	1359
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30365.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	128139.36

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	63.64
	Total Number of Water Connections	58416
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	199000
	Total number of households in the city with access to community toilets in the city	21200
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	360
	Total number of households covered through door-to-door collection of solid waste	175000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	60
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	**Total number of authorized electrical connections in the city**	351955
	Total electricity supplied to the city (kWh)	492491861
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	218477.66
Roads and Transport	**Total Length of Road Network in the City (Km)**	2223.86
	Total length of arterial and sub-arterial road network in the city (Km)	1621
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m

Pillars of Comprehensive Development	Category	Indicators
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
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	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
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3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	**25 marks** (Maximum score that any city can achieve under **Social** Pillar)	**5 marks** (Maximum score that any city can achieve under **Economic** Pillar)	**45 marks** (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	**4** (Number of categories under Social Pillar)	**1** (Category under Economic Pillar)	**9** (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	**20** (Number of indicators under Social Pillar)	**5** (Category under Economic Pillar)	**46** (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, HDMC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department, HDMC
Urban Local Body	For Water Supply and Drainage related questions	KUWSDB, Hubballi Office (Water Board) & Engineering Department, HDMC
Urban Local Body	For Heritage sites related data	Town Planning Department, HDMC
Urban Local Body	For Ecological sites related data	Town Planning Department, HDMC
Urban Local Body	For Housing related data	Housing - Engineering Department, HDMC
Urban Local Body	For Building plan related data	Town Planning Department, HDMC
Urban Local Body	For Roads related data	Engineering Department, HDMC
Urban Local Body	For Solid waste management related data	SWM – Engineering Department, HDMC
Urban Local Body	For IT services related data	Information Technology Department, HDMC
Urban Local Body	For Vendor committee related data	Town Vending Committee, HDMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Professional Tax Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Dharwad District Office.
Development Authority	Building Infrastructure	Town Planning Department, HDMC

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Town Planning Department, HDMC
	Green Building	Town Planning Department, HDMC
	Rain water harvesting	Town Planning Department, HDMC
	Universal Design Principle	Town Planning Department, HDMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Hubli Electricity Supply Company Limited
State Disaster management authority		Engineering Department, HDMC
State Education Department		Education Department, Dharwad District Office.
State Health Department	Health care professionals	Health Department, Dharwad District Office.
	Citizen Services	Health Department, Dharwad District Office.
	Disease Prevalence	Health Department, Dharwad District Office.
	Health Infrastructure	Health Department, Dharwad District Office.
State Renewable Energy Development Agency	Renewable Energy	Hubli Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Sales & Commercial Taxes Department, Dharwad District Office.
Town and Country Planning Department	Land Use	Hubballi Dharwad Urban Development Authority
Traffic and Police Department		Hubballi Dharwad Police Department.
Transport Authorities	Buses	North Western Karnataka Road Transport Corporation (NWKRTC), Hubli Division.
	Registered Vehicles	Regional Transport Office (RTO) – Navanagar Hubli Office KA 25 & Gabbur cross Hbl KA 63 Office.
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 11 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	1
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	2
Total	11*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

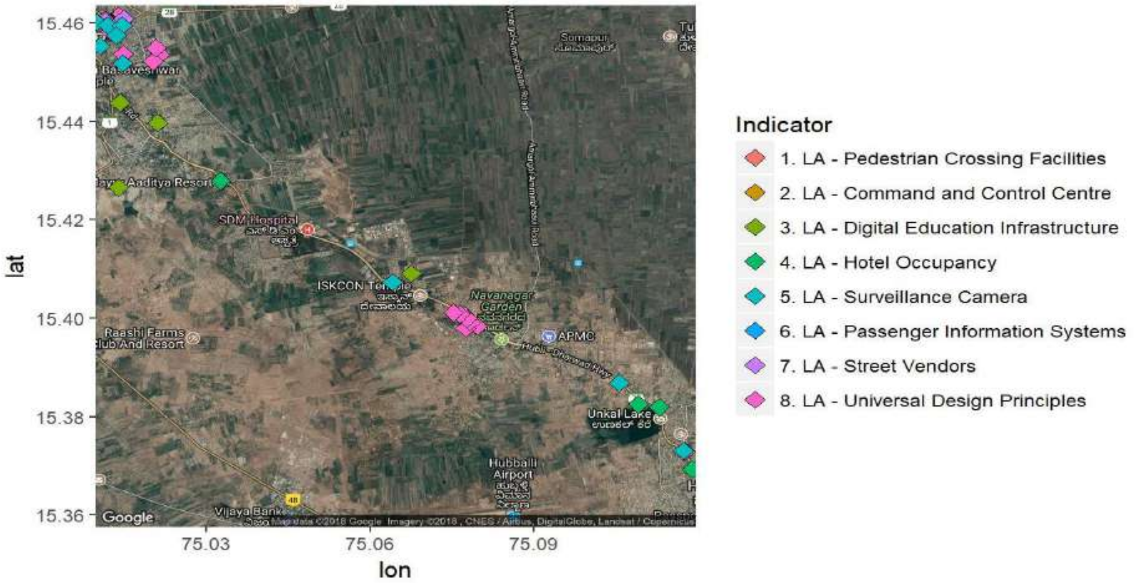
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Basaveshwar
Aditya Resort
SDM Hospital
ISKCON Temple
Navanagar Garden
APMC
Raashi Farms Club And Resort
Unkal Lake
Hubballi Airport
Somapur
Vijaya Bank
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**72.65**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0.5
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.111111111
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**21.43**
Description	Services integrated through an integrated or a singular operations command centre	4.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**3.85**
Description		
Sub Indicators	1.3a Building plan	0.000517103
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA

	1.3d solid waste management	NA
	1.3e property tax	0.000359826
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.114648179
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.57**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	4
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**89.81**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	5061.69
Denominator	Total demand raised for the year	5636.12
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**81.16**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1256.54

Denominator	Total O&M cost for providing water supply services during the year	1548.28
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**57.12**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	78128.52
Denominator	Total expenditure (revenue and capital accounts) in the same year	136786.61
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	67
Denominator	Total number of wards	67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**40**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**65**

Description	Average Occupancy rate of Hotels	65
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.63**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	191.78
Denominator	Total budget of the ULB (capital and revenue)	30365.58
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**146**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	146
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**86.58**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	143196
Denominator	Total population in the age group of 6-14 years	165389
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**85.19**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	68427
Denominator	Total female population in the age group of 6-14 years	80321
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**23.86**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	90748
Denominator	Total number of teachers available for primary grades (public and private schools)	3804
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**10.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	64
Denominator	Total number of schools	625
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**105.53**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	105.5255055
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**101.2**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	299390520
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**41.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4359
Denominator	Total population of the city	1047838
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**29.74**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	3116
Denominator	Total population of the city	1047838
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**14**
Description	Total response time for health-related distress calls received in the city	14
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	6269
Denominator	Total population of the city	1047838
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	153
Denominator	Total population of the city	1047838
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**10.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	240
Denominator	Total length of road network in the city	2223.86
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**216.73**
Formula:	Numerator / Denominator	

Numerator	Total number of crimes recorded in a year	2271
Denominator	Total population of the city	1047838
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**12.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	282
Denominator	Total crimes recorded in the same year	2271
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**8.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	93
Denominator	Total population of the city	1047838
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**11.12**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	12824.87
Denominator	Total VAT/GST collection during preceding year	1153.1449
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**-87.1**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-1245.59

Denominator	Total Professional Tax collection during preceding year	1430.13
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**349.54**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	1905
Denominator	Number of construction permits during preceding year	5.45
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2185
Denominator	Total labour force in the city	165389
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**125.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	5667
Denominator	Total number of vendors in the city	4507
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**5.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	4835

Denominator	Total number of slum and EWS households in the city	874.74
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.96**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	509100321000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	218477.66
Denominator	Total population of the city	1047838
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.58**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1657134.26
Denominator	Total population of the city	1047838
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	202300000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	Net Density	**0.9**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1047838
Denominator	Area allocated for residential land use (in hectares)	1159500
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**110.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	274835
Denominator	Total number of households in the city	248500
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	351955
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**16154**
Description	Total number of sustained electrical interruptions in a year	16154
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	201824
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	979
Denominator	Total energy consumption from all sources	492491861
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	381760.6667
Denominator	Total quantum of water and waste water handled during the period	3109.2
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	12834988
Denominator	Total number of street light installations	51147
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	314421
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.69**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	492491861
Denominator	Total population of the city	1047838
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1195.1
Denominator	Total area of the city (sq.km)	202.3
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	414
Denominator	Total population of the city	1047838
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	33
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	2223.86
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with	NA

	bicycle parking facility (within 250m radius)	
Denominator	Total number of major transport interchanges in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**81.83**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	491
Denominator	Total number of major interchanges in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	34
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**62.16**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	23
Denominator	Total available on-street parking spaces in the city	37
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	12.5
Denominator	Total length of road network in the city	4447.72
Unit	Percentage	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**231.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	553
Denominator	Total number of public right-of-way areas in the city	239
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**22.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	55744
Denominator	Total number of households in the city	248500
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**60.73**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	63.64
Denominator	Total population of the city	1047838
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	5734
Denominator	Total number of samples tested for water quality	6047
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**7.33**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	4.665
Denominator	Quantum of water put into the distribution system (mld)	63.64
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	58416
Denominator	Total number of water connections in the city	58416
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**2.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	63
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2450
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**98.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	245559

Denominator	Total number of properties in the city	248500
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**57.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	141800
Denominator	Total number of properties in the city	248500
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	40
Denominator	Total waste water generated in the city per day	60
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**282.86**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	99
Denominator	Total waste water received at treatment plants per day	35
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	2
Denominator	Total length of road network in the city	2223.86
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**69.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	190000
Denominator	Total number of households and establishments in the city	271755

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**90**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	360
Denominator	Total quantum of MSW generated in the city	400
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**1.39**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	150
Denominator	Average MSW generated in the city (tons per month)	10800
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**5**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	5
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**24**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	24
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**78**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	78
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable

Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**85.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	82
Denominator	Total number of samples tested	96
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

HYDERABAD

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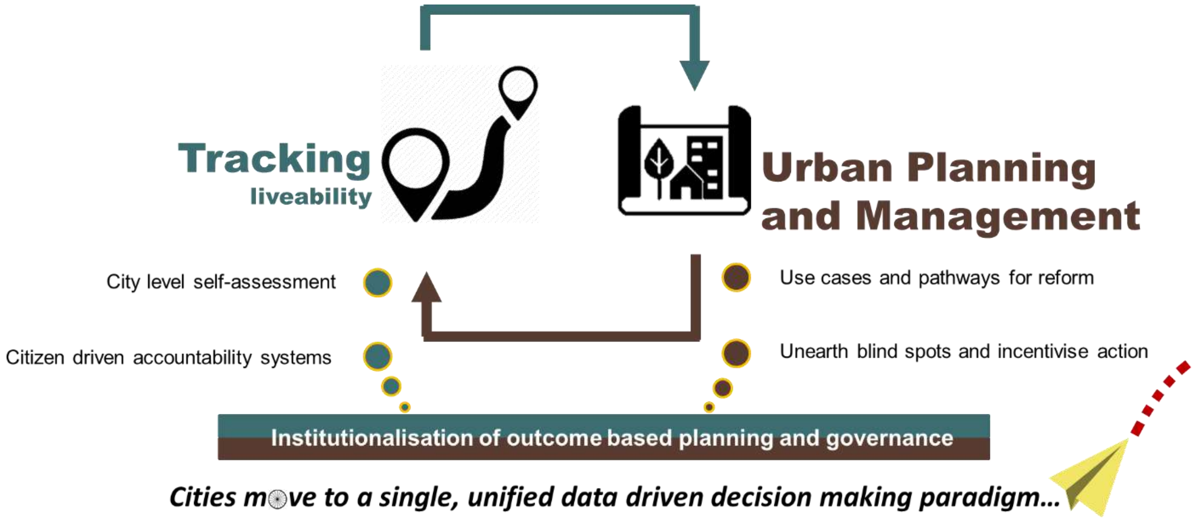
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

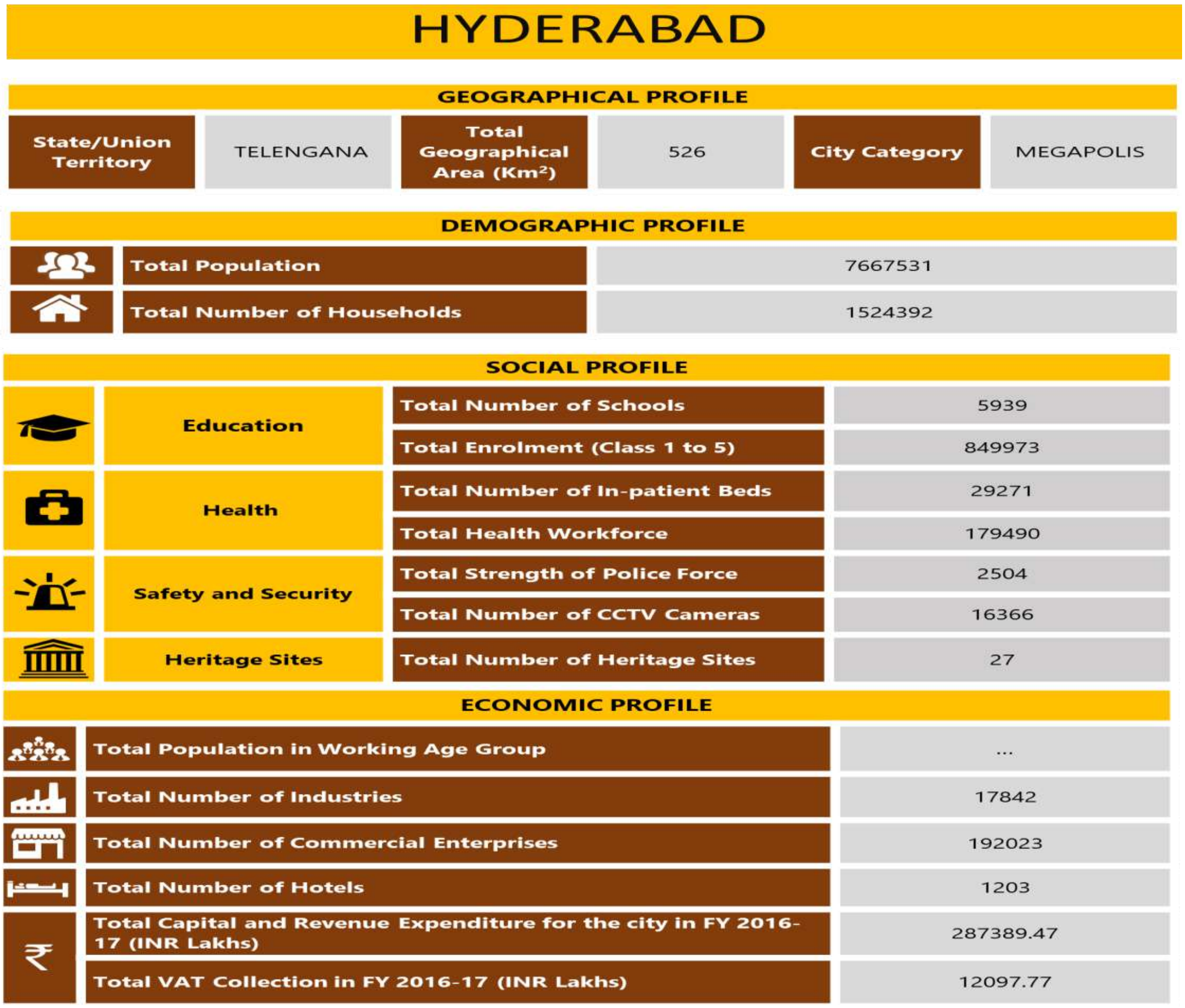
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



HYDERABAD

GEOGRAPHICAL PROFILE

State/Union Territory	TELENGANA	**Total Geographical Area (Km^2)**	526	**City Category**	MEGAPOLIS

DEMOGRAPHIC PROFILE

Total Population	7667531
Total Number of Households	1524392

SOCIAL PROFILE

Education	**Total Number of Schools**	5939
	Total Enrolment (Class 1 to 5)	849973
Health	**Total Number of In-patient Beds**	29271
	Total Health Workforce	179490
Safety and Security	**Total Strength of Police Force**	2504
	Total Number of CCTV Cameras	16366
Heritage Sites	**Total Number of Heritage Sites**	27

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	17842
Total Number of Commercial Enterprises	192023
Total Number of Hotels	1203
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	287389.47
Total VAT Collection in FY 2016-17 (INR Lakhs)	12097.77

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	1780
	Total Number of Water Connection	945453
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	4800
	Total number of households covered through door-to-door collection of solid waste	19.57
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	1350
	Daily average quantum of waste water treated by STPs in the city (MLD)	700
Electricity	**Total number of authorized electrical connections in the city**	1912994
	Total electricity supplied to the city (kWh)	6612.52
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	2662268
Roads and Transport	**Total Length of Road Network in the City (Km)**	9103.35
	Total length of arterial and sub-arterial road network in the city (Km)	345
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	335

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

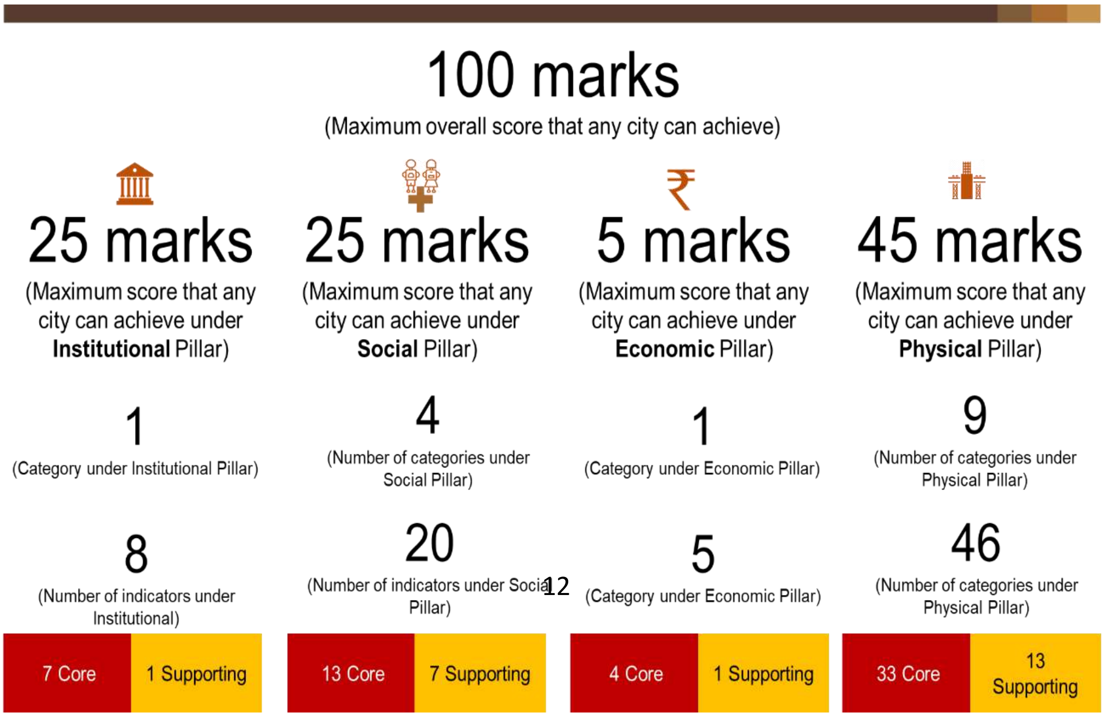
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Finance Wing, Greater Hyderabad Municipal Corporation and Commercial Tax Department, Govt. of Telangana
Urban Local Body	For Park and Recreation Related Questions	Urban Biodiversity Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Hyderabad Metro Water Supply and Sewage Board
Urban Local Body	For Heritage sites related data	Department of Archaeology, Telangana
Urban Local Body	For Ecological sites related data	Department of Archaeology, Telangana
Urban Local Body	For Housing related data	Housing Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For Building plan related data	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
Urban Local Body	For Roads related data	Projects and Maintenance Wings of Greater Hyderabad Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management (SWM) Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For IT services related data	IT Wing, Greater Hyderabad Municipal Corporation and Information Technology,

Designated data owners	Subcategories	Data owners at city level
		Electronics and Communications Department, Govt of Telangana
Urban Local Body	For Vendor committee related data	Urban Community Development, Greater Hyderabad Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Sports Authority of Telangana,
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Telangana State Pollution Control Board
Development Authority	Building Infrastructure	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Construction planning	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Green Building	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Rain water harvesting	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Universal Design Principle	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Telangana Southern power distribution Company Limited
State Disaster management authority		State Disaster Management, Greater Hyderabad Municipal Corporation, tank Bund Hyderabad.
State Education Department		Commissioner and Directorate of school Education, Telangana
State Health Department	Health care professionals	NHM/health Department Telagana
	Citizen Services	NHM/health Department Telagana
	Disease Prevalence	Telangana State Health Department
	Health Infrastructure	Telangana State Health Department

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency	Renewable Energy	Telangana state renewable energy department
State Sales / Commercial Taxes Department		Government of Telangana Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and country planning, GHMC, Telangana
Traffic and Police Department		Department of police, Telangana
Transport Authorities	Buses	Telangana State Road Transport Corporation
	Registered Vehicles	Road Transport Authority Telangana
	Sub urban rail transport	Indian railways
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 213 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	0
DISCOM/Electricity Department	1
Traffic and Police Department	6
Development Authority	8
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	3

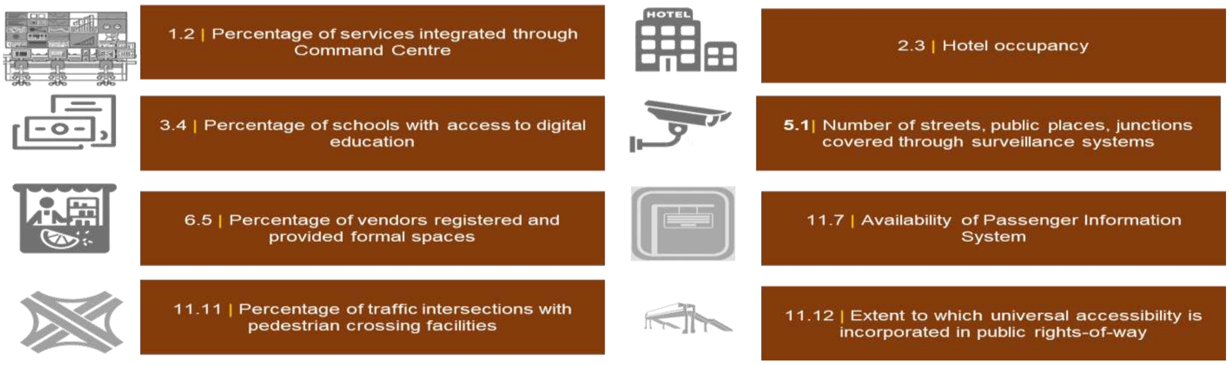
State Health Department	0
Transport Authority	24
Disaster Management	1
Urban Local Body	161
Total	213*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

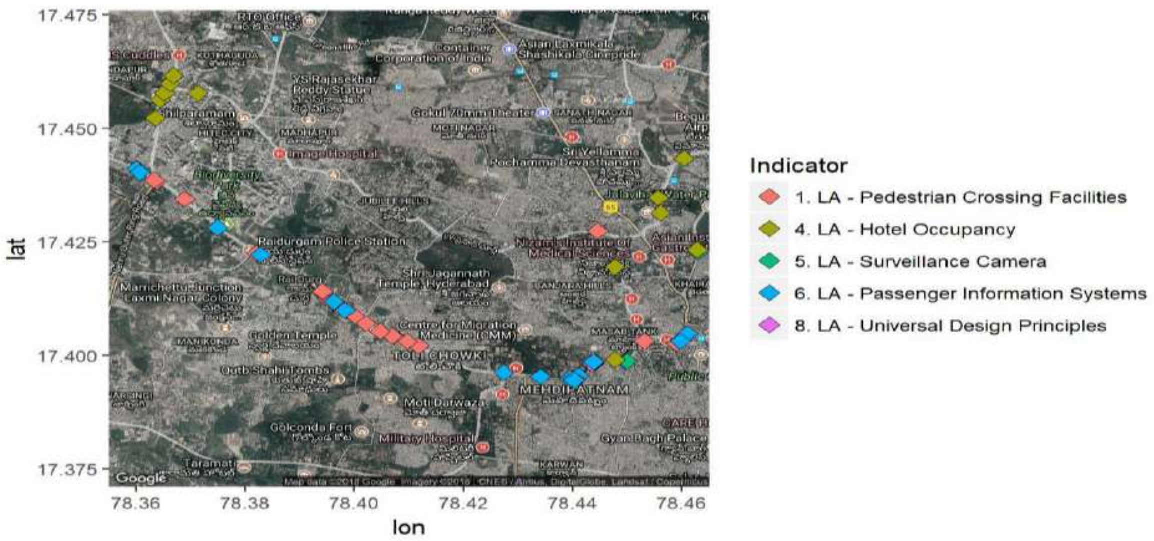
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Google
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**83.53**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0.5
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.666666667
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**83.33**
Description	Services integrated through an integrated or a singular operations command centre	17.5

Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**30.01**
Description		
Sub Indicators	1.3a Building plan	0.083663604
	1.3b Birth/Death Certificate	0.146599577
	1.3c water supply	NA
	1.3d solid waste management	0.146637006
	1.3e property tax	0.874252967
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000319045
	1.3i information	0.549222094
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**3**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	18
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**89.16**
Formula:	*Numerator / Denominator*	

Numerator	Total tax collected in a year	120573
Denominator	Total demand raised for the year	135231
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**114.25**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	105700
Denominator	Total O&M cost for providing water supply services during the year	92515.73
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**33.58**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	283486.64
Denominator	Total expenditure (revenue and capital accounts) in the same year	844250.44
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	150
Denominator	Total number of wards	150
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**55.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	15
Denominator	Total number of historic buildings/sites identified	27

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**42.4**
Description	Average Occupancy rate of Hotels	42.4
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1849
Denominator	Total budget of the ULB (capital and revenue)	287389.47
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**61**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	61
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**103.79**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public	1290785

	and private)	
Denominator	Total population in the age group of 6-14 years	1243610
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**104.24**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	626166
Denominator	Total female population in the age group of 6-14 years	600674
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**23.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	849973
Denominator	Total number of teachers available for primary grades (public and private schools)	36096
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**9.45**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	561
Denominator	Total number of schools	5939
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**661.14**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	661.1377317
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**250.08**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	21094112007

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**41.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	29271
Denominator	Total population of the city	6993262
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**25.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	17490
Denominator	Total population of the city	6993262
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**1.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	74222
Denominator	Total population of the city	6993262
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2250

Denominator	Total population of the city	6993262
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**179.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	16366
Denominator	Total length of road network in the city	9103.35
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**314.57**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	21999
Denominator	Total population of the city	6993262
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**9.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2141
Denominator	Total crimes recorded in the same year	21999
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**5.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	394

Denominator	Total population of the city	6993262
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**19.25**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1952.78
Denominator	Total VAT/GST collection during preceding year	101.4499
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**-100**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-2750
Denominator	Total Professional Tax collection during preceding year	2750
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**281.66**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	19657
Denominator	Number of construction permits during preceding year	69.79
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	76185

Denominator	Total labour force in the city	1243610
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	31090.25
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	4216.08
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**41.27**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	30926942145868000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.38**
Formula:	*Numerator / Denominator*	

Numerator	Total area of green space (sq.m.)	2662268
Denominator	Total population of the city	6993262
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	6993262
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	526000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**13970.6**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	6993262
Denominator	Area allocated for residential land use (in hectares)	500.57
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**400.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	6107179
Denominator	Total number of households in the city	1524392
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	1912994
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**31189**
Description	Total number of sustained electrical interruptions in a year	31189
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	336.9527778
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	NA
Denominator	Total energy consumption from all sources	6612.52
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	110000000
Denominator	Total quantum of water and waste water handled during the period	74400
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	238
Denominator	Total number of street light installations	405000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	138076
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	6612.52
Denominator	Total population of the city	6993262
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	17273
Denominator	Total area of the city (sq.km)	526
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**1.21**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	8486
Denominator	Total population of the city	6993262
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	43.3
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	3
Denominator	Total length of road network in the city	9103.35
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**23.33**
Formula:	*Numerator / Denominator*	

Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	21
Denominator	Total number of major transport interchanges in the city	90
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0.42
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**1.48**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	133
Denominator	Total number of major interchanges in the city	90
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**10**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	12
Denominator	Total number of signalised intersections in the city	120
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**1000**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	800
Denominator	Total available on-street parking spaces in the city	80
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**1.84**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	335
Denominator	Total length of road network in the city	18206.7

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**81.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	239
Denominator	Total number of junctions/ intersections on major roads in the city	295
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	318
Denominator	Total number of public right-of-way areas in the city	954
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**59.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	910068
Denominator	Total number of households in the city	1524392
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**254.53**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1780
Denominator	Total population of the city	6993262
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	1026288
Denominator	Total number of samples tested for water quality	1028367
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	1780
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**25.84**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	244298
Denominator	Total number of water connections in the city	945453
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**13.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1646
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	12256
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with access to individual and/or community toilets	Data Unavailable
Denominator	Total number of properties in the city	1443767
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**65.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	945735
Denominator	Total number of properties in the city	1443767
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**106.67**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	1440
Denominator	Total waste water generated in the city per day	1350
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	700
Denominator	Total waste water received at treatment plants per day	700
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	9103.35
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	1108.8

Denominator	Total number of households and establishments in the city	1716415
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	4800
Denominator	Total quantum of MSW generated in the city	4800
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**7.07**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	10175
Denominator	Average MSW generated in the city (tons per month)	144000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**5.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	5.9
Unit	μg/m3	
Benchmark	Annual mean concentration of 50 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**34.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	34.1
Unit	μg/m3	
Benchmark	Annual mean concentration of 40 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**123**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	123
Unit	μg/m3	
Benchmark	Annual mean concentration of 60 μg/m3 OR Mean concentration over 24 hours of 100 μg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**

Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1319
Denominator	Total number of noise samples	5992
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	156
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

Ministry of Urban Development
Government of India

IMPHAL

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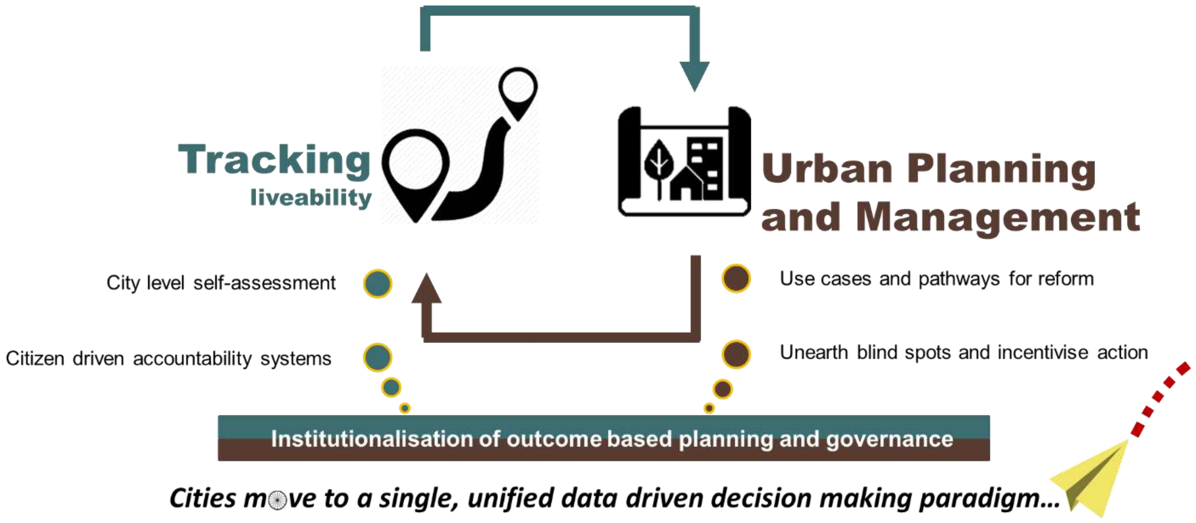
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

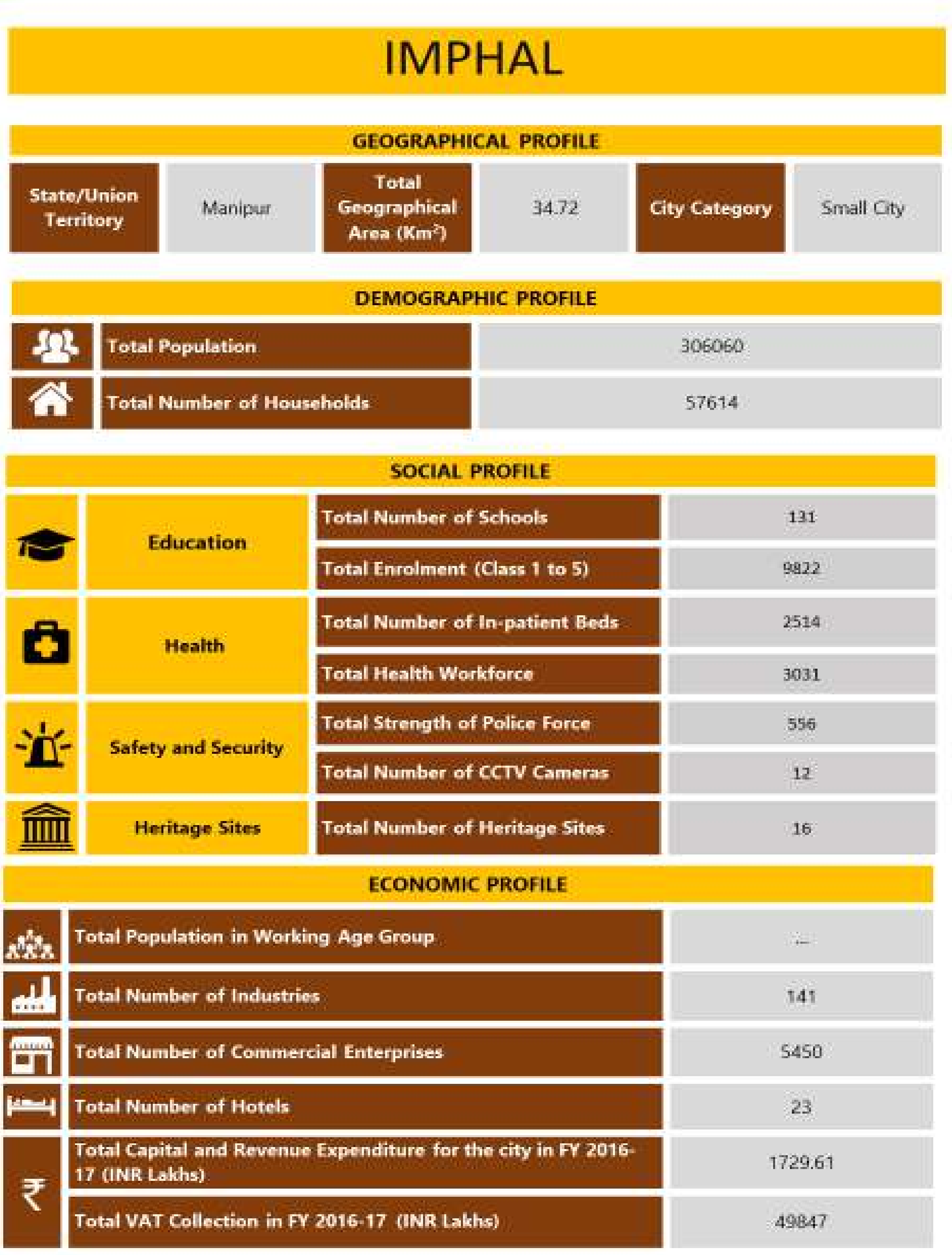
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Manipur	**Total Geographical Area (Km²)**	34.72	**City Category**	Small City

DEMOGRAPHIC PROFILE

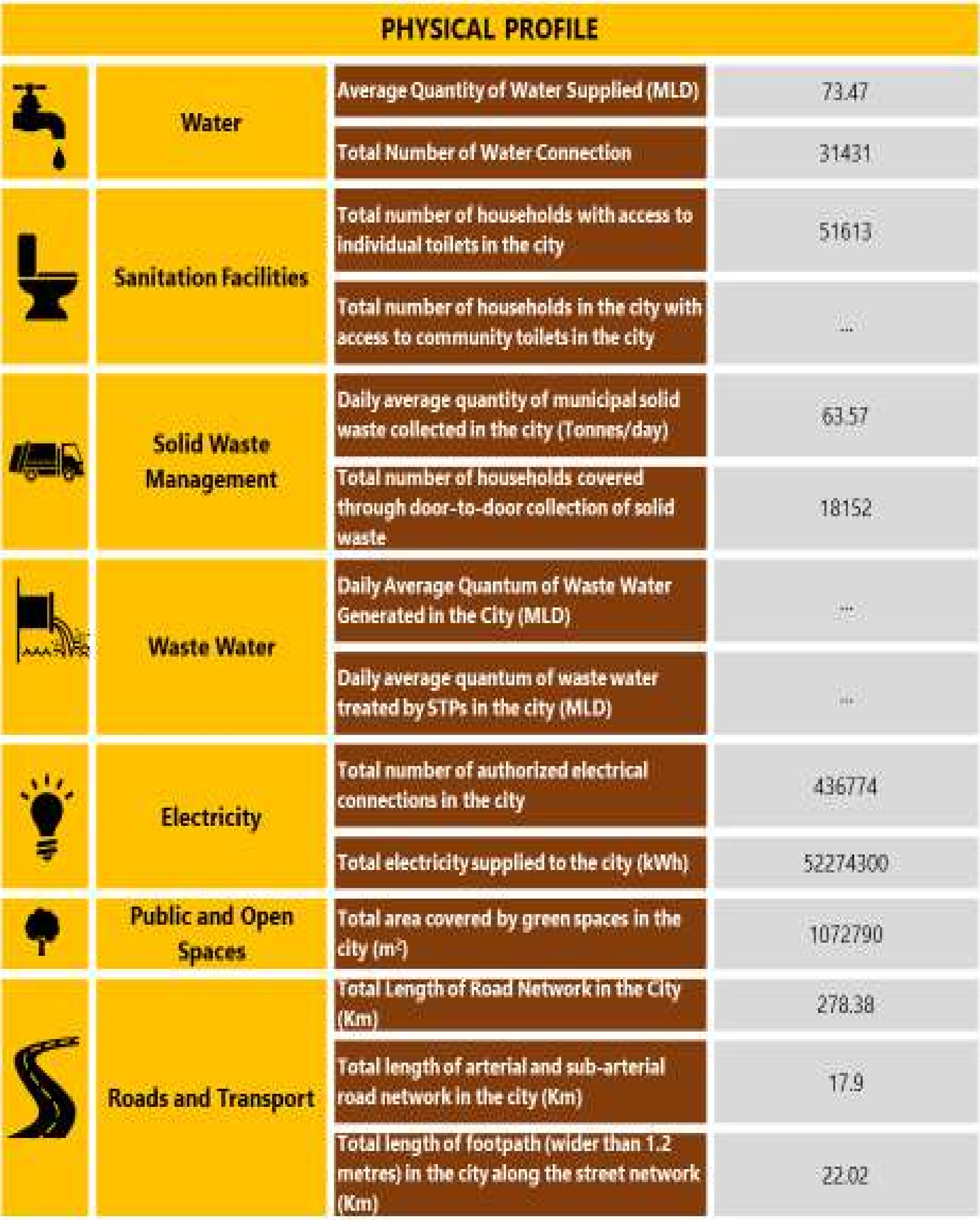
Total Population	306060
Total Number of Households	57614

SOCIAL PROFILE

Education	**Total Number of Schools**	131
	Total Enrolment (Class 1 to 5)	9822
Health	**Total Number of In-patient Beds**	2514
	Total Health Workforce	3031
Safety and Security	**Total Strength of Police Force**	556
	Total Number of CCTV Cameras	12
Heritage Sites	**Total Number of Heritage Sites**	16

ECONOMIC PROFILE

Total Population in Working Age Group	--
Total Number of Industries	141
Total Number of Commercial Enterprises	5450
Total Number of Hotels	23
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1729.61
Total VAT Collection in FY 2016-17 (INR Lakhs)	49847



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	73.47
	Total Number of Water Connection	31431
Sanitation Facilities	Total number of households with access to individual toilets in the city	51613
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	63.57
	Total number of households covered through door-to-door collection of solid waste	18152
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	436774
	Total electricity supplied to the city (kWh)	52274300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1072790
Roads and Transport	Total Length of Road Network in the City (Km)	278.38
	Total length of arterial and sub-arterial road network in the city (Km)	17.9
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	22.02

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Imphal Municipal Corporation (IMC)
Urban Local Body	For Park and Recreation Related Questions	Imphal Municipal Corporation (IMC)
Urban Local Body	For Water Supply and Drainage related questions	PHED
Urban Local Body	For Heritage sites related data	Art & Culture
Urban Local Body	For Ecological sites related data	Dept. of Ecology & Environment
Urban Local Body	For Housing related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For Building plan related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For Roads related data	PWD
Urban Local Body	For Solid waste management related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For IT services related data	Imphal Municipal Coorporation (IMC)
Urban Local Body	For Vendor committee related data	Imphal Municipal Corporation (IMC)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	(1) PWD (2) PHED (3) Economics & Statistics Deptt. (4) Water Resources Deptt. (5) Commerce & industry (6) Tourism (7) Education (S) (8) Taxation (9) Arts & Culture (10) Youth Affairs & Sports (11) Employment Exchange (12)

Designated data owners	Subcategories	Data owners at city level
		Transport (13) Traffic (14) Town Planning (15) PDA (16) Manipur state pollution Control board (17) Manipur State power Development Corporation ltd. (MSPDCL) (18) Ecology 7 Environment (19) Medical & health Services
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Manipur state pollution Control board
Development Authority	Building Infrastructure	IMC
	Construction planning	IMC
	Green Building	IMC
	Rain water harvesting	IMC
	Universal Design Principle	IMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MSPDCL
State Disaster management authority		Relief & Disaster
State Education Department		Education (Schools)
State Health Department	Health care professionals	Medical & Health Services
State Health Department	Citizen Services	Medical & Health Services
State Health Department	Disease Prevalence	Medical & Health Services
State Health Department	Health Infrastructure	Medical & Health Services
State Renewable Energy Development Agency		MANIREDA
State Sales / Commercial Taxes Department		Taxation
Town and Country Planning Department	Land Use	Town Planning Deptt.
Traffic and Police Department		Home Dept.

Designated data owners	Subcategories	Data owners at city level
Transport Authorities	Buses	Transport Deptt.
Transport Authorities	Registered Vehicles	Transport Deptt.
Transport Authorities	Sub urban rail transport	N/A
Transport Authorities	Mono Rail Authority	N/A
Transport Authorities	Tramways	N/A
Transport Authorities	Marine Transport Authority	N/A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 22 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	12
Total	22

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

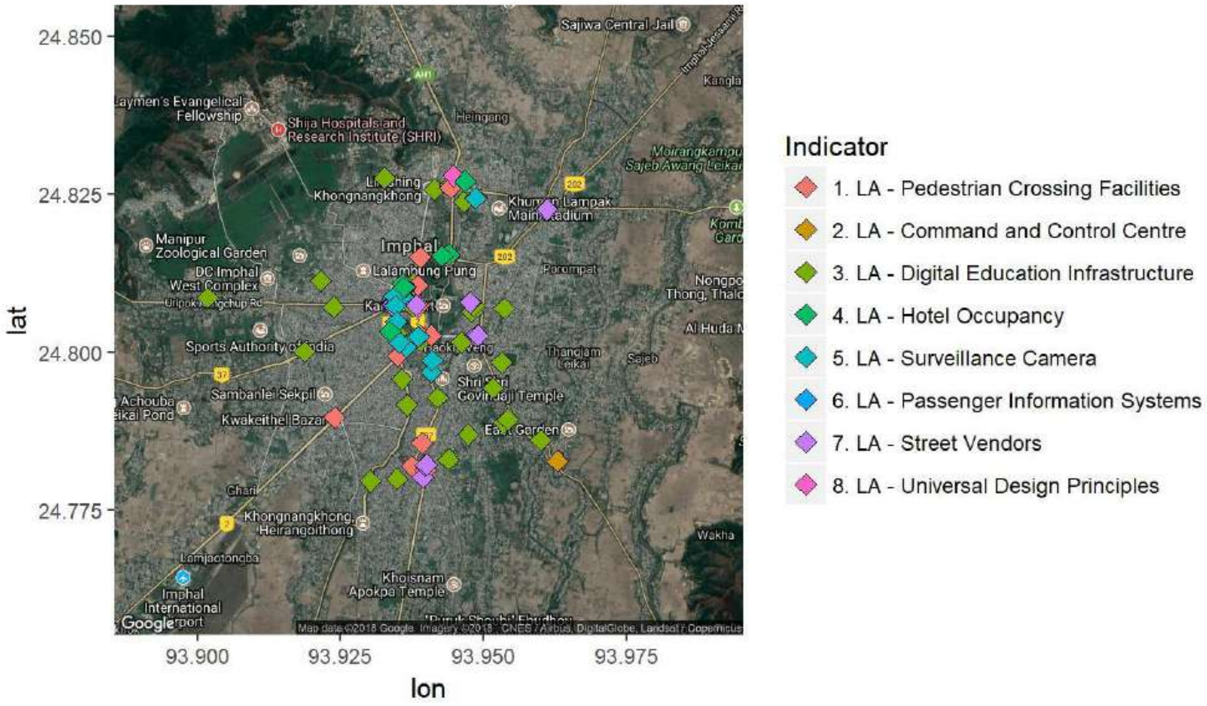
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


24.850
24.825
24.800
24.775
lat
93.900
93.925
93.950
93.975
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Imphal
Sajiwa Central Jail
Shija Hospitals and Research Institute (SHRI)
Manipur Zoological Garden
Sports Authority of India
Khongnangkhong
Lalambung Pung
Khuman Lampak Main Stadium
Porompat
Kwakeithel Bazar
Shri Shri Govindaji Temple
East Garden
Thangjam Leikai
Khoisnam Apokpa Temple
Imphal International Airport
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**15.68**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	NA
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**100.11**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2378.5
Denominator	Total demand raised for the year	2376
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**20.99**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	193.38
Denominator	Total O&M cost for providing water supply services during the year	921.13
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-39.21**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-665.25
Denominator	Total expenditure (revenue and capital accounts) in the same year	1696.69
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	27
Denominator	Total number of wards	27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**6.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**11960.86**
Description	Average Occupancy rate of Hotels	11960.85714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**123.63**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	2138.38
Denominator	Total budget of the ULB (capital and revenue)	1729.61

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**906**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	906
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**33.77**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	15296
Denominator	Total population in the age group of 6-14 years	45295
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**36.41**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	8101
Denominator	Total female population in the age group of 6-14 years	22249
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**10.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	9822
Denominator	Total number of teachers available for primary grades (public and private schools)	956
Unit	Ratio	
Benchmark	1 teacher for every 30 students	

Indicator No: 3.4	**Percentage of schools with access to digital education**	**19.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	25
Denominator	Total number of schools	131
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**90.53**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	90.52861042
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.85**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	3097985
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**90.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2514
Denominator	Total population of the city	277196
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	

Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**109.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3031
Denominator	Total population of the city	277196
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**16.81**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	46594
Denominator	Total population of the city	277196
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	546
Denominator	Total population of the city	277196
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**4.31**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	12
Denominator	Total length of road network in the city	278.383
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**308.45**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	855
Denominator	Total population of the city	277196
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**3.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	30
Denominator	Total crimes recorded in the same year	855
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**3.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	11
Denominator	Total population of the city	277196
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**7.11**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	3307
Denominator	Total VAT/GST collection during preceding year	465.4
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	2376
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**45.58**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	129
Denominator	Number of construction permits during preceding year	2.83
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	231288

Denominator	Total labour force in the city	45295
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1132.375
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**135.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	21161
Denominator	Total number of slum and EWS households in the city	156.34
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	NA
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**3.87**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1072790
Denominator	Total population of the city	277196
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**11.11**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	3079999.25
Denominator	Total population of the city	277196
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	34725100
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	277196
Denominator	Area allocated for residential land use (in hectares)	33530000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**418.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	240893
Denominator	Total number of households in the city	57614
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	436774
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1585**
Description	Total number of sustained electrical interruptions in a year	1585

Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	7158
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	12876.12
Denominator	Total energy consumption from all sources	52274300
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	575761.3333
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1344616
Denominator	Total number of street light installations	1851
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1510.38
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	52274300
Denominator	Total population of the city	277196
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	34.7251
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	Data Unavailable
Denominator	Total population of the city	277196
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	278.383
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	15
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**3.95**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	22.02
Denominator	Total length of road network in the city	556.766
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	11
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	9
Denominator	Total number of public right-of-way areas in the city	27
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**52.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	30137
Denominator	Total number of households in the city	57614
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**265.05**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	73.47
Denominator	Total population of the city	277196
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	48
Denominator	Total number of samples tested for water quality	552
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	73.47

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	31431
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	3
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	51640
Denominator	Total number of properties in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**9.83**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	27.36

Denominator	Total length of road network in the city	278.383
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**30.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	19529
Denominator	Total number of households and establishments in the city	63064
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**55.24**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	63.57
Denominator	Total quantum of MSW generated in the city	115.08
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**3.15**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	60
Denominator	Average MSW generated in the city (tons per month)	1907.1
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**31.34**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	31.34
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	100
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**16.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	6
Denominator	Total number of samples tested	36
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

INDORE

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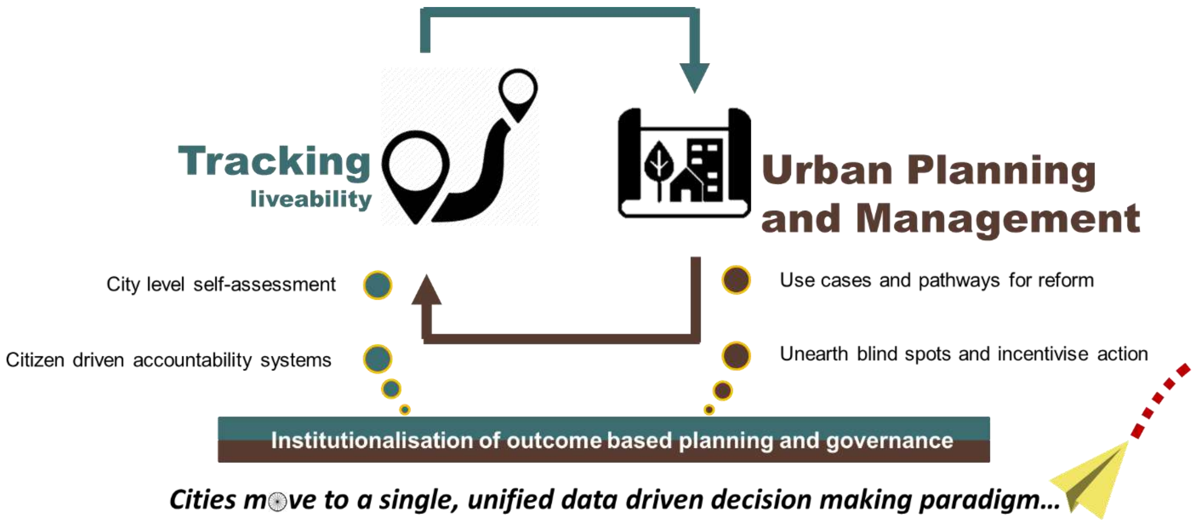
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

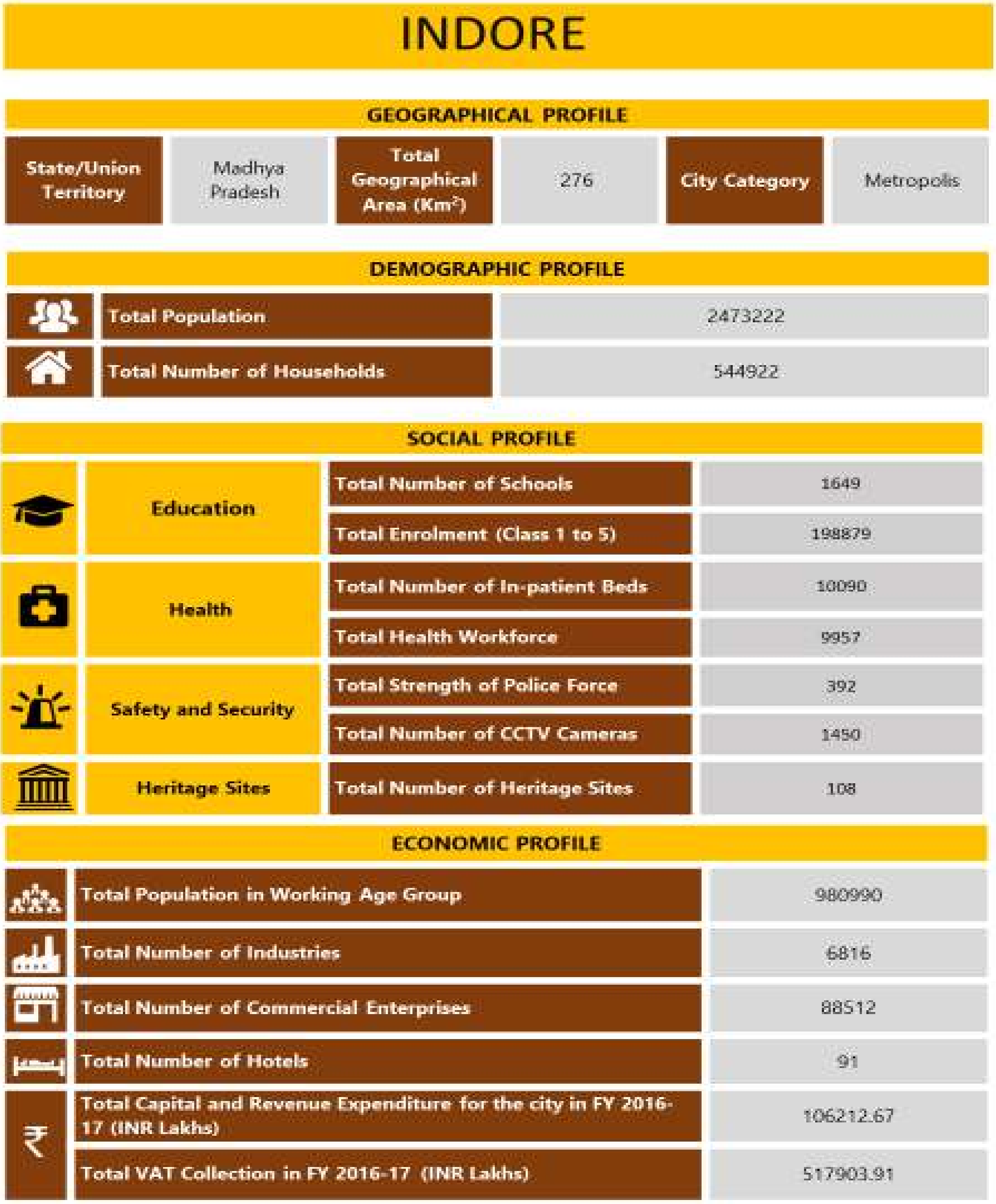
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



INDORE

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	276	City Category	Metropolis

DEMOGRAPHIC PROFILE

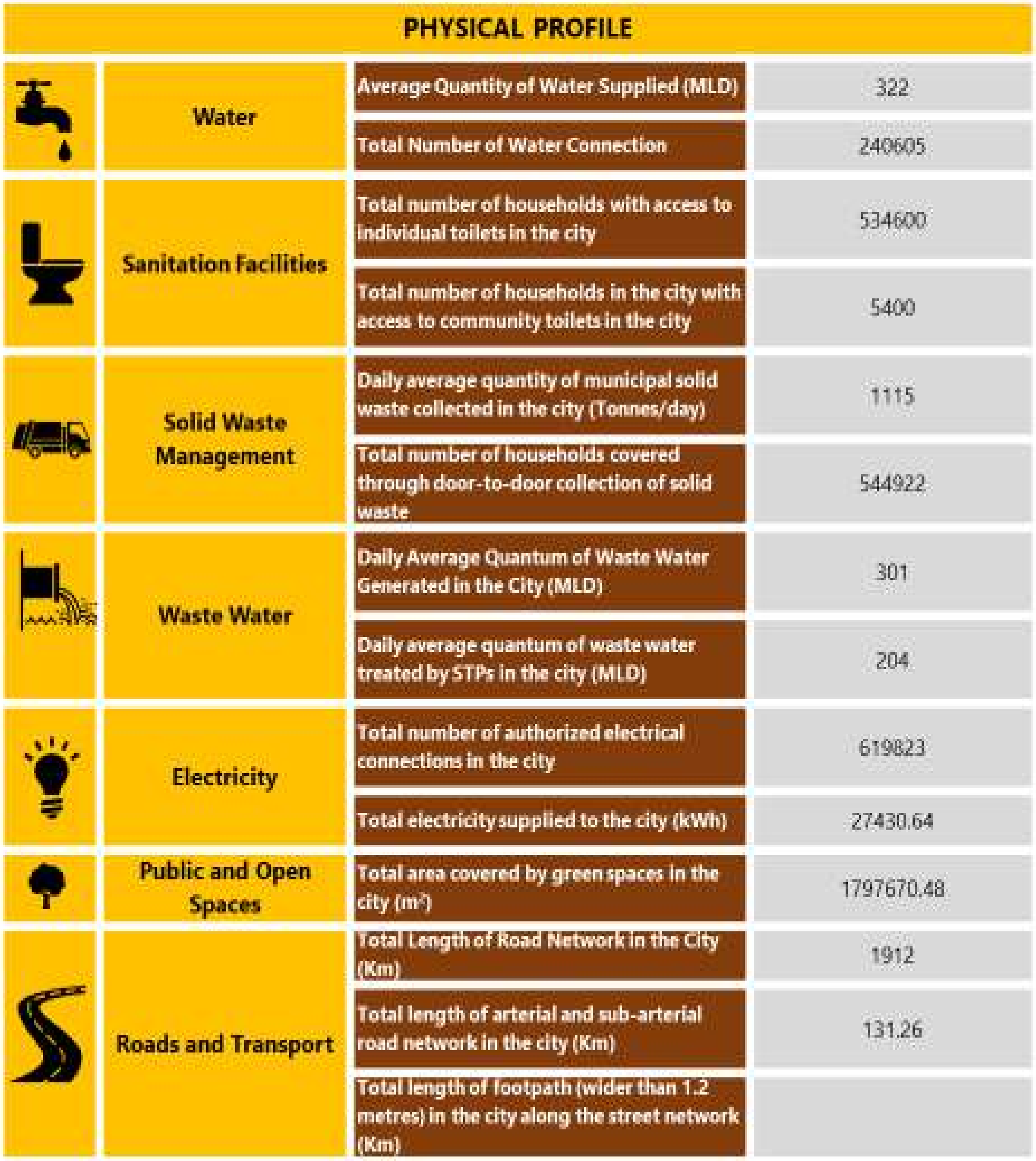
Total Population	2473222
Total Number of Households	544922

SOCIAL PROFILE

Education	Total Number of Schools	1649
	Total Enrolment (Class 1 to 5)	198879
Health	Total Number of In-patient Beds	10090
	Total Health Workforce	9957
Safety and Security	Total Strength of Police Force	392
	Total Number of CCTV Cameras	1450
Heritage Sites	Total Number of Heritage Sites	108

ECONOMIC PROFILE

Total Population in Working Age Group	980990
Total Number of Industries	6816
Total Number of Commercial Enterprises	88512
Total Number of Hotels	91
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	106212.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	517903.91



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	322
	Total Number of Water Connection	240605
Sanitation Facilities	Total number of households with access to individual toilets in the city	534600
	Total number of households in the city with access to community toilets in the city	5400
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1115
	Total number of households covered through door-to-door collection of solid waste	544922
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	301
	Daily average quantum of waste water treated by STPs in the city (MLD)	204
Electricity	Total number of authorized electrical connections in the city	619823
	Total electricity supplied to the city (kWh)	27430.64
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1797670.48
Roads and Transport	Total Length of Road Network in the City (Km)	1912
	Total length of arterial and sub-arterial road network in the city (Km)	131.26
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

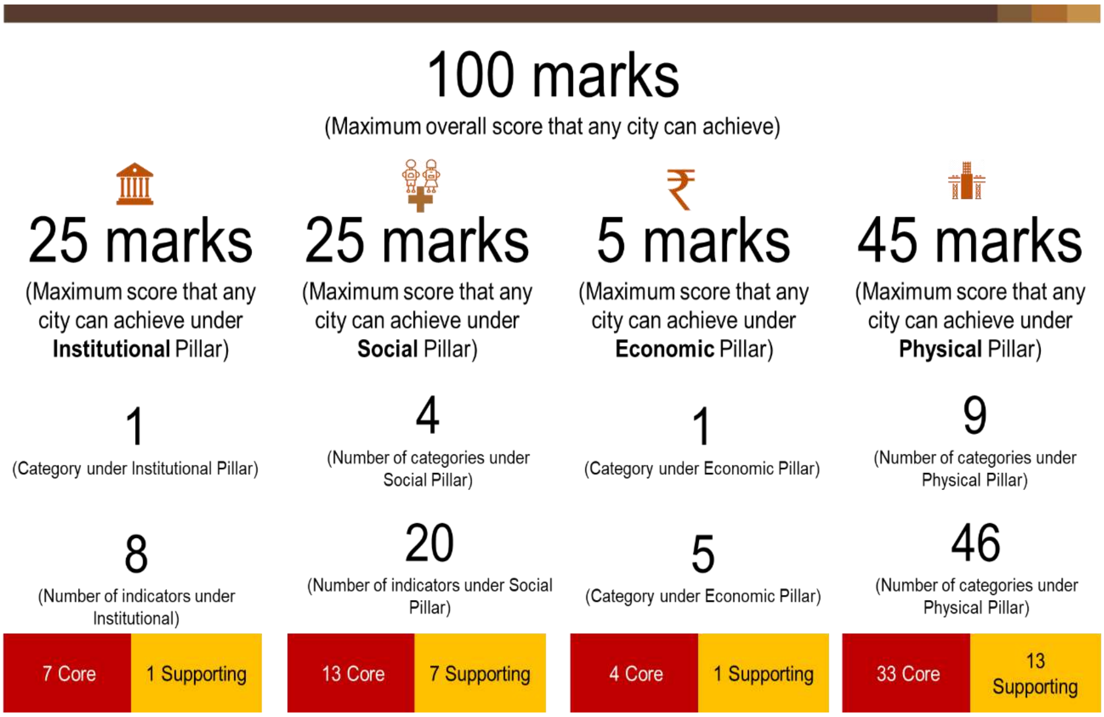
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Indore Municipal Corporation
	Park and Recreation	Indore Municipal Corporation
	Water Supply and Drainage	Engineering Department, Indore Municipal Corporation
	Heritage sites	Indore Municipal Corporation
	Ecological sites	Indore Municipal Corporation
	Housing	Housing section, Indore Municipal Corporation
	Building plan	Indore Municipal Corporation
	Roads	Indore Municipal Corporation
	Solid waste management	Solid waste management, Indore Municipal Corporation
	IT services	IT Section, Indore Municipal Corporation
	Vendor committee	Indore Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Indore Development Authority
	Construction planning	Indore Development Authority
	Green Building	Indore Development Authority

Designated data owners	Sub categories	Data owners at city level
	Rain water harvesting	Indore Development Authority
	Universal Design Principle	Indore Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Jabalpur
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 86 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	2
DISCOM/Electricity Department	2
Traffic and Police Department	11
Development Authority	3
Pollution Control Board	4
State Renewable Energy Department	0
Town and Country Planning	3
State Health Department	4
Transport Authority	8
Disaster Management	1
Urban Local Body	46
Total	86

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

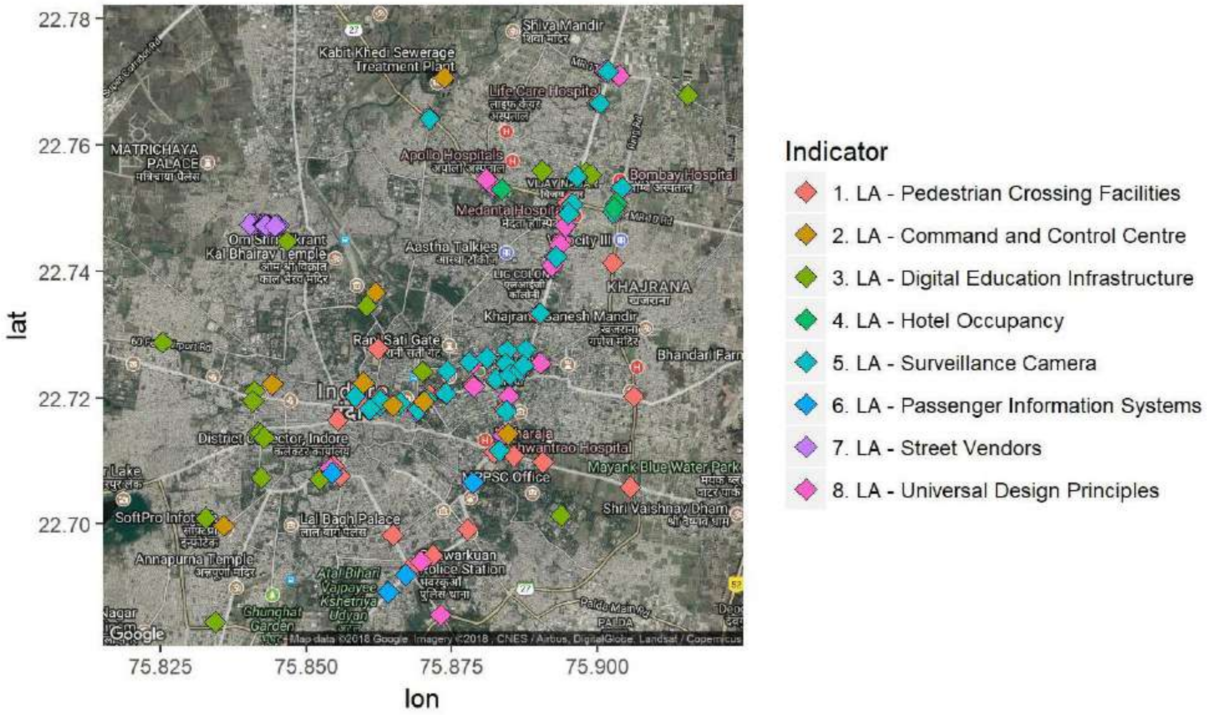
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.78
22.76
22.74
22.72
22.70
lat
75.825
75.850
75.875
75.900
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Kabit Khedi Sewerage Treatment Plant
Shiva Mandir
Life Care Hospital
MATRICHAYA PALACE
Apollo Hospitals
Bombay Hospital
Medanta Hospital
Aastha Talkies
KHAJRANA
Khajrana Ganesh Mandir
Rani Sati Gate
Bhandari Farm
Mayank Blue Water Park
Shri Vaishnav Dham
Lal Bagh Palace
Annapurna Temple
SoftPro Infotech
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**73.5**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**35.71**
Description	Services integrated through an integrated or a singular operations command centre	7.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**8.52**
Description		
Sub Indicators	1.3a Building plan	4.57939E-05
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.017396241
	1.3d solid waste management	0.048706953
	1.3e property tax	0.391735022
	1.3f professional tax (RC)	0.004975906
	1.3g professional tax (EC)	0.001317958

	1.3h complaints/ grievance redressal	0.003796177
	1.3i information	0.291054389
	1.3j electricity	0.007874829
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.92**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	11.5
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**65.28**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	18566.91
Denominator	Total demand raised for the year	28441
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**27.22**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	4683
Denominator	Total O&M cost for providing water supply services during the year	17206
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**14.73**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	31816.38
Denominator	Total expenditure (revenue and capital accounts) in the same year	215983.94
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward**	**100**

	Committees/ Area *Sabhas*	
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	85
Denominator	Total number of wards	85
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**8.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	9
Denominator	Total number of historic buildings/sites identified	108
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	4
Denominator	Total number of ecologically important sites identified in the city	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**29.29**
Description	Average Occupancy rate of Hotels	29.28571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the	

	benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	576.00385
Denominator	Total budget of the ULB (capital and revenue)	106212.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**3293**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	3293
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**86.13**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	309120
Denominator	Total population in the age group of 6-14 years	358901
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**94.1**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	158002
Denominator	Total female population in the age group of 6-14 years	167909
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**173.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	198879
Denominator	Total number of teachers available for primary grades (public and private schools)	1147
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**62.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1031
Denominator	Total number of schools	1649
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**66.77**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	66.76558901
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**90.54**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1294565930
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**50.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	10090
Denominator	Total population of the city	1994397
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**49.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	9957
Denominator	Total population of the city	1994397
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**25**
Description	Total response time for health-related distress calls received in the city	25
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	26620
Denominator	Total population of the city	1994397
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.11**

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2140
Denominator	Total population of the city	1994397
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**75.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1450
Denominator	Total length of road network in the city	1912
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1689.78**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	33701
Denominator	Total population of the city	1994397
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**14.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	4749
Denominator	Total crimes recorded in the same year	33701
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against	

	vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**19.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	391
Denominator	Total population of the city	1994397
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**10.75**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	50260.28
Denominator	Total VAT/GST collection during preceding year	4676.4363
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**14.34**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	659.52
Denominator	Total Professional Tax collection during preceding year	4598.39
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**10.07**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	447

Denominator	Number of construction permits during preceding year	44.41
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	31108
Denominator	Total labour force in the city	358901
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	14667
Denominator	Total number of vendors in the city	14667
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**3.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	10984
Denominator	Total number of slum and EWS households in the city	3063.21

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**1.21** 74141532927000
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.9**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1797670.48
Denominator	Total population of the city	1994397
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**3.22**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	6426251.6
Denominator	Total population of the city	1994397
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	276000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1994397
Denominator	Area allocated for residential land use (in hectares)	157950000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**91.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	495976
Denominator	Total number of households in the city	544922
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**3.76**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	23280
Denominator	Total number of electricity connections in the city	619823
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**24625**
Description	Total number of sustained electrical interruptions in a year	24625
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.71**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	499404
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	570
Denominator	Total energy consumption from all sources	27430.64
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on water supply and sewerage services	17999052.29
Denominator	Total quantum of water and waste water handled during the period	15780
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	96029.491
Denominator	Total number of street light installations	89161
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	89442.11
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	44455.1
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	27430.64
Denominator	Total population of the city	1994397
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	14
Denominator	Total area of the city (sq.km)	276
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	384
Denominator	Total population of the city	1994397
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	33.18
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.82**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	34.82
Denominator	Total length of road network in the city	1912
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.13
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**13.4**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	67
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**27.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	12
Denominator	Total number of signalised intersections in the city	43
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**4.18**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	160
Denominator	Total length of road network in the city	3824
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**56.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	47
Denominator	Total number of junctions/ intersections on major roads in the city	83
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**11.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	219
Denominator	Total number of public right-of-way areas in the city	1925
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**37.53**
Formula:	*Numerator / Denominator*	

Numerator	Total number of households with direct water supply connection	204490
Denominator	Total number of households in the city	544922
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**161.45**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	322
Denominator	Total population of the city	1994397
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	199
Denominator	Total number of samples tested for water quality	12307
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**72.67**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	234
Denominator	Quantum of water put into the distribution system (mld)	322
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0.02**
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	40
Denominator	Total number of water connections in the city	240605
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**4.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	202
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	4276
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**121.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	636972
Denominator	Total number of properties in the city	522268
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**89.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	469817
Denominator	Total number of properties in the city	522268

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**39.87**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	120
Denominator	Total waste water generated in the city per day	301
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	204
Denominator	Total waste water received at treatment plants per day	204
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**7.85**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	150
Denominator	Total length of road network in the city	1912
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	633434
Denominator	Total number of households and establishments in the city	633434
Unit	Percentage	

Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1115
Denominator	Total quantum of MSW generated in the city	1115
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**3.33**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1115
Denominator	Average MSW generated in the city (tons per month)	33450
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.79**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.79
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**20.66**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	20.66
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**79.06**

Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	79.06
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	108
Denominator	Total number of noise samples	171
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	34
Denominator	Total number of samples tested	34
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

ITANAGAR

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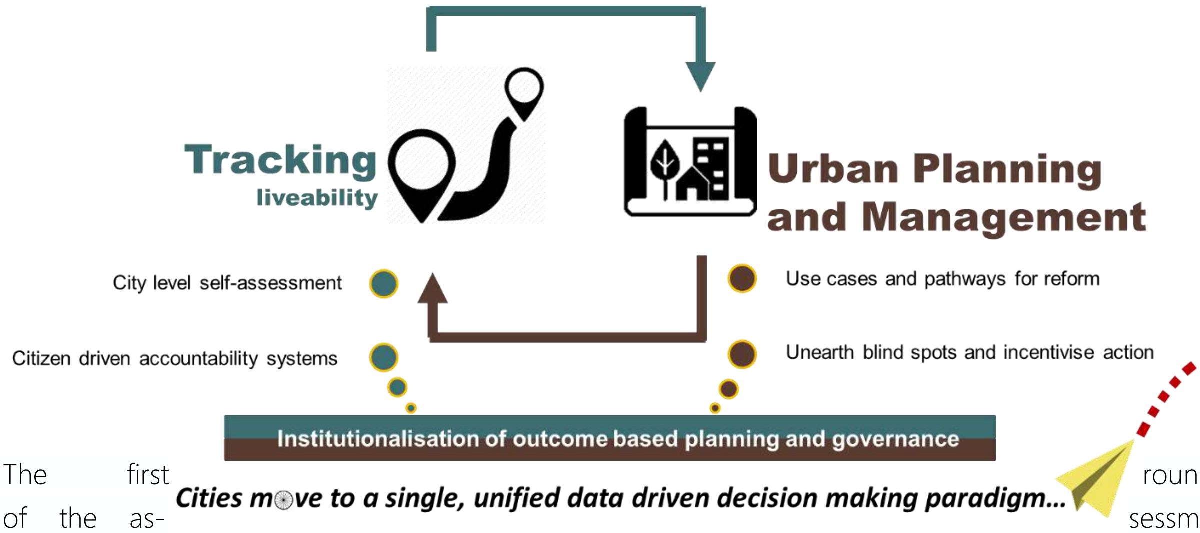
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

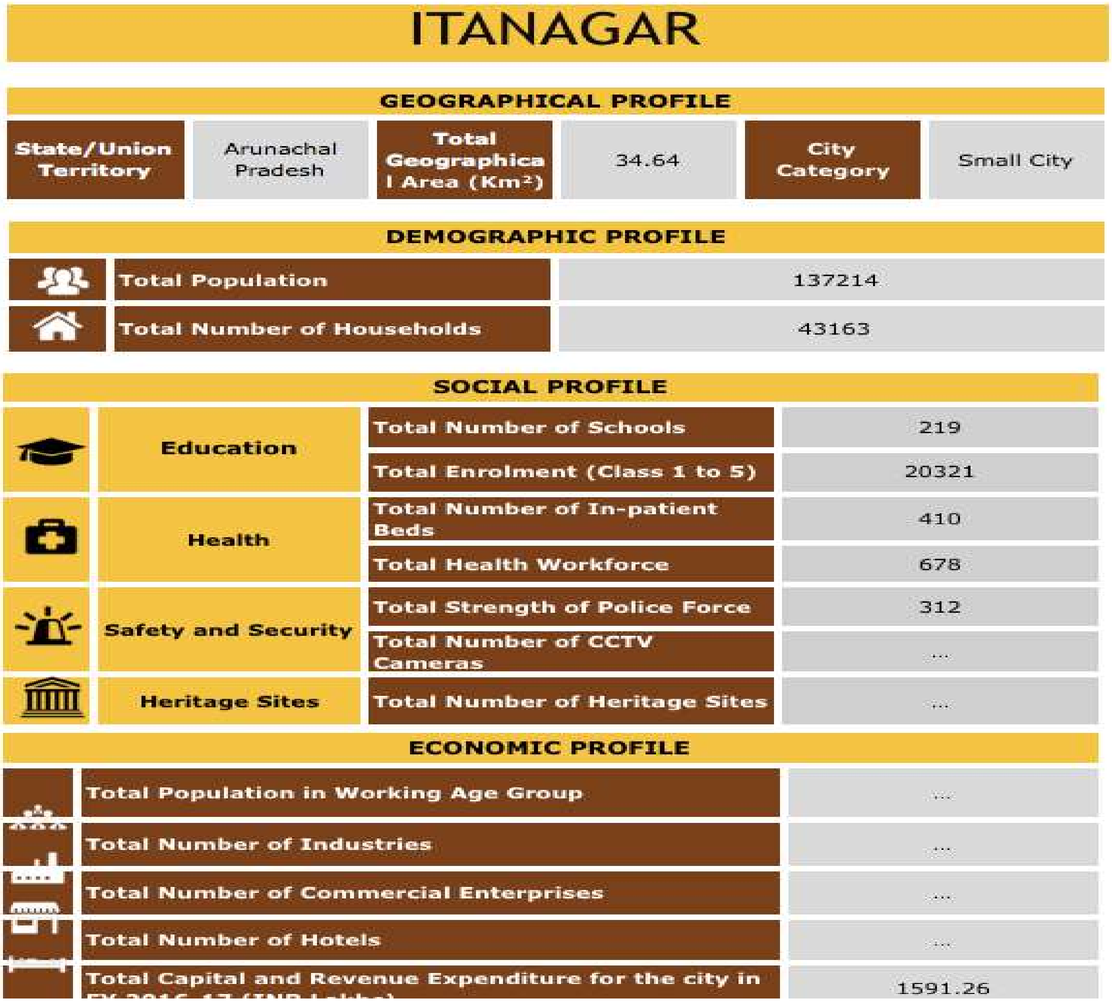

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment

commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



ITANAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Arunachal Pradesh	Total Geographical Area (Km²)	34.64	City Category	Small City

DEMOGRAPHIC PROFILE

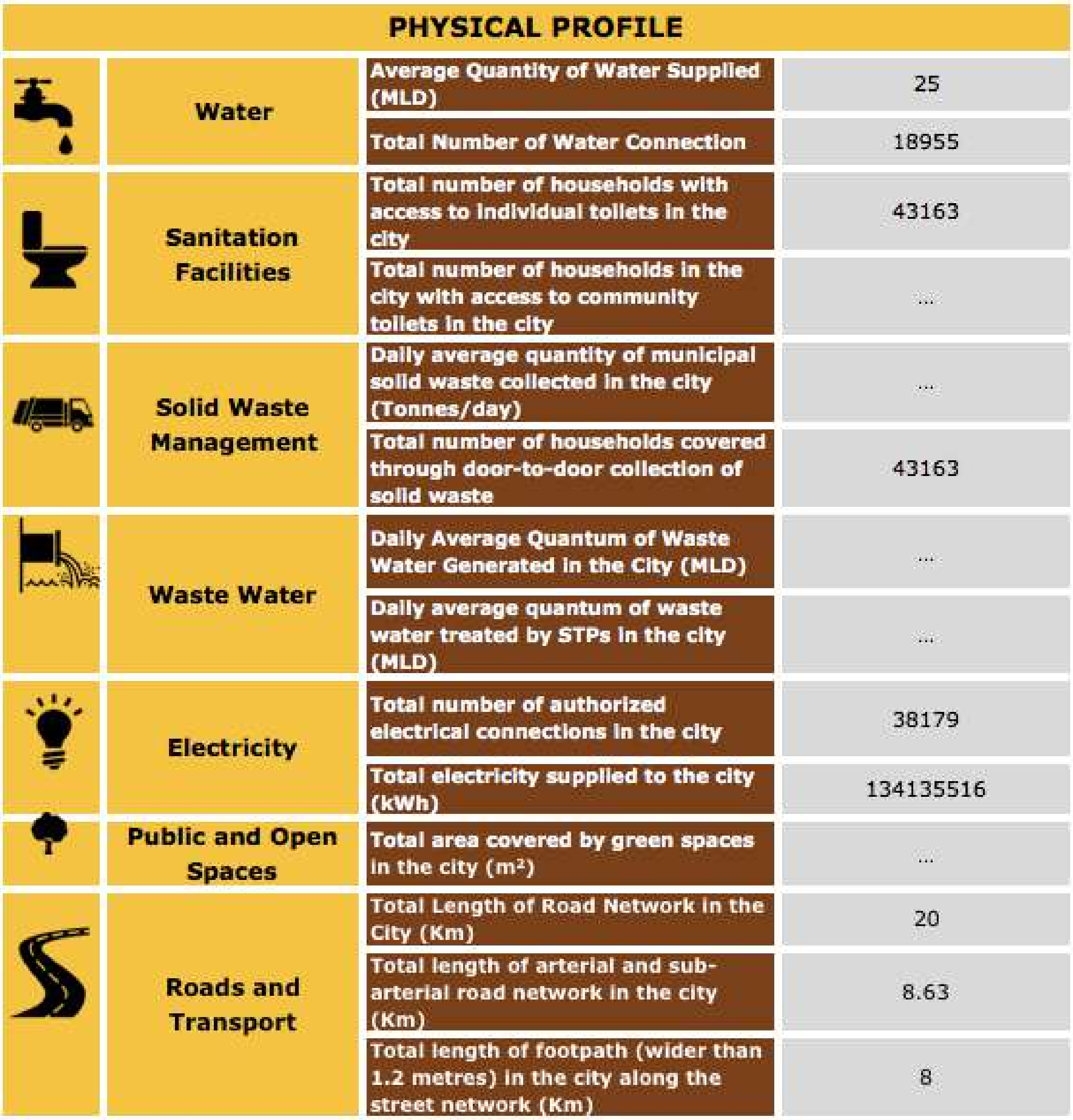
Total Population	137214
Total Number of Households	43163

SOCIAL PROFILE

Education	Total Number of Schools	219
	Total Enrolment (Class 1 to 5)	20321
Health	Total Number of In-patient Beds	410
	Total Health Workforce	678
Safety and Security	Total Strength of Police Force	312
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	...
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in	1591.26



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	25
	Total Number of Water Connection	18955
Sanitation Facilities	Total number of households with access to individual toilets in the city	43163
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	...
	Total number of households covered through door-to-door collection of solid waste	43163
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	38179
	Total electricity supplied to the city (kWh)	134135516
Public and Open Spaces	Total area covered by green spaces in the city (m²)	...
Roads and Transport	Total Length of Road Network in the City (Km)	20
	Total length of arterial and sub-arterial road network in the city (Km)	8.63
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	8

Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	**Category**	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources

Pillars of Comprehensive Development	Category	Indicators
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	**Category**	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse

Pillars of Comprehensive Development	**Category**	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring

2.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions

on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Itanagar Municipal Council
Urban Local Body	For Park and Recreation Related Questions	Itanagar Municipal Council
Urban Local Body	For Water Supply and Drainage related questions	Itanagar Municipal Council
Urban Local Body	For Heritage sites related data	Itanagar Municipal Council
Urban Local Body	For Ecological sites related data	Itanagar Municipal Council
Urban Local Body	For Housing related data	Itanagar Municipal Council
Urban Local Body	For Building plan related data	Itanagar Municipal Council
Urban Local Body	For Roads related data	Itanagar Municipal Council
Urban Local Body	For Solid waste management related data	Itanagar Municipal Council
Urban Local Body	For IT services related data	Itanagar Municipal Council
Urban Local Body	For Vendor committee related data	Itanagar Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Arunachal Pradesh State Pollution Control Board
Development Authority	Building Infrastructure	Urban Development Department, Itanagar
	Construction planning	Urban Development Department, Itanagar
	Green Building	Urban Development Department, Itanagar
	Rain water harvesting	Urban Development Department, Itanagar

Designated data owners	Subcategories	Data owners at city level
	Universal Design Principle	Urban Development Department, Itanagar
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Arunachal Pradesh power corporation private limited
State Disaster management authority		District Disaster management Office, Itanagar
State Education Department		District Education Department, Itanagar
State Health Department	Health care professionals	Health department, Itanagar
	Citizen Services	Health department, Itanagar
	Disease Prevalence	Health department, Itanagar
	Health Infrastructure	Health department, Itanagar
State Renewable Energy Development Agency		Tripura Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and Excise Department, Itanagar
Town and Country Planning Department	Land Use	Town planning department, Itanagar
Traffic and Police Department		Home Department
Transport Authorities	Buses	Arunachal Pradesh State Transport Department
	Registered Vehicles	Arunachal Pradesh State Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 16 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	3
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	2
Disaster Management	0
Urban Local Body	6
Total	16

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

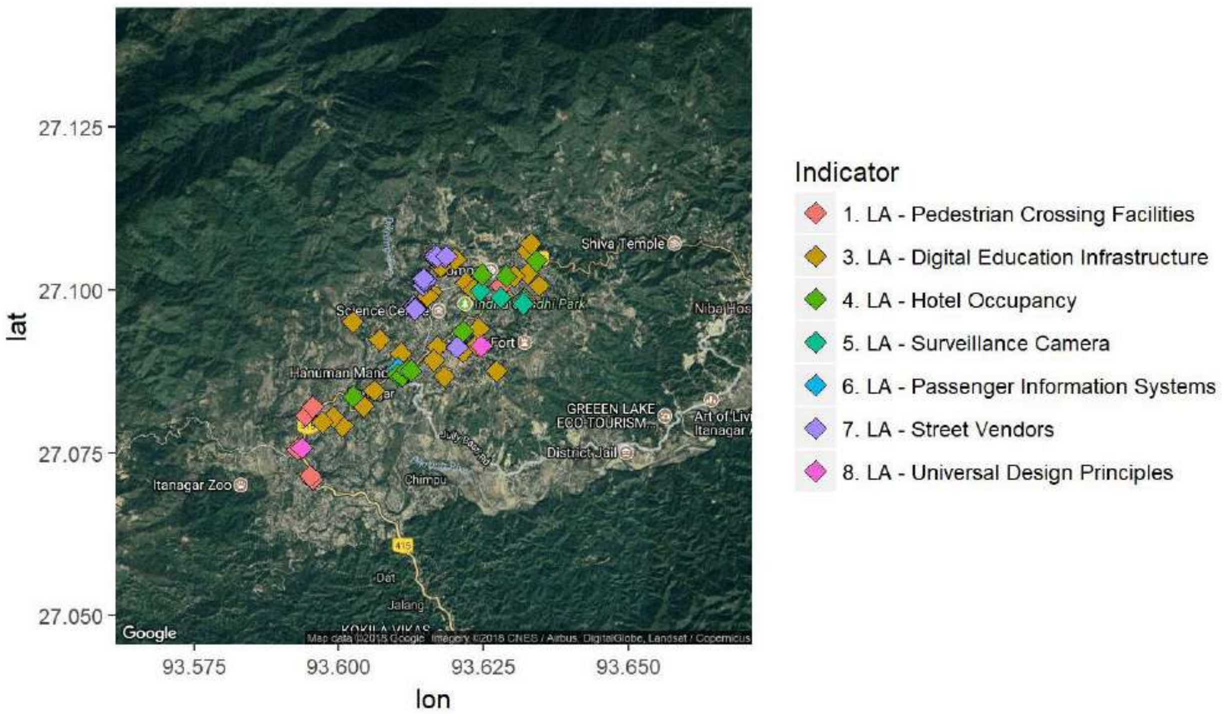
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1** | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


27.125
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District Jail
Itanagar Zoo
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Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**24.85**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.2307692307
	1.1k Grievance redressal	1
	1.1l electricity	0

	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**2.14**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	0
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.4	Average delay in grievance redressal	**0.08**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0.5
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	NA
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**46**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	138
Denominator	Total O&M cost for providing water supply services during the year	300
Unit	Percentage	

Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**83.7**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	648.62226999 9999
Denominator	Total expenditure (revenue and capital accounts) in the same year	774.92205
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	30
Denominator	Total number of wards	30
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered	**Non-**

	through projects for restoration	**Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	1591.26326
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**148.65**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	32035
Denominator	Total population in the age group of 6-14 years	21550
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**146.39**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	16071
Denominator	Total female population in the age group of 6-14 years	10978
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**376.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	20321
Denominator	Total number of teachers available for primary grades (public and private schools)	54
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**25.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	56

Denominator	Total number of schools	225
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**49.27** 49.274944 3427296
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	95.38
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	15135912
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**68.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	410
Denominator	Total population of the city	59490
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**113.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	678
Denominator	Total population of the city	59490

Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**13.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	8171
Denominator	Total population of the city	
Unit	Percentage	59490
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	25
Denominator	Total population of the city	59490
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	Data Unavailable
Denominator	Total length of road network in the city	20
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**1292.65**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	769
Denominator	Total population of the city	59490
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**18.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	143
Denominator	Total crimes recorded in the same year	769
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**121.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	72
Denominator	Total population of the city	59490
Unit	Fatality per lakh	

Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**58.09**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	6912.56
Denominator	Total VAT/GST collection during preceding year	118.9893
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-33.72**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-29
Denominator	Number of construction permits during preceding year	0.86
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	65477
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**38.98**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	638
Denominator	Total number of vendors in the city	1636.925
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable

Denominator	Total number of slum and EWS households in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	59490
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	59490
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**7.25**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	2510000
Denominator	Total area of the city (total area of all land uses)	34640000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	59490
Denominator	Area allocated for residential land use (in hectares)	40700000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**76.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	33191
Denominator	Total number of households in the city	43163
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**Non-Computa**

Formula:	*Numerator / Denominator*	**ble**
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	38179
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**1679**
Description	Total number of sustained electrical interruptions in a year	1679
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	13136
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	533477
Denominator	Total energy consumption from all sources	13423294 9
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage ser-	0

	vices	
Denominator	Total quantum of water and waste water handled during the period	750
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	Data Unavailable
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	0
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	102262.124
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.73**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	134232949
Denominator	Total population of the city	59490
Unit	kWh per capita	

Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	25
Denominator	Total area of the city (sq.km)	34.64
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	Data Unavailable
Denominator	Total population of the city	59490
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	20
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	20
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	Data Unavailable
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**20**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	8
Denominator	Total length of road network in the city	40
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	5
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**26.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	5
Denominator	Total number of public right-of-way areas in the city	19
Unit	Percentage	

Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**40.48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	17472
Denominator	Total number of households in the city	43163
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**420.24**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	25
Denominator	Total population of the city	59490
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank

Denominator	Quantum of water put into the distribution system (mld)	25
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	18955
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	58
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	43163
Denominator	Total number of properties in the city	0
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	20
Unit	Percentage	

Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	43163
Denominator	Total number of households and establishments in the city	43163
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	Data Unavailable
Denominator	Total quantum of MSW generated in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	Data Unavailable
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computab**

		le
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	

Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JABALPUR

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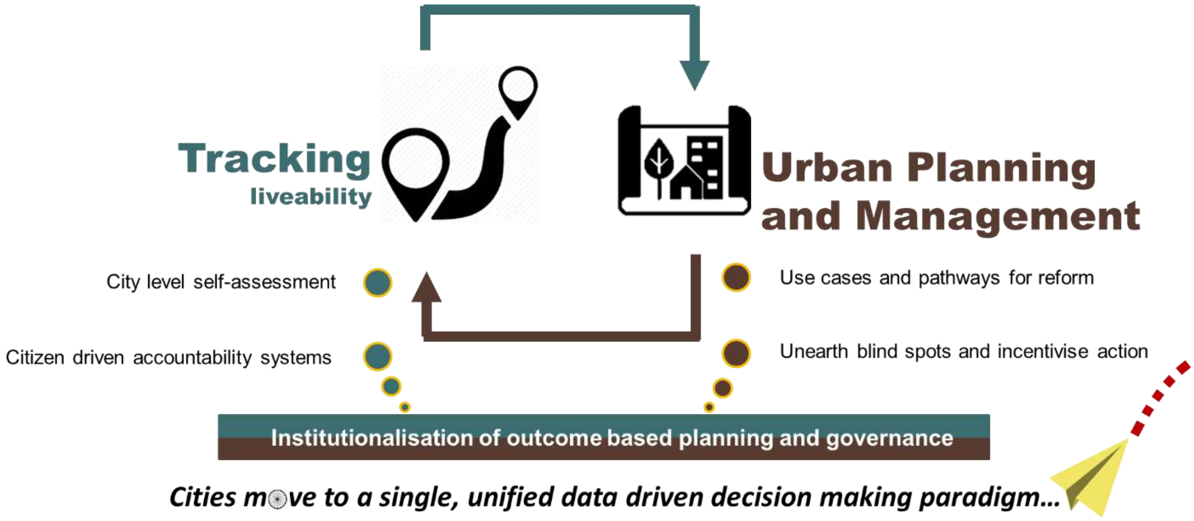
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

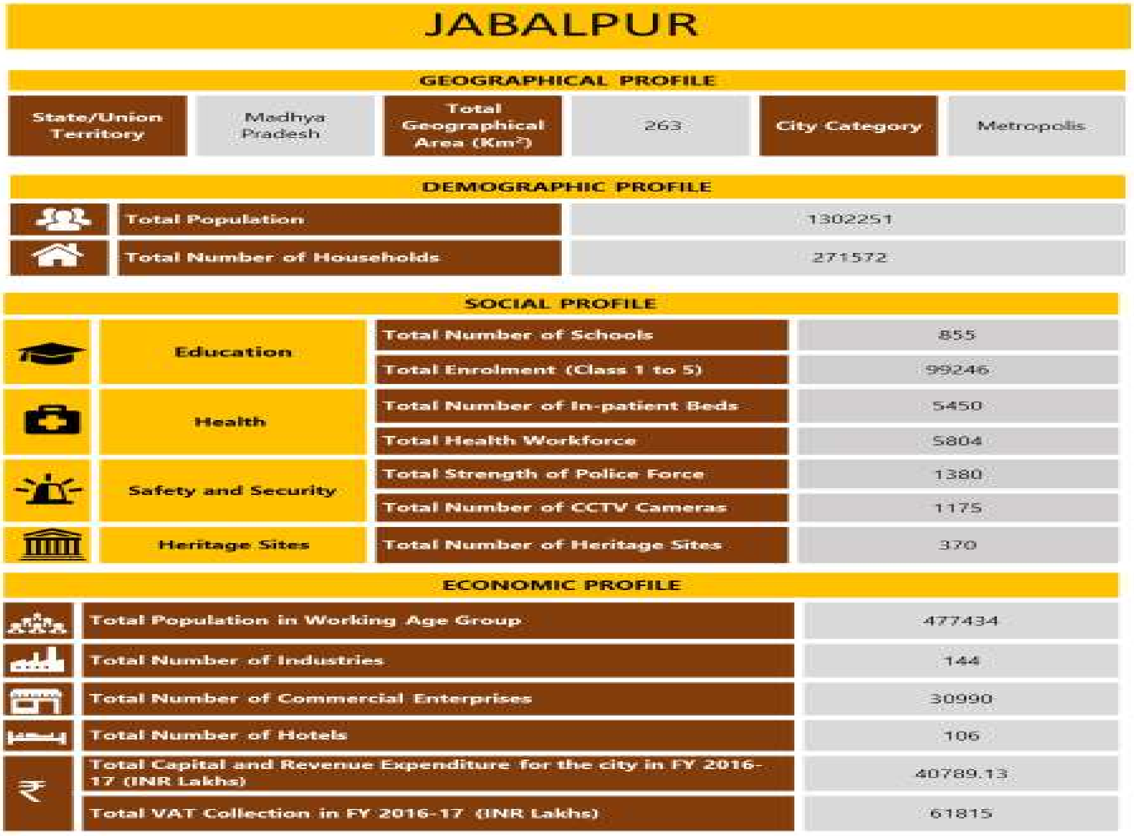
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JABALPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	263	City Category	Metropolis

DEMOGRAPHIC PROFILE

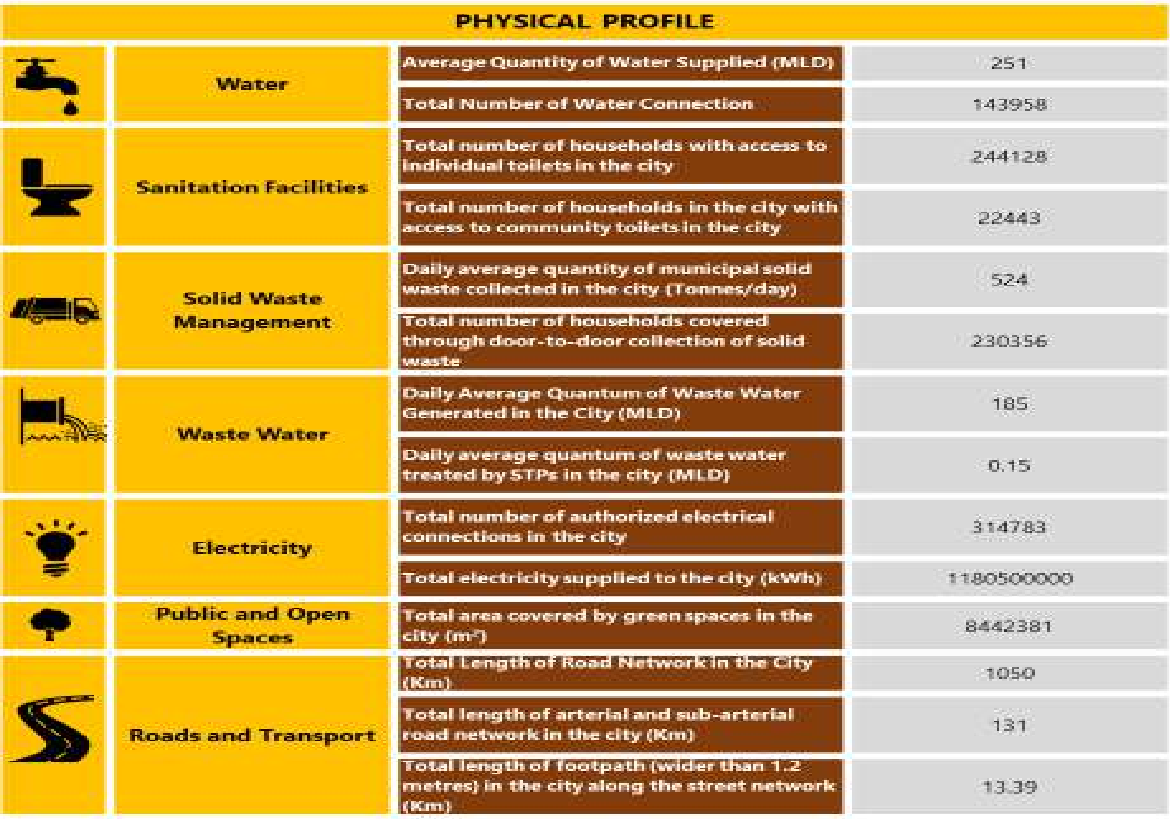
Total Population	1302251
Total Number of Households	271572

SOCIAL PROFILE

Education	Total Number of Schools	855
	Total Enrolment (Class 1 to 5)	99246
Health	Total Number of In-patient Beds	5450
	Total Health Workforce	5804
Safety and Security	Total Strength of Police Force	1380
	Total Number of CCTV Cameras	1175
Heritage Sites	Total Number of Heritage Sites	370

ECONOMIC PROFILE

Total Population in Working Age Group	477434
Total Number of Industries	144
Total Number of Commercial Enterprises	30990
Total Number of Hotels	106
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40789.13
Total VAT Collection in FY 2016-17 (INR Lakhs)	61815



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	251
	Total Number of Water Connection	143958
Sanitation Facilities	Total number of households with access to individual toilets in the city	244128
	Total number of households in the city with access to community toilets in the city	22443
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	524
	Total number of households covered through door-to-door collection of solid waste	230356
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	185
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.15
Electricity	Total number of authorized electrical connections in the city	314783
	Total electricity supplied to the city (kWh)	1180500000
Public and Open Spaces	Total area covered by green spaces in the city (m²)	8442381
Roads and Transport	Total Length of Road Network in the City (Km)	1050
	Total length of arterial and sub-arterial road network in the city (Km)	131
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	13.39

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational

Pillars of Comprehensive Development	Category	Indicators
		places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse

Pillars of Comprehensive Development	Category	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

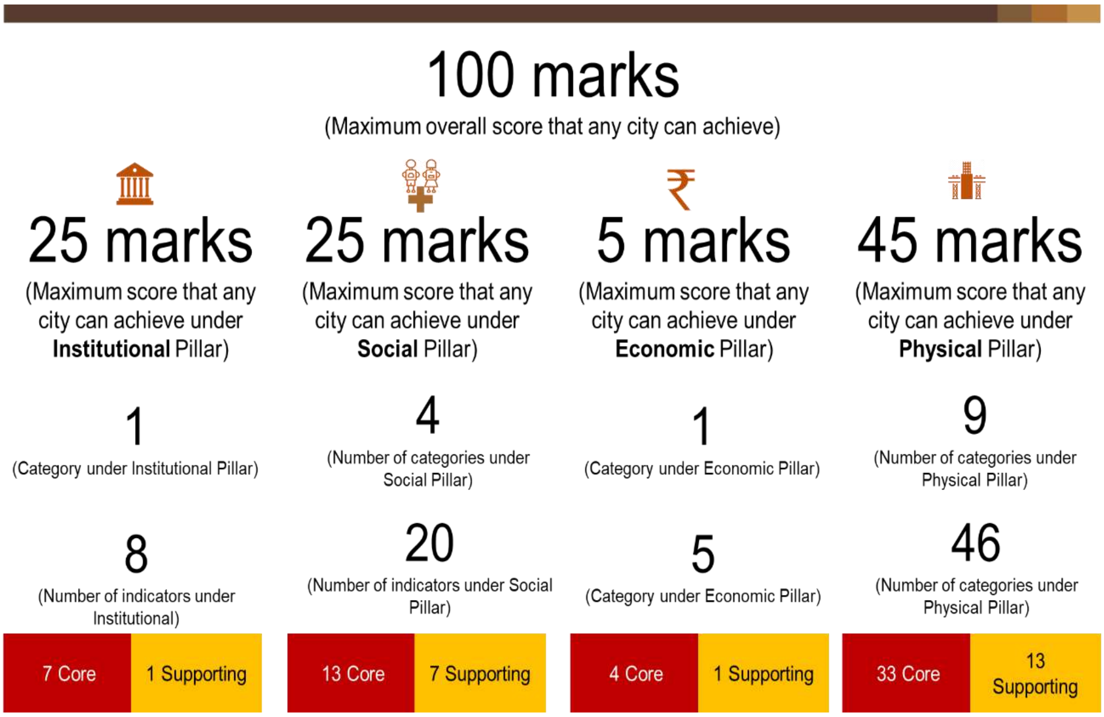
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Jabalpur Municipal Corporation
	Park and Recreation	Garden Section, Jabalpur Municipal Corporation
	Water Supply and Drainage	Water works and Water Head, Jabalpur Municipal Corporation
	Heritage sites	INTACH & Jabalpur Municipal corporation
	Ecological sites	Development Plan, Jabalpur Municipal Corporation
	Housing	Housing section, Jabalpur Municipal Corporation
	Building plan	Building Section and Colony Cell, Jabalpur Municipal Corporation
	Roads	Smart city corporation limited, Jabalpur city Transport Service Limited, PWD section, JMC
	Solid waste management	Health Section, Jabalpur Municipal Corporation
	IT services	IT Section, Jabalpur Municipal Corporation
	Vendor committee	Market Section, Jabalpur Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment Exchange Census reports Archaeological Survey of India
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board

Designated data owners	Sub categories	Data owners at city level
Development Authority	Building Infrastructure	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Construction planning	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Green Building	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Rain water harvesting	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Universal Design Principle	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department DPC Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department (Urja Vikas Nigam)
State Sales / Commercial Taxes Department		Department of sales and Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning Department
Traffic and Police Department		Traffic and Police Department, Jabalpur

Designated data owners	Sub categories	Data owners at city level
Transport Authorities	Buses	Regional Transport Office Jabalpur city transport service limited
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 162 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	8
State Education Department	7
DISCOM/Electricity Department	4
Traffic and Police Department	4
Development Authority	2
Pollution Control Board	5
State Renewable Energy Department	3
Town and Country Planning	3
State Health Department	17
Transport Authority	8
Disaster Management	4
Urban Local Body	97
Total	162

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

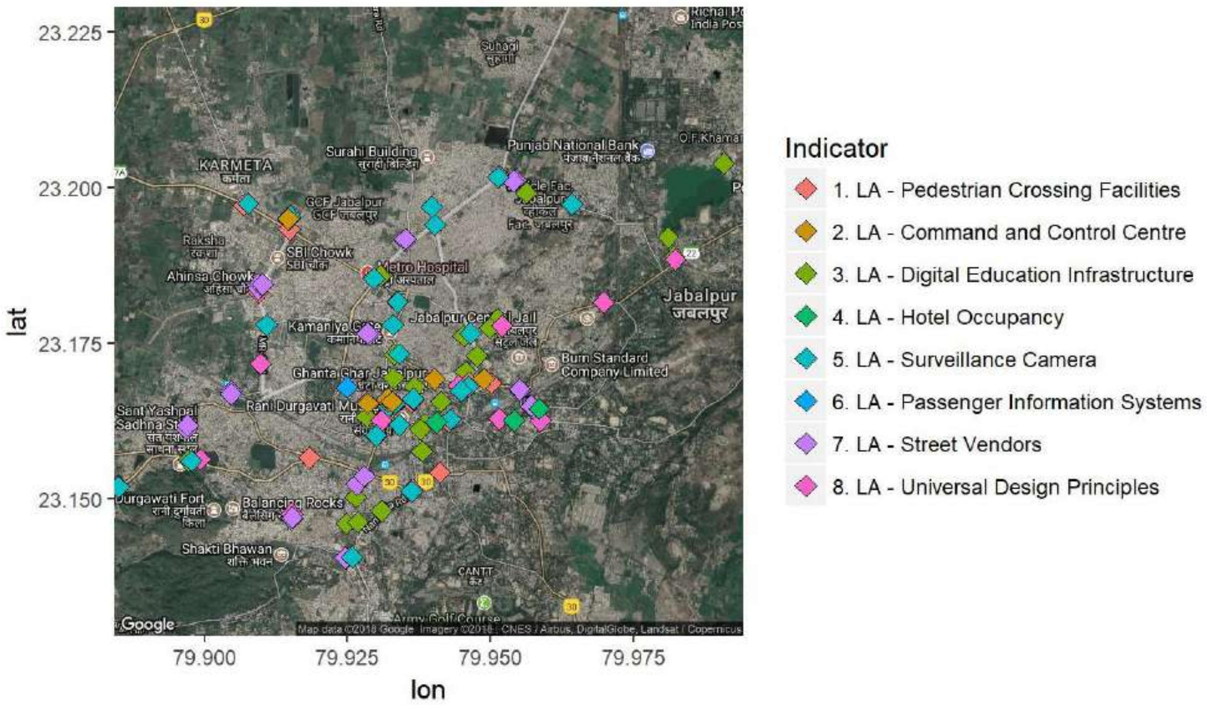
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.225
23.200
23.175
23.150
lat
79.900
79.925
79.950
79.975
lon
KARMETA
Surahi Building
Punjab National Bank
GCF Jabalpur
SBI Chowk
Ahinsa Chowk
Metro Hospital
Kamaniya Gate
Jabalpur
Ghanta Ghar
Rani Durgavati Museum
Burn Standard Company Limited
Sant Yashpal Sadhna Sthal
Durgawati Fort
Balancing Rocks
Shakti Bhawan
CANTT
Army Golf Course
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**87.28**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**28.57**
Description	Services integrated through an integrated or a singular operations command centre	6
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**3.49**
Description		

Sub Indicators	1.3a Building plan	0.005641189
	1.3b Birth/Death Certificate	0.00602814
	1.3c water supply	0.18098162
	1.3d solid waste management	0
	1.3e property tax	0.139646577
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0.016846526
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**65.88**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	12484.66
Denominator	Total demand raised for the year	18950.44

Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**43.48**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2930
Denominator	Total O&M cost for providing water supply services during the year	6738.3
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**17.28**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	16157.82
Denominator	Total expenditure (revenue and capital accounts) in the same year	93501.05
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**189.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	150
Denominator	Total number of wards	79
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**67.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	250

Denominator	Total number of historic buildings/sites identified	370
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	10
Denominator	Total number of ecologically important sites identified in the city	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**50.13**
Description	Average Occupancy rate of Hotels	50.125
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	219.25
Denominator	Total budget of the ULB (capital and revenue)	40789.13
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**69**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	69
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**84.56**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	156078
Denominator	Total population in the age group of 6-14 years	184587
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**85.15**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	74426
Denominator	Total female population in the age group of 6-14 years	87410
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**26.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	99246
Denominator	Total number of teachers available for primary grades (public and private schools)	3708
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**16.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	137
Denominator	Total number of schools	855
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.45**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.45143759
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**93.11**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	351591488
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**50.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5450
Denominator	Total population of the city	1081677
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**53.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	5804
Denominator	Total population of the city	1081677
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	**Average response time in case of health emergencies**	**21.5**
Description	Total response time for health-related distress calls received in the city	21.5
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	4539
Denominator	Total population of the city	1081677
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	527
Denominator	Total population of the city	1081677
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**111.9**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1175
Denominator	Total length of road network in the city	1050
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1696.25**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	18348
Denominator	Total population of the city	1081677
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2200
Denominator	Total crimes recorded in the same year	18348
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**25.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	280
Denominator	Total population of the city	1081677
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.24**
Formula:	*Numerator / Denominator*	

Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	7229
Denominator	Total VAT/GST collection during preceding year	545.86
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**11.9**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	547.86
Denominator	Total Professional Tax collection during preceding year	4605.14
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**22.59**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	363
Denominator	Number of construction permits during preceding year	16.07
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	28663
Denominator	Total labour force in the city	184587
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	4614.675
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**2.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	4288
Denominator	Total number of slum and EWS households in the city	1606.29
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**13.32** 55790223309000
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**7.81**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	8442831

Denominator	Total population of the city	1081677
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**8.25**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	8928131.51
Denominator	Total population of the city	1081677
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	263000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1081677
Denominator	Area allocated for residential land use (in hectares)	47340000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**96.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	262050
Denominator	Total number of households in the city	271572
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	314783
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2171**
Description	Total number of sustained electrical interruptions in a year	2171
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	886
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	15404.46
Denominator	Total energy consumption from all sources	1180503980
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2625808.75
Denominator	Total quantum of water and waste water handled during the period	7534.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1839990
Denominator	Total number of street light installations	43255
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.52**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1180503980
Denominator	Total population of the city	1081677
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.48**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	200
Denominator	Total area of the city (sq.km)	263
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	122
Denominator	Total population of the city	1081677
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	5
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.59**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	6.2
Denominator	Total length of road network in the city	1050
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**40**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.01
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**2.4**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	12
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**58.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	10
Denominator	Total number of signalised intersections in the city	17
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	11800
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	13.39
Denominator	Total length of road network in the city	2100
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**37.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	23

Denominator	Total number of junctions/ intersections on major roads in the city	61
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**48**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	84
Denominator	Total number of public right-of-way areas in the city	175
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**50.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	136677
Denominator	Total number of households in the city	271572
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**232.05**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	251
Denominator	Total population of the city	1081677
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	19786
Denominator	Total number of samples tested for water quality	20075
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**40**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	100.4
Denominator	Quantum of water put into the distribution system (mld)	251
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**6.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	9308
Denominator	Total number of water connections in the city	143958
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	9
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1970
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**112.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	275189
Denominator	Total number of properties in the city	244127
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**120.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	295228
Denominator	Total number of properties in the city	244127
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	185
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0.15
Denominator	Total waste water received at treatment plants per day	0.15

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**10.25**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	107.67
Denominator	Total length of road network in the city	1050
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**86.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	261110
Denominator	Total number of households and establishments in the city	302562
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	524
Denominator	Total quantum of MSW generated in the city	524
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**101.77**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	15998

Denominator	Average MSW generated in the city (tons per month)	15720
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**16.58**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	16.58
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**63.83**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	63.83
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	236
Denominator	Total number of noise samples	504
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**43.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	48
Denominator	Total number of samples tested	110
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JAIPUR

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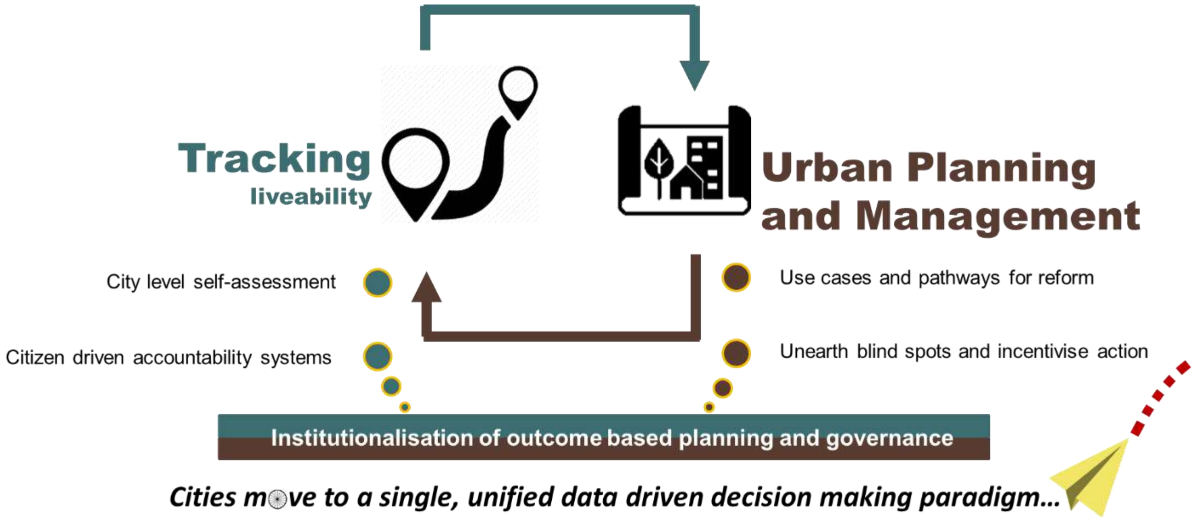
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

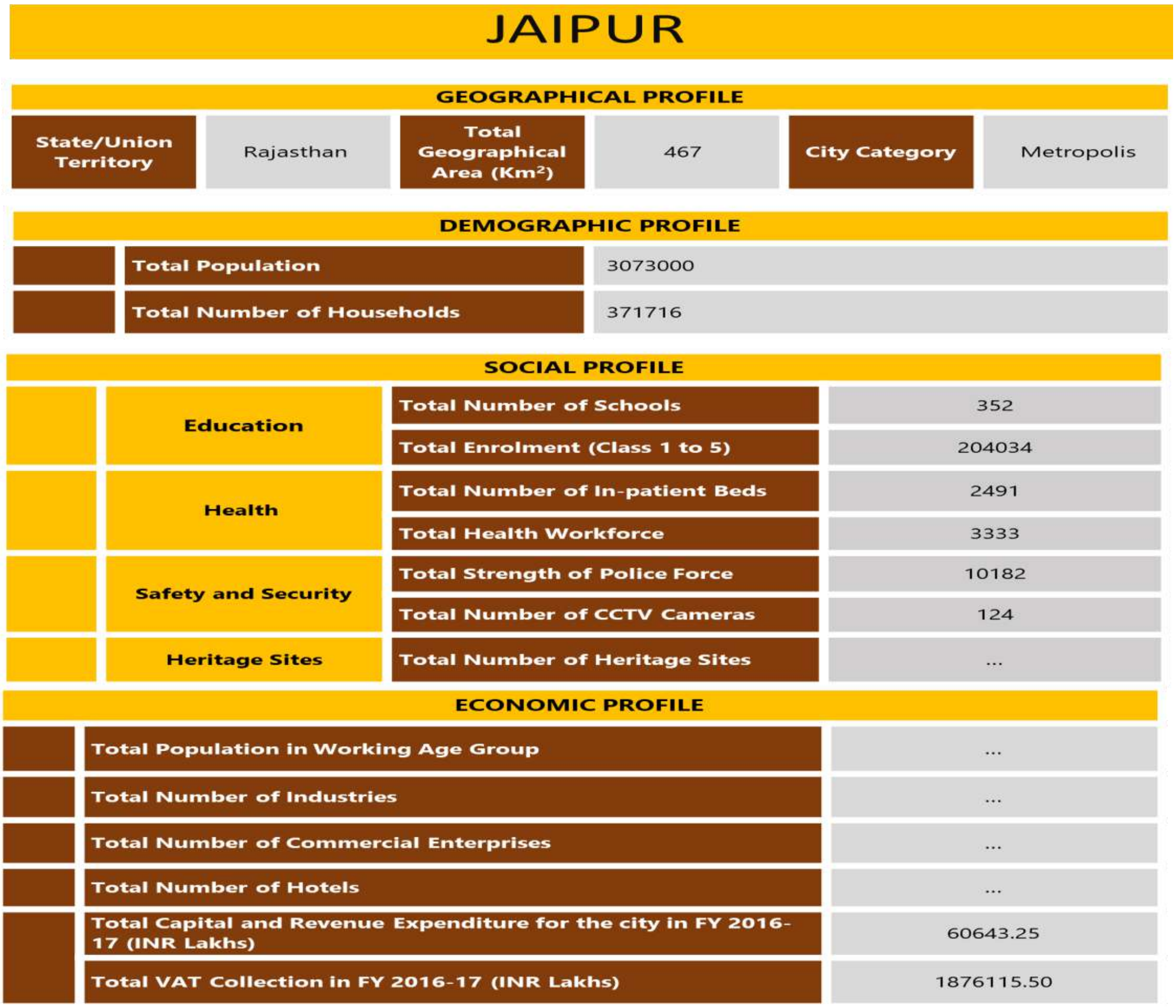

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	**Total Geographical Area (Km^2)**	467	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

	Total Population	3073000
	Total Number of Households	371716

SOCIAL PROFILE

	Education	**Total Number of Schools**	352
		Total Enrolment (Class 1 to 5)	204034
	Health	**Total Number of In-patient Beds**	2491
		Total Health Workforce	3333
	Safety and Security	**Total Strength of Police Force**	10182
		Total Number of CCTV Cameras	124
	Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

	Total Population in Working Age Group	...
	Total Number of Industries	...
	Total Number of Commercial Enterprises	...
	Total Number of Hotels	...
	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	60643.25
	Total VAT Collection in FY 2016-17 (INR Lakhs)	1876115.50

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	50.6
		Total Number of Water Connection	471080
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	638982
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1472.8
		Total number of households covered through door-to-door collection of solid waste	630091
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	264
		Daily average quantum of waste water treated by STPs in the city (MLD)	202
	Electricity	**Total number of authorized electrical connections in the city**	4131152
		Total electricity supplied to the city (kWh)	4189100000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
	Roads and Transport	**Total Length of Road Network in the City (Km)**	6000
		Total length of arterial and sub-arterial road network in the city (Km)	2800
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	400

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

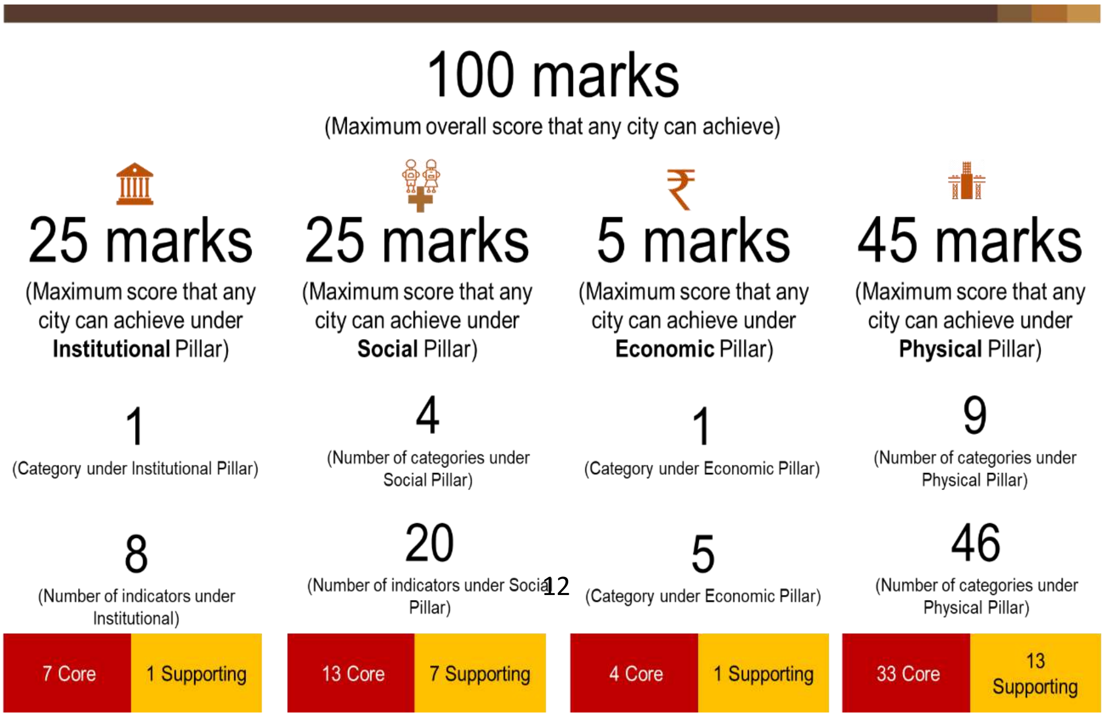
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core | 1 Supporting	13 Core | 7 Supporting	4 Core | 1 Supporting	33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engineering Department
Urban Local Body	For Heritage sites related data	Not Identified
Urban Local Body	For Ecological sites related data	Municipal Corporation
Urban Local Body	For Housing related data	Municipal Corporation
Urban Local Body	For Building plan related data	Municipal Corporation
Urban Local Body	For Roads related data	Municipal Corporation
Urban Local Body	For Solid waste management related data	Municipal Corporation
Urban Local Body	For IT services related data	Municipal Corporation
Urban Local Body	For Vendor committee related data	Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Town & Country Planning
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Not Identified
	Universal Design Principle	Not Identified

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jaipur Vidyut Vikas Nigam
State Disaster management authority		Disaster Management,Collectorate Jaipur
State Education Department		District Education Officer
State Health Department	Health care professionals	Director Health Department
	Citizen Services	Director Health Department
	Disease Prevalence	Director Health Department
	Health Infrastructure	Director Health Department
State Renewable Energy Development Agency		State Renewable Energy Department
State Sales / Commercial Taxes Department		Commissioner Commercial Tax
Town and Country Planning Department	Land Use	Town & Country Planning Department
Traffic and Police Department		ACP Traffic Office.Yaadgar,Jaipur
Transport Authorities	Buses	Transport Deoartment
	Registered Vehicles	Transport Department
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 11 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

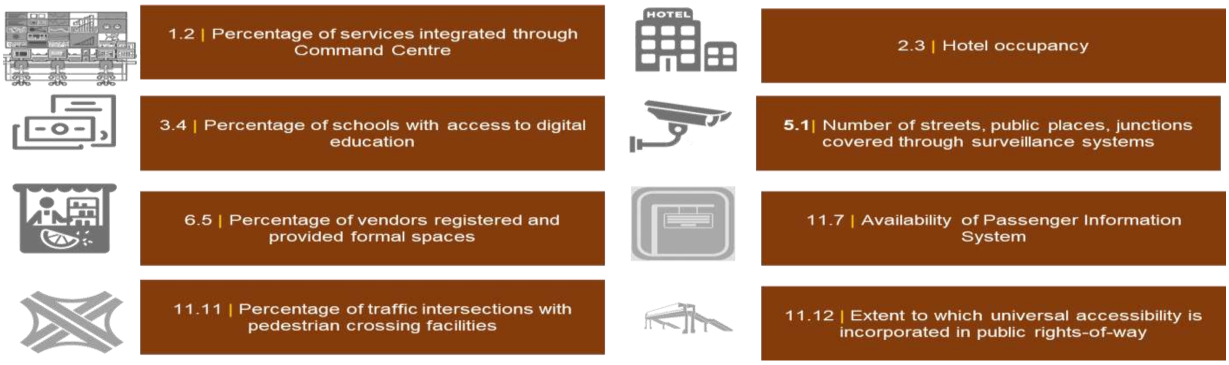
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	4
Transport Authority	2
Disaster Management	0
Urban Local Body	5
Total	11*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were

found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

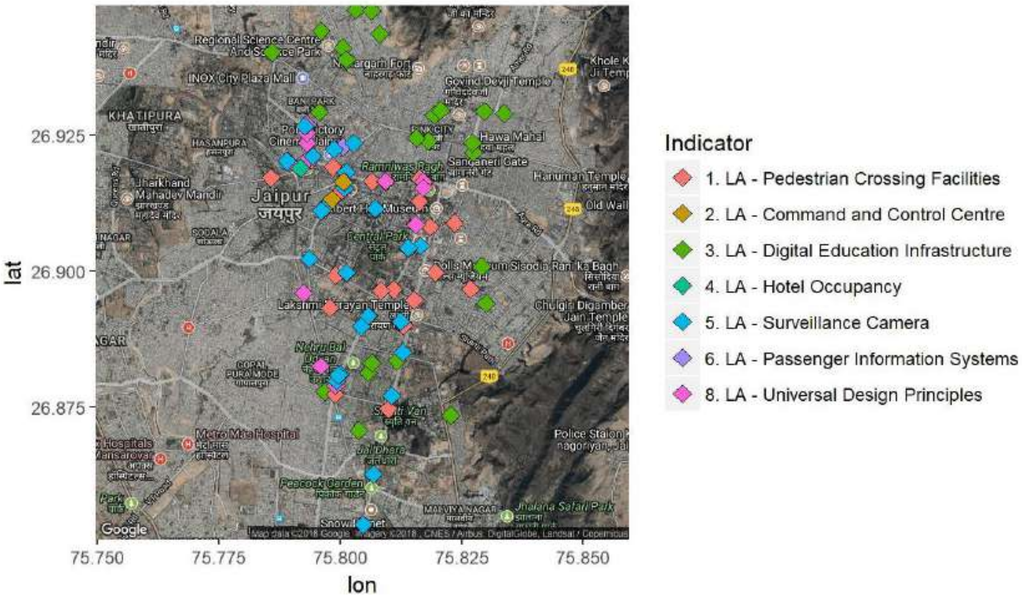
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.925
26.900
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lat
75.750
75.775
75.800
75.825
75.850
lon
Jaipur
जयपुर
KHATIPURA
Hawa Mahal
Central Park
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate

Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**64.1**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1

	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**40.48**
Description	Services integrated through an integrated or a singular operations command centre	8.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**4.52**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.003829955
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000465066
	1.3i information	0.131312737
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	0

	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**39.62**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	6119.12
Denominator	Total demand raised for the year	15443.88
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	4755
Denominator	Total O&M cost for providing water supply services during the year	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**-162.63**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-78135.82
Denominator	Total expenditure (revenue and capital accounts) in the same year	48046.6
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	91
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**0**
Description	Average Occupancy rate of Hotels	0
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	8.22
Denominator	Total budget of the ULB (capital and revenue)	60643.25
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the	

	same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	NA
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**57.05**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	346031
Denominator	Total population in the age group of 6-14 years	606520
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**39.2**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	109508
Denominator	Total female population in the age group of 6-14 years	279378
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**133.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	204034
Denominator	Total number of teachers available for primary grades (public and private schools)	1532
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**26.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	92

Denominator	Total number of schools	352
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**93877.92**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	93877.91866
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**102.76**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	2273612793
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**8.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2491
Denominator	Total population of the city	3046163
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**10.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3333
Denominator	Total population of the city	3046163
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**

Description	Total response time for health-related distress calls received in the city	NA
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1675
Denominator	Total population of the city	3046163
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2523
Denominator	Total population of the city	3046163
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**2.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	124
Denominator	Total length of road network in the city	6000
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**979.13**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	29826
Denominator	Total population of the city	3046163
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a	

	benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**6.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1918
Denominator	Total crimes recorded in the same year	29826
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**13.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	399
Denominator	Total population of the city	3046163
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**10.57**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	179281.32
Denominator	Total VAT/GST collection during preceding year	16968.3418
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	Increase in issuance of Construction Permits	**8.77**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	10
Denominator	Number of construction permits during preceding year	1.14
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	NA
Denominator	Total labour force in the city	606520
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	15163
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	NA
Unit	Percentage	

Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	NA
Denominator	Total population of the city	3046163
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.85**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2588300
Denominator	Total population of the city	3046163
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0.75**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	3500000
Denominator	Total area of the city (total area of all land uses)	467000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0**

Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	3046163
Denominator	Area allocated for residential land use (in hectares)	1596000000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**215.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	799563
Denominator	Total number of households in the city	371716
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	4131152
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	NA
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	NA

Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	13550
Denominator	Total energy consumption from all sources	4189100000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	7578
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	85000000
Denominator	Total number of street light installations	285000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.44**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	4189100000
Denominator	Total population of the city	3046163
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	467
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	2401
Denominator	Total population of the city	3046163
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	6000
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**19.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	44
Denominator	Total number of signalised intersections in the city	224
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**3.33**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	400

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total length of road network in the city	12000
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**200**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	600
Denominator	Total number of junctions/ intersections on major roads in the city	300
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	12
Denominator	Total number of public right-of-way areas in the city	NA
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**107.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	399194
Denominator	Total number of households in the city	371716
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**16.61**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	50.6
Denominator	Total population of the city	3046163
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	NA
Denominator	Total number of samples tested for water quality	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**349.8**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	177
Denominator	Quantum of water put into the distribution system (mld)	50.6
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	471080
Denominator	Total number of water connections in the city	471080
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	NA
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	NA
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	638982
Denominator	Total number of properties in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	90160
Denominator	Total number of properties in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**76.52**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	202
Denominator	Total waste water generated in the city per day	264
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**86.63**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	175
Denominator	Total waste water received at treatment plants per day	202
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	6000
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**170.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	634281
Denominator	Total number of households and establishments in the city	371716
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**99.92**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1472.8
Denominator	Total quantum of MSW generated in the city	1474
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**16.97**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	7500
Denominator	Average MSW generated in the city (tons per month)	44184
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**

Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	NA
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1
Denominator	Total number of noise samples	72
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JALANDHAR

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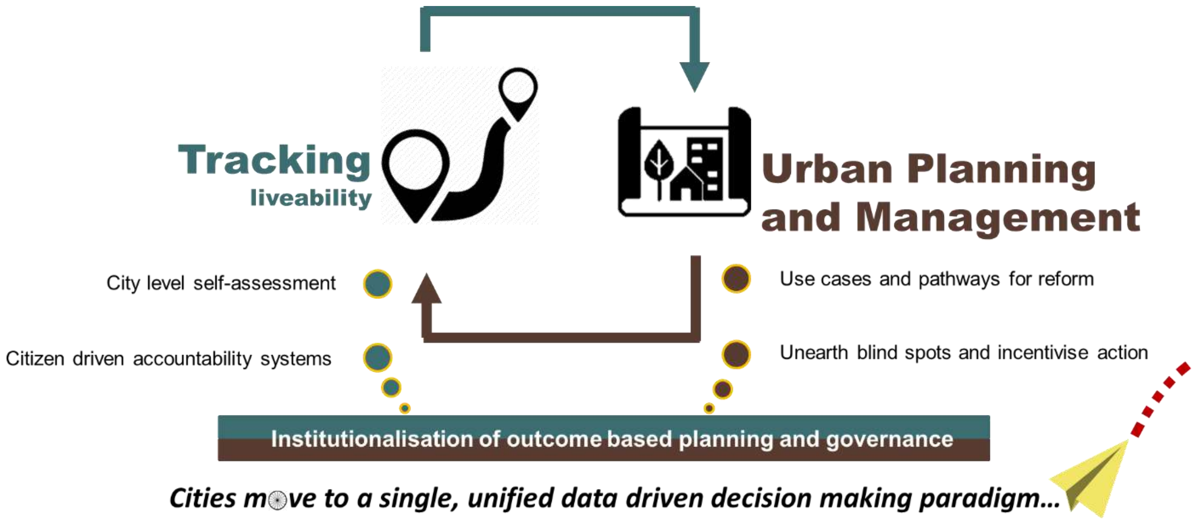
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

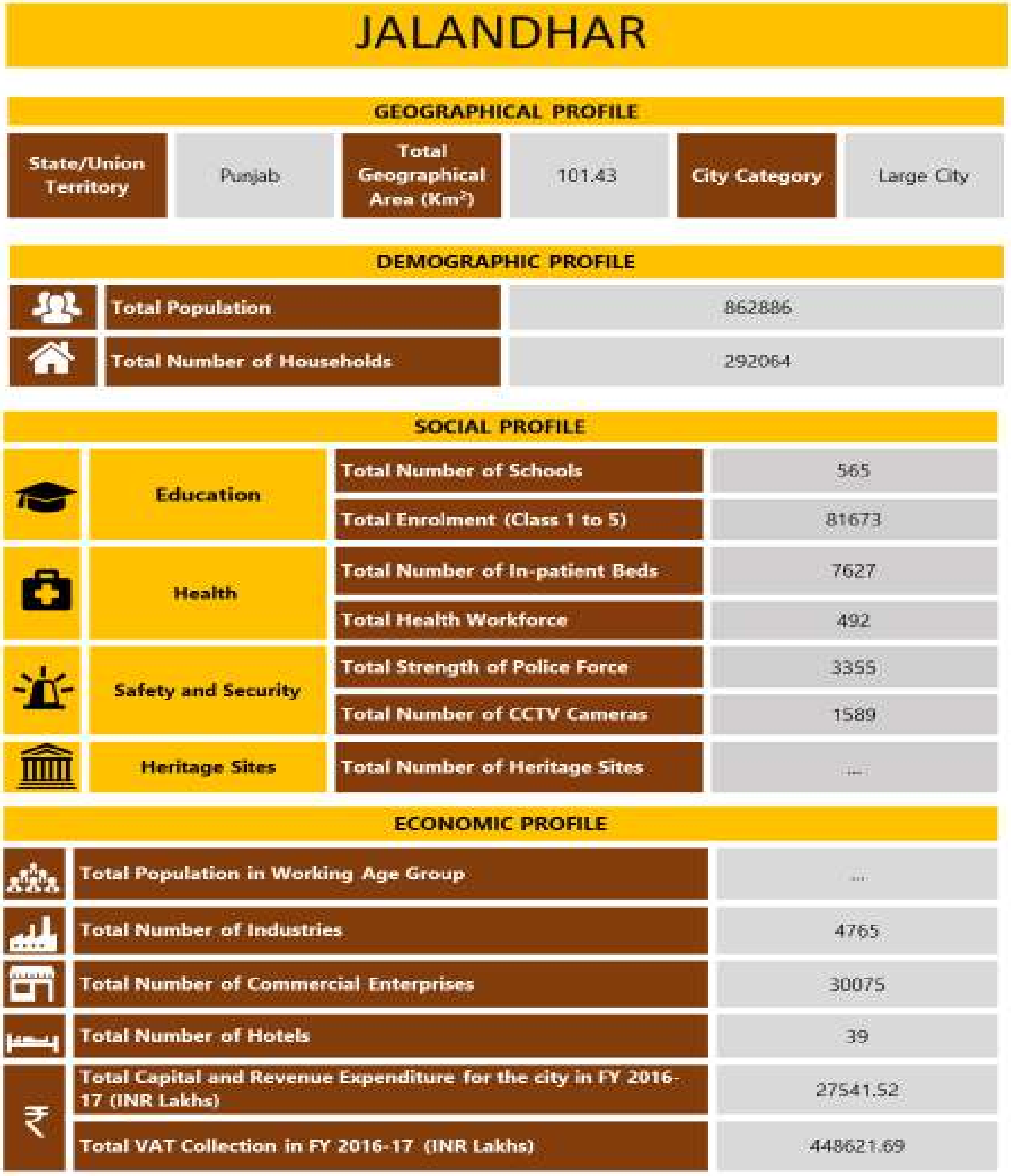

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JALANDHAR

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	Total Geographical Area (Km²)	101.43	City Category	Large City

DEMOGRAPHIC PROFILE

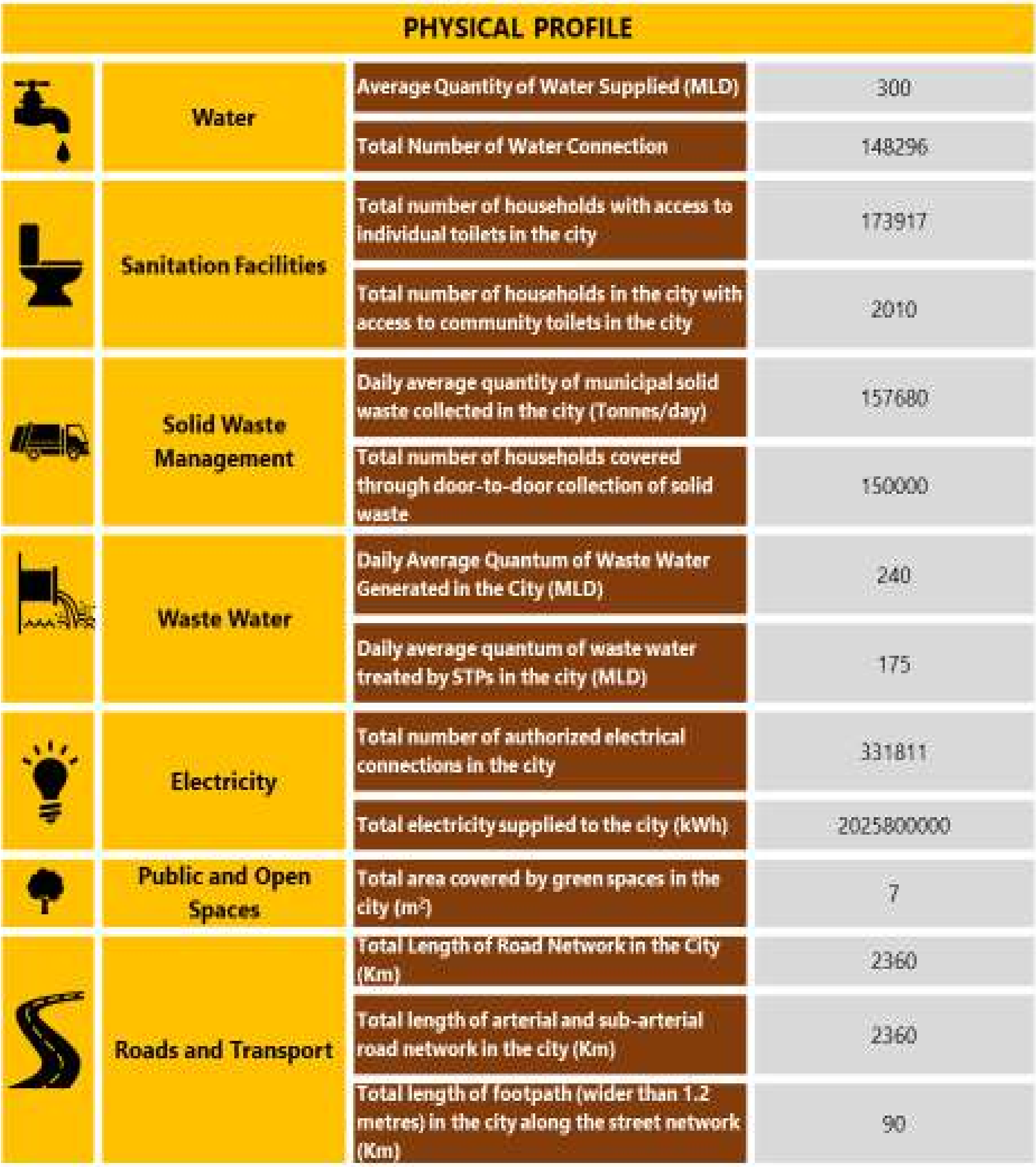
Total Population	862886
Total Number of Households	292064

SOCIAL PROFILE

Education	Total Number of Schools	565
	Total Enrolment (Class 1 to 5)	81673
Health	Total Number of In-patient Beds	7627
	Total Health Workforce	492
Safety and Security	Total Strength of Police Force	3355
	Total Number of CCTV Cameras	1589
Heritage Sites	Total Number of Heritage Sites	----

ECONOMIC PROFILE

Total Population in Working Age Group	....
Total Number of Industries	4765
Total Number of Commercial Enterprises	30075
Total Number of Hotels	39
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	27541.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	448621.69



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	300
	Total Number of Water Connection	148296
Sanitation Facilities	Total number of households with access to individual toilets in the city	173917
	Total number of households in the city with access to community toilets in the city	2010
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	157680
	Total number of households covered through door-to-door collection of solid waste	150000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	240
	Daily average quantum of waste water treated by STPs in the city (MLD)	175
Electricity	Total number of authorized electrical connections in the city	331811
	Total electricity supplied to the city (kWh)	2025800000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7
Roads and Transport	Total Length of Road Network in the City (Km)	2360
	Total length of arterial and sub-arterial road network in the city (Km)	2360
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	90

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

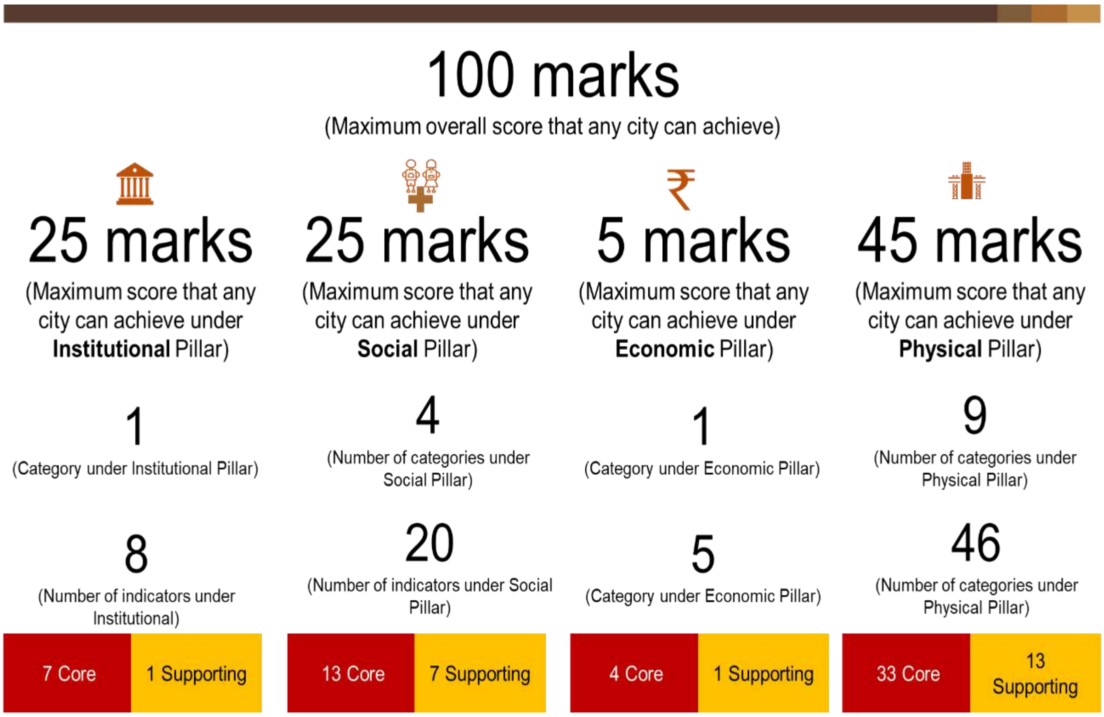
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Deputy Controller (Finance & Accounts)
Urban Local Body	For Park and Recreation Related Questions	Horticulture
Urban Local Body	For Water Supply and Drainage related questions	Operation & Maintenance
Urban Local Body	For Heritage sites related data	There are no Heritage sites in Jalandhar
Urban Local Body	For Ecological sites related data	There are no ecological sites in Jalandhar
Urban Local Body	For Housing related data	Housing Branch
Urban Local Body	For Building plan related data	Building Branch
Urban Local Body	For Roads related data	Buildings & Roads Branch
Urban Local Body	For Solid waste management related data	Medical Officer of Health
Urban Local Body	For IT services related data	Information Technology Department
Urban Local Body	For Vendor committee related data	Advertisement Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	District Sports Office District Employment Exchange District Transport Office
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Building Branch of the ULB
	Construction planning	Building Branch of the ULB
	Green Building	Building Branch of the ULB
	Rain water harvesting	Building Branch of the ULB
	Universal Design Principle	Building Branch of the ULB
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Building Branch of the ULB
State Disaster management authority		Revenue Department
State Education Department		State Education Department
State Health Department	Health care professionals	Chief Medical Office
State Health Department	Citizen Services	Chief Medical Office
State Health Department	Disease Prevalence	Chief Medical Office
State Health Department	Health Infrastructure	Indian Medical Association
State Renewable Energy Development Agency		Punjab Energy Development Agency
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	District Town and Country Planning
Traffic and Police Department		Traffic Police Department
Transport Authorities	Buses	General Manager Roadways
Transport Authorities	Registered Vehicles	Regional Transport Authority
Transport Authorities	Sub urban rail transport	Not Applicable in Jalandhar
Transport Authorities	Mono Rail Authority	Not Applicable in Jalandhar
Transport Authorities	Tramways	Not Applicable in Jalandhar
Transport Authorities	Marine Transport Authority	Not Applicable in Jalandhar

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 101 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	4
Traffic and Police Department	7
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	5
State Health Department	11
Transport Authority	7
Disaster Management	1
Urban Local Body	59
Total	101

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

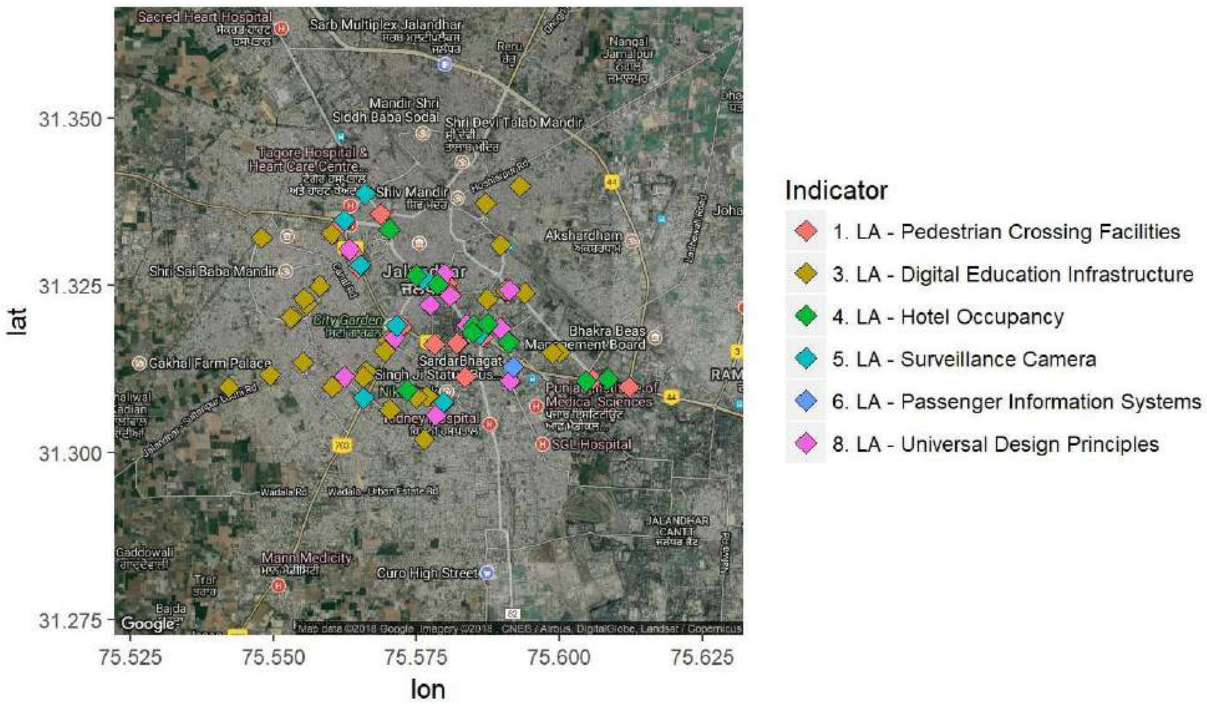
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


31.350
31.325
31.300
31.275
lat
75.525
75.550
75.575
75.600
75.625
lon
Sacred Heart Hospital
Sarb Multiplex Jalandhar
Mandir Shri Siddh Baba Sodal
Shri Devi Talab Mandir
Tagore Hospital & Heart Care Centre
Shiv Mandir
Akshardham
Shri Sai Baba Mandir
Jalandhar
City Garden
Bhakra Beas Management Board
Gakhal Farm Palace
Sardar Bhagat Singh Ji Statue
Punjab Institute of Medical Sciences
SGL Hospital
JALANDHAR CANTT
Mann Medicity
Curo High Street
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**36**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0.25
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.43**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.002962651
	1.3c water supply	0.132582242
	1.3d solid waste management	0.001554788
	1.3e property tax	0.016865596
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA

	1.3h complaints/ grievance redressal	0.0000172626302033883
	1.3i information	0.010451947
	1.3j electricity	0.030137639
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.67**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	1
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	3
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2432.59
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**83.28**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2487.25
Denominator	Total O&M cost for providing water supply services during the year	2986.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-7.55**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-5019.16
Denominator	Total expenditure (revenue and capital accounts) in the same year	66455.39
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	80
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**41.43**
Description	Average Occupancy rate of Hotels	41.42857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	27541.52

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**49**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	49
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**78.66**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	112273
Denominator	Total population in the age group of 6-14 years	142733
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**90.47**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	57606
Denominator	Total female population in the age group of 6-14 years	63672
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**26.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	81673
Denominator	Total number of teachers available for primary grades (public and private schools)	3111
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**29.2**
Formula:	*Numerator / Denominator*	

Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	165
Denominator	Total number of schools	565
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**72.33** 72.33418084
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**3.6** 9329328
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**87.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	7627
Denominator	Total population of the city	868929
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**5.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	492
Denominator	Total population of the city	868929
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**

Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**2.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	22499
Denominator	Total population of the city	868929
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	517
Denominator	Total population of the city	868929
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**67.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1589
Denominator	Total length of road network in the city	2360
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**367.46**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3193
Denominator	Total population of the city	868929
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**110.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3543
Denominator	Total crimes recorded in the same year	3193
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**20.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	179
Denominator	Total population of the city	868929
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.5**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	53344.4
Denominator	Total VAT/GST collection during preceding year	3952.7729
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**535.21**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	2280
Denominator	Number of construction permits during preceding year	4.26
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	5031
Denominator	Total labour force in the city	142733
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	12014
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.13**
Formula:	*Numerator / Denominator*	

Numerator	Total number of slum and EWS households covered through formal/affordable housing	1636
Denominator	Total number of slum and EWS households in the city	395.91
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	7
Denominator	Total population of the city	868929
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**3.76**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	3267419
Denominator	Total population of the city	868929
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	5.5786
Denominator	Total area of the city (total area of all land uses)	101430000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**3622.33**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	868929
Denominator	Area allocated for residential land use (in hectares)	239.8812
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**113.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	331811
Denominator	Total number of households in the city	292064
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0

Denominator	Total number of electricity connections in the city	331811
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**45959**
Description	Total number of sustained electrical interruptions in a year	45959
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.05**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2196928
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	730
Denominator	Total energy consumption from all sources	2025800000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	14250
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	65027
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	69
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.41**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	2025800000
Denominator	Total population of the city	868929
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA

Denominator	Total area of the city (sq.km)	101.43
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	868929
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	2360
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	12
Denominator	Total available on-street parking spaces in the city	12
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.91**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	90
Denominator	Total length of road network in the city	4720
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**68.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	11
Denominator	Total number of junctions/ intersections on major roads in the city	16
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**26.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	44
Denominator	Total number of public right-of-way areas in the city	164
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**50.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	148926
Denominator	Total number of households in the city	292064
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**345.25**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	300
Denominator	Total population of the city	868929
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	126
Denominator	Total number of samples tested for water quality	422
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-**

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	300
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**5.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	7853
Denominator	Total number of water connections in the city	148926
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1799
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**60.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	177400
Denominator	Total number of properties in the city	292064
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	292064
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	240
Denominator	Total waste water generated in the city per day	240
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	175
Denominator	Total waste water received at treatment plants per day	175
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.93**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	22
Denominator	Total length of road network in the city	2360
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**46.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	150000
Denominator	Total number of households and establishments in the city	322139

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**90**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	157680
Denominator	Total quantum of MSW generated in the city	175200
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	4730400
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**12**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	12
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**21**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	21
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**154**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	154
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of noise samples meeting acceptable noise levels	48
Denominator	Total number of noise samples	108
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JAMMU

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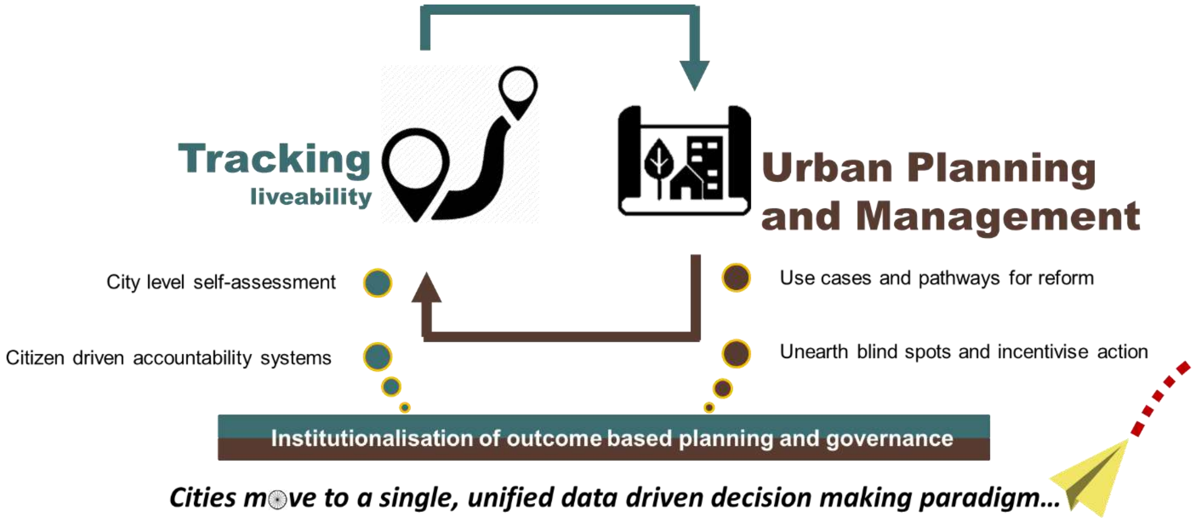
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

JAMMU

GEOGRAPHICAL PROFILE

State/Union Territory	Jammu & Kashmir	**Total Geographical Area (Km^2)**	112	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	742188
Total Number of Households	150000

SOCIAL PROFILE

Education	**Total Number of Schools**	452
	Total Enrolment (Class 1 to 5)	46551
Health	**Total Number of In-patient Beds**	431
	Total Health Workforce	246
Safety and Security	**Total Strength of Police Force**	3214
	Total Number of CCTV Cameras	7
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	260455
Total Number of Industries	...
Total Number of Commercial Enterprises	86416
Total Number of Hotels	284
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	12441.19
Total VAT Collection in FY 2016-17 (INR Lakhs)	447042

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	227.81
	Total Number of Water Connection	...
Sanitation Facilities	Total number of households with access to individual toilets in the city	140000
	Total number of households in the city with access to community toilets in the city	20000
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	350
	Total number of households covered through door-to-door collection of solid waste	32000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	20
	Daily average quantum of waste water treated by STPs in the city (MLD)	30
Electricity	Total number of authorized electrical connections in the city	20114
	Total electricity supplied to the city (kWh)	...
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	65000000
Roads and Transport	Total Length of Road Network in the City (Km)	...
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Department of Accounts
Urban Local Body	For Park and Recreation Related Questions	Jammu Muncipal Cooperation
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engeenering Department (PHE)
Urban Local Body	For Heritage sites related data	Jammu Development Authority (JDA)
Urban Local Body	For Ecological sites related data	Jammu Development Authority (JDA)
Urban Local Body	For Housing related data	Jammu Development Authority (JDA)
Urban Local Body	For Building plan related data	Jammu Development Authority (JDA)
Urban Local Body	For Roads related data	Jammu Development Authority (JDA)
Urban Local Body	For Solid waste management related data	Jammu Pollution Control Board
Urban Local Body	For IT services related data	Department of Information Technology
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Jammu Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Jammu Development Authority
	Construction planning	Jammu Development Authority
	Green Building	Jammu Development Authority
	Rain water harvesting	Jammu Development Authority
	Universal Design Principle	Jammu Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Power and works Department (PWD)
State Disaster management authority		Department of State Disaster Management
State Education Department		Education Department Jammu
State Health Department	Health care professionals	Jammu Health Department
	Citizen Services	Jammu Health Department
	Disease Prevalence	Jammu Health Department
	Health Infrastructure	Jammu Health Department
State Renewable Energy Development Agency		Jammu & Kashmir Energy Development AuthorityJKEDA
State Sales / Commercial Taxes Department		Jammu Sales Tax Department
Town and Country Planning Department	Land Use	Department of Town and country planning
Traffic and Police Department		Jammu Traffic Department Jammu Police Department
Transport Authorities	Buses	Jammu Transport department
	Registered Vehicles	Jammu Transport department
	Sub urban rail transport	Railway Department
	Mono Rail Authority	N/A
	Tramways	N/A
	Marine Transport Authority	N/A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 06 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	6
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	6*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

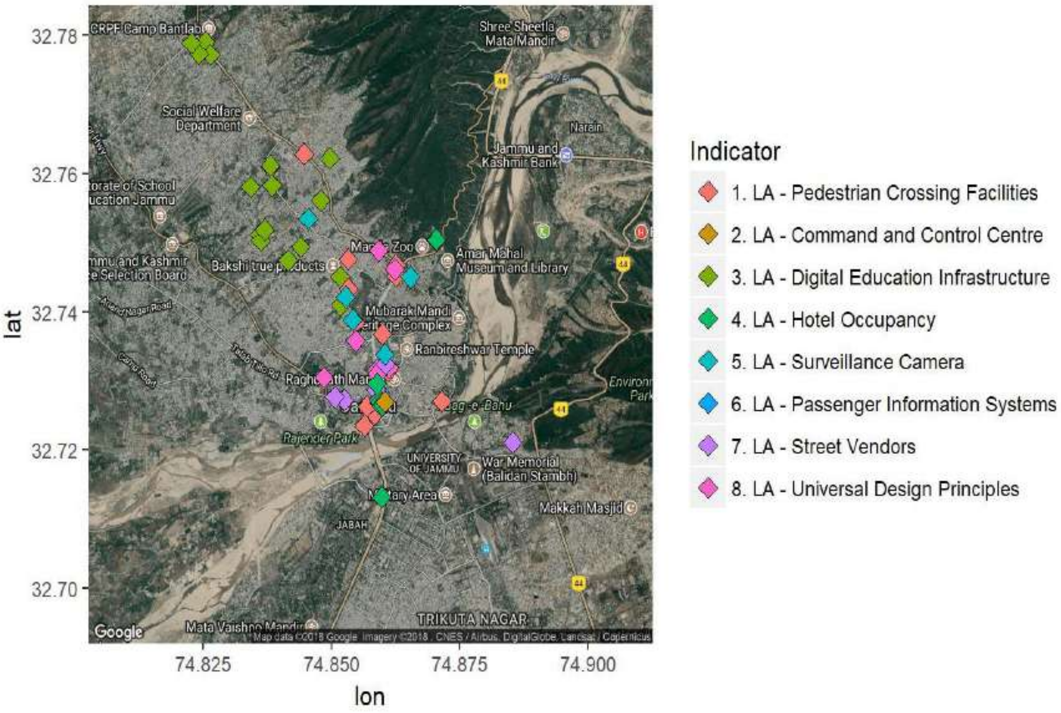
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
32.78
32.76
32.74
32.72
32.70
lon
74.825
74.850
74.875
74.900
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
CRPF Camp Bantlab
Shree Sheetla Mata Mandir
Social Welfare Department
Jammu and Kashmir Bank
Mubarak Mandi Heritage Complex
Ranbireshwar Temple
Amar Mahal Museum and Library
Rajender Park
University of Jammu
War Memorial (Balidan Stambh)
Makkah Masjid
Military Area
Trikuta Nagar
Mata Vaishno Mandir
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**32.48**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**9.75**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.031025649
	1.3c water supply	NA
	1.3d solid waste management	0.000260327
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000402639
	1.3i information	0.454704806
	1.3j electricity	0.001243076
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	

Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3.94
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**25.06**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1521.72
Denominator	Total O&M cost for providing water supply services during the year	6072.92
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-3.12**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-1001.05
Denominator	Total expenditure (revenue and capital accounts) in the same year	32066.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	71
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**60**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	2
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	12441.19
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**170**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	170
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**82.61**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	73206
Denominator	Total population in the age group of 6-14 years	88612
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**85.8**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	33719
Denominator	Total female population in the age group of 6-14 years	39298
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**15.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	46551
Denominator	Total number of teachers available for primary grades (public and private schools)	2945
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**13.05**

Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	59
Denominator	Total number of schools	452
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**77.23**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**77.23**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**87.55**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**87.55**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**7.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	431
Denominator	Total population of the city	576198
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**4.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	246
Denominator	Total population of the city	576198

Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	6317
Denominator	Total population of the city	576198
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	308
Denominator	Total population of the city	576198
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	7
Denominator	Total length of road network in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**367.06**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2115
Denominator	Total population of the city	576198
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**7.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	168
Denominator	Total crimes recorded in the same year	2115
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**9.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	54
Denominator	Total population of the city	576198
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.75**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	54039
Denominator	Total VAT/GST collection during preceding year	3930.03

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-51.89**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-4.25
Denominator	Total Professional Tax collection during preceding year	8.19
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	12150
Denominator	Total labour force in the city	88612
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**59.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1310
Denominator	Total number of vendors in the city	2215.3
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**65.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6482
Denominator	Total number of slum and EWS households in the city	99.38
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**112.81**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	65000000

Denominator	Total population of the city	576198
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	576198
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.73**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	820000
Denominator	Total area of the city (total area of all land uses)	112000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	**Net Density**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	576198
Denominator	Area allocated for residential land use (in hectares)	900000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**109.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	164512
Denominator	Total number of households in the city	150000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	201114
Unit	Percentage	

Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	288000
Denominator	Total energy consumption from all sources	Data Unavailable
Unit	Percentage	

Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	7734.3
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	13029120
Denominator	Total number of street light installations	37790
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	Data Unavailable
Denominator	Total population of the city	576198
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	112
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	Data Unavailable
Denominator	Total population of the city	576198
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	40
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian	Data

	crossing facilities on major roads	Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	NA
Denominator	Total number of public right-of-way areas in the city	54
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	Data Unavailable
Denominator	Total number of households in the city	150000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**395.37**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	227.81
Denominator	Total population of the city	576198
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	227.81
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	3332
Denominator	Total number of water connections in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	NA
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	160000
Denominator	Total number of properties in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	105000
Denominator	Total number of properties in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	20
Denominator	Total waste water generated in the city per day	20
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	20
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**14.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	35000
Denominator	Total number of households and establishments in the city	235416
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or	350

	private operator	
Denominator	Total quantum of MSW generated in the city	350
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	10500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JHANSI

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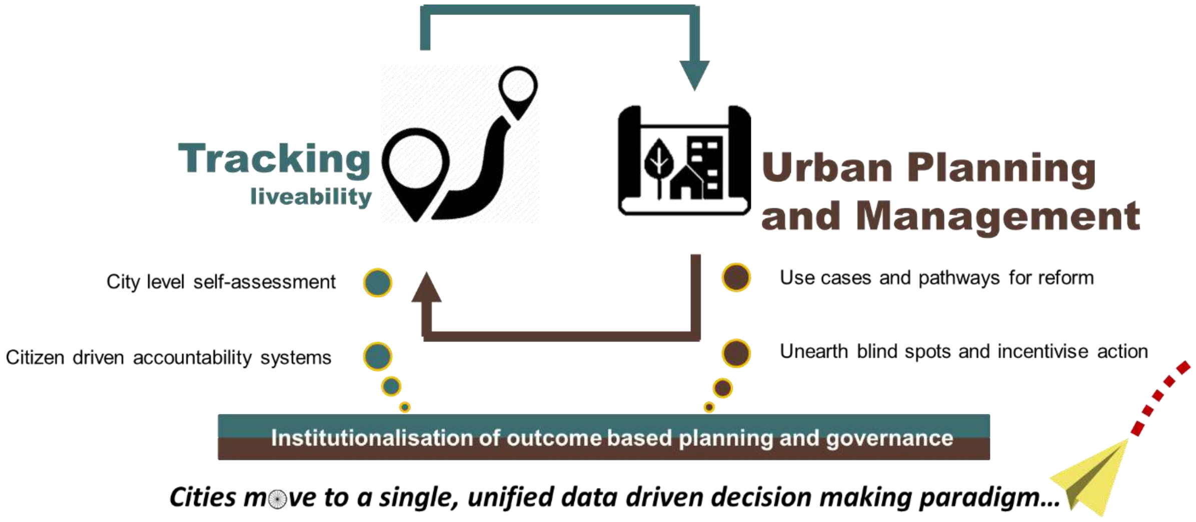
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

JHANSI

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	152	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	644513
Total Number of Households	136000

SOCIAL PROFILE

Education	**Total Number of Schools**	754
	Total Enrolment (Class 1 to 5)	95992
Health	**Total Number of In-patient Beds**	2223
	Total Health Workforce	2382
Safety and Security	**Total Strength of Police Force**	479
	Total Number of CCTV Cameras	29
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	322853
Total Number of Industries	140
Total Number of Commercial Enterprises	2118
Total Number of Hotels	71
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13092.20
Total VAT Collection in FY 2016-17 (INR Lakhs)	52242.88

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	88
	Total Number of Water Connection	40443
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	102000
	Total number of households in the city with access to community toilets in the city	15544
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	250
	Total number of households covered through door-to-door collection of solid waste	136000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	66
	Daily average quantity of waste water treated by STPs in the city (MLD)	…
Electricity	**Total number of authorized electrical connections in the city**	109921
	Total electricity supplied to the city (kWh)	579534515
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	857638.28
Roads and Transport	**Total Length of Road Network in the City (Km)**	599.45
	Total length of arterial and sub-arterial road network in the city (Km)	55
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	20

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

Pillars of Comprehensive Development	Category	Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

Pillars of Comprehensive Development	Category	Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar nigam Jhansi
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Jhansi
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar nigam Jhansi
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Jhansi
Urban Local Body	For Housing related data	Jhansi Development Authority / Nirmaan Vibhag Nagar Nigam Jhansi
Urban Local Body	For Building plan related data	Jhansi Development Authority Jhansi
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Jhansi
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Jhansi
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Jhansi
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Jhansi
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Jhansi
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Jhansi
Development Authority	Building Infrastructure	Moradabad development Authority Jhansi
	Construction planning	Moradabad development Authority Jhansi
	Green Building	Moradabad development

Designated data owners	Subcategories	Data owners at city level
		Authority Jhansi
	Rain water harvesting	Moradabad development Authority Jhansi
	Universal Design Principle	Moradabad development Authority Jhansi
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Jhansi
State Disaster management authority		State Disaster Management Jhansi[in UP ADM (FR]
State Education Department		Basic Shikcha Adhikari/district inspector of school Jhansi (DIOS)
State Health Department	Health care professionals	UP State Health Department Jhansi (CMO)
	Citizen Services	UP State Health Department Jhansi(CMO)
	Disease Prevalence	UP State Health Department Jhansi (CMO)
	Health Infrastructure	UP State Health Department Jhansi (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Jhansi
Town and Country Planning Department	Land Use	Town and Country Planning Department Jhansi
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Jhansi
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Jhansi
	Registered Vehicles	Regional Transport Office Jhansi
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**2**
Urban Local Body	**25**
Total	**40***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

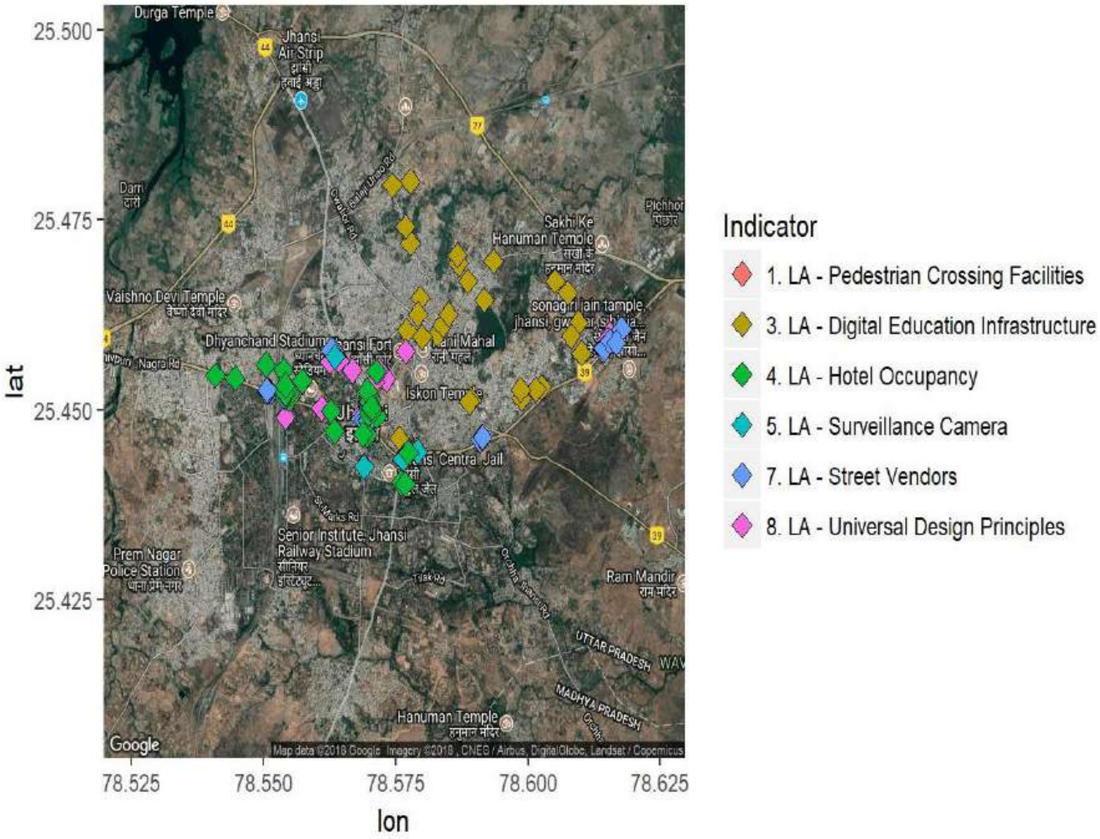
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Durga Temple
Jhansi Air Strip
Sakhi Ke Hanuman Temple
Vaishno Devi Temple
Dhyanchand Stadium
Jhansi Fort
Rani Mahal
Iskon Temple
Jhansi Central Jail
Senior Institute, Jhansi Railway Stadium
Prem Nagar Police Station
Ram Mandir
UTTAR PRADESH
MADHYA PRADESH
Hanuman Temple
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
25.500
25.475
25.450
25.425
lon
78.525
78.550
78.575
78.600
78.625
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**51.38**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.14**

Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.002742606
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.000882031
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000463061
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.4**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	2
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**67.9**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1461.1
Denominator	Total demand raised for the year	2151.88
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**43.7**

Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	779.73
Denominator	Total O&M cost for providing water supply services during the year	1784.47
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**34.79**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	9713.47
Denominator	Total expenditure (revenue and capital accounts) in the same year	27917.68
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	60
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	5
Denominator	Total number of historic buildings/sites identified	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA

Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**10**
Description	Average Occupancy rate of Hotels	10
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	4.94
Denominator	Total budget of the ULB (capital and revenue)	13092.2
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**26**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	26
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**148.43**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	139266
Denominator	Total population in the age group of 6-14 years	93825
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**163.09**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	70470

Denominator	Total female population in the age group of 6-14 years	43209
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**6.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	95992
Denominator	Total number of teachers available for primary grades (public and private schools)	15677
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	754
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**185.32**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	185.3217087
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**184.42**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	206424300
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**43.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2223
Denominator	Total population of the city	505693
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**47.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2382
Denominator	Total population of the city	505693
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**3.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	17625
Denominator	Total population of the city	505693
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	96
Denominator	Total population of the city	505693
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**4.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	29
Denominator	Total length of road network in the city	599.45
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**479.74**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2426
Denominator	Total population of the city	505693
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**7.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	175
Denominator	Total crimes recorded in the same year	2426
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**7.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	37
Denominator	Total population of the city	505693
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**8.45**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4069.81
Denominator	Total VAT/GST collection during preceding year	481.7307
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-3.45**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-9
Denominator	Number of construction permits during preceding year	2.61
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	58567
Denominator	Total labour force in the city	93825
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	7638
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**11.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6078
Denominator	Total number of slum and EWS households in the city	514.73
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**11.65**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	631703153983
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**1.7**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	857638.28
Denominator	Total population of the city	505693
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	116982.4

Denominator	Total population of the city	505693
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	152000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	505693
Denominator	Area allocated for residential land use (in hectares)	46372100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**68.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	92514
Denominator	Total number of households in the city	136000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	109921
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	214
Denominator	Total energy consumption from all sources	579534515
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1608
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be	

	treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	15726180
Denominator	Total number of street light installations	21427
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	929
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	579534515
Denominator	Total population of the city	505693
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	152
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA

Denominator	Total population of the city	505693
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	63.19
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	599.45
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Blank
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	9
Denominator	Total available on-street parking spaces in the city	9
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	20
Denominator	Total length of road network in the city	1198.9
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	10
Denominator	Total number of junctions/ intersections on major roads in the city	10
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	7
Denominator	Total number of public right-of-way areas in the city	875
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply**	**29**

	connections	
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	39446
Denominator	Total number of households in the city	136000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**174.02**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	88
Denominator	Total population of the city	505693
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	21852
Denominator	Total number of samples tested for water quality	21860
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**25.27**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	22.24
Denominator	Quantum of water put into the distribution system (mld)	88
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**86.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	34802
Denominator	Total number of water connections in the city	40443
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0**

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	252
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**139.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	134714
Denominator	Total number of properties in the city	96274
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**226.44**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	218000
Denominator	Total number of properties in the city	96274
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	66
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**28.36**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	170
Denominator	Total length of road network in the city	599.45
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**110.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	153000
Denominator	Total number of households and establishments in the city	138118
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**83.33**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	250
Denominator	Total quantum of MSW generated in the city	300
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**70**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	5250
Denominator	Average MSW generated in the city (tons per month)	7500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6.57**

Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6.57
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**19.32**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	19.32
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**112.94**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	112.94
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	12
Denominator	Total number of noise samples	96
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

JODHPUR

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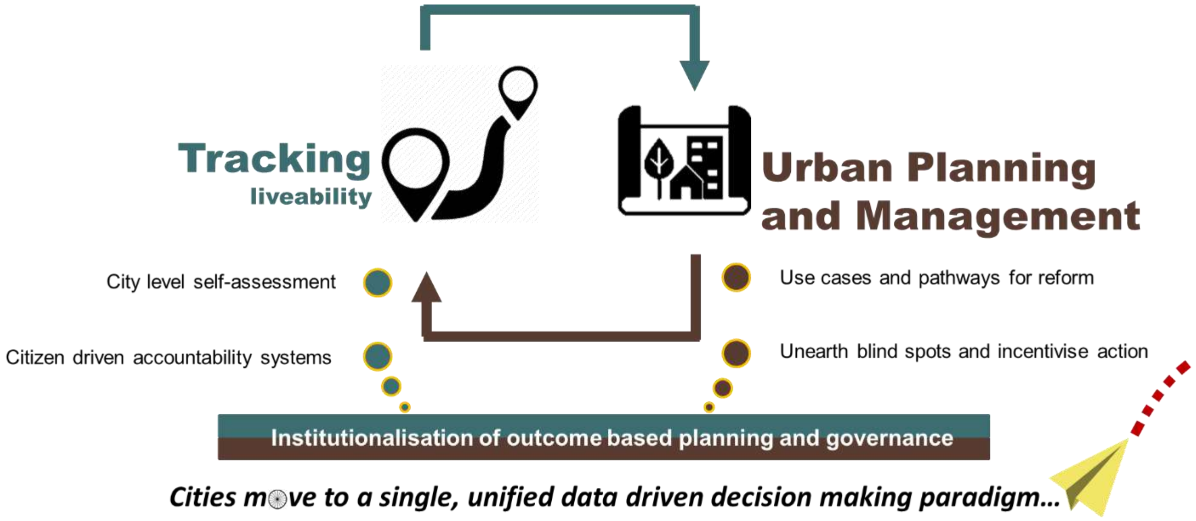
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

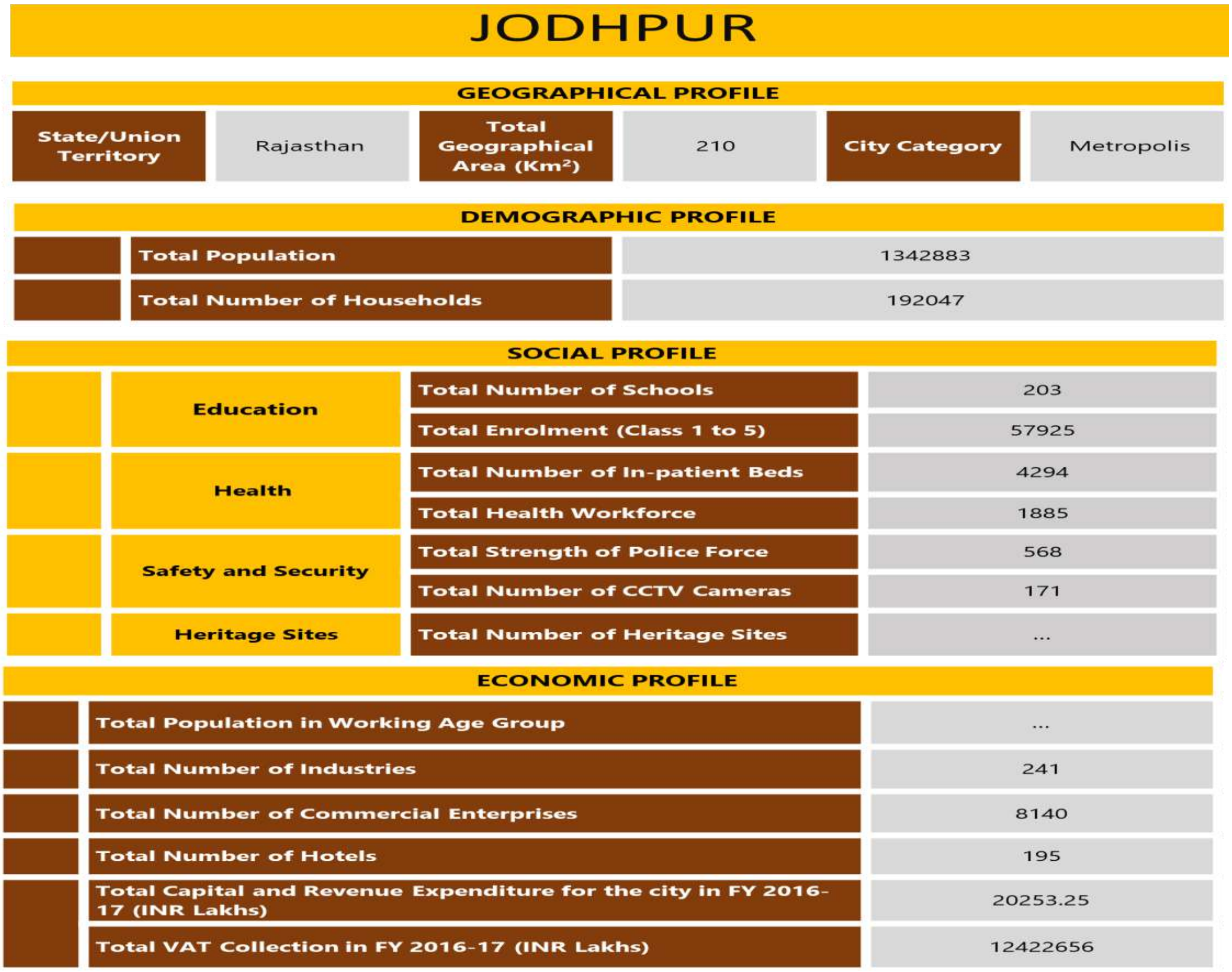

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JODHPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	**Total Geographical Area (Km^2)**	210	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

	Total Population	1342883
	Total Number of Households	192047

SOCIAL PROFILE

	Education	**Total Number of Schools**	203
		Total Enrolment (Class 1 to 5)	57925
	Health	**Total Number of In-patient Beds**	4294
		Total Health Workforce	1885
	Safety and Security	**Total Strength of Police Force**	568
		Total Number of CCTV Cameras	171
	Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

	Total Population in Working Age Group	...
	Total Number of Industries	241
	Total Number of Commercial Enterprises	8140
	Total Number of Hotels	195
	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	20253.25
	Total VAT Collection in FY 2016-17 (INR Lakhs)	12422656

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	606.19
	Total Number of Water Connection	194170
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	167024
	Total number of households in the city with access to community toilets in the city	6959
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	500
	Total number of households covered through door-to-door collection of solid waste	14674
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	108
	Daily average quantum of waste water treated by STPs in the city (MLD)	70
Electricity	**Total number of authorized electrical connections in the city**	239271
	Total electricity supplied to the city (kWh)	16541.51
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
Roads and Transport	**Total Length of Road Network in the City (Km)**	1595
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

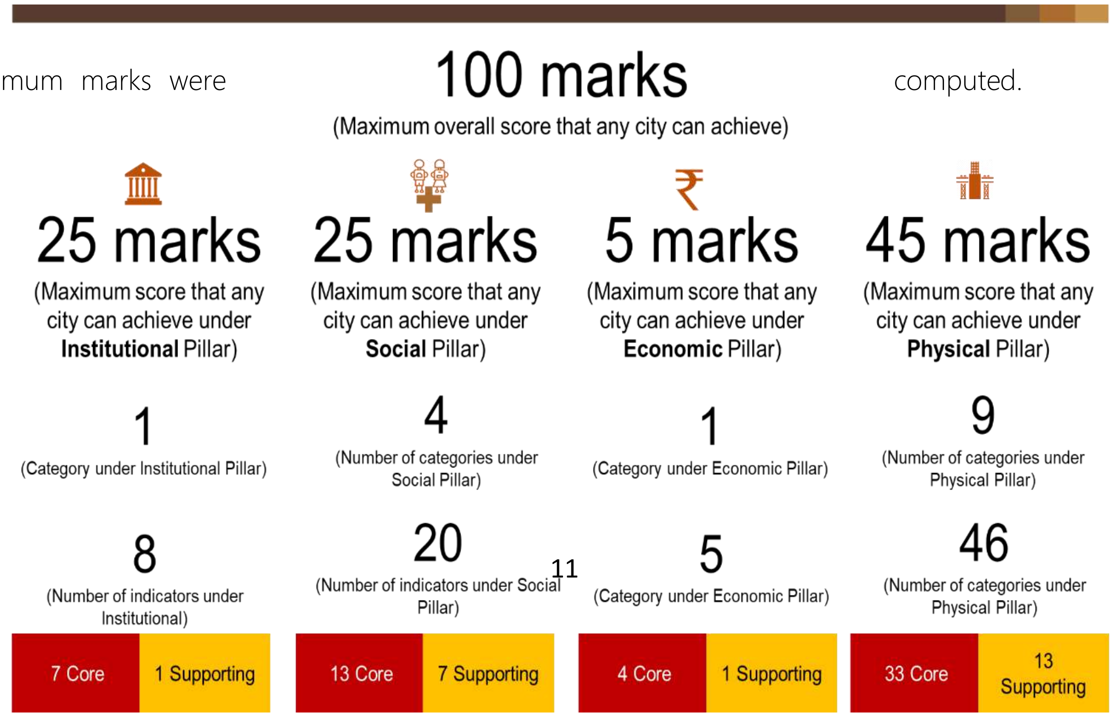
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken

down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section, Jodhpur Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Town and Country Planning department
Urban Local Body	For Water Supply and Drainage related questions	Public Health and Engineering Department
Urban Local Body	For Heritage sites related data	Jodhpur Nagar Nigam
Urban Local Body	For Ecological sites related data	Jodhpur Nagar Nigam
Urban Local Body	For Housing related data	Jodhpur Nagar Nigam
Urban Local Body	For Building plan related data	Jodhpur Development Authority
Urban Local Body	For Roads related data	Jodhpur Nagar Nigam, Jodhpur Development Authority and Public Works Department
Urban Local Body	For Solid waste management related data	Jodhpur Nagar Nigam
Urban Local Body	For IT services related data	Oswal Data, Jodhpur Nagar Nigam
Urban Local Body	For Vendor committee related data	Jodhpur Nagar Nigam

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Jodhpur Nagar Nigam
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Central Pollution Control Board
Development Authority	Building Infrastructure	Jodhpur Development Authority
	Construction planning	Jodhpur Development Authority
	Green Building	Jodhpur Development Authority
	Rain water harvesting	Jodhpur Development Authority
	Universal Design Principle	Jodhpur Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jodhpur Vidyut Vibhag Nigam Limited
State Disaster management authority		Control Room, Collectorate
State Education Department		District Education Office
State Health Department	Health care professionals	Health Department & S.N. medical College
	Citizen Services	Health Department & S.N. medical College
	Disease Prevalence	Health Department & S.N. medical College
	Health Infrastructure	Health Department & S.N. medical College
State Renewable Energy Development Agency		Jodhpur Vidyut Vibhag Nigam Limited
State Sales / Commercial Taxes Department		Sales and Commercial Tax Department, Collectorate
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Department
	Registered Vehicles	Transport Department
	Sub urban rail transport	Transport Department

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Transport Department
	Tramways	Transport Department
	Marine Transport Authority	Transport Department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	3
State Health Department	1
Transport Authority	9
Disaster Management	0
Urban Local Body	14
Total	32*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that

data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

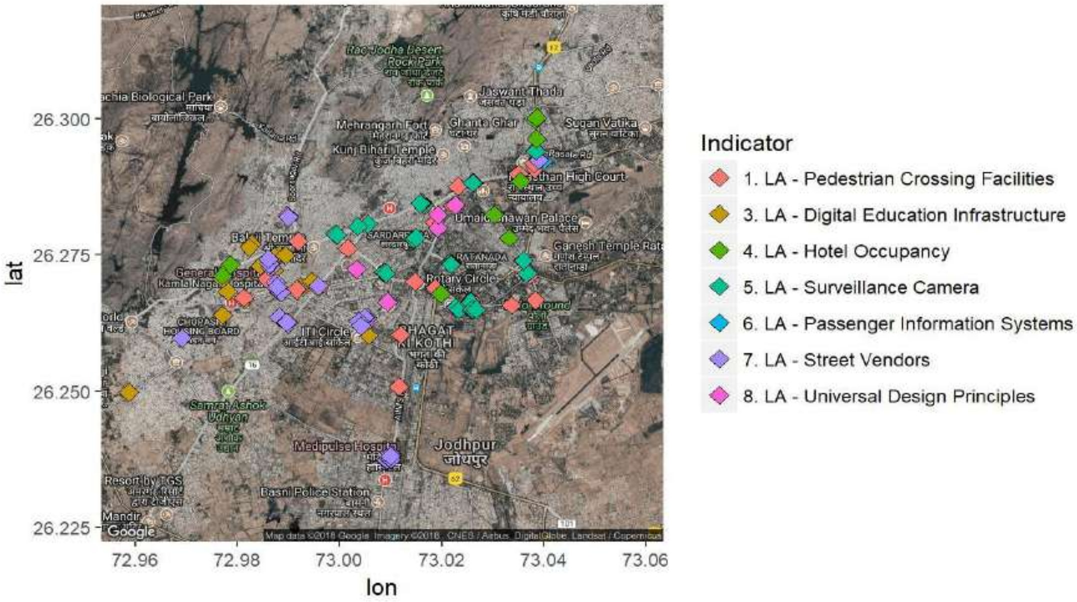
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
26.300
26.275
26.250
26.225
72.96
72.98
73.00
73.02
73.04
73.06
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Jodhpur
Mehrangarh Fort
Rotary Circle
ITI Circle
Google

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**44.97**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75

	1.1c trade license	0
	1.1d solid waste management	0.25
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0.25
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**21.13**
Description		
Sub Indicators	1.3a Building plan	0.000611429
	1.3b Birth/Death Certificate	0.003123725
	1.3c water supply	0.000785714
	1.3d solid waste management	NA
	1.3e property tax	0.648525238
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.40338988
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	NA
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**16.81**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	230359051
Denominator	Total demand raised for the year	1370617501
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**124.02**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	7639.29
Denominator	Total O&M cost for providing water supply services during the year	6159.81
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	Capital spending as percentage of total expenditure	**-49.11**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-13511.89
Denominator	Total expenditure (revenue and capital accounts) in the same year	27511.94
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	65
Denominator	Total number of wards	65
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	18.46
Denominator	Total budget of the ULB (capital and revenue)	20253.25
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	Number of cultural/sports events hosted by city	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**43.9**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	92344
Denominator	Total population in the age group of 6-14 years	210360
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**40.07**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	39493
Denominator	Total female population in the age group of 6-14 years	98566
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**20.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	57925
Denominator	Total number of teachers available for primary grades (public and private schools)	2825
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**80.79**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	164
Denominator	Total number of schools	203

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**45.26**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	45.25744169
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**107.66**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	135548798
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**40.66**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4294
Denominator	Total population of the city	1056191
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**17.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1885
Denominator	Total population of the city	1056191
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	

Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**4.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	51368
Denominator	Total population of the city	1056191
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	987
Denominator	Total population of the city	1056191
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**10.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	171
Denominator	Total length of road network in the city	1595
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**314.24**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3319
Denominator	Total population of the city	1056191
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**12.84**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	426
Denominator	Total crimes recorded in the same year	3319
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**9.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	105
Denominator	Total population of the city	1056191
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**6.12**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	716069
Denominator	Total VAT/GST collection during preceding year	117065.87
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	Increase in issuance of Construction Permits	**325.69**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	1407
Denominator	Number of construction permits during preceding year	4.32
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	4274
Denominator	Total labour force in the city	210360
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	6231
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	4.63

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**0.03**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	28117164000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	1056191
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.39**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	410000
Denominator	Total population of the city	1056191
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	210000000

Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1056191
Denominator	Area allocated for residential land use (in hectares)	133238700.9
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**9.88**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	18971
Denominator	Total number of households in the city	192047
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	239271
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**20987**
Description	Total number of sustained electrical interruptions in a year	20987
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	53
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	5224.32
Denominator	Total energy consumption from all sources	16541.51
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	20285.7
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	23637543
Denominator	Total number of street light installations	72000
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	16541.51
Denominator	Total population of the city	1056191
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	210
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.78**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	823
Denominator	Total population of the city	1056191

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	30
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	1595
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	5
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	3190
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	304
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**91.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	174927
Denominator	Total number of households in the city	192047
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**573.94**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	606.19
Denominator	Total population of the city	1056191
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	2922
Denominator	Total number of samples tested for water quality	2922
Unit	Percentage	
Benchmark	100%	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.4	Level of non-revenue water – NRW	**20**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	121.23
Denominator	Quantum of water put into the distribution system (mld)	606.19
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**97.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	188873
Denominator	Total number of water connections in the city	194170
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**99.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	173988
Denominator	Total number of properties in the city	175000
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.2	Coverage of sewerage network and/or septage	**91.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	159385
Denominator	Total number of properties in the city	175000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	86.4
Denominator	Total waste water generated in the city per day	108
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**98.59**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	70
Denominator	Total waste water received at treatment plants per day	71
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**3.2**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	51
Denominator	Total length of road network in the city	1595
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**7.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	15594

Denominator	Total number of households and establishments in the city	200187
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	500
Denominator	Total quantum of MSW generated in the city	500
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	15000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6.12**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6.12
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**22.86**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	22.86
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**192**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	192

Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	22
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

KAKINADA

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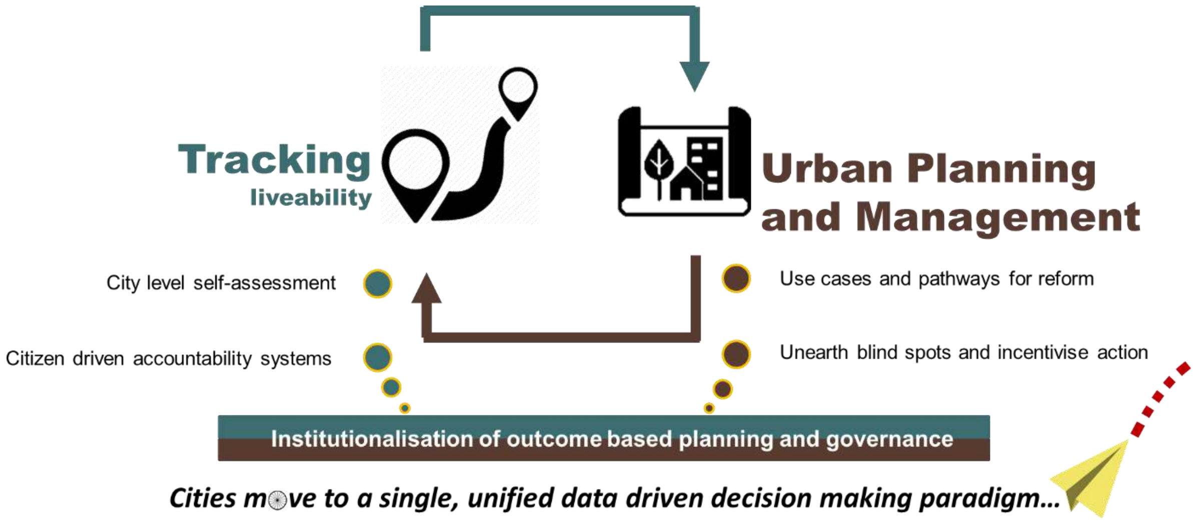
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

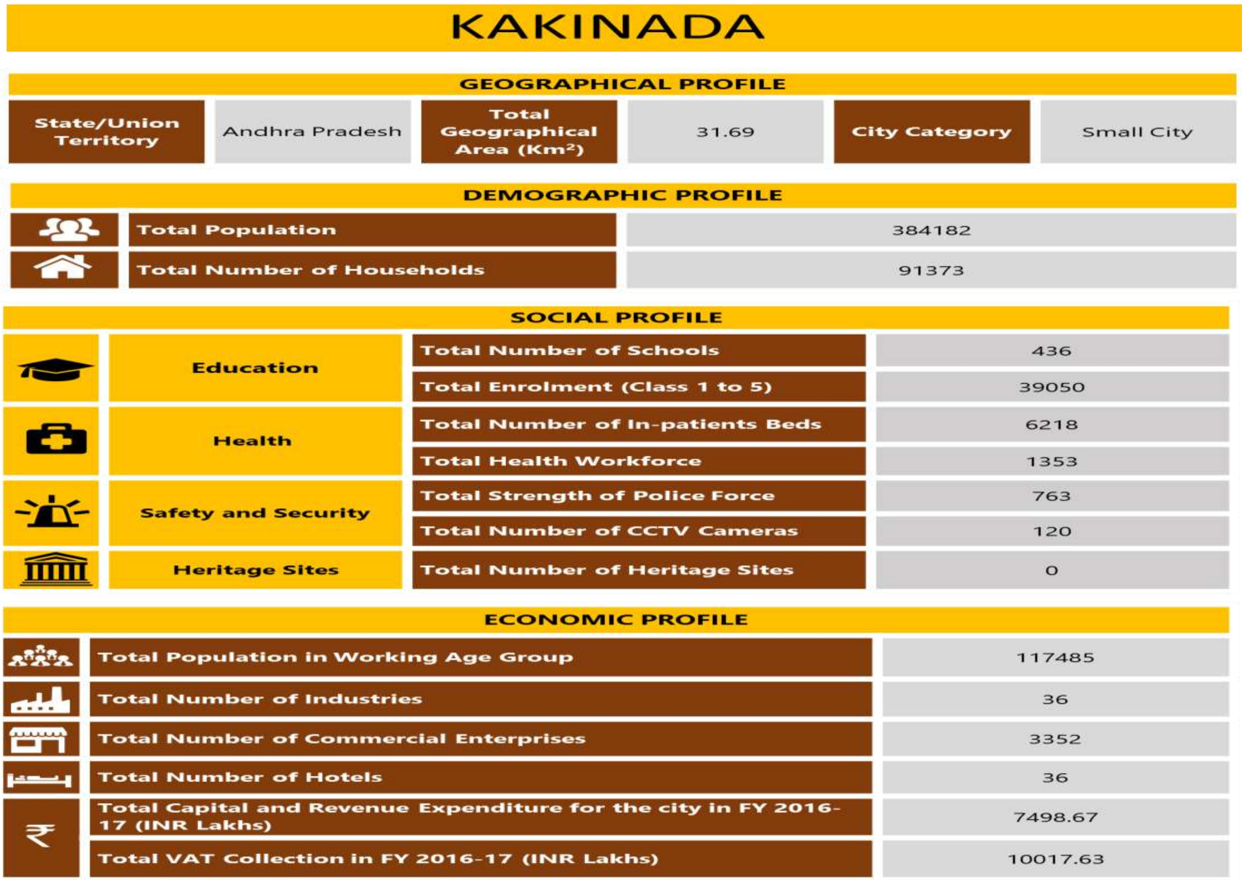
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KAKINADA

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	**Total Geographical Area (Km^2)**	31.69	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	384182
Total Number of Households	91373

SOCIAL PROFILE

Education	**Total Number of Schools**	436
	Total Enrolment (Class 1 to 5)	39050
Health	**Total Number of In-patients Beds**	6218
	Total Health Workforce	1353
Safety and Security	**Total Strength of Police Force**	763
	Total Number of CCTV Cameras	120
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

Total Population in Working Age Group	117485
Total Number of Industries	36
Total Number of Commercial Enterprises	3352
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7498.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	10017.63

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	84.72
		Total Number of Water Connections	40365
	Sanitation Facilities	Total number of households with access to individual toilets in the city	82236
		Total number of households in the city with access to community toilets in the city	7690
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	169
		Total number of households covered through door-to-door collection of solid waste	91373
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	36
		Daily average quantum of waste water treated by STPs in the city (MLD)	0
	Electricity	Total number of authorized electrical connections in the city	168716
		Total electricity supplied to the city (kWh)	433.959
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1518712
	Roads and Transport	Total Length of Road Network in the City (Km)	723
		Total length of arterial and sub-arterial road network in the city (Km)	8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\textit{indicator value for the city} - \textit{indicator value for the worst performing city}}{\textit{benchmark} - \textit{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission

of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Town Planning Section/ Urban Planner (AMRUT)
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Revenue and Accounts Sections for financial figures
Urban Local Body	For Heritage sites related data	Not applicable as there was no such sites
Urban Local Body	For Ecological sites related data	Not applicable as there was no such sites
Urban Local Body	For Housing related data	Town Planning Section
Urban Local Body	For Building plan related data	Town Planning Section
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Public Health and Engineering Sections
Urban Local Body	For IT services related data	IT Cell
Urban Local Body	For Vendor committee related data	Town Planning and Urban Poverty Alleviation Sections
Urban Local Body	Any other departments	Administration and Revenue Sections, Urban

Designated data owners	Subcategories	Data owners at city level
	involved in providing data for questions mentioned under Urban Local Body	Planner (AMRUT)
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	District Pollution Control Board
Development Authority	Building Infrastructure	There is a Development Authority newly formed for the district of East Godavari. But all the items mentioned here are presently being dealt by ULB (Town Planning Section)
	Construction planning	Do
	Green Building	Do
	Rain water harvesting	Do
	Universal Design Principle	Do
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Eastern Power/DISCOM, Kakinada
State Disaster management authority		District Disaster management Authority AC[P]
State Education Department		District Education Office
State Health Department	Health care professionals	District Medical and Health Officer & GGH
	Citizen Services	Do
	Disease Prevalence	Do
	Health Infrastructure	Do
State Renewable Energy Development Agency	Renewable Energy	NEDCAP
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Superintendent of Police
Transport Authorities	Buses	Transport Department
	Registered Vehicles	RTO
	Sub urban rail transport	Do
	Mono Rail Authority	Do
	Tramways	Do
	Marine Transport Authority	Do

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	9
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	5
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	6
Transport Authority	4
Disaster Management	1
Urban Local Body	29
Total	60*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

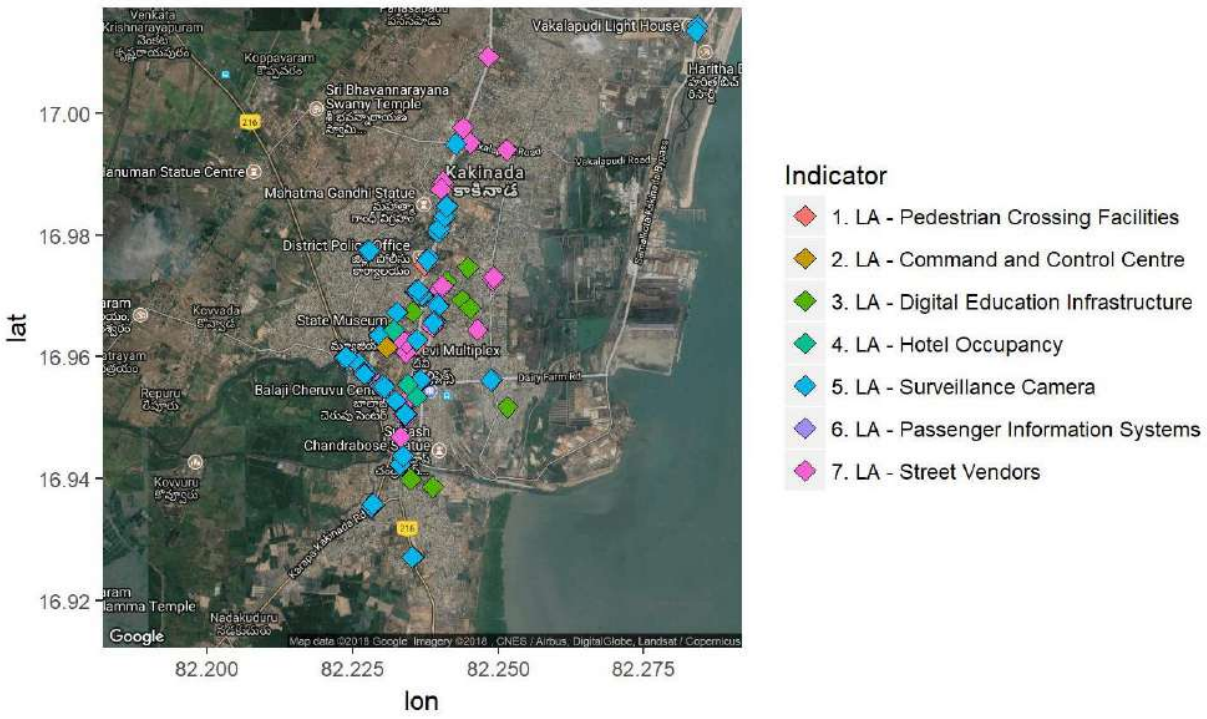
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
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Vakalapudi Light House
Koppavaram
Sri Bhavannarayana Swamy Temple
Kakinada
Hanuman Statue Centre
Mahatma Gandhi Statue
District Police Office
State Museum
Devi Multiplex
Balaji Cheruvu Centre
Chandrabose Statue
Kowvada
Repuru
Kovvuru
Nadakuduru
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**84.02**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.23**
Description		
Sub Indicators	1.3a Building plan	0.000478168
	1.3b Birth/Death Certificate	0.002899884
	1.3c water supply	NA
	1.3d solid waste management	0.007106007
	1.3e property tax	0.000177705

	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.000714218
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.9**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	4
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**53.15**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2499.92
Denominator	Total demand raised for the year	4703.37
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**908.95**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	590.82
Denominator	Total O&M cost for providing water supply services during the year	65
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	Capital spending as percentage of total expenditure	**100.73**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-1246784
Denominator	Total expenditure (revenue and capital accounts) in the same year	-1237775.53
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	50
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**58.5**
Description	Average Occupancy rate of Hotels	58.5
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**2.91**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	218.4
Denominator	Total budget of the ULB (capital and revenue)	7498.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**47**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	47
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**101.38**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	63695
Denominator	Total population in the age group of 6-14 years	62831
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**98.79**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	30952
Denominator	Total female population in the age group of 6-14 years	31330
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**22.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	39050
Denominator	Total number of teachers available for primary grades (public and private schools)	1767

Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**1.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	8
Denominator	Total number of schools	436
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**110.69**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	110.6935085
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**103.47**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	68665026
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**161.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6218
Denominator	Total population of the city	384182
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**35.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1353
Denominator	Total population of the city	384182
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3104
Denominator	Total population of the city	384182
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	37
Denominator	Total population of the city	384182
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**16.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	120
Denominator	Total length of road network in the city	723
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**453.43**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1742
Denominator	Total population of the city	384182
Unit	Crimes per lakh	

Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**19.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	336
Denominator	Total crimes recorded in the same year	1742
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**8.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	32
Denominator	Total population of the city	384182
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-3.72**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-387.28
Denominator	Total VAT/GST collection during preceding year	104.0491
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated	

	as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**-55.57**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-424
Denominator	Number of construction permits during preceding year	7.63
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	7248
Denominator	Total labour force in the city	62831
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**39.66**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	623
Denominator	Total number of vendors in the city	1570.775
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**13.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	9347
Denominator	Total number of slum and EWS households in the city	709.03
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	Percentage of slum areas covered through basic services	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	999277380
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**3.95**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1518712
Denominator	Total population of the city	384182
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.94**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	360046.55
Denominator	Total population of the city	384182
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**6**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1900643
Denominator	Total area of the city (total area of all land uses)	31690000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	384182

Denominator	Area allocated for residential land use (in hectares)	6342898
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**159.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	145534
Denominator	Total number of households in the city	91373
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	168716
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**456**
Description	Total number of sustained electrical interruptions in a year	456
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	404
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable	**0.81**

	sources	
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	243
Denominator	Total energy consumption from all sources	433.959
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	216615.5
Denominator	Total quantum of water and waste water handled during the period	2541.6
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1915265
Denominator	Total number of street light installations	868
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	28810
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	433.959
Denominator	Total population of the city	384182
Unit	kWh per capita	

Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	31.69
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	36
Denominator	Total population of the city	384182
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	723
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	12
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	9
Denominator	Total length of road network in the city	1446

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**104**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	130
Denominator	Total number of junctions/ intersections on major roads in the city	125
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	55
Denominator	Total number of public right-of-way areas in the city	165
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**72.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	66153
Denominator	Total number of households in the city	91373
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**220.52**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	84.72
Denominator	Total population of the city	384182
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	1
Denominator	Total number of samples tested for water quality	260
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**52.79**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	44.72
Denominator	Quantum of water put into the distribution system (mld)	84.72
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**4.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	1672
Denominator	Total number of water connections in the city	40365
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**41.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	126
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	307
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**131.44**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	93686

Denominator	Total number of properties in the city	71279
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**100.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	71391
Denominator	Total number of properties in the city	71279
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**4.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	32
Denominator	Total length of road network in the city	723
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**101.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	96573
Denominator	Total number of households and establishments in the city	94725

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**97.69**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	169
Denominator	Total quantum of MSW generated in the city	173
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**61.81**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	3134
Denominator	Average MSW generated in the city (tons per month)	5070
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**17.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	17.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**62.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	62.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0

Denominator	Total number of noise samples	24
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KALYAN-DOMBIVALI

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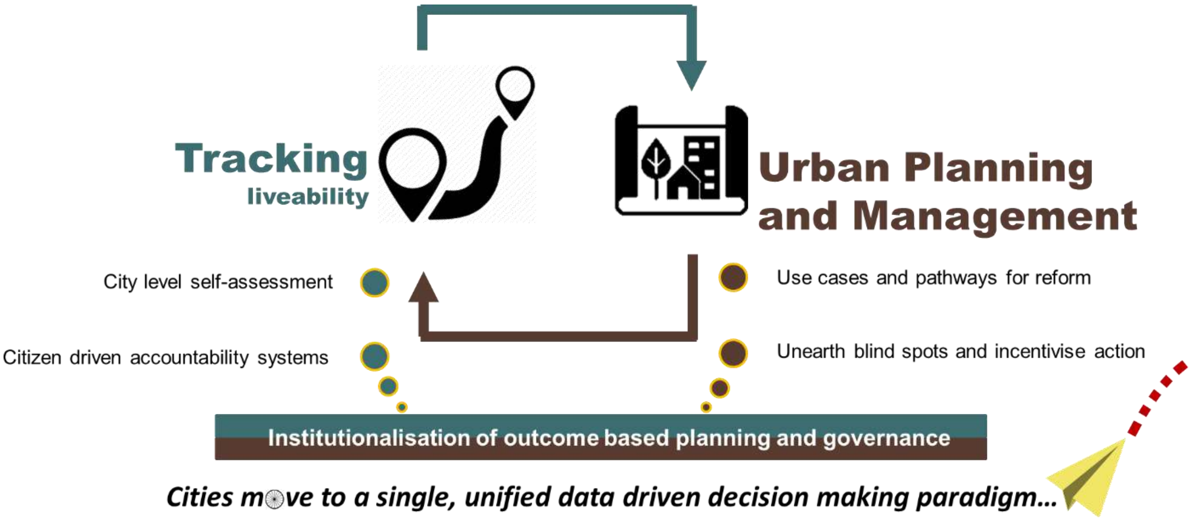
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

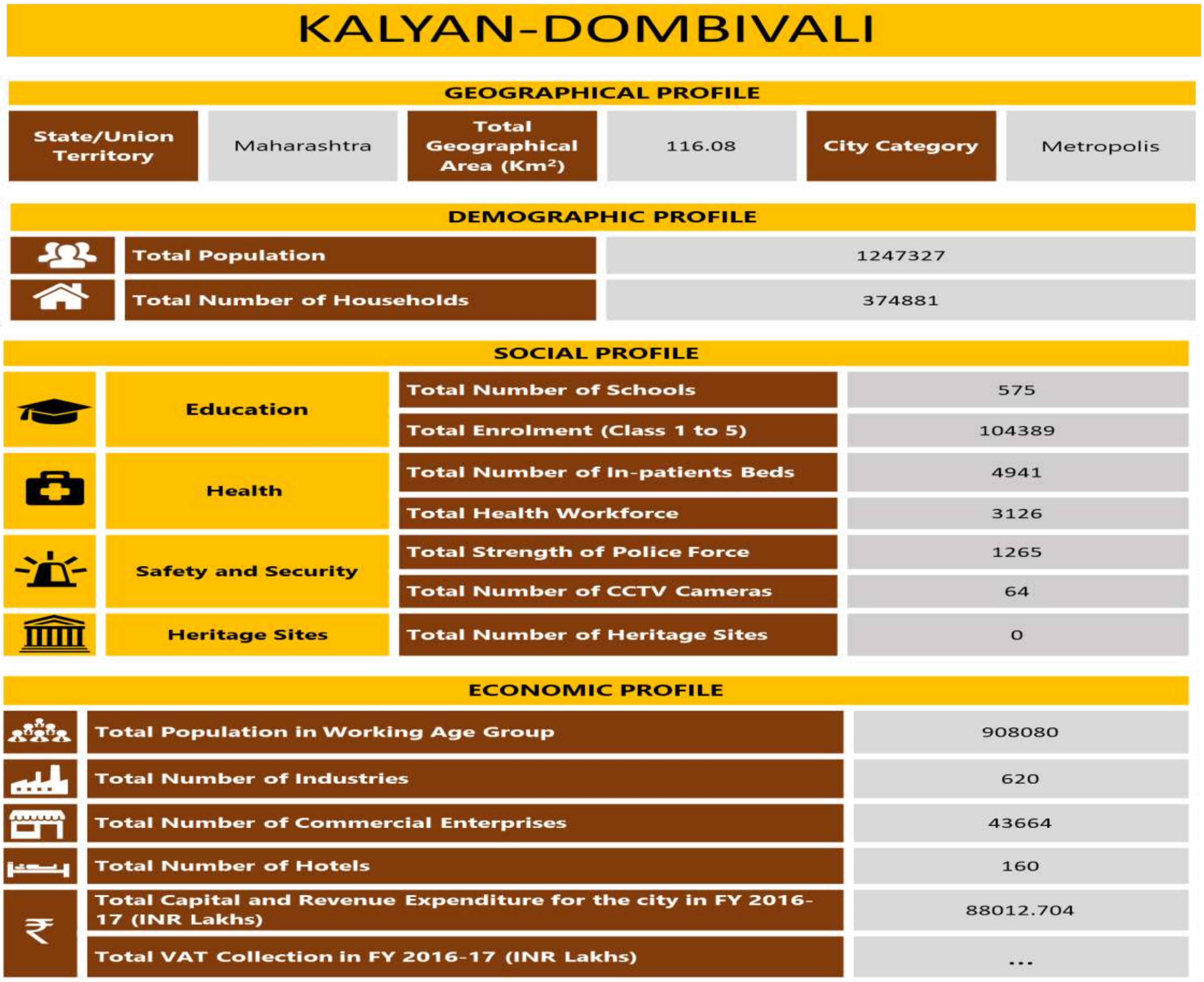
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KALYAN-DOMBIVALI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	116.08	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1247327
Total Number of Households	374881

SOCIAL PROFILE

Education	**Total Number of Schools**	575
	Total Enrolment (Class 1 to 5)	104389
Health	**Total Number of In-patients Beds**	4941
	Total Health Workforce	3126
Safety and Security	**Total Strength of Police Force**	1265
	Total Number of CCTV Cameras	64
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

	Total Population in Working Age Group	908080
	Total Number of Industries	620
	Total Number of Commercial Enterprises	43664
	Total Number of Hotels	160
₹	**Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)**	88012.704
	Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	310
		Total Number of Water Connections	105016
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	132500
		Total number of households in the city with access to community toilets in the city	383
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	650
		Total number of households covered through door-to-door collection of solid waste	310881
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	216
		Daily average quantum of waste water treated by STPs in the city (MLD)	44
	Electricity	**Total number of authorized electrical connections in the city**	595697
		Total electricity supplied to the city (kWh)	1768520000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	0
	Roads and Transport	**Total Length of Road Network in the City (Km)**	488
		Total length of arterial and sub-arterial road network in the city (Km)	42
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	412

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution

Pillars of Comprehensive Development	Category	Indicators
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

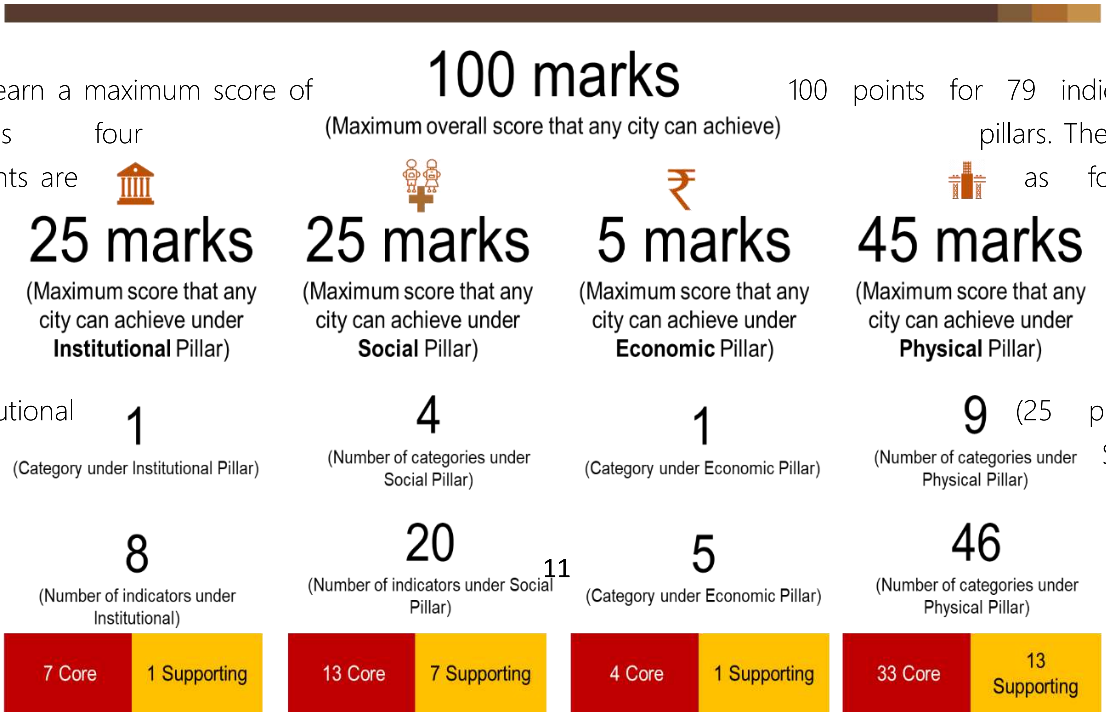
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\textit{indicator value for the city} - \textit{indicator value for the worst performing city}}{\textit{benchmark} - \textit{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4 Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts
Urban Local Body	For Park and Recreation Related Questions	Solide Waste Management
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Town Planning
Urban Local Body	For Building plan related data	Town Planning
Urban Local Body	For Roads related data	Town Planning
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	Citizen Facilitation Centre
Urban Local Body	For Vendor committee related data	Solide Waste Management
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Account,Tax, IT,Health Dept
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Town Planning
	Construction planning	Town Planning
	Green Building	Town Planning
	Rain water harvesting	Town Planning
	Universal Design Principle	Town Planning
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM
State Disaster management authority		Disaster management
State Education Department		Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		DISCOM
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	MSRTC

Designated data owners	Subcategories	Data owners at city level
	Registered Vehicles	Traffic
	Sub urban rail transport	Railway Dept
	Mono Rail Authority	Railway Dept
	Tramways	Railway Dept
	Marine Transport Authority	Railway Dept

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 80 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	9
DISCOM/Electricity Department	4
Traffic and Police Department	5
Development Authority	7
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	7
Transport Authority	7
Disaster Management	1
Urban Local Body	33
Total	80*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

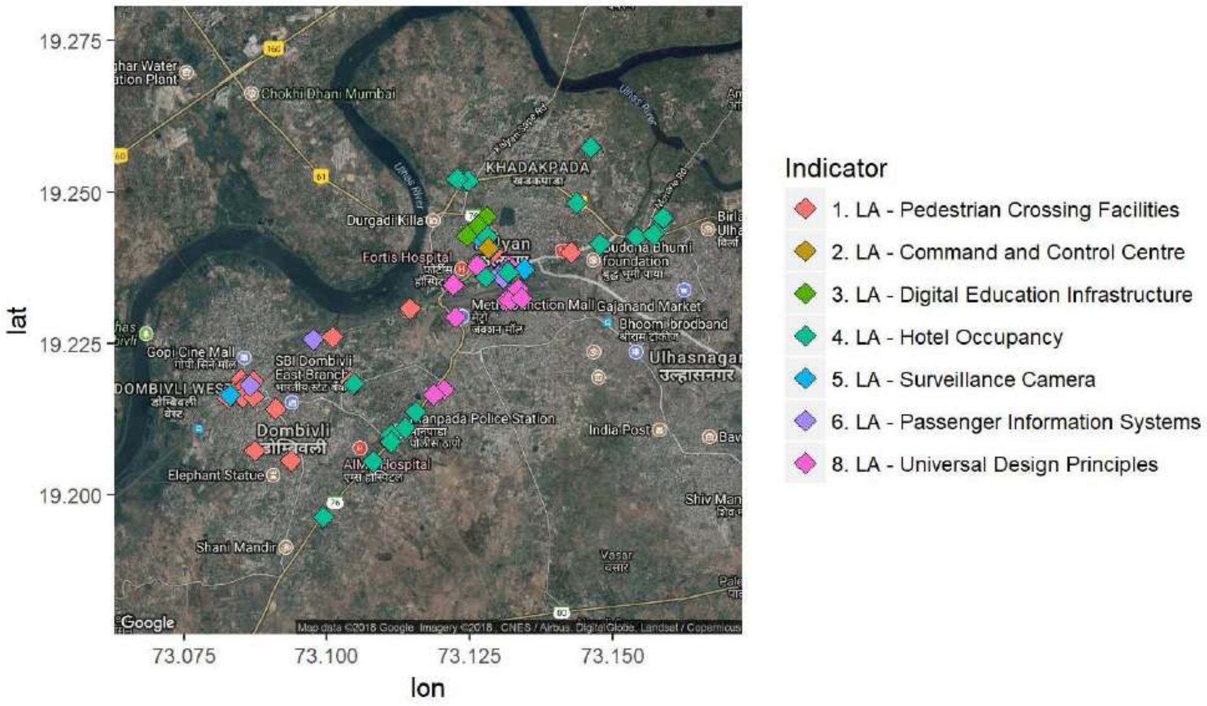
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.275
19.250
19.225
19.200
lat
73.075
73.100
73.125
73.150
lon
KHADAKPADA
Dombivli
Ulhasnagar
Chokhi Dhani Mumbai
Durgadi Killa
Fortis Hospital
Gopi Cine Mall
SBI Dombivli East Branch
Elephant Statue
Shani Mandir
AIMS Hospital
India Post
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**83.43**
Description	Average citizen services available online	

Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.25**
Description		
Sub Indicators	1.3a Building plan	2.96576E-05
	1.3b Birth/Death Certificate	6.07967E-06
	1.3c water supply	0.00727051
	1.3d solid waste management	0
	1.3e property tax	0.007368637
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	7.015E-05
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**73.9**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	29325.32
Denominator	Total demand raised for the year	39683.06
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**1874.27**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	5322
Denominator	Total O&M cost for providing water supply services during the year	283.95
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	Capital spending as percentage of total expenditure	**35.89**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	85089.374
Denominator	Total expenditure (revenue and capital accounts) in the same year	237109.004
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**8.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	10
Denominator	Total number of wards	122
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**25**

Description	Average Occupancy rate of Hotels	25
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	62.18
Denominator	Total budget of the ULB (capital and revenue)	88012.704
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**59**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	59
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**88.75**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	167687
Denominator	Total population in the age group of 6-14 years	188950
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**88.5**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	79277
Denominator	Total female population in the age group of 6-14 years	89574
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**148.7**

Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	104389
Denominator	Total number of teachers available for primary grades (public and private schools)	702
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**49.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	282
Denominator	Total number of schools	575
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**108.19**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	108.1884099
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**99.37**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	434427622
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**39.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4941
Denominator	Total population of the city	1247327
Unit	Number per 10,000 population	

Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**25.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3126
Denominator	Total population of the city	1247327
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1678
Denominator	Total population of the city	1247327
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	251
Denominator	Total population of the city	1247327
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**13.11**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	64
Denominator	Total length of road network in the city	488
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**316.68**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3950
Denominator	Total population of the city	1247327
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**14.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	571
Denominator	Total crimes recorded in the same year	3950
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**24.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	310
Denominator	Total population of the city	1247327
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC

Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**3.61**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	31.57
Denominator	Total Professional Tax collection during preceding year	875.02
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**4088.89**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	368
Denominator	Number of construction permits during preceding year	0.09
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	188950
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0

Denominator	Total number of vendors in the city	9531
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**11.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	2680
Denominator	Total number of slum and EWS households in the city	240.18
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	0
Denominator	Total population of the city	1247327
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.66**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	826299

Denominator	Total population of the city	1247327
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	116080000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1247327
Denominator	Area allocated for residential land use (in hectares)	38239000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**143.79**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	539023
Denominator	Total number of households in the city	374881

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	643
Denominator	Total number of electricity connections in the city	595697
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**91**
Description	Total number of sustained electrical interruptions in a year	91
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2175
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	264166908
Denominator	Total energy consumption from all sources	1768520000
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3483975.75
Denominator	Total quantum of water and waste water handled during the period	10620
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	21566008
Denominator	Total number of street light installations	33015
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	199
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1768520000
Denominator	Total population of the city	1247327
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.77**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	222.5
Denominator	Total area of the city (sq.km)	116.08
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**16.43**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	20499
Denominator	Total population of the city	1247327
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	74
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	488
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**320**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	32
Denominator	Total number of major transport interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be**

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

		computed
Description	Mode share of non-motorised transport	8
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**1.6**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	16
Denominator	Total number of major interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**42.21**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	412
Denominator	Total length of road network in the city	976
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**153.41**
Formula:	*Numerator / Denominator*	

Numerator	Total number of intersections with pedestrian crossing facilities on major roads	135
Denominator	Total number of junctions/ intersections on major roads in the city	88
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**36.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	61
Denominator	Total number of public right-of-way areas in the city	167
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**105.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	396942
Denominator	Total number of households in the city	374881
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**248.53**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	310
Denominator	Total population of the city	1247327
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	3106
Denominator	Total number of samples tested for water quality	3113
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	310
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**24.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	25853
Denominator	Total number of water connections in the city	105016
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**85.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	140
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	163
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**39.06**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	177804
Denominator	Total number of properties in the city	455195
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**60.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	276521
Denominator	Total number of properties in the city	455195
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**20.37**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	44
Denominator	Total waste water generated in the city per day	216
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**105**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	46.2
Denominator	Total waste water received at treatment plants per day	44
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**44.44**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	216.89
Denominator	Total length of road network in the city	488
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**84.71**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	354545
Denominator	Total number of households and establishments in the city	418545
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	650
Denominator	Total quantum of MSW generated in the city	650
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**3.12**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	608
Denominator	Average MSW generated in the city (tons per month)	19500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**26.95**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	26.95
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**64.72**
Description	Annual mean concentration OR Mean concentration	64.72

	over 24 hours of NO2	
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**75**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	18
Denominator	Total number of samples tested	24
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KANPUR

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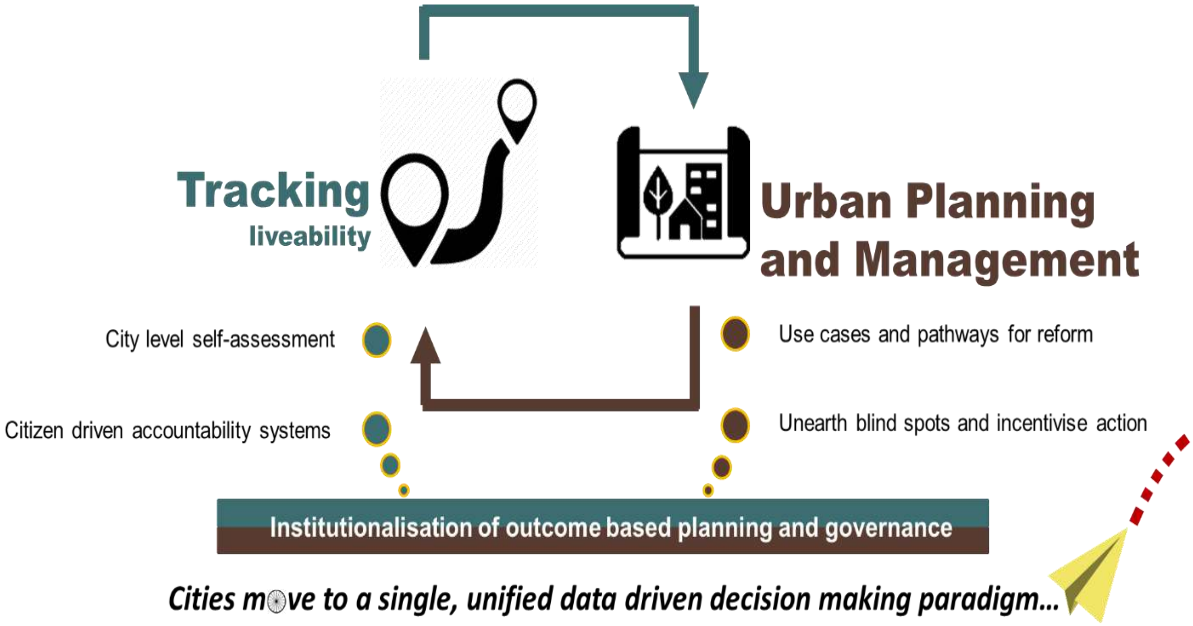
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KANPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	260	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2931269
Total Number of Households	528347

SOCIAL PROFILE

Education	**Total Number of Schools**	5314
	Total Enrolment (Class 1 to 5)	435112
Health	**Total Number of In-patient Beds**	16121
	Total Health Workforce	3194
Safety and Security	**Total Strength of Police Force**	2308
	Total Number of CCTV Cameras	50
Heritage Sites	**Total Number of Heritage Sites**	6

ECONOMIC PROFILE

Total Population in Working Age Group	804433
Total Number of Industries	3237
Total Number of Commercial Enterprises	65664
Total Number of Hotels	88
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	58390
Total VAT Collection in FY 2016-17 (INR Lakhs)	378474.38

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	430
	Total Number of Water Connection	196650
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	472320
	Total number of households in the city with access to community toilets in the city	32302
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1200
	Total number of households covered through door-to-door collection of solid waste	322260
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	301
	Daily average quantum of waste water treated by STPs in the city (MLD)	185
Electricity	**Total number of authorized electrical connections in the city**	583266
	Total electricity supplied to the city (kWh)	3657804000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
Roads and Transport	**Total Length of Road Network in the City (Km)**	4636.31
	Total length of arterial and sub-arterial road network in the city (Km)	146.31
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	32

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar Nigam Kanpur Nagar
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Kanpur Nagar
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar Nigam Kanpur Nagar Nagar
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB Kanpur Nagar
Urban Local Body	For Ecological sites related data	Forest Department Kanpur Nagar
Urban Local Body	For Housing related data	Kanpur Development Authority / Nirmaan Vibhag Nagar Nigam Kanpur/ DUDA Kanpur Nagar
Urban Local Body	For Building plan related data	Kanpur Development Authority Kanpur Nagar
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Kanpur
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Kanpur
Urban Local Body	For IT services related data	GIS/ IT / Computer Department. Nagar Nigam Kanpur
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Kanpur Nagar
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District Urban Development Agency Kanpur Nagar
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Kanpur Nagar
Development Authority	Building Infrastructure	Kanpur Development Authority Kanpur
	Construction planning	Kanpur Development Authority Kanpur

Designated data owners	Subcategories	Data owners at city level
	Green Building	Kanpur Development Authority Kanpur
	Rain water harvesting	Kanpur Development Authority Kanpur
	Universal Design Principle	Kanpur Development Authority Kanpur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	KESCO Kanpur Nagar / Uttar Pradesh Power Corporation Ltd Kanpur Nagar
State Disaster management authority		State Disaster Management Kanpur Nagar [ADM(FR]
State Education Department		Basic Siksha Adhikari / District Inspector of School Kanpur Nagar (DIOS)
State Health Department	Health care professionals	UP State Health Department Kanpur Nagar (CMO)
	Citizen Services	UP State Health Department Kanpur Nagar (CMO)
	Disease Prevalence	UP State Health Department Kanpur Nagar (CMO)
	Health Infrastructure	UP State Health Department Kanpur Nagar (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA) Kanpur Nagar
State Sales / Commercial Taxes Department		Commercial Taxes Department Kanpur Nagar
Town and Country Planning Department	Land Use	Town and Country Planning Department Kanpur Nagar
Traffic and Police Department		Traffic police, Civil police Kanpur Nagar
Transport Authorities	Buses	Uttar Pradesh State Roadways Transport Corporation & Regional Transport Office Kanpur Nagar
	Registered Vehicles	Regional Transport Office Kanpur Nagar
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 39 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**39***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

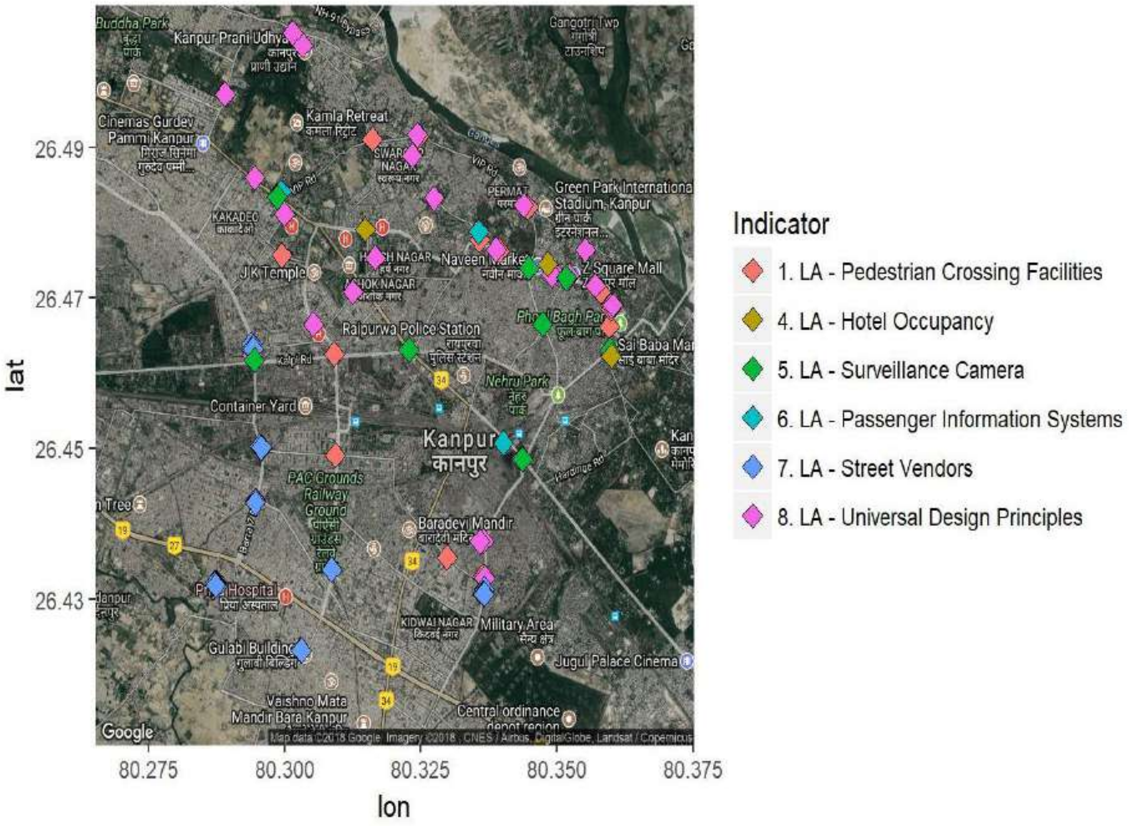
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Buddha Park
Kanpur Prani Udhyan
Cinemas Gurdev Pammi Kanpur
Kamla Retreat
SWARUP NAGAR
Green Park International Stadium, Kanpur
KAKADEO
J K Temple
Naveen Market
Z Square Mall
ASHOK NAGAR
Rajpurwa Police Station
Phool Bagh Park
Sai Baba Mandir
Container Yard
Nehru Park
Kanpur
PAC Grounds Railway Ground
Baradevi Mandir
Priya Hospital
KIDWAI NAGAR
Military Area
Gulabi Building
Jugul Palace Cinema
Vaishno Mata Mandir Bara Kanpur
Central ordinance depot region
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
26.49
26.47
26.45
26.43
lat
80.275
80.300
80.325
80.350
80.375
lon
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**53.94**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.666666667
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.47**
Description		

Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.000628871
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0.001275917
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	3.61264E-05
	1.3i information	0.001445057
	1.3j electricity	0.034289672
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.64**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0.5
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	4
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**75.67**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	9988.23
Denominator	Total demand raised for the year	13200.55
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	Data Unavailable
Denominator	Total O&M cost for providing water supply services during the year	9755.77
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**2.93**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	4208.86
Denominator	Total expenditure (revenue and capital accounts) in the same year	143673.69
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	110
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	6
Denominator	Total number of historic buildings/sites identified	6
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**23.57**
Description	Average Occupancy rate of Hotels	23.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	20.32
Denominator	Total budget of the ULB (capital and revenue)	58390.9
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**141.45**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	704978
Denominator	Total population in the age group of 6-14 years	498400
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**141.89**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	326313

Denominator	Total female population in the age group of 6-14 years	229969
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**38.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	435112
Denominator	Total number of teachers available for primary grades (public and private schools)	11321
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**3.76**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	200
Denominator	Total number of schools	5314
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**44.12**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	44.12466386
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**161.94**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	8775118670
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**58.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	16121
Denominator	Total population of the city	2768057
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**11.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3194
Denominator	Total population of the city	2768057
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**25**
Description	Total response time for health-related distress calls received in the city	25
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7917
Denominator	Total population of the city	2768057
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	7265
Denominator	Total population of the city	2768057
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**1.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	50
Denominator	Total length of road network in the city	4636.31
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**288.25**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7979
Denominator	Total population of the city	2768057
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**20.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1656
Denominator	Total crimes recorded in the same year	7979
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**24.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	687
Denominator	Total population of the city	2768057
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**6.12**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	21815.68
Denominator	Total VAT/GST collection during preceding year	3566.587
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-7.12**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-22
Denominator	Number of construction permits during preceding year	3.09
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	132518
Denominator	Total labour force in the city	498400
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	14494
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**15.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	68074
Denominator	Total number of slum and EWS households in the city	4493.9
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	2768057
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.74**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	2051128
Denominator	Total population of the city	2768057
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	260000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	2768057
Denominator	Area allocated for residential land use (in hectares)	129480000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**92.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	490692
Denominator	Total number of households in the city	528347
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	583266
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**40464**
Description	Total number of sustained electrical interruptions in a year	40464
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	119040
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1732526
Denominator	Total energy consumption from all sources	3657804000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3049158.417
Denominator	Total quantum of water and waste water handled during the period	18450
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	223510.23
Denominator	Total number of street light installations	91935
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.45**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3657804000
Denominator	Total population of the city	2768057
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1318
Denominator	Total area of the city (sq.km)	260
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	575
Denominator	Total population of the city	2768057
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	46
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	12.75
Denominator	Total length of road network in the city	4636.31
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	22
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	10
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**5.77**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	127
Denominator	Total number of major interchanges in the city	22
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	68
Denominator	Total number of signalised intersections in the city	68
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	74
Denominator	Total available on-street parking spaces in the city	74
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	32
Denominator	Total length of road network in the city	9272.62
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**83.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	20
Denominator	Total number of junctions/ intersections on major roads in the city	24
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2423.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	12456
Denominator	Total number of public right-of-way areas in the city	514
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**35.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	185072
Denominator	Total number of households in the city	528347
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**155.34**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	430
Denominator	Total population of the city	2768057
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	385
Denominator	Total number of samples tested for water quality	12533
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**30.7**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	132
Denominator	Quantum of water put into the distribution system (mld)	430
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	196650
Unit	Percentage	
Benchmark	100%	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**136.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	522036
Denominator	Total number of properties in the city	382666
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**110.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	422522
Denominator	Total number of properties in the city	382666
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**61.46**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	185
Denominator	Total waste water generated in the city per day	301
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**173.51**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	321

Denominator	Total waste water received at treatment plants per day	185
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**3.33**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	154.2
Denominator	Total length of road network in the city	4636.31
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**58.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	350032
Denominator	Total number of households and establishments in the city	594011
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**91.95**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1200
Denominator	Total quantum of MSW generated in the city	1305
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	28800
Denominator	Average MSW generated in the city (tons per month)	36000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**50**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	50
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**237**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	237
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	77
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**27.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	205
Denominator	Total number of samples tested	752
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KARIM NAGAR

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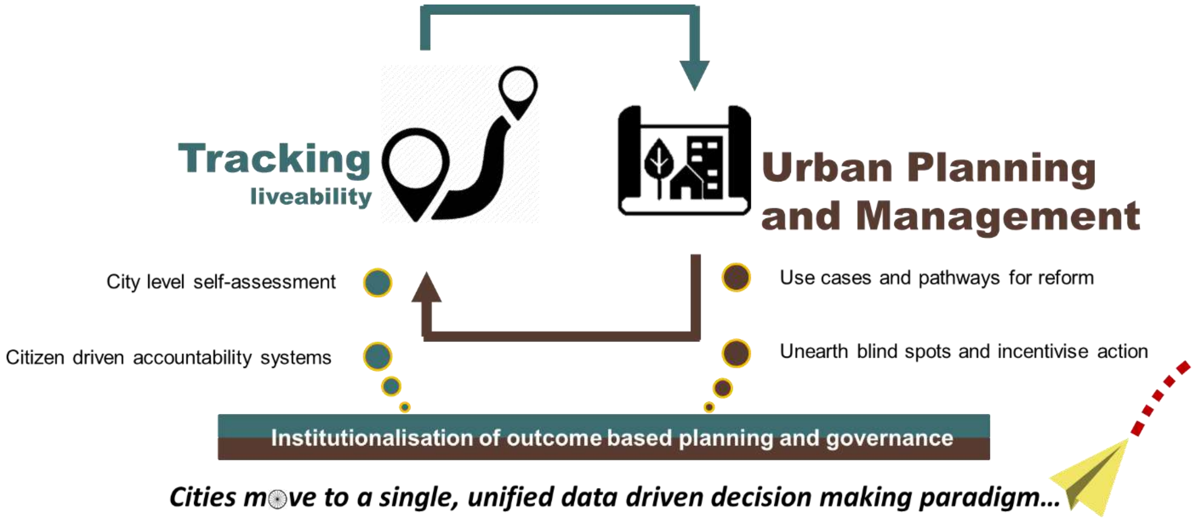
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

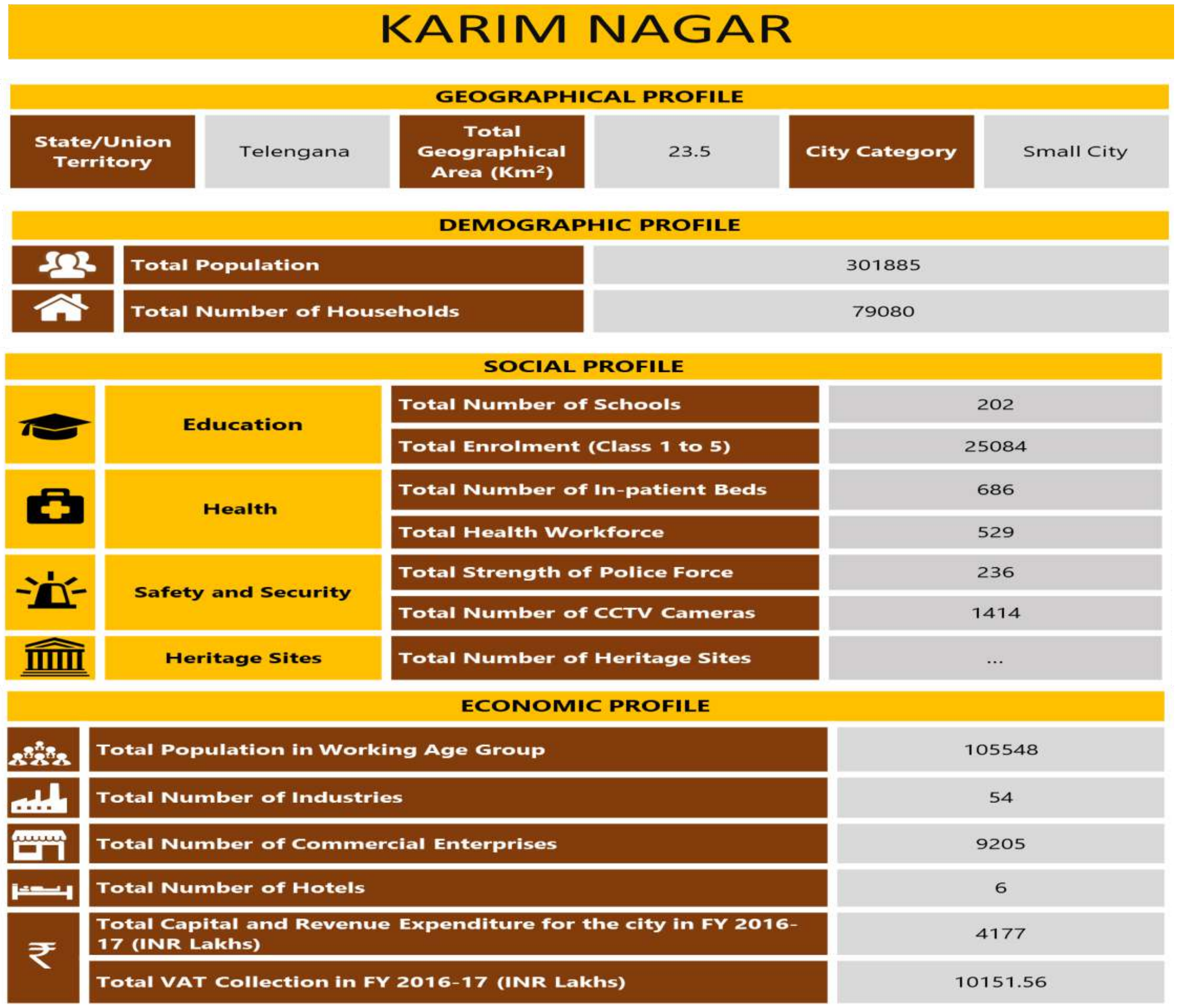
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KARIM NAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Telengana	**Total Geographical Area (Km²)**	23.5	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	301885
Total Number of Households	79080

SOCIAL PROFILE

Education	**Total Number of Schools**	202
	Total Enrolment (Class 1 to 5)	25084
Health	**Total Number of In-patient Beds**	686
	Total Health Workforce	529
Safety and Security	**Total Strength of Police Force**	236
	Total Number of CCTV Cameras	1414
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	105548
Total Number of Industries	54
Total Number of Commercial Enterprises	9205
Total Number of Hotels	6
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4177
Total VAT Collection in FY 2016-17 (INR Lakhs)	10151.56

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	37
	Total Number of Water Connection	42237
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	28697
	Total number of households in the city with access to community toilets in the city	120
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	120
	Total number of households covered through door-to-door collection of solid waste	79880
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	38
	Daily average quantum of waste water treated by STPs in the city (MLD)	2
Electricity	**Total number of authorized electrical connections in the city**	131685
	Total electricity supplied to the city (kWh)	224633933
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	182753
Roads and Transport	**Total Length of Road Network in the City (Km)**	579
	Total length of arterial and sub-arterial road network in the city (Km)	8.39
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	4.95

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

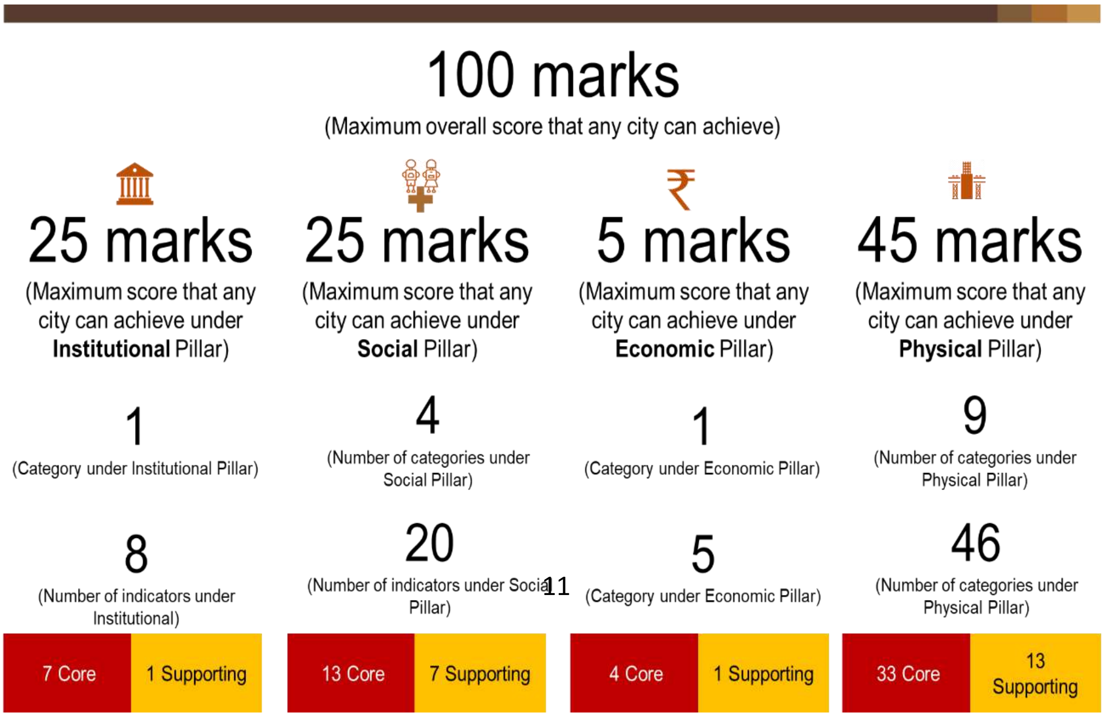
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken

down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section
Urban Local Body	For Park and Recreation Related Questions	Town Planning Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	Tourism Department
Urban Local Body	For Housing related data	Sanitation Section
Urban Local Body	For Building plan related data	Town Planning Section
Urban Local Body	For Roads related data	Town Planning Section
Urban Local Body	For Solid waste management related data	Sanitation Section
Urban Local Body	For IT services related data	Revenue, Engineering, Birth & Death, Town Planning, Sanitation Sections.
Urban Local Body	For Vendor committee related data	Town Planning Section

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Office of District Employment Exchange
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control Board
Development Authority	Building Infrastructure	Town Planning Section
	Construction planning	Town Planning Section
	Green Building	
	Rain water harvesting	Town Planning Section
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Telangana Northern Power Distribution Company Limited
State Disaster management authority		District Collectorate
State Education Department		District Medical and Health Office
State Health Department	Health care professionals	District Medical and Health Office
	Citizen Services	District Medical and Health Office
	Disease Prevalence	District Medical and Health Office
	Health Infrastructure	District Medical and Health Office
State Renewable Energy Development Agency	Renewable Energy	Telangana Northern Power Distribution Company Limited
State Sales / Commercial Taxes Department		Commercial Tax Office
Town and Country Planning Department	Land Use	Town Planning Section
Traffic and Police Department		Police Commissionerate
Transport Authorities	Buses	Telangana State Road Transport Corporation
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	Not applicable as the facility is not there in the city
	Mono Rail Authority	Not applicable as the facility is not there in the city
	Tramways	Not applicable as the facility is not there in the city

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	Not applicable as the facility is not there in the city

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 196 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	8
Traffic and Police Department	3
Development Authority	13
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	4
State Health Department	3
Transport Authority	3
Disaster Management	0
Urban Local Body	157
Total	196*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that

data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

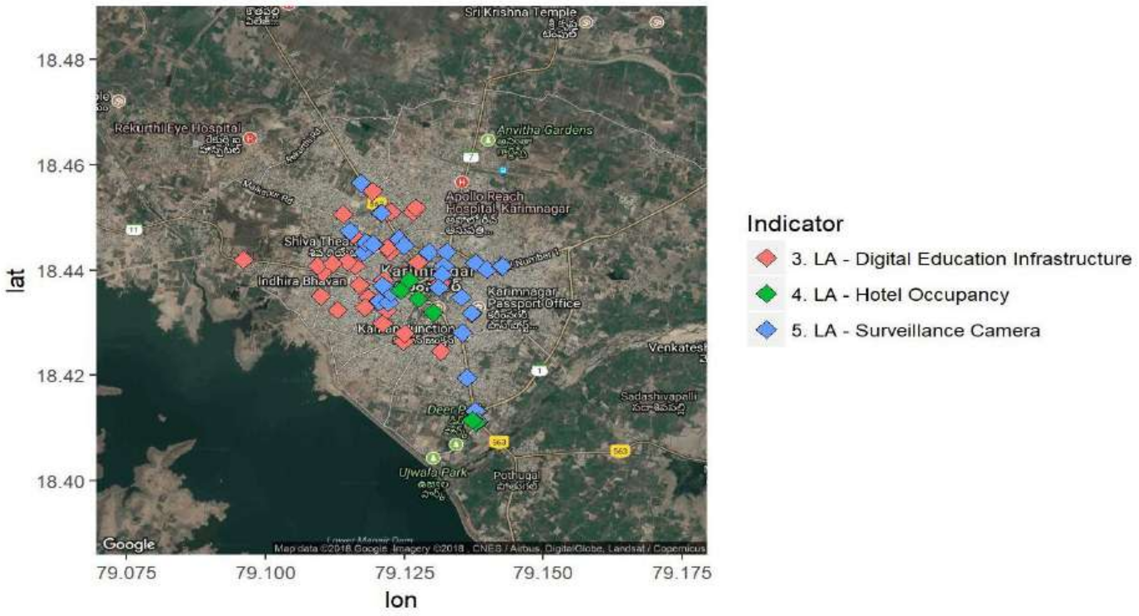
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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18.48
18.46
18.44
18.42
18.40
lon
79.075
79.100
79.125
79.150
79.175
Sri Krishna Temple
Rekurthi Eye Hospital
Anvitha Gardens
Apollo Reach Hospital, Karimnagar
Shiva Theatre
Indhira Bhavan
Karimnagar
Karimnagar Passport Office
Kaman Junction
Venkatesh
Sadashivapalli
Deer Park
Ujwala Park
Pothugal
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**83.43**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1

	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**0.65**
Description		
Sub Indicators	1.3a Building plan	5.89593E-05
	1.3b Birth/Death Certificate	0.004953632
	1.3c water supply	0.000286829
	1.3d solid waste management	5.52065E-05
	1.3e property tax	0.000836584
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA

	1.3h complaints/ grievance redressal	0.000172808
	1.3i information	0.001035122
	1.3j electricity	0.044253332
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**0.1**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**75.77**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1392
Denominator	Total demand raised for the year	1837.11
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**60.07**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	352
Denominator	Total O&M cost for providing water supply services during the year	586
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**23.63**

Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	2474
Denominator	Total expenditure (revenue and capital accounts) in the same year	10468
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	50
Denominator	Total number of wards	50
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**57.5**
Description	Average Occupancy rate of Hotels	57.5
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	4177
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**85**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	85

Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**81**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	39487
Denominator	Total population in the age group of 6-14 years	48747
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**79.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	18671
Denominator	Total female population in the age group of 6-14 years	23599
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**17.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	25084
Denominator	Total number of teachers available for primary grades (public and private schools)	1415
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**31.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	63
Denominator	Total number of schools	202
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**71.81**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	71.80982762

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**88.63**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	23239994
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**23.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	686
Denominator	Total population of the city	289821
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**18.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	529
Denominator	Total population of the city	289821
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1536
Denominator	Total population of the city	289821

Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	85
Denominator	Total population of the city	289821
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**244.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1414
Denominator	Total length of road network in the city	579
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**463.39**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1343
Denominator	Total population of the city	289821
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**16.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	221
Denominator	Total crimes recorded in the same year	1343
Unit	Percentage	

Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**3.45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	10
Denominator	Total population of the city	289821
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-19.28**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-2425.13
Denominator	Total VAT/GST collection during preceding year	125.7669
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**32.31**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	283
Denominator	Number of construction permits during preceding year	8.76
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	41735
Denominator	Total labour force in the city	48747
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1728
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**17.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6985
Denominator	Total number of slum and EWS households in the city	410.18
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.63**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	182753
Denominator	Total population of the city	289821
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	793143.36
Denominator	Total population of the city	289821
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	23500000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	289821
Denominator	Area allocated for residential land use (in hectares)	90000000
Unit		

Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**140.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	110844
Denominator	Total number of households in the city	79080
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	207
Denominator	Total number of electricity connections in the city	131685
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**5492**
Description	Total number of sustained electrical interruptions in a year	5492
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**0.59**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	126146
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	235
Denominator	Total energy consumption from all sources	224633933
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	416939.5833
Denominator	Total quantum of water and waste water handled during the period	1170
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	4632967
Denominator	Total number of street light installations	14735
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	9966.84
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	224633933
Denominator	Total population of the city	289821
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.77**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	58
Denominator	Total area of the city (sq.km)	23.5
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	24
Denominator	Total population of the city	289821
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	579

Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**150**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	3
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	4.95
Denominator	Total length of road network in the city	1158
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	28
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	NA
Denominator	Total number of public right-of-way areas in the city	415
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**69.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	55000
Denominator	Total number of households in the city	79080

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**127.67**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	37
Denominator	Total population of the city	289821
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	13140
Denominator	Total number of samples tested for water quality	13140
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**16.14**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	5.97
Denominator	Quantum of water put into the distribution system (mld)	37
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	3
Denominator	Total number of water connections in the city	42237
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**50.91**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	590

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1159
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**160.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	83966
Denominator	Total number of properties in the city	52296
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**104.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	54806
Denominator	Total number of properties in the city	52296
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**5.26**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	2
Denominator	Total waste water generated in the city per day	38
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	2
Denominator	Total waste water received at treatment plants per day	2
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**4.32**
Formula:	*Numerator / Denominator*	

Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	25
Denominator	Total length of road network in the city	579
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**95.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	84174
Denominator	Total number of households and establishments in the city	88285
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	120
Denominator	Total quantum of MSW generated in the city	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**12.94**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	466
Denominator	Average MSW generated in the city (tons per month)	3600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	7.7
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.7
Unit	μg/m3	
Benchmark	Annual mean concentration of 50 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	

Indicator No: 15.2	Concentration of NO2 - air pollution	25.9
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	25.9
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	Concentration of PM10 - air pollution	76.2
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	76.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	3
Denominator	Total number of noise samples	3
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KARNAL

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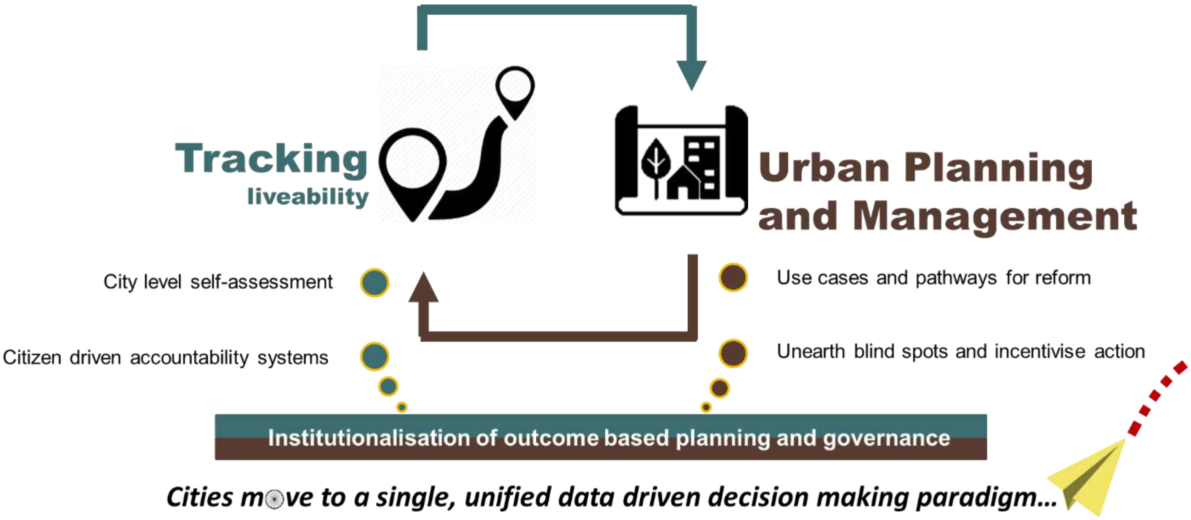
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KARNAL

GEOGRAPHICAL PROFILE

State/Union Territory	Haryana	**Total Geographical Area (Km^2)**	87	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	397000
Total Number of Households	77668

SOCIAL PROFILE

Education	**Total Number of Schools**	194
	Total Enrolment (Class 1 to 5)	36362
Health	**Total Number of In-patient Beds**	3402
	Total Health Workforce	1791
Safety and Security	**Total Strength of Police Force**	283
	Total Number of CCTV Cameras	129
Heritage Sites	**Total Number of Heritage Sites**	25

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	955
Total Number of Commercial Enterprises	21061
Total Number of Hotels	34
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	6932.51
Total VAT Collection in FY 2016-17 (INR Lakhs)	100659.39

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	85.97
	Total Number of Water Connection	37524
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	77028
	Total number of households in the city with access to community toilets in the city	640
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	140
	Total number of households covered through door-to-door collection of solid waste	77668
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	63.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	55
Electricity	**Total number of authorized electrical connections in the city**	99726
	Total electricity supplied to the city (kWh)	4389.25
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	5000
Roads and Transport	**Total Length of Road Network in the City (Km)**	691.38
	Total length of arterial and sub-arterial road network in the city (Km)	19.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	34.3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Karnal
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Karnal
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Karnal
Urban Local Body	For Heritage sites related data	Municipal Corporation Karnal
Urban Local Body	For Ecological sites related data	Municipal Corporation Karnal
Urban Local Body	For Housing related data	Municipal Corporation Karnal
Urban Local Body	For Building plan related data	Municipal Corporation Karnal
Urban Local Body	For Roads related data	Municipal Corporation Karnal
Urban Local Body	For Solid waste management related data	Municipal Corporation Karnal
Urban Local Body	For IT services related data	Municipal Corporation Karnal
Urban Local Body	For Vendor committee related data	Municipal Corporation Karnal
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Karnal

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Karnal
	Citizen Services	Civil Hospital Karnal
	Disease Prevalence	Civil Hospital Karnal
	Health Infrastructure	Civil Hospital Karnal
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town and Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Transport Authority
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 6 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	3
Transport Authority	0
Disaster Management	1
Urban Local Body	0
Total	6*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

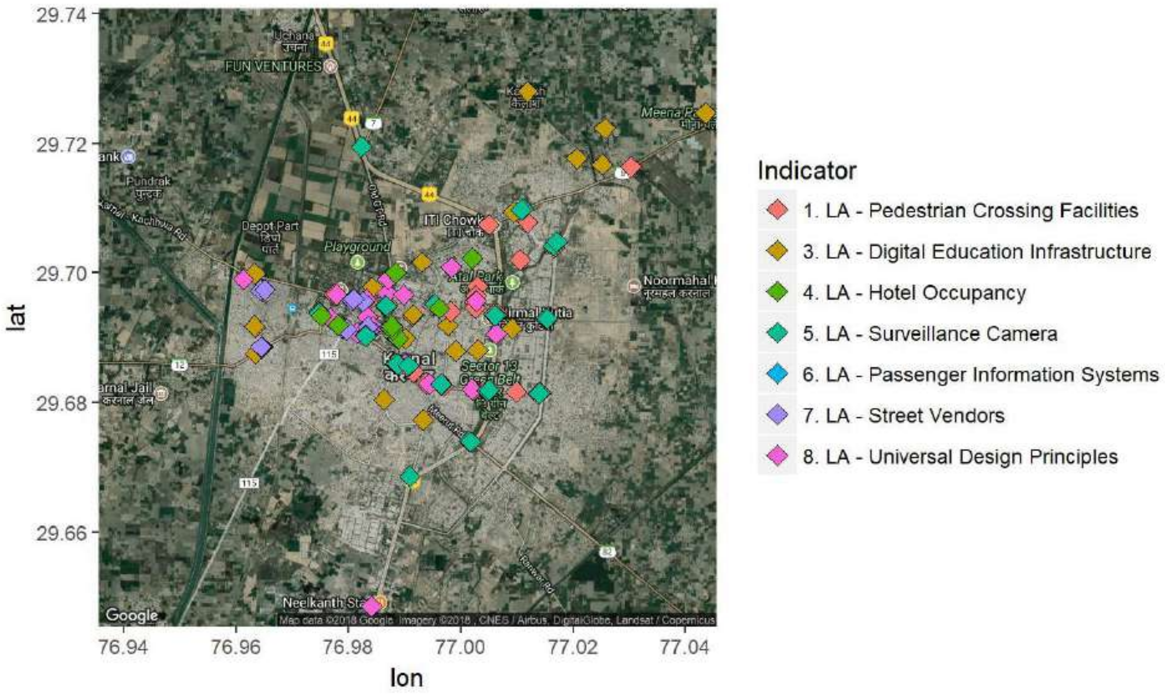
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


29.74
29.72
29.70
29.68
29.66
lat
76.94
76.96
76.98
77.00
77.02
77.04
lon
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**55.65**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0.75
	1.1d solid waste management	0.25
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**14**
Description		
Sub Indicators	1.3a Building plan	4.93526E-07
	1.3b Birth/Death Certificate	0.014557269
	1.3c water supply	0.0007166
	1.3d solid waste management	0.000800953
	1.3e property tax	0.01641714
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.001246387
	1.3i information	0.043493083
	1.3j electricity	1.042927622
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.33**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**50.63**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1324

Denominator	Total demand raised for the year	2615
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**81.7**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	592.94
Denominator	Total O&M cost for providing water supply services during the year	725.77
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**15.19**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	2018.22
Denominator	Total expenditure (revenue and capital accounts) in the same year	13289.21
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	20
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**12**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	25
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**14.29**
Description	Average Occupancy rate of Hotels	14.28571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0.927
Denominator	Total budget of the ULB (capital and revenue)	6932.51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**184**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	184
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**107.51**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	56513
Denominator	Total population in the age group of 6-14 years	52566

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**108.79**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	24949
Denominator	Total female population in the age group of 6-14 years	22933
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**22.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	36362
Denominator	Total number of teachers available for primary grades (public and private schools)	1625
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**28.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	55
Denominator	Total number of schools	194
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**112.43**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	112.4314363
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**101.33**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	43043572
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**112.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3402
Denominator	Total population of the city	302140
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**59.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1791
Denominator	Total population of the city	302140
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**19**
Description	Total response time for health-related distress calls received in the city	19
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	814
Denominator	Total population of the city	302140
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	137
Denominator	Total population of the city	302140
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**18.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	129
Denominator	Total length of road network in the city	691.38
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**800.29**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2418
Denominator	Total population of the city	302140
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**6.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	152
Denominator	Total crimes recorded in the same year	2418
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**274.38**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	829
Denominator	Total population of the city	302140
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**1.5**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1490
Denominator	Total VAT/GST collection during preceding year	991.6939
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**29.67**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	54
Denominator	Number of construction permits during preceding year	1.82
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	34463
Denominator	Total labour force in the city	52566
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	8852
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	92.13
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**12.82**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	153165960
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.02**

Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	5000
Denominator	Total population of the city	302140
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**4.02**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1214257.08
Denominator	Total population of the city	302140
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	87000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	302140
Denominator	Area allocated for residential land use (in hectares)	30480000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**99.81**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	77519
Denominator	Total number of households in the city	77668
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	99726
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**4275**
Description	Total number of sustained electrical interruptions in a year	4275
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1765
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	770
Denominator	Total energy consumption from all sources	4389.25
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	97.16666667
Denominator	Total quantum of water and waste water handled during the period	4229.1
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2635
Denominator	Total number of street light installations	18986
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	45960
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	4389.25
Denominator	Total population of the city	302140
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1022
Denominator	Total area of the city (sq.km)	87
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	6
Denominator	Total population of the city	302140
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	1.5
Denominator	Total length of road network in the city	691.38
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**40**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	40
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	8
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	5
Unit		
Benchmark		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**2.48**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	34.3
Denominator	Total length of road network in the city	1382.76
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**79.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	127
Denominator	Total number of junctions/ intersections on major roads in the city	160
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**48.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	129
Denominator	Total number of public right-of-way areas in the city	266
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**65.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	50740
Denominator	Total number of households in the city	77668
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**284.54**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	85.97
Denominator	Total population of the city	302140
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	63
Denominator	Total number of samples tested for water quality	615
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	85.97
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**69.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	26078
Denominator	Total number of water connections in the city	37524
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**12.66**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	97
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	766

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**59.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	100063
Denominator	Total number of properties in the city	168853
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**44.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	75647
Denominator	Total number of properties in the city	168853
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	63.5
Denominator	Total waste water generated in the city per day	63.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**115.45**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	63.5
Denominator	Total waste water received at treatment plants per day	55
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**117.17**
Formula:	*Numerator / Denominator*	

Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	810.06
Denominator	Total length of road network in the city	691.38
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	98729
Denominator	Total number of households and establishments in the city	98729
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**93.33**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	140
Denominator	Total quantum of MSW generated in the city	150
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**80.95**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	3400
Denominator	Average MSW generated in the city (tons per month)	4200
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**13**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	13
Unit	µg/m3	

Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**13**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	13
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**13**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	13
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	6
Denominator	Total number of noise samples	6
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	21
Denominator	Total number of samples tested	21
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KAVARATTI

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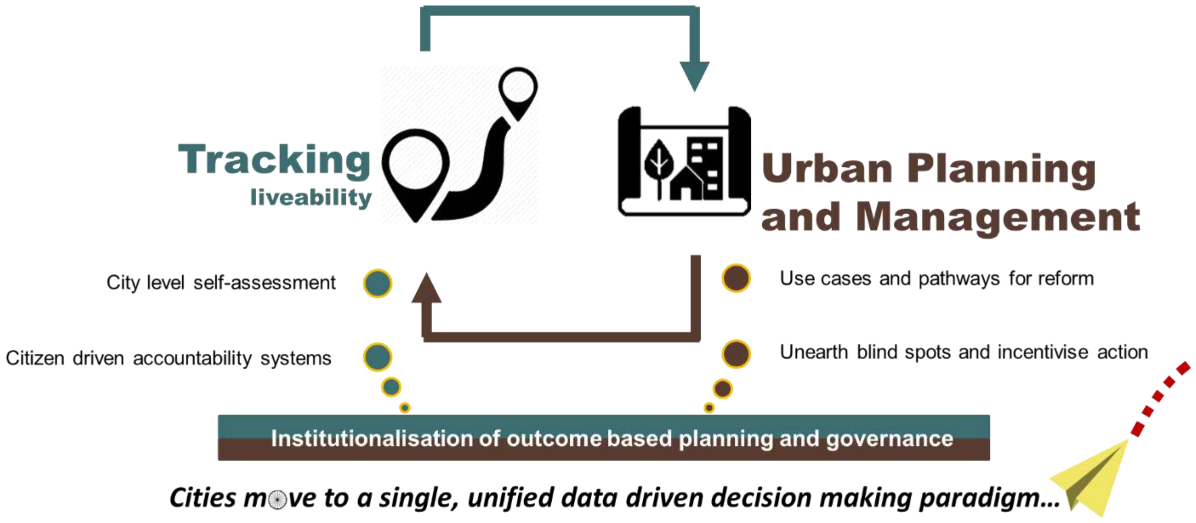
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

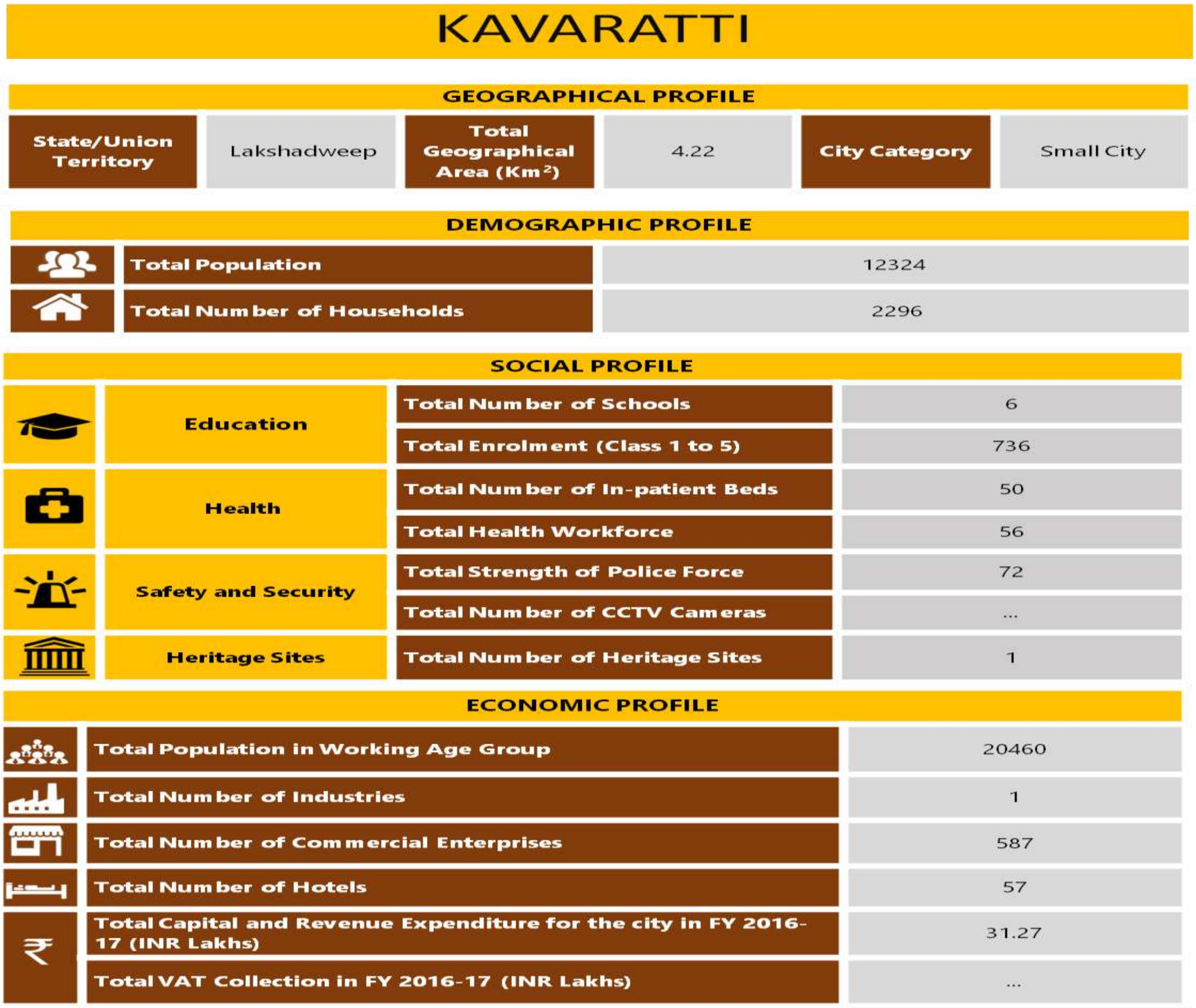
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KAVARATTI

GEOGRAPHICAL PROFILE

State/Union Territory	Lakshadweep	**Total Geographical Area (Km²)**	4.22	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	12324
Total Number of Households	2296

SOCIAL PROFILE

Education	**Total Number of Schools**	6
	Total Enrolment (Class 1 to 5)	736
Health	**Total Number of In-patient Beds**	50
	Total Health Workforce	56
Safety and Security	**Total Strength of Police Force**	72
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	20460
Total Number of Industries	1
Total Number of Commercial Enterprises	587
Total Number of Hotels	57
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	31.27
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	0.945
	Total Number of Water Connection	630
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	2296
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	0.491
	Total number of households covered through door-to-door collection of solid waste	2246
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	1.1
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	**Total number of authorized electrical connections in the city**	4562
	Total electricity supplied to the city (kWh)	12029822
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	4130000
Roads and Transport	**Total Length of Road Network in the City (Km)**	36
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	District administration
Urban Local Body	For Park and Recreation Related Questions	PWD - Public works department
Urban Local Body	For Water Supply and Drainage related questions	PWD
Urban Local Body	For Heritage sites related data	Science and Technology
Urban Local Body	For Ecological sites related data	Science and Technology
Urban Local Body	For Housing related data	PWD
Urban Local Body	For Building plan related data	PWD
Urban Local Body	For Roads related data	Transport department
Urban Local Body	For Solid waste management related data	PWD and Forest department
Urban Local Body	For IT services related data	PWD
Urban Local Body	For Vendor committee related data	Kavaratti Panchayat
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	PWD, Pollution control department
Development Authority	Building Infrastructure	PWD
	Construction planning	PWD

Designated data owners	Subcategories	Data owners at city level
	Green Building	PWD
	Rain water harvesting	PWD
	Universal Design Principle	PWD
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		PWD
State Education Department		Directorate of education
State Health Department	Health care professionals	Directorate of Health services
	Citizen Services	Directorate of Health services
	Disease Prevalence	Directorate of Health services
	Health Infrastructure	Directorate of Health services
State Renewable Energy Development Agency		Electricity department
State Sales / Commercial Taxes Department		NA
Town and Country Planning Department	Land Use	PWD
Traffic and Police Department		Police department
Transport Authorities	Buses	NA
	Registered Vehicles	Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	Marine transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 37 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	3
Traffic and Police Department	3
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	3
Transport Authority	4
Disaster Management	2
Urban Local Body	17
Total	37*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water

Indicator No. 15.4 Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	7.69
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0
	1.1k Grievance redressal	0
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	4.76
Description	Services integrated through an integrated or a singular operations command centre	1

Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	54.8
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.548005261
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	0.67
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	Non-

Formula:	*Numerator / Denominator*	Computable
Numerator	Total tax collected in a year	NA
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	NA
Denominator	Total O&M cost for providing water supply services during the year	107.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	99
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	5160
Denominator	Total expenditure (revenue and capital accounts) in the same year	5212.27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	100
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	12
Denominator	Total number of wards	12
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	0
Formula:	*Numerator / Denominator*	

Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	0
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	10
Description	Average Occupancy rate of Hotels	10
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	639.59
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	200
Denominator	Total budget of the ULB (capital and revenue)	31.27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	5
Description	Number of cultural/sports events hosted by the city authority in the preceding year	5
Unit		

Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	15.03
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	1297
Denominator	Total population in the age group of 6-14 years	8632
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	13.74
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	599
Denominator	Total female population in the age group of 6-14 years	4358
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	13.63
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	736
Denominator	Total number of teachers available for primary grades (public and private schools)	54
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	33.33
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	2
Denominator	Total number of schools	6
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.5	Percentage of students completing primary education	88.25
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	88.24786325
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	106.44
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	35820
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	44.6
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	50
Denominator	Total population of the city	11210
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	49.96
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	56
Denominator	Total population of the city	11210
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	15
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	

Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	1.16
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	130
Denominator	Total population of the city	11210
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	1.28
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	144
Denominator	Total population of the city	11210
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	0
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	0
Denominator	Total length of road network in the city	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	240.86
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	27
Denominator	Total population of the city	11210
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a	

	benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	14.81
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	4
Denominator	Total crimes recorded in the same year	27
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	#VALUE!
Denominator	Total population of the city	11210
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	0
Denominator	Total VAT/GST collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA

Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	20419
Denominator	Total labour force in the city	35233
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	880.825
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	0.02
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Computable** NA
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	368.42
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	4130000
Denominator	Total population of the city	11210
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	4.97
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	55670

Denominator	Total population of the city	11210
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	4220000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	Net Density	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	11210
Denominator	Area allocated for residential land use (in hectares)	NA
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**166.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	3829
Denominator	Total number of households in the city	2296
Unit	Percentage	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	4562
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**2883**
Description	Total number of sustained electrical interruptions in a year	2883
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	760
Denominator	Total energy consumption from all sources	12033022
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	37635.25
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	113160
Denominator	Total number of street light installations	203
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.23**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	12033022
Denominator	Total population of the city	11210
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	4.22
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	11210
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	Mode share of public transport	To be computed
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	0
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	36

Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	To be computed
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	Non-Computable
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	Extent of signal synchronisation	0
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	5

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	NA
Denominator	Total length of road network in the city	72
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	100
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	719
Denominator	Total number of public right-of-way areas in the city	719

Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	Data Unavailable
Denominator	Total number of households in the city	2296
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	84.3
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	0.945
Denominator	Total population of the city	11210
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	782
Denominator	Total number of samples tested for water quality	1516
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Quantum of water put into the distribution system (mld)	0.945
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	630
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	1066.67
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	64
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	6
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	80.79
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	2957
Denominator	Total number of properties in the city	3660
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	99.97
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with connection to waste water management systems	3659
Denominator	Total number of properties in the city	3660
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	1.1
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	36
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	81.13
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	2339

Denominator	Total number of households and establishments in the city	2883
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	100
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1200
Denominator	Total quantum of MSW generated in the city	1200
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	8.1
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2917
Denominator	Average MSW generated in the city (tons per month)	36000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	Concentration of SO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	Concentration of NO2 - air pollution	Non=Computable
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	Concentration of PM10 - air pollution	33.13
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	33.13
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	Level of noise pollution	To be computed
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	Quality of water in public surface water bodies	Non-Computable
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KOCHI

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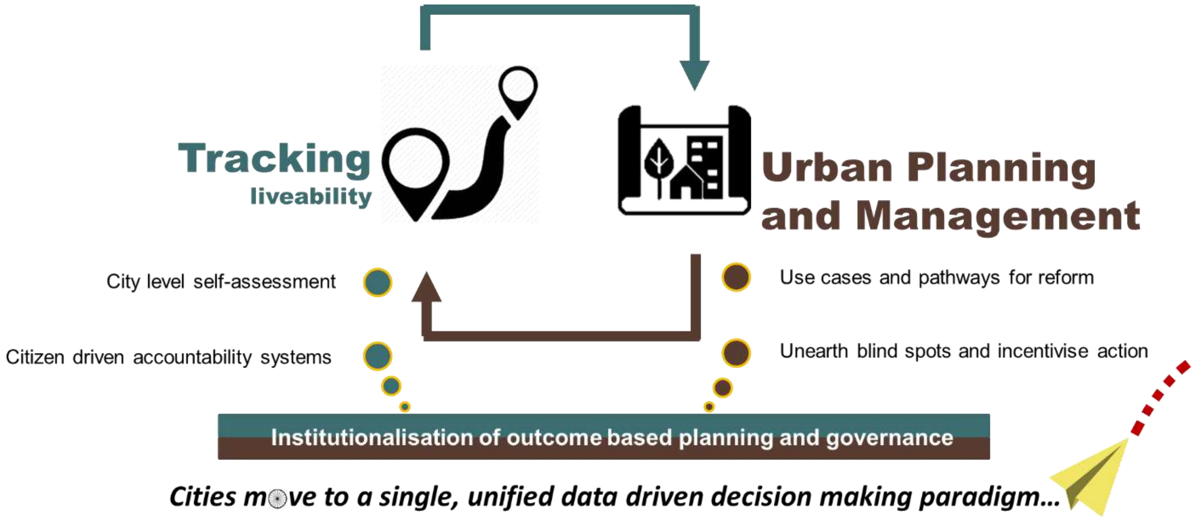
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

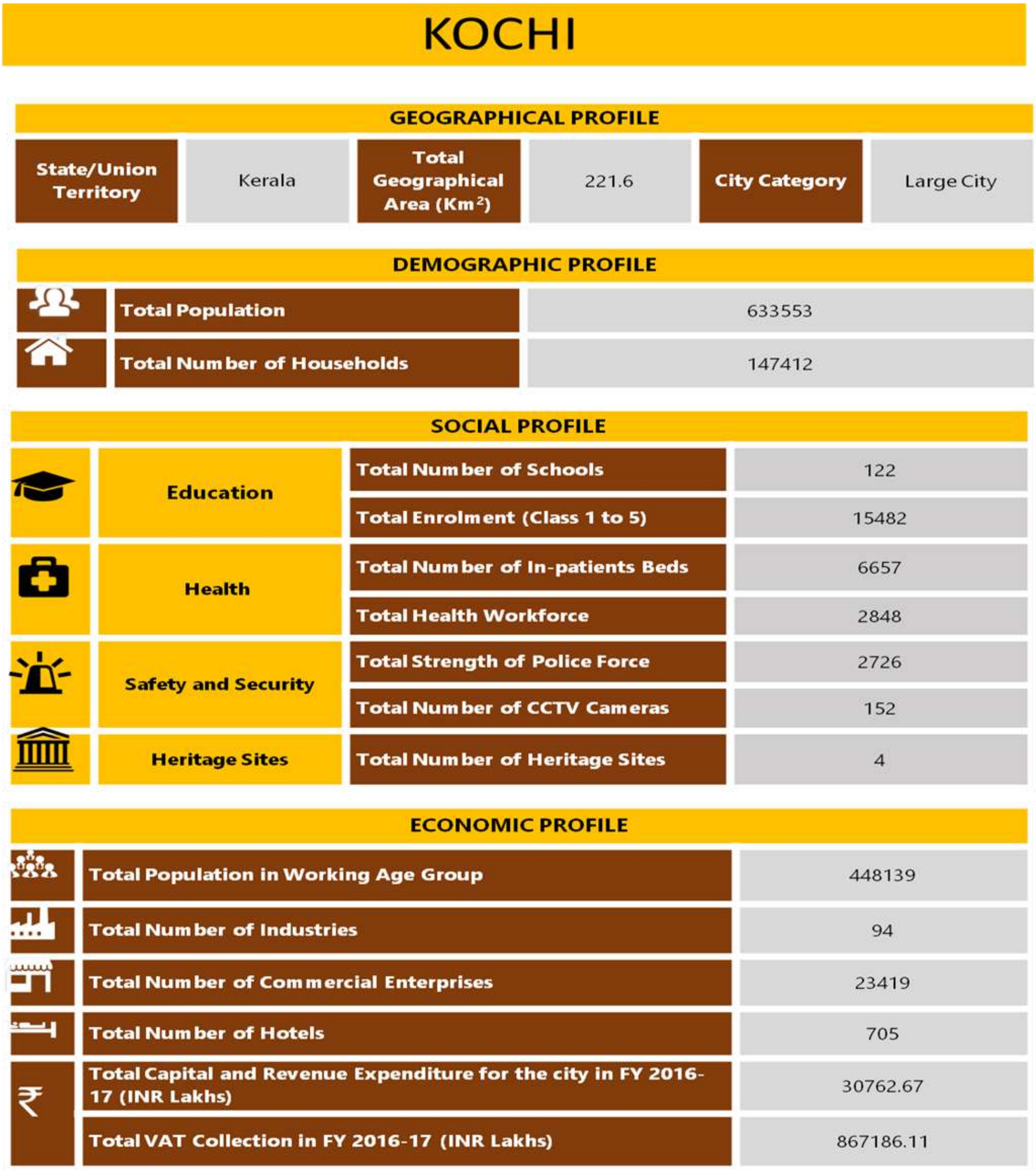
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KOCHI

GEOGRAPHICAL PROFILE

State/Union Territory	Kerala	**Total Geographical Area (Km²)**	221.6	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	633553
Total Number of Households	147412

SOCIAL PROFILE

Education	**Total Number of Schools**	122
	Total Enrolment (Class 1 to 5)	15482
Health	**Total Number of In-patients Beds**	6657
	Total Health Workforce	2848
Safety and Security	**Total Strength of Police Force**	2726
	Total Number of CCTV Cameras	152
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	448139
Total Number of Industries	94
Total Number of Commercial Enterprises	23419
Total Number of Hotels	705
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30762.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	867186.11

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	185
	Total Number of Water Connections	149030
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	..
	Total number of households in the city with access to community toilets in the city	1207
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	278
	Total number of households covered through door-to-door collection of solid waste	140000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	73
	Daily average quantum of waste water treated by STPs in the city (MLD)	30
Electricity	**Total number of authorized electrical connections in the city**	283657
	Total electricity supplied to the city (kWh)	694900000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	25447.84
Roads and Transport	**Total Length of Road Network in the City (Km)**	1135.733
	Total length of arterial and sub-arterial road network in the city (Km)	197.1882
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	29.455

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

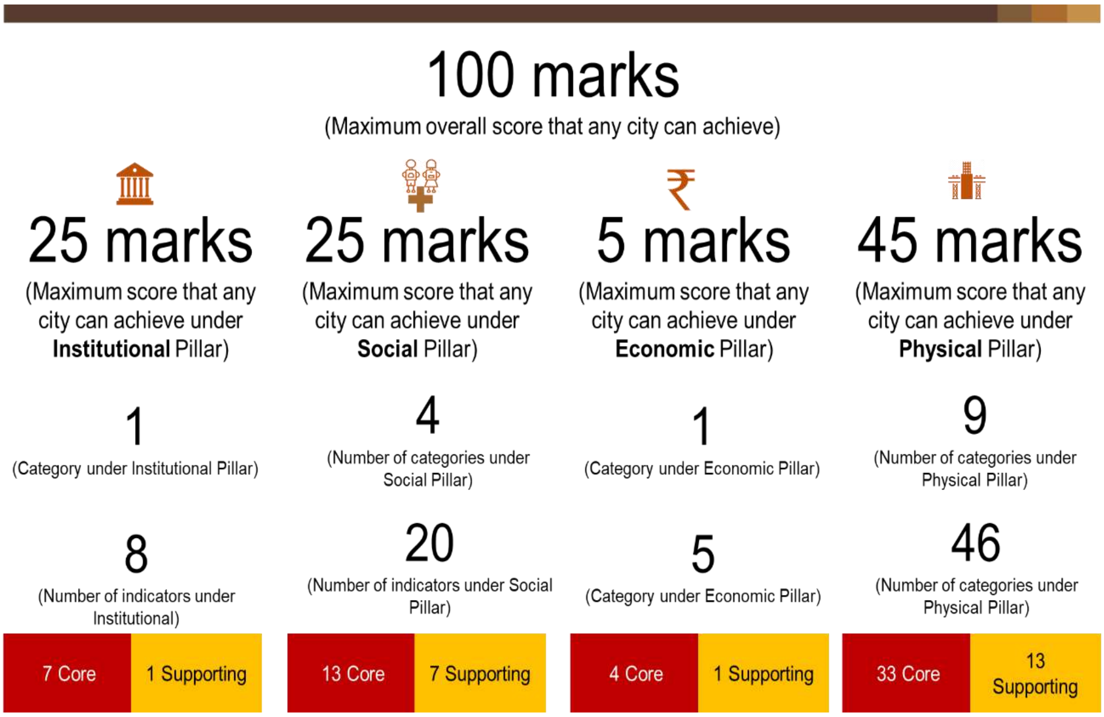
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Revenue Officer, Accounts Officer
Urban Local Body	For Park and Recreation Related Questions	Executive Engineer, Engineering Department
Urban Local Body	For Water Supply and Drainage related questions	Executive Engineer, P.H.Division, Kerala Water Authority, Thevara, Ernakulam (Separate Department not ULB)
Urban Local Body	For Heritage sites related data	Executive Engineer, Engineering Department
Urban Local Body	For Ecological sites related data	Executive Engineer, Engineering Department
Urban Local Body	For Housing related data	Manager, PMAY
Urban Local Body	For Building plan related data	Executive Engineer, Engineering Department
Urban Local Body	For Roads related data	Executive Engineer, Engineering Department
Urban Local Body	For Solid waste management related data	Health Officer
Urban Local Body	For IT services related data	Project Manager-TCS ***Not Direct staff of Kochi Corporation. All IT and Online services are done by TCS which is housed at Kochi Municipal Corporation.***
Urban Local Body	For Vendor committee related data	Manager, NULM
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	**Ward Sabha Details**-Superintendent, Planning cell **Offline Grievances**- Superintendent, General Section **Population Details**-Senior Clerk,

Designated data owners	Subcategories	Data owners at city level
		Census Department **Unemployment Data Source :(Not ULB)** 1.District Employment Officer, District Employment Office, Ernakulam 2. Divisional Employment Officer, Professional & Executive Exchange, Ernakulam **Online Service** Project Manager-TCS **Sewerage Services :** Environment Engineer under Engineering Department **Transport & City Mobility Plan Details** Kochi Smart City Mission
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Kerala State Pollution Control Board, Regional Office, Ernakulam
Development Authority	Building Infrastructure	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Construction planning	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Green Building	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Rain water harvesting	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Universal Design Principle	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Deputy Chief Engineer, Kerala State Electricity Board Ltd, Electrical Circle, Ernakulam
State Disaster management authority		District Disaster Management Authority, Civil Station, Kakkanad
State Education Department		District Education Officer, Ernakulam

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	District Medical Office (Health), Ernakulam
	Citizen Services	District Medical Office (Health), Ernakulam
	Disease Prevalence	District Medical Office (Health), Ernakulam
	Health Infrastructure	District Medical Office (Health), Ernakulam
State Renewable Energy Development Agency		ANERT, Kakkanad
State Sales / Commercial Taxes Department		1.Deputy Commissioner, Deputy Commissioner Office, Sales and Commercial Tax Department, Thevara, Ernakulam 2. Deputy Commissioner, Deputy Commissioner Office, Sales and Commercial Tax Department, Mattancherry, Ernakulam
Town and Country Planning Department	Land Use	Senior Town Planner, Town and Country Planning Department, Civil Station, Kakkanad
Traffic and Police Department		City Police Commissioner, Kochi City
Transport Authorities	Buses	Regional Transport Office, Civil Station, Kakkanad
	Registered Vehicles	Regional Transport Office, Civil Station, Kakkanad
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	Senior Superintendent, Regional Office, Water Transport, Ernakulam

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 36 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**1**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**4**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**2**
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**26**
Total	**36***

* The count of documents is based on first round of submission

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

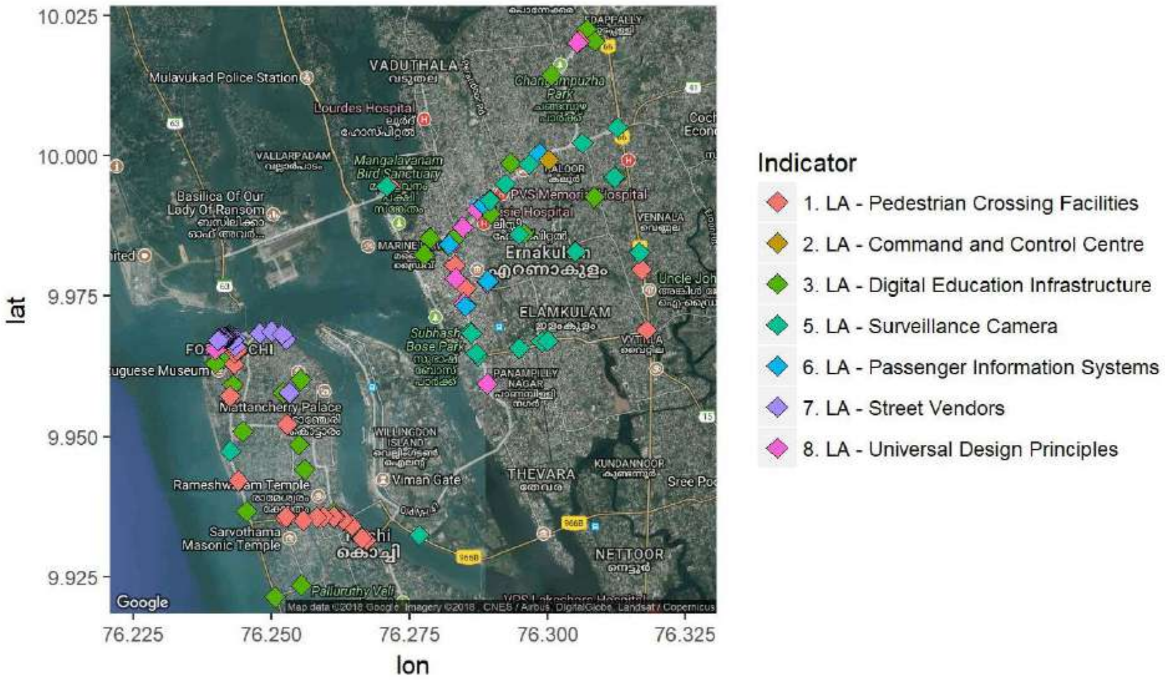
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


10.025
10.000
9.975
9.950
9.925
lat
76.225
76.250
76.275
76.300
76.325
lon
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**41.58**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.461538462
	1.1k Grievance redressal	0.5
	1.1l electricity	1
	1.1m Building plan	0.111111111
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.74**
Description		

Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.002945557
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	0.013179639
	1.3j electricity	0.036112276
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.4**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	1
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	0
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**91.71**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	10660.59
Denominator	Total demand raised for the year	11624.28
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**558.33**

Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	6700
Denominator	Total O&M cost for providing water supply services during the year	1200
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**45.82**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	43759.03
Denominator	Total expenditure (revenue and capital accounts) in the same year	95492.74
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	74
Denominator	Total number of wards	74
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**33.33**
Formula:	*Numerator / Denominator*	

Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	107.25
Denominator	Total budget of the ULB (capital and revenue)	30762.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**20**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	20
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**33.9**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	30473
Denominator	Total population in the age group of 6-14 years	89885

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**37.96**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	16709
Denominator	Total female population in the age group of 6-14 years	44022
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**19.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	15482
Denominator	Total number of teachers available for primary grades (public and private schools)	813
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**40.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	49
Denominator	Total number of schools	122
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**144.89**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	144.8881504
Numerator	Percentage	
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**251.16**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	26784948
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**105.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6657
Denominator	Total population of the city	633553
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**44.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2848
Denominator	Total population of the city	633553
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7198
Denominator	Total population of the city	633553

Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	112
Denominator	Total population of the city	633553
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**13.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	152
Denominator	Total length of road network in the city	1135.733
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**9871.63**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	62542
Denominator	Total population of the city	633553
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**1.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	829
Denominator	Total crimes recorded in the same year	62542

Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**395.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	2505
Denominator	Total population of the city	633553
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**8.5**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	67961.16
Denominator	Total VAT/GST collection during preceding year	7992.2495
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**10.75**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	272.85
Denominator	Total Professional Tax collection during preceding year	2536.99
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**24.18**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	990
Denominator	Number of construction permits during preceding year	40.94
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	75467
Denominator	Total labour force in the city	89885
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	2247.125
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**13.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	5840
Denominator	Total number of slum and EWS households in the city	447.95
Unit	Percentage	

Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	25447.84
Denominator	Total population of the city	633553
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**1.7**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1075378.8
Denominator	Total population of the city	633553
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**14.04**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	31111465

Denominator	Total area of the city (total area of all land uses)	221600000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	633553
Denominator	Area allocated for residential land use (in hectares)	56179273
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**146.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	216324
Denominator	Total number of households in the city	147412
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	283657
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**17000**
Description	Total number of sustained electrical interruptions in a	17000

	year	
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	124188
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	2003.855
Denominator	Total energy consumption from all sources	694900000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	6450
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	21716776
Denominator	Total number of street light installations	49873
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	295524.54
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	694900000
Denominator	Total population of the city	633553
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	13.638
Denominator	Total area of the city (sq.km)	221.6
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.25**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	789
Denominator	Total population of the city	633553
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	42
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	2
Denominator	Total length of road network in the city	1135.733
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**27.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	6
Denominator	Total number of major transport interchanges in the city	22
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.15
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.36**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	8
Denominator	Total number of major interchanges in the city	22

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	30
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	4
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.3**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	29.455
Denominator	Total length of road network in the city	2271.466
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**125.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	34
Denominator	Total number of junctions/ intersections on major roads in the city	27
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is**	**1.01**

	incorporated in public rights-of-way	
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	3
Denominator	Total number of public right-of-way areas in the city	297
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**88.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	130000
Denominator	Total number of households in the city	147412
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**292**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	185
Denominator	Total population of the city	633553
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	185
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**102.91**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	153364
Denominator	Total number of water connections in the city	149030
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1207
Denominator	Total number of properties in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	7200
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**6.85**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	5
Denominator	Total waste water generated in the city per day	73
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	5
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**44.02**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	500
Denominator	Total length of road network in the city	1135.733
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**95.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	163419
Denominator	Total number of households and establishments in the city	170831
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	278
Denominator	Total quantum of MSW generated in the city	278
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	16680
Denominator	Average MSW generated in the city (tons per month)	8340
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2.53**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2.53
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**13.62**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	13.62

Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**50.89**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	50.886
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	480
Denominator	Total number of samples tested	480
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KOHIMA

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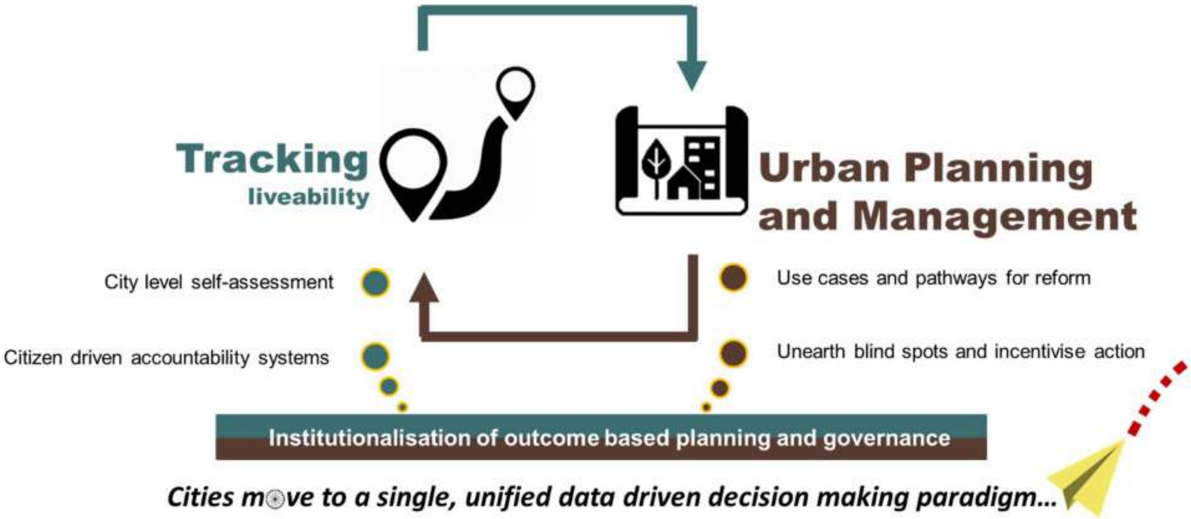
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

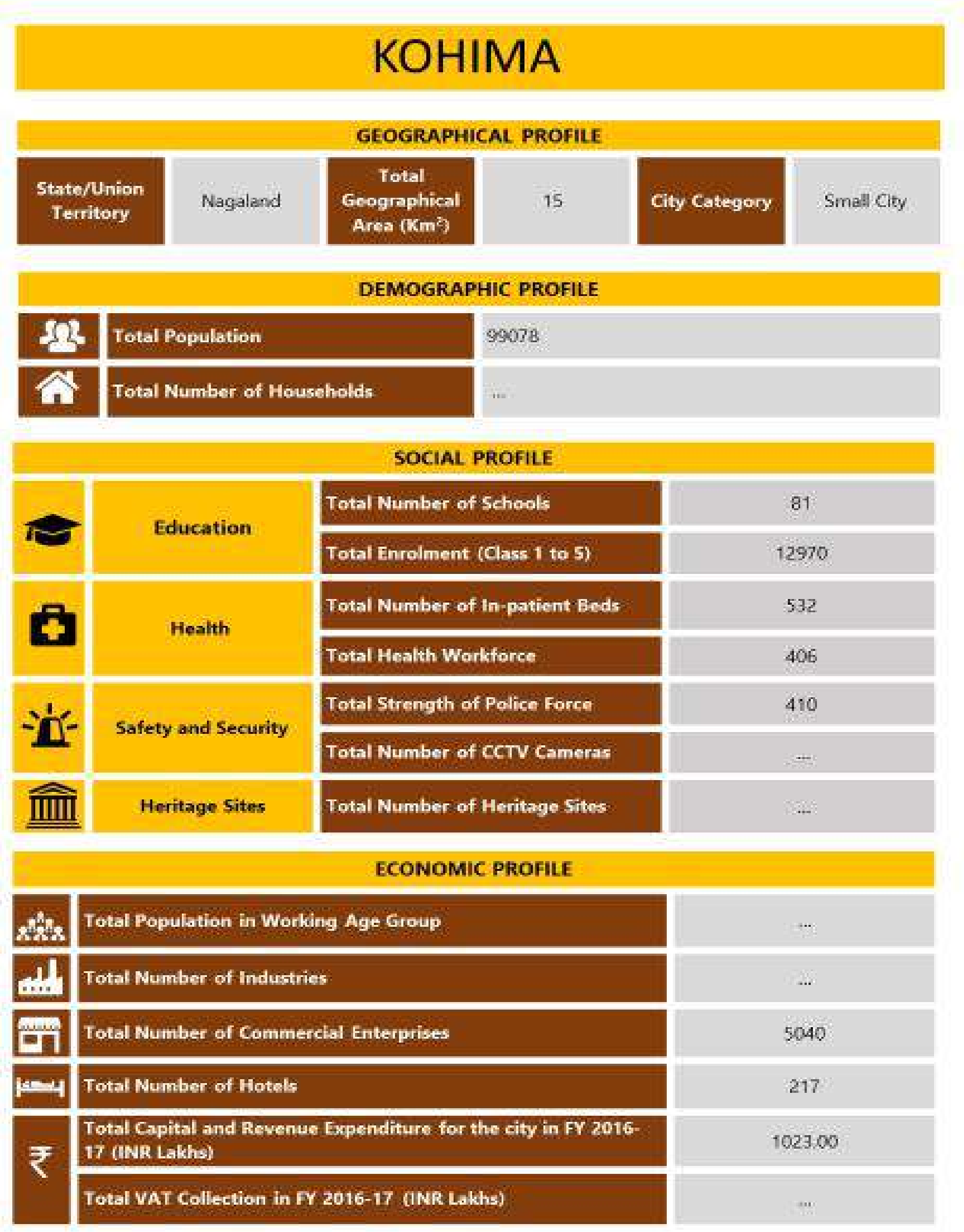

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KOHIMA

GEOGRAPHICAL PROFILE

State/Union Territory	Nagaland	Total Geographical Area (Km^2)	15	City Category	Small City

DEMOGRAPHIC PROFILE

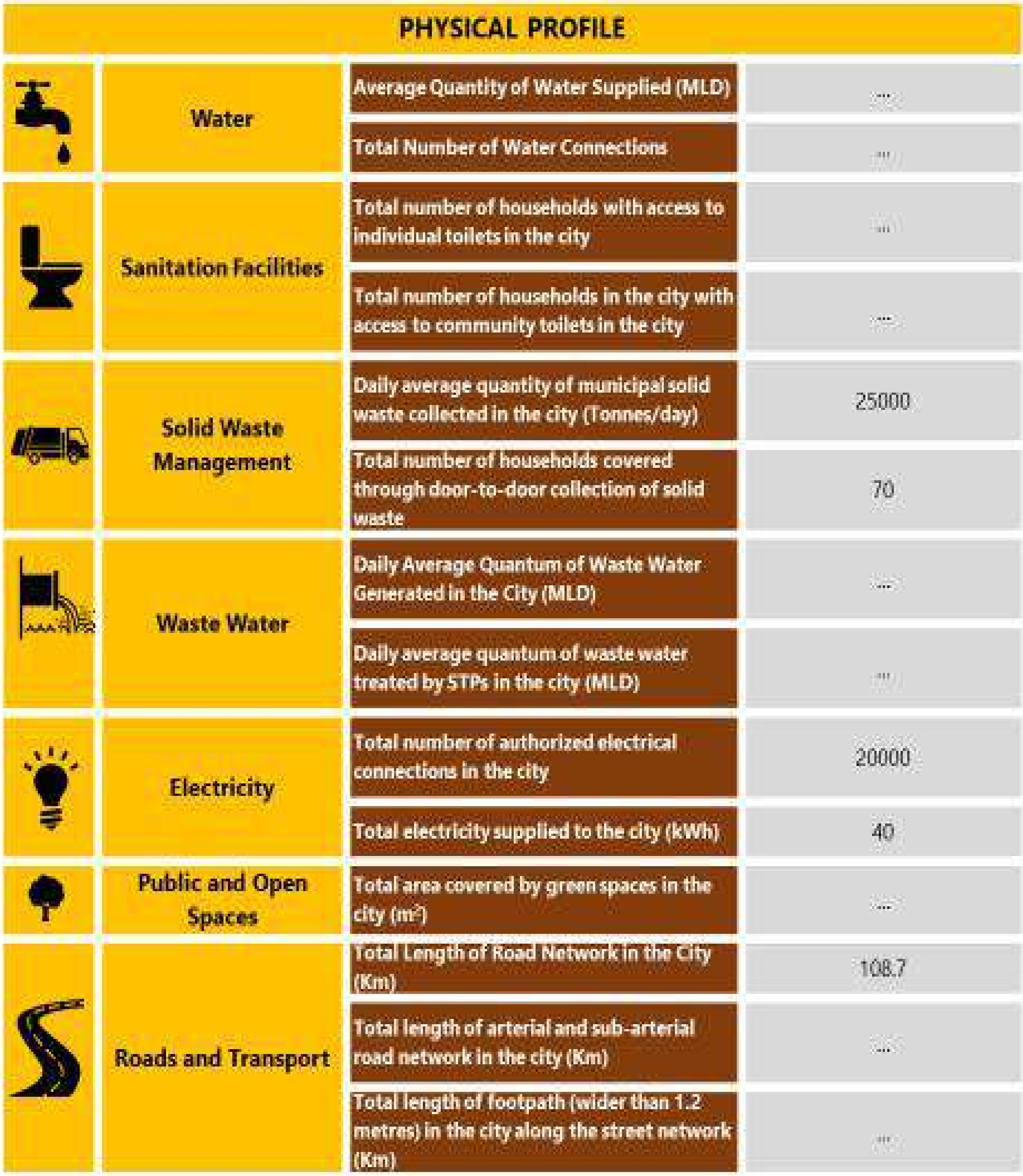
Total Population	99078
Total Number of Households	...

SOCIAL PROFILE

Education	Total Number of Schools	81
	Total Enrolment (Class 1 to 5)	12970
Health	Total Number of In-patient Beds	532
	Total Health Workforce	406
Safety and Security	Total Strength of Police Force	410
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	5040
Total Number of Hotels	217
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1023.00
Total VAT Collection in FY 2016-17 (INR Lakhs)	...



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	...
	Total Number of Water Connections	...
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	25000
	Total number of households covered through door-to-door collection of solid waste	70
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	20000
	Total electricity supplied to the city (kWh)	40
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	108.7
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration

Pillars of Comprehensive Development	Category	Indicators
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and**	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms

Pillars of Comprehensive Development	Category	Indicators
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

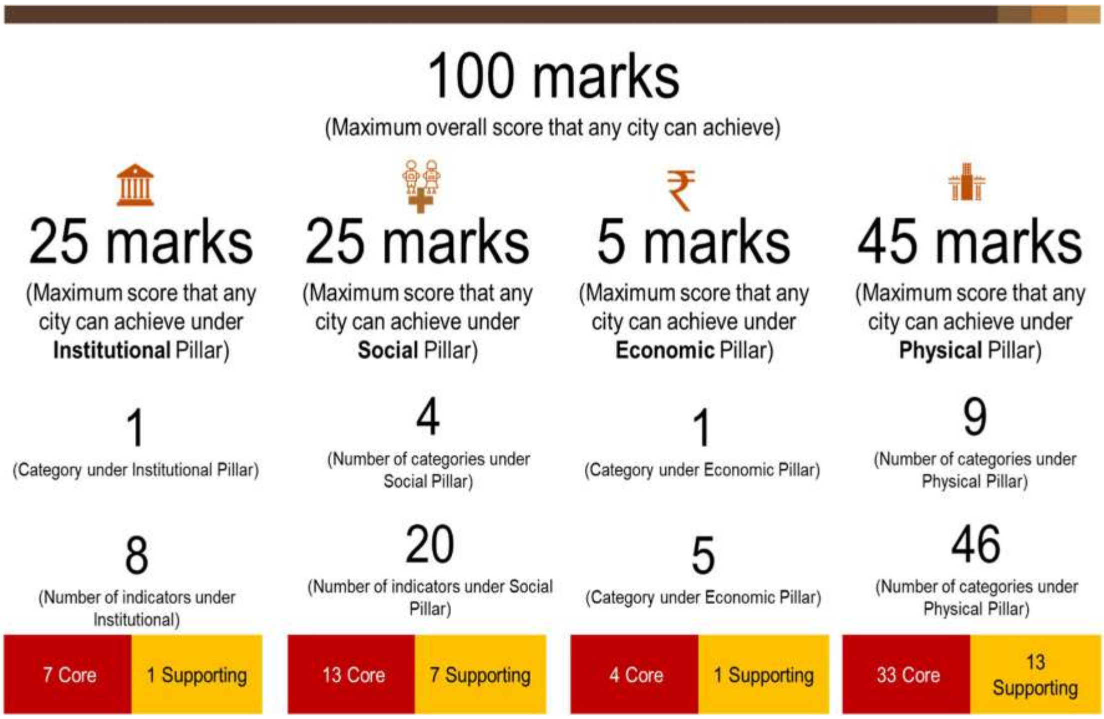
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Council
Urban Local Body	For Park and Recreation Related Questions	
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engineering
Urban Local Body	For Heritage sites related data	Tourism
Urban Local Body	For Ecological sites related data	Tourism
Urban Local Body	For Housing related data	Department of Housing
Urban Local Body	For Building plan related data	
Urban Local Body	For Roads related data	Public Works Department
Urban Local Body	For Solid waste management related data	Municipal Council
Urban Local Body	For IT services related data	Department of Information and Technology
Urban Local Body	For Vendor committee related data	Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	
	Rain water harvesting	
	Universal Design Principle	
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Department of Power
State Disaster management authority	Disaster management	Disaster management
State Education Department		
State Health Department	Health care professionals	Department of Health and Family Welfare
State Health Department	Citizen Services	Department of Health and Family Welfare
State Health Department	Disease Prevalence	Department of Health and Family Welfare
State Health Department	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Department of Taxes
Town and Country Planning Department	Land Use	
Traffic and Police Department		
Transport Authorities	Buses	Nagaland State Transport
Transport Authorities	Registered Vehicles	Nagaland State Transport
Transport Authorities	Sub urban rail transport	NA
Transport Authorities	Mono Rail Authority	NA
Transport Authorities	Tramways	NA
Transport Authorities	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 9 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register,

signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

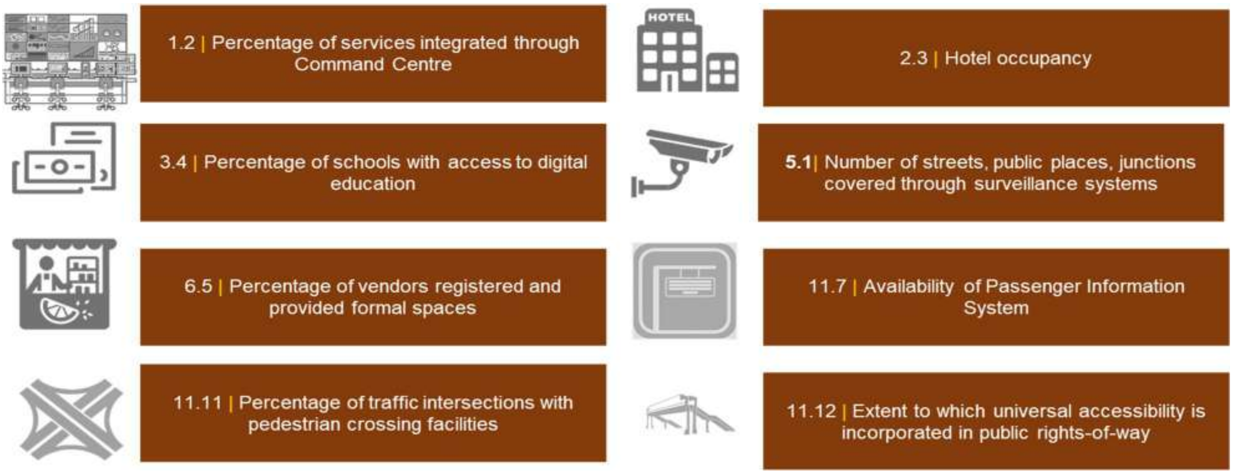
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	2
Total	9

* The count of documents is based on first round of submission.

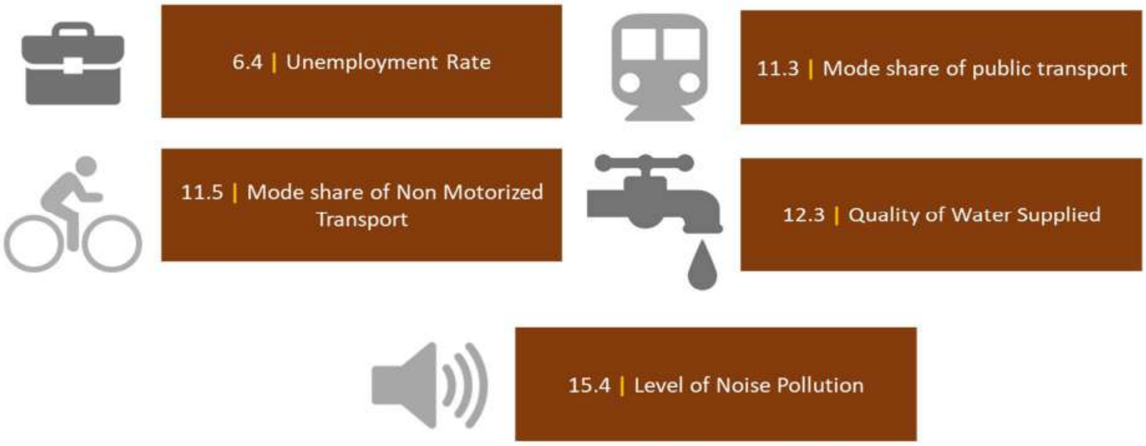
4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

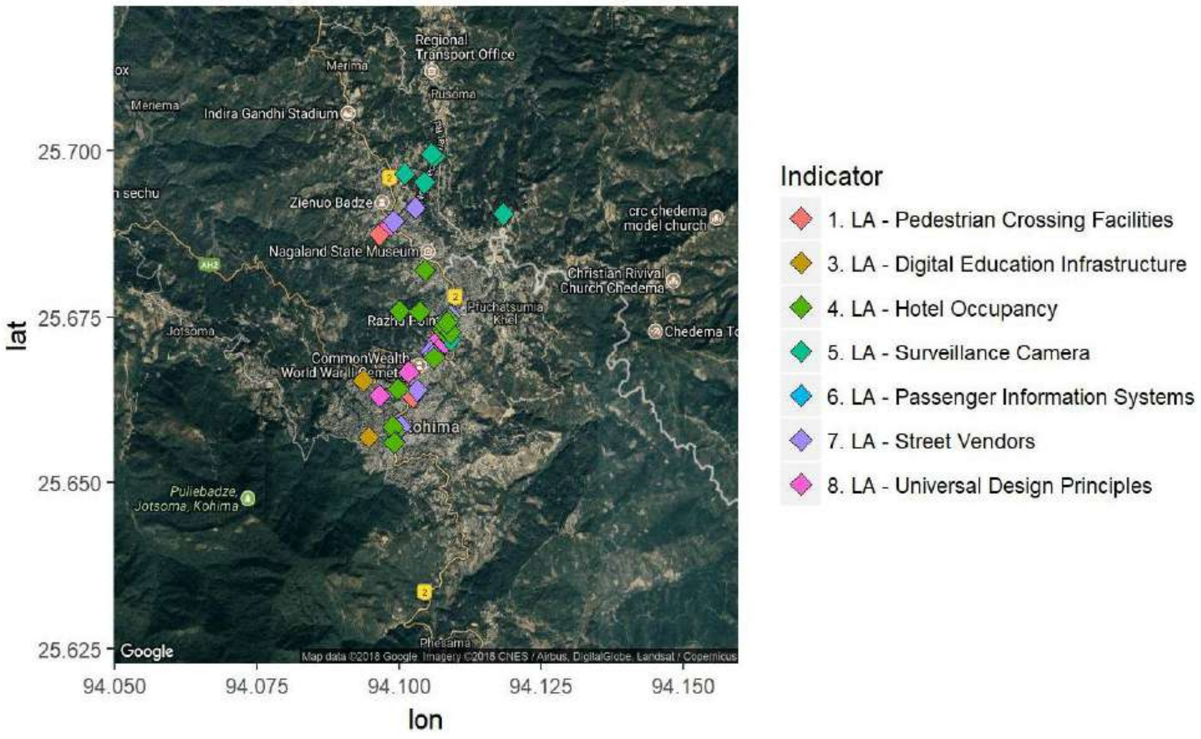

1.2 | Percentage of services integrated through Command Centre
HOTEL
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Regional Transport Office
Merima
Rusoma
Meriema
Indira Gandhi Stadium
sechu
Zienuo Badze
Nagaland State Museum
crc chedema model church
Christian Rivival Church Chedema
Phuchatsumia Khel
Chedema
Jotsoma
CommonWealth World War II Cemetery
Kohima
Puliebadze, Jotsoma, Kohima
Phesama
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
25.700
25.675
25.650
25.625
lat
94.050
94.075
94.100
94.125
94.150
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**7**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.076923077
	1.1k Grievance redressal	0
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	

Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	NA
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**141.4**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	119.79
Denominator	Total O&M cost for providing water supply services during the year	84.72
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	144121829
Denominator	Total expenditure (revenue and capital accounts) in the same year	288243658
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	19
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**3**
Description	Average Occupancy rate of Hotels	3

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	102300000
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**82.59**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	21363
Denominator	Total population in the age group of 6-14 years	25865
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**84.06**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	10802
Denominator	Total female population in the age group of 6-14 years	12850
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**19.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	12970
Denominator	Total number of teachers available for primary grades (public and private schools)	649
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**98.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	80
Denominator	Total number of schools	81
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**112.58**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	112.5811688
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.6	**Percentage of students completing secondary education**	**98.3** 7753368
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**53.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	532
Denominator	Total population of the city	99039
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**40.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	406
Denominator	Total population of the city	99039
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	

Indicator No: 4.4	**Period prevalence of water borne diseases**	**3.8**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3765
Denominator	Total population of the city	99039
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	15
Denominator	Total population of the city	99039
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	Data Unavailable
Denominator	Total length of road network in the city	108.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**12.12**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	12

Denominator	Total population of the city	99039
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	24
Denominator	Total crimes recorded in the same year	12
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**7.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	7
Denominator	Total population of the city	99039
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	82583
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	2064.575
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	13.47
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	99039
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**15.35**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1520000
Denominator	Total population of the city	99039
Unit	Square metres (sq.m.)	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**40.93**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	6140000
Denominator	Total area of the city (total area of all land uses)	15000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	99039
Denominator	Area allocated for residential land use (in hectares)	41290000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	15000
Denominator	Total number of households in the city	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	20000
Denominator	Total number of electricity connections in the city	20000
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**250**
Description	Total number of sustained electrical interruptions in a year	250
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	60
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	Data Unavailable
Denominator	Total energy consumption from all sources	40
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	Data Unavailable
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	40
Denominator	Total population of the city	99039

Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	11
Denominator	Total area of the city (sq.km)	15
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.16**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	115
Denominator	Total population of the city	99039
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	108.7
Unit	Percentage	

Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronization**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

		Unavailable
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	3
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	217.4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	1
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	552
Denominator	Total number of households in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	Data Unavailable
Denominator	Total population of the city	99039
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	2
Denominator	Total number of samples tested for water quality	10

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	Data Unavailable
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	Data Unavailable
Denominator	Total number of water connections in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	Data Unavailable
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	108.7
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**1.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	70
Denominator	Total number of households and establishments in the city	5040
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**35714.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	25000
Denominator	Total quantum of MSW generated in the city	70
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	750000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**0.19**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	0.19
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**4.58**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	4.58
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**114**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	114
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**55.88**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	38
Denominator	Total number of samples tested	68
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

KOLKATA

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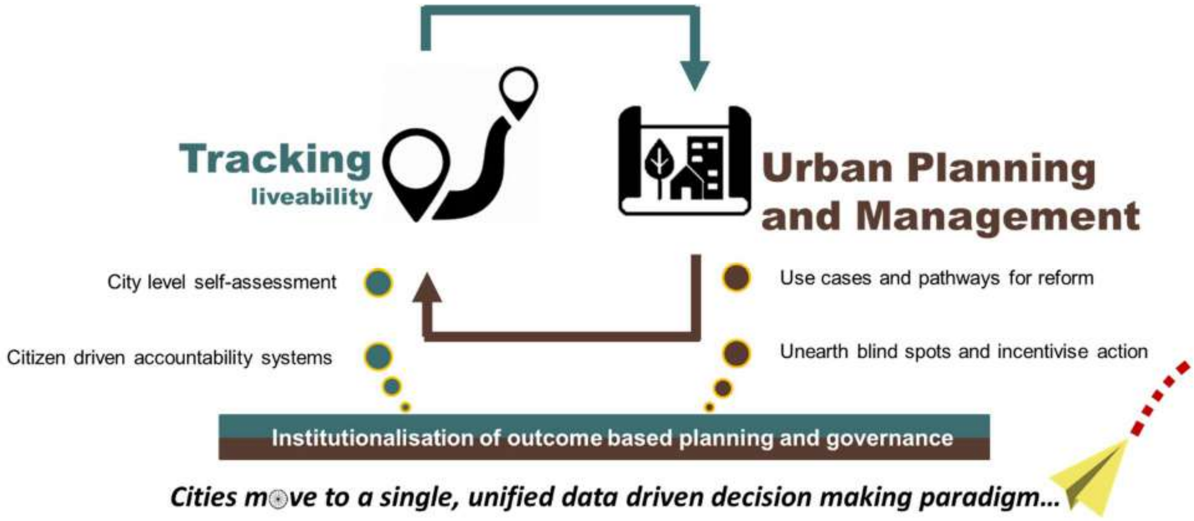
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities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Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed

Pillars of Comprehensive Development	Category	Indicators
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water

Pillars of Comprehensive Development	Category	Indicators
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

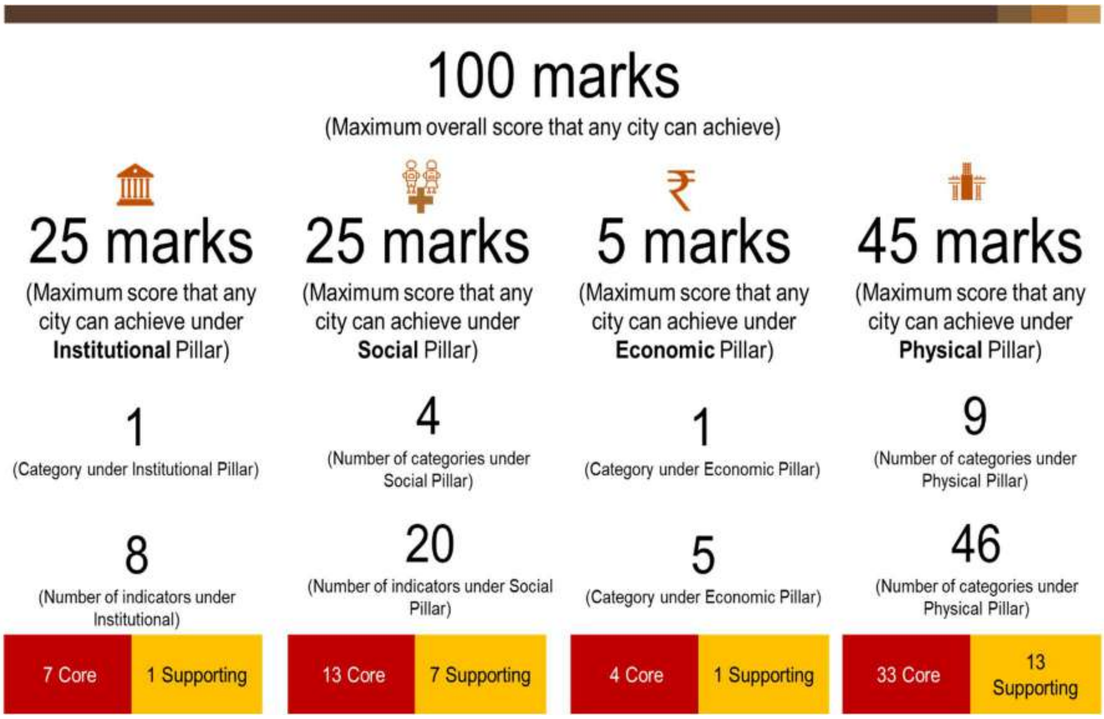
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks

awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

Date	Departments	Key Discussions
07 March 2018 09 March 2018 12 March 2018 13 March 2018	PA to Principal secretary (UD) Joint Secretary Urban Development Department Government of West Bengal	State Workshop schedule
13 March 2018	Additional Director, State Urban Development Agency, West Bengal	State Workshop for liveability Assessment City login
15 March 2018 16 March 2018	PA to Chief Secretary, Office of Chief Secretary	Permission for state workshop Appointing SUDA as nodal agency for liveability assessment
19 March 2018	Director, SUDA, West Bengal	Discussion on whether SUDA has got any intimation from PS/CS office to act as nodal agency
21 March 2018	Principal Secretary (UD) office	Understand the scope of assessment process in WB
22 March 2018	Principal Secretary (UD) Director, SUDA Chief Manager, Planning and Monitoring (SUDA)	Schedule meeting to discuss the Workshop and subsequent requirements for the Liveability Assessment study
23 March 2018	Director, Additional Director and Chief Manager, SUDA	SUDA officials shared that March month was not convenient to organise workshop and 4th April 2018 was scheduled as attentive date for workshop. Files forwarded to Principal Secretary to approve list of participants

Date	Departments	Key Discussions
26 March 2018 27 March 2018 28 March 2018	Director, Additional Director and Chief Manager, SUDA	Follow up to know the Progress on workshop date and assessment process
29 March 2018	Director, SUDA	Inclusion of New Town Kolkata in assessment process
30 March 2018 31 March 2018 2 April 2018	SUDA office	Follow up to initiate assessment process
3 April 2018 (From Consortium Ms. Sujaya Rathi travelled to Kolkata to discuss on liveability assessment process)	Chief Manager, SUDA	Brief note on liveability index was faxed to CS office to expedite the process
4 April 2018 5 April 2018	CS Office , WB PS (UD) office, WB	Follow up to initiate assessment process
6 April 2018	PS Office, WB	SUDA file was marked to Minister of State, Mr Firhad Hakim
7 April 2018 to 15 April 2018	PS (UD) office and SUDA, West Bengal	Follow up to initiate assessment process

State level workshop was necessary to make cities understand the importance and process of liveability assessment. City level assessments didn't happen as State level workshop could not be conducted despite several meetings and follow ups with Urban development department and SUDA at state level.

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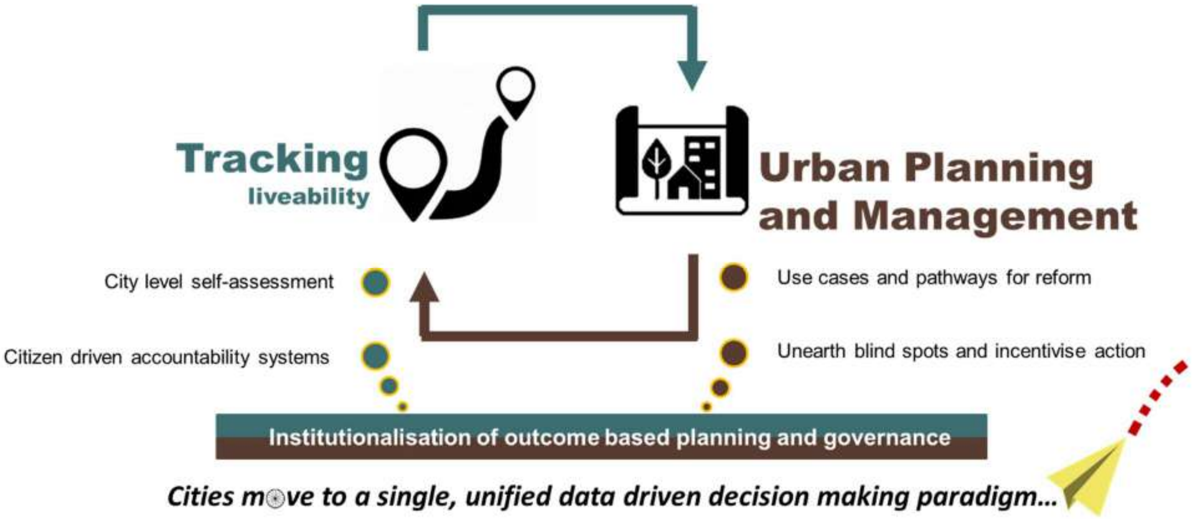
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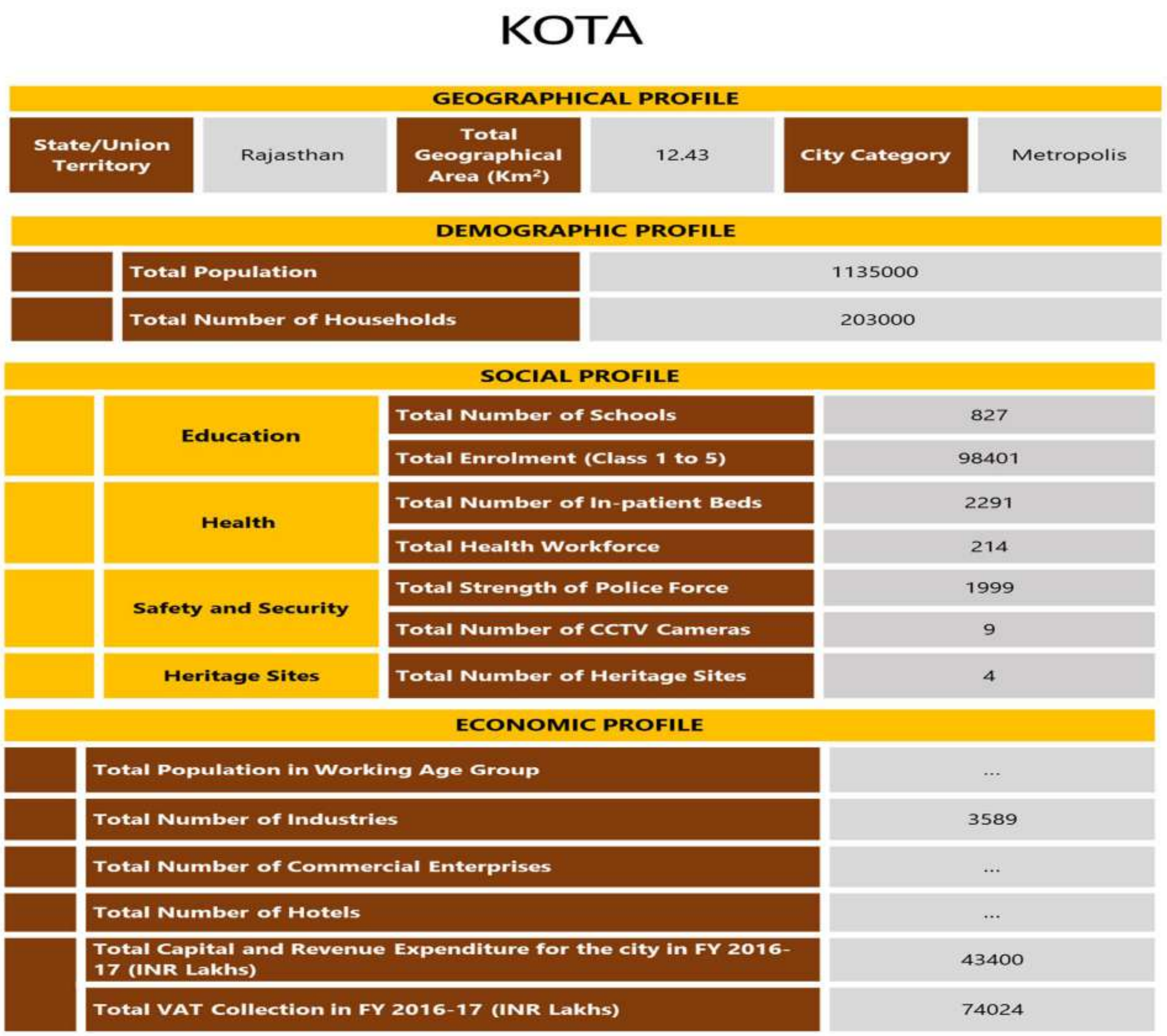
2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KOTA

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	Total Geographical Area (Km²)	12.43	City Category	Metropolis

DEMOGRAPHIC PROFILE

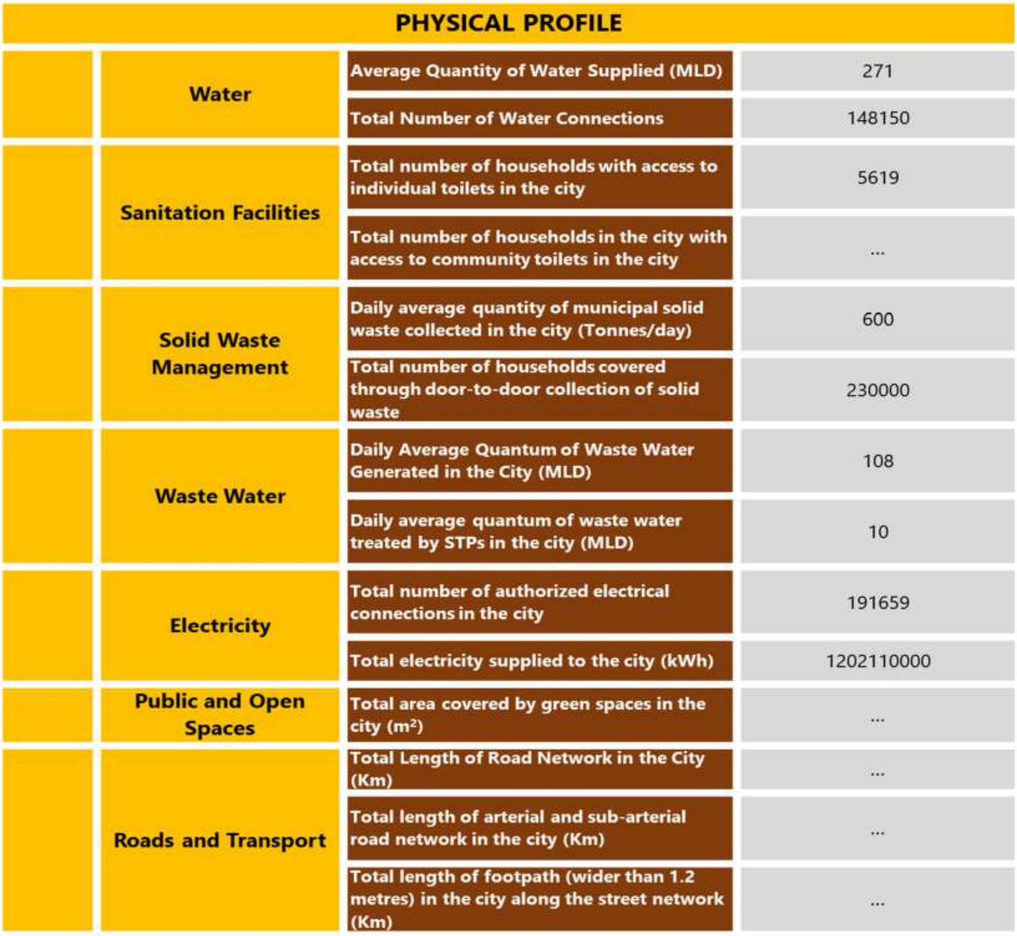
Total Population	1135000
Total Number of Households	203000

SOCIAL PROFILE

Education	Total Number of Schools	827
	Total Enrolment (Class 1 to 5)	98401
Health	Total Number of In-patient Beds	2291
	Total Health Workforce	214
Safety and Security	Total Strength of Police Force	1999
	Total Number of CCTV Cameras	9
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	3589
Total Number of Commercial Enterprises	...
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	43400
Total VAT Collection in FY 2016-17 (INR Lakhs)	74024



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	271
		Total Number of Water Connections	148150
	Sanitation Facilities	Total number of households with access to individual toilets in the city	5619
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	600
		Total number of households covered through door-to-door collection of solid waste	230000
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	108
		Daily average quantum of waste water treated by STPs in the city (MLD)	10
	Electricity	Total number of authorized electrical connections in the city	191659
		Total electricity supplied to the city (kWh)	1202110000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
	Roads and Transport	Total Length of Road Network in the City (Km)	...
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
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		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
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		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
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		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
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		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
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		10.9 Total energy consumption per capita
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		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
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		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
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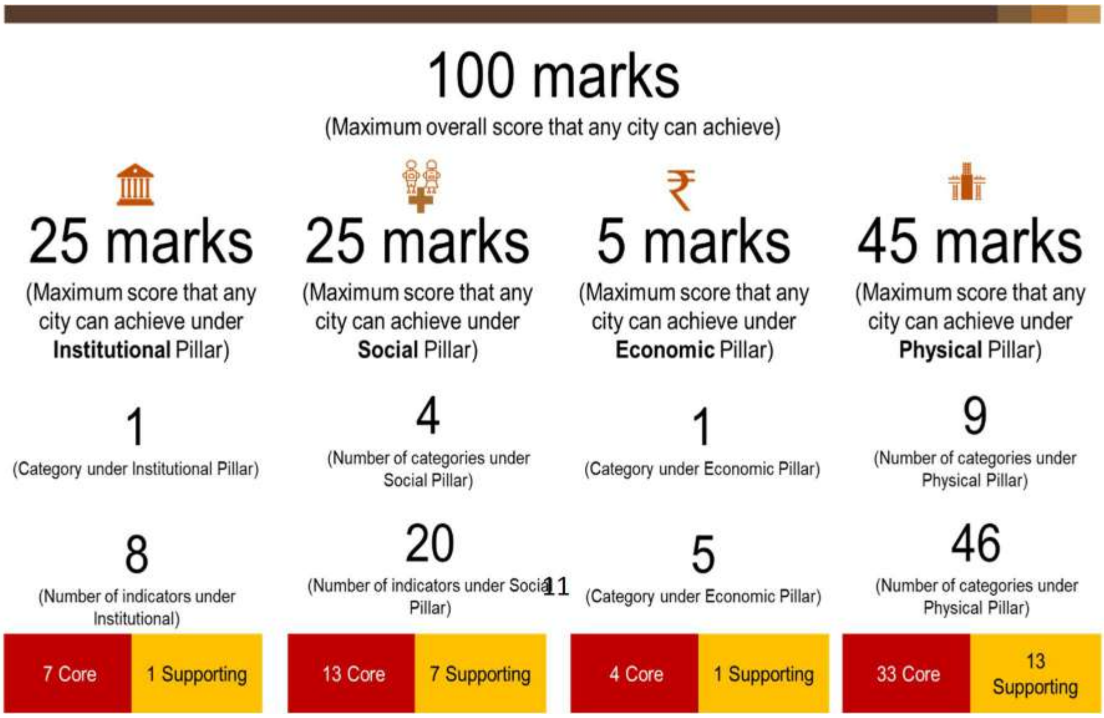
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account department
Urban Local Body	For Park and Recreation Related Questions	Chief Medical And Health Officer
Urban Local Body	For Water Supply and Drainage related questions	Public Health and Engineering Department
Urban Local Body	For Heritage sites related data	Urban Improvement Trust
Urban Local Body	For Ecological sites related data	Tourism department
Urban Local Body	For Housing related data	Town Plan Department
Urban Local Body	For Building plan related data	Town Plan Department
Urban Local Body	For Roads related data	Regional Transport Office
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	NO
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Town Plan Department
	Construction planning	Town Plan Department
	Green Building	Urban Improvement Trust

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Urban Local Body
	Universal Design Principle	Urban Local Body
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	KDEL department (JVVNL)
State Disaster management authority		Fire brigade
State Education Department		District Education Officer
State Health Department	Health care professionals	Chief Medical And Health Officer
	Citizen Services	Chief Medical And Health Officer
	Disease Prevalence	Chief Medical And Health Officer
	Health Infrastructure	Chief Medical And Health Officer
State Renewable Energy Development Agency		Rajasthan Renewable energy corporation
State Sales / Commercial Taxes Department		Office Joint Commissioner State Commissioner of commerce, Kota
Town and Country Planning Department	Land Use	Town Plan Department
Traffic and Police Department		City SP
Transport Authorities	Buses	Central Bus Stand
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 21 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**3**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**12**
Total	**21***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

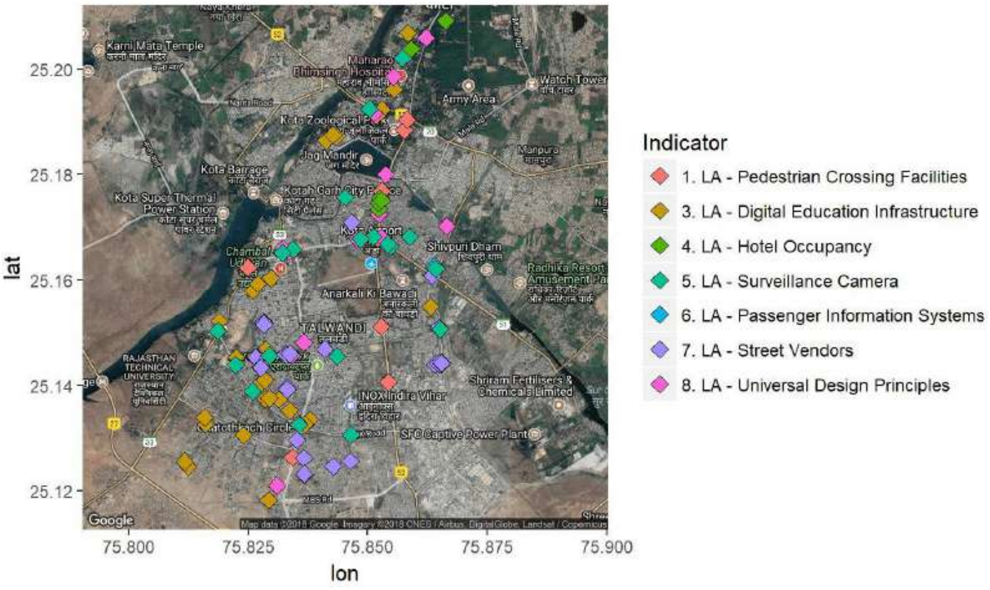
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
lon
25.20
25.18
25.16
25.14
25.12
75.800
75.825
75.850
75.875
75.900
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title

Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**53.52**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.111111111

Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**19.05**
Description	Services integrated through an integrated or a singular operations command centre	4
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**5.89**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.058935401
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0

	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	NA
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**918.39**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2746
Denominator	Total O&M cost for providing water supply services during the year	299
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**49.23**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	61215
Denominator	Total expenditure (revenue and capital accounts) in the same year	124342
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	65

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.82**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	355
Denominator	Total budget of the ULB (capital and revenue)	43400
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**2**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	2
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**82.37**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	151766
Denominator	Total population in the age group of 6-14 years	184252
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**60.73**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	51826
Denominator	Total female population in the age group of 6-14 years	85340
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**23.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	98401
Denominator	Total number of teachers available for primary grades (public and private schools)	4153
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**16.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	133
Denominator	Total number of schools	827

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**914.72**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	914.7229836
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**98.53**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	309723912
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**22.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2291
Denominator	Total population of the city	1001694
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**2.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	214
Denominator	Total population of the city	1001694
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	

Indicator No: 4.4	**Period prevalence of water borne diseases**	**9.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	93484
Denominator	Total population of the city	1001694
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1733
Denominator	Total population of the city	1001694
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	9
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**783.77**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7851
Denominator	Total population of the city	1001694
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	930
Denominator	Total crimes recorded in the same year	7851
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**9.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	93
Denominator	Total population of the city	1001694
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**10.15**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	6820
Denominator	Total VAT/GST collection during preceding year	672.04
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	6.21
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	184252
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	4606.3
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**3.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	3554
Denominator	Total number of slum and EWS households in the city	1081.43

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	1001694
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	1001694
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	12436000000

Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1001694
Denominator	Area allocated for residential land use (in hectares)	123850472
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**80.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	163362
Denominator	Total number of households in the city	203000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**15.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	30471
Denominator	Total number of electricity connections in the city	191659
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1651**
Description	Total number of sustained electrical interruptions in a year	1651
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	97
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1000
Denominator	Total energy consumption from all sources	1202110000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	8430
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	Data Unavailable

Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1202110000
Denominator	Total population of the city	1001694
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	787
Denominator	Total area of the city (sq.km)	12436
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.77**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	769
Denominator	Total population of the city	1001694
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	20
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data Unavailable

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	3
Denominator	Total number of signalised intersections in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**30**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	3
Denominator	Total number of public right-of-way areas in the city	10
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**68.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	139547
Denominator	Total number of households in the city	203000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**270.54**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	271
Denominator	Total population of the city	1001694
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	9223
Denominator	Total number of samples tested for water quality	9266
Unit	Percentage	
Benchmark	100%	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	NA
Denominator	Quantum of water put into the distribution system (mld)	271
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	148150
Denominator	Total number of water connections in the city	148150
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	637
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	5619
Denominator	Total number of properties in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	10000
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**18.52**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	20
Denominator	Total waste water generated in the city per day	108
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	10
Denominator	Total waste water received at treatment plants per day	10
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**113.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	230000
Denominator	Total number of households and establishments in the city	203000
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	600
Denominator	Total quantum of MSW generated in the city	600
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**10**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1800
Denominator	Average MSW generated in the city (tons per month)	18000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**27**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	27
Unit	µg/m3	

Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**130**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	130
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	26
Denominator	Total number of noise samples	26
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	40
Denominator	Total number of samples tested	40
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

LUCKNOW

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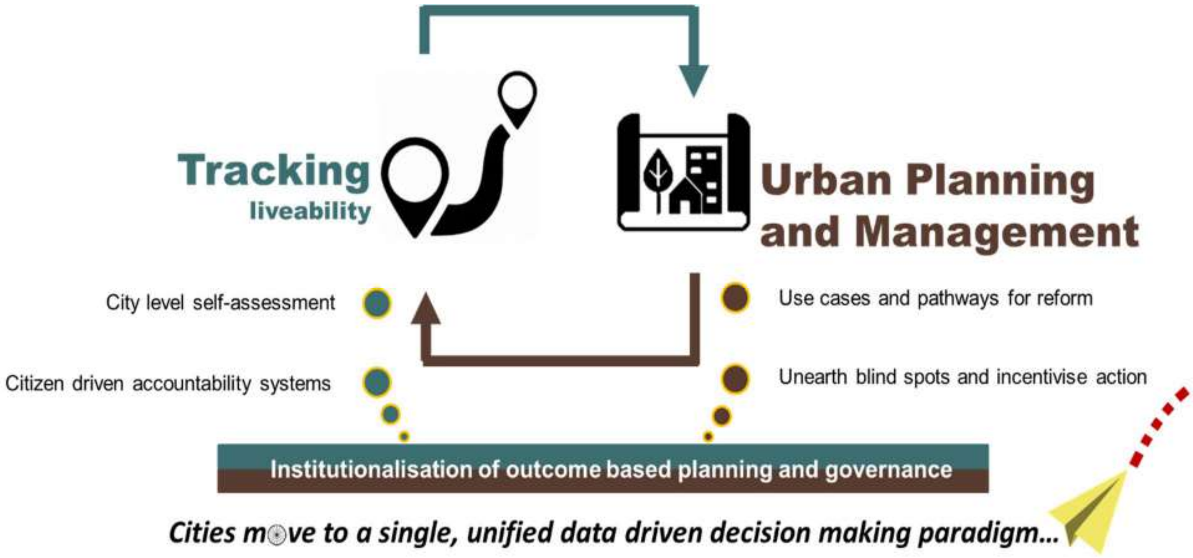
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

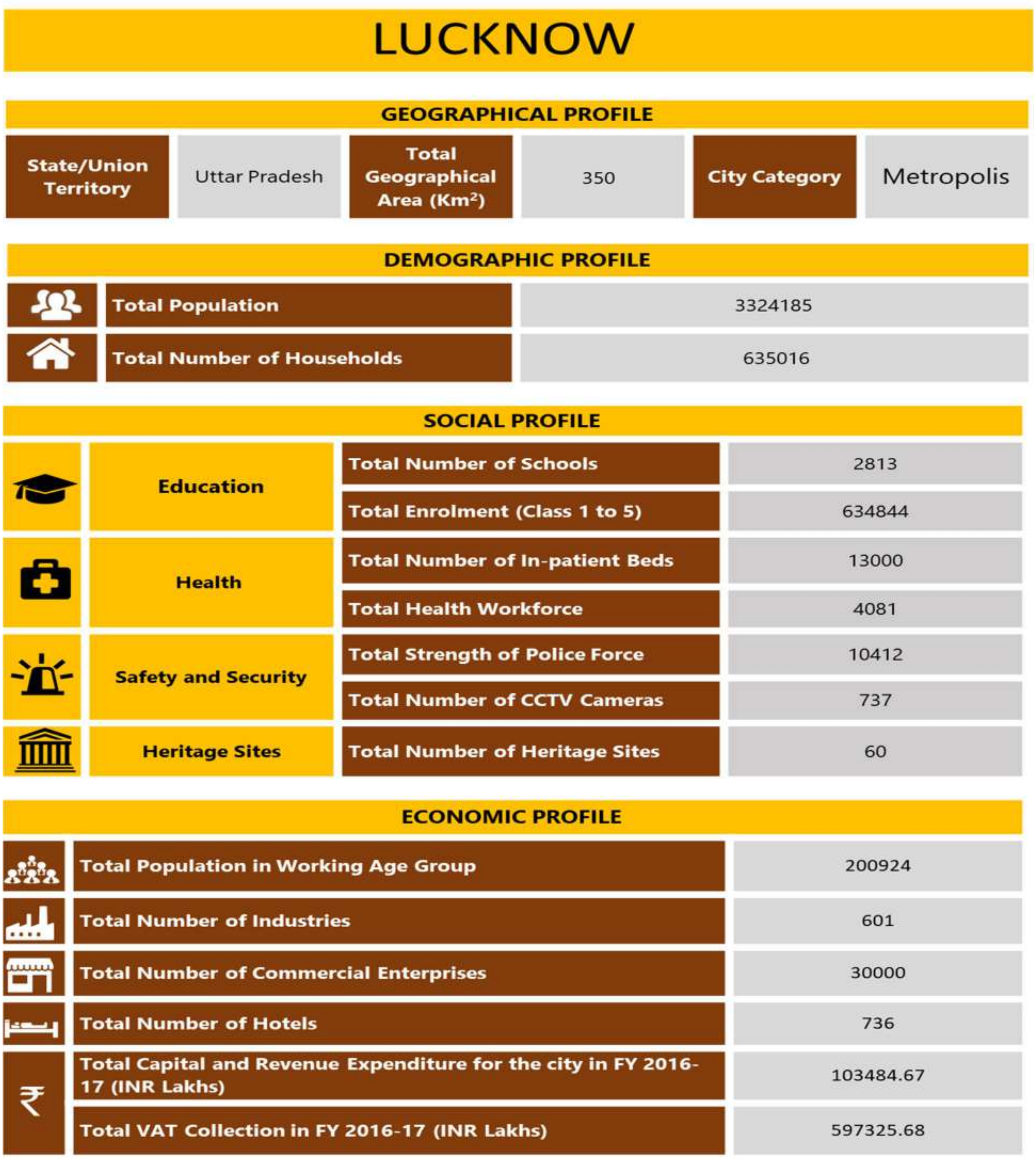
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



LUCKNOW

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	350	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	3324185
Total Number of Households	635016

SOCIAL PROFILE

Education	Total Number of Schools	2813
	Total Enrolment (Class 1 to 5)	634844
Health	Total Number of In-patient Beds	13000
	Total Health Workforce	4081
Safety and Security	Total Strength of Police Force	10412
	Total Number of CCTV Cameras	737
Heritage Sites	Total Number of Heritage Sites	60

ECONOMIC PROFILE

Total Population in Working Age Group	200924
Total Number of Industries	601
Total Number of Commercial Enterprises	30000
Total Number of Hotels	736
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	103484.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	597325.68

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	691
	Total Number of Water Connections	374141
Sanitation Facilities	Total number of households with access to individual toilets in the city	572784
	Total number of households in the city with access to community toilets in the city	15240
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	868
	Total number of households covered through door-to-door collection of solid waste	576719
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	720
	Daily average quantum of waste water treated by STPs in the city (MLD)	401
Electricity	Total number of authorized electrical connections in the city	794709
	Total electricity supplied to the city (kWh)	6170479000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	5995103.69
Roads and Transport	Total Length of Road Network in the City (Km)	3700.26
	Total length of arterial and sub-arterial road network in the city (Km)	3700.26
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	351

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

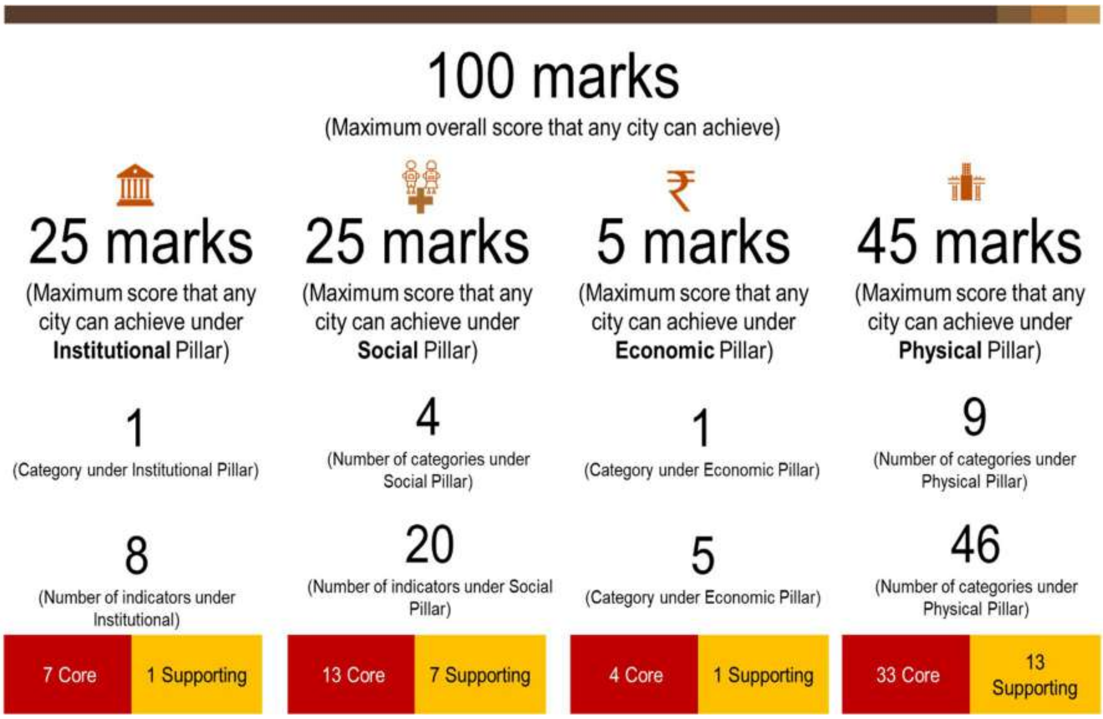
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MFO, Lucknow Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Garden Drpartment, Lucknow Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	GPCU
Urban Local Body	For Heritage sites related data	Uttar Pradesh State Archeological Department
Urban Local Body	For Ecological sites related data	Lucknow Nagar Nigam
Urban Local Body	For Housing related data	DUDA
Urban Local Body	For Building plan related data	Lucknow Development Authority
Urban Local Body	For Roads related data	Engineering Department, Lucknow Nagar Nigam
Urban Local Body	For Solid waste management related data	Lucknow Nagar Nigam
Urban Local Body	For IT services related data	Lucknow Nagar Nigam
Urban Local Body	For Vendor committee related data	Lucknow Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	DUDA, LDA, Water works deptt.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Lucknow Development Authority

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Lucknow Development Authority
	Green Building	Lucknow Development Authority
	Rain water harvesting	Lucknow Development Authority
	Universal Design Principle	Lucknow Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Lucknow Electricity Supply Administration
State Disaster management authority		Nodal Officer/ADM
State Education Department		Basic Education Department Lucknow
State Health Department	Health care professionals	CMO Office
	Citizen Services	CMO Office
	Disease Prevalence	CMO Office
	Health Infrastructure	CMO Office
State Renewable Energy Development Agency	Renewable Energy	UP New energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country Planning Department	Land Use	Town and Country Planning
Traffic and Police Department		DCRB
Transport Authorities	Buses	Lucknow City Transport Service Limited
	Registered Vehicles	RTO office
	Sub urban rail transport	N.A
	Mono Rail Authority	N.A
	Tramways	N.A
	Marine Transport Authority	N.A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 50 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**3**
Traffic and Police Department	**7**
Development Authority	**1**
Pollution Control Board	**2**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**8**
Disaster Management	**0**
Urban Local Body	**25**
Total	**50***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

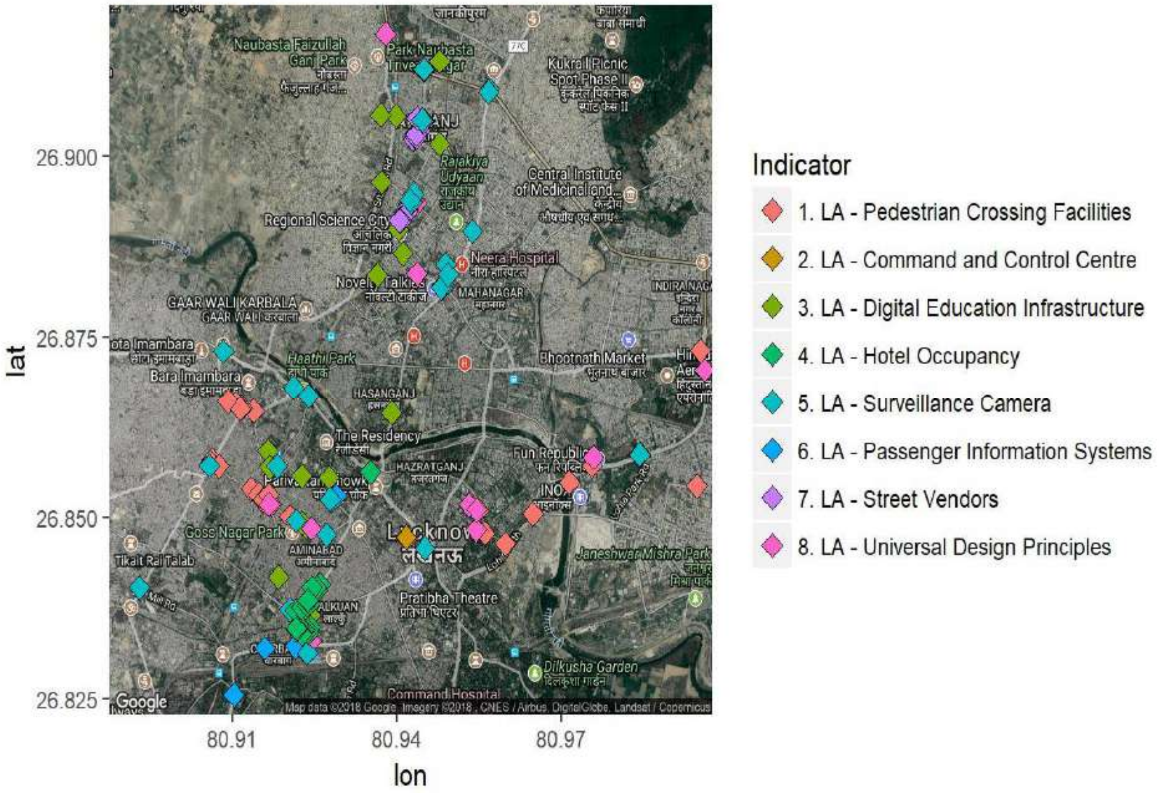
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
26.900
26.875
26.850
26.825
lon
80.91
80.94
80.97
Lucknow
Google
Map data ©2018 Google, Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**55.23**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0.5
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**21.43**
Description	Services integrated through an integrated or a singular operations command centre	4.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.81**

Description		
Sub Indicators	1.3a Building plan	5.06736E-05
	1.3b Birth/Death Certificate	0.002773119
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.029092193
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.002611842
	1.3i information	0.00574029
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**3.42**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	20.5
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**75.85**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	20099.58
Denominator	Total demand raised for the year	26500
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**3717.66**

Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	11947.43
Denominator	Total O&M cost for providing water supply services during the year	321.37
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-375.58**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-93518.56
Denominator	Total expenditure (revenue and capital accounts) in the same year	24899.55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	110
Denominator	Total number of wards	110
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**28.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	17
Denominator	Total number of historic buildings/sites identified	60
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0

Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**56.83**
Description	Average Occupancy rate of Hotels	56.83333333
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	8.5
Denominator	Total budget of the ULB (capital and revenue)	103484.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**18**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	18
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**170.71**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	879055
Denominator	Total population in the age group of 6-14 years	514931
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**180.45**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	439608

Denominator	Total female population in the age group of 6-14 years	243619
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**140.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	634844
Denominator	Total number of teachers available for primary grades (public and private schools)	4508
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1
Denominator	Total number of schools	2813
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**128.78**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	128.779004
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**132.27**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	6400435536
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**46.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	13000
Denominator	Total population of the city	2817105
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**14.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4081
Denominator	Total population of the city	2817105
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**5.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	161962
Denominator	Total population of the city	2817105
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	3163
Denominator	Total population of the city	2817105

Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**19.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	737
Denominator	Total length of road network in the city	3700.26
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**934.97**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	26339
Denominator	Total population of the city	2817105
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**16.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	4259
Denominator	Total crimes recorded in the same year	26339
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**18.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	512
Denominator	Total population of the city	2817105
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**18.82**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	94612.52
Denominator	Total VAT/GST collection during preceding year	5027.1316
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-11.87**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-211
Denominator	Number of construction permits during preceding year	17.78
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	11278
Denominator	Total labour force in the city	514931
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**1.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	205
Denominator	Total number of vendors in the city	13235
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**11.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	16736
Denominator	Total number of slum and EWS households in the city	1497.55
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**3.5**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	113640759782000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**2.13**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	5995103.69
Denominator	Total population of the city	2817105
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**4.14**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	11651815.6
Denominator	Total population of the city	2817105
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**2.85**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	9984800
Denominator	Total area of the city (total area of all land uses)	350000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	2817105
Denominator	Area allocated for residential land use (in hectares)	333950000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**108.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	687253
Denominator	Total number of households in the city	635016
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	794709
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**148**
Description	Total number of sustained electrical interruptions in a year	148
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	5442
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	2714
Denominator	Total energy consumption from all sources	6170479000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	51.6525
Denominator	Total quantum of water and waste water handled during the period	32760
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.3**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	88767360
Denominator	Total number of street light installations	117607
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	6170479000
Denominator	Total population of the city	2817105
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1075.5
Denominator	Total area of the city (sq.km)	350
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	502
Denominator	Total population of the city	2817105
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	4
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.6**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	59.21
Denominator	Total length of road network in the city	3700.26
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**58.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	7
Denominator	Total number of major transport interchanges in the city	12
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	34.38
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.83**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	10
Denominator	Total number of major interchanges in the city	12
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

	synchronised	
Denominator	Total number of signalised intersections in the city	65
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0.42**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	36
Denominator	Total available on-street parking spaces in the city	8640
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**4.74**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	351
Denominator	Total length of road network in the city	7400.52
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**106.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	109
Denominator	Total number of junctions/ intersections on major roads in the city	102
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**17.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	160
Denominator	Total number of public right-of-way areas in the city	940
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**58.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	374141
Denominator	Total number of households in the city	635016
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**245.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	691
Denominator	Total population of the city	2817105
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	3047
Denominator	Total number of samples tested for water quality	3191
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**21.27**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	147
Denominator	Quantum of water put into the distribution system (mld)	691
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	374141
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	3
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**111.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	618625
Denominator	Total number of properties in the city	555845
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**100.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	555876
Denominator	Total number of properties in the city	555845
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**55.69**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	401
Denominator	Total waste water generated in the city per day	720
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	401

Denominator	Total waste water received at treatment plants per day	401
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**3.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	116
Denominator	Total length of road network in the city	3700.26
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**92.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	616719
Denominator	Total number of households and establishments in the city	665016
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	868
Denominator	Total quantum of MSW generated in the city	868
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**4.97**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1294
Denominator	Average MSW generated in the city (tons per month)	26040
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.64**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.64
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**43.79**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	43.79
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**205.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	205.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	NA
Denominator	Total number of noise samples	7100
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	24
Denominator	Total number of samples tested	24
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

LUDHIANA

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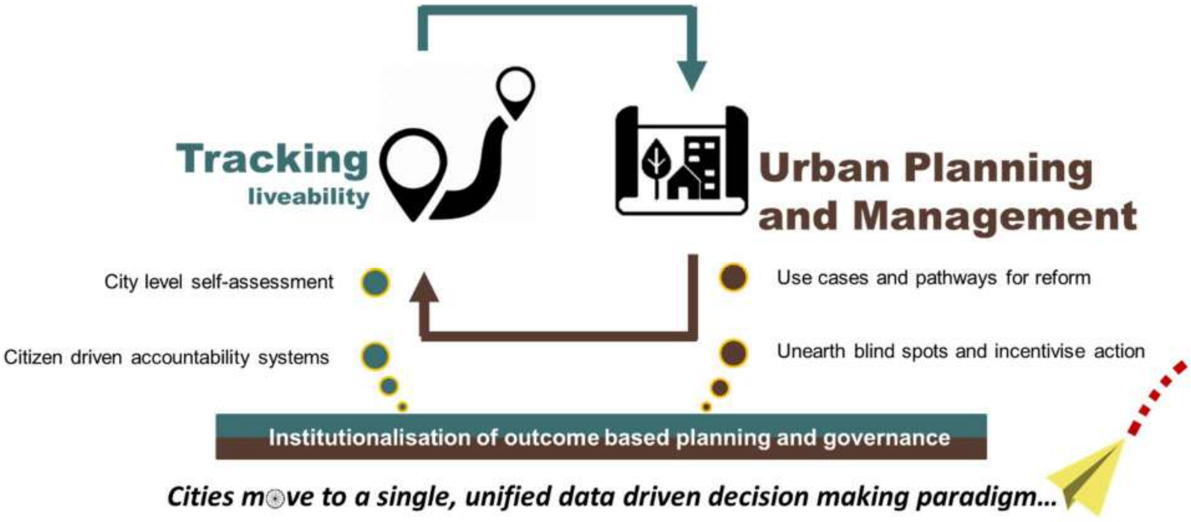
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

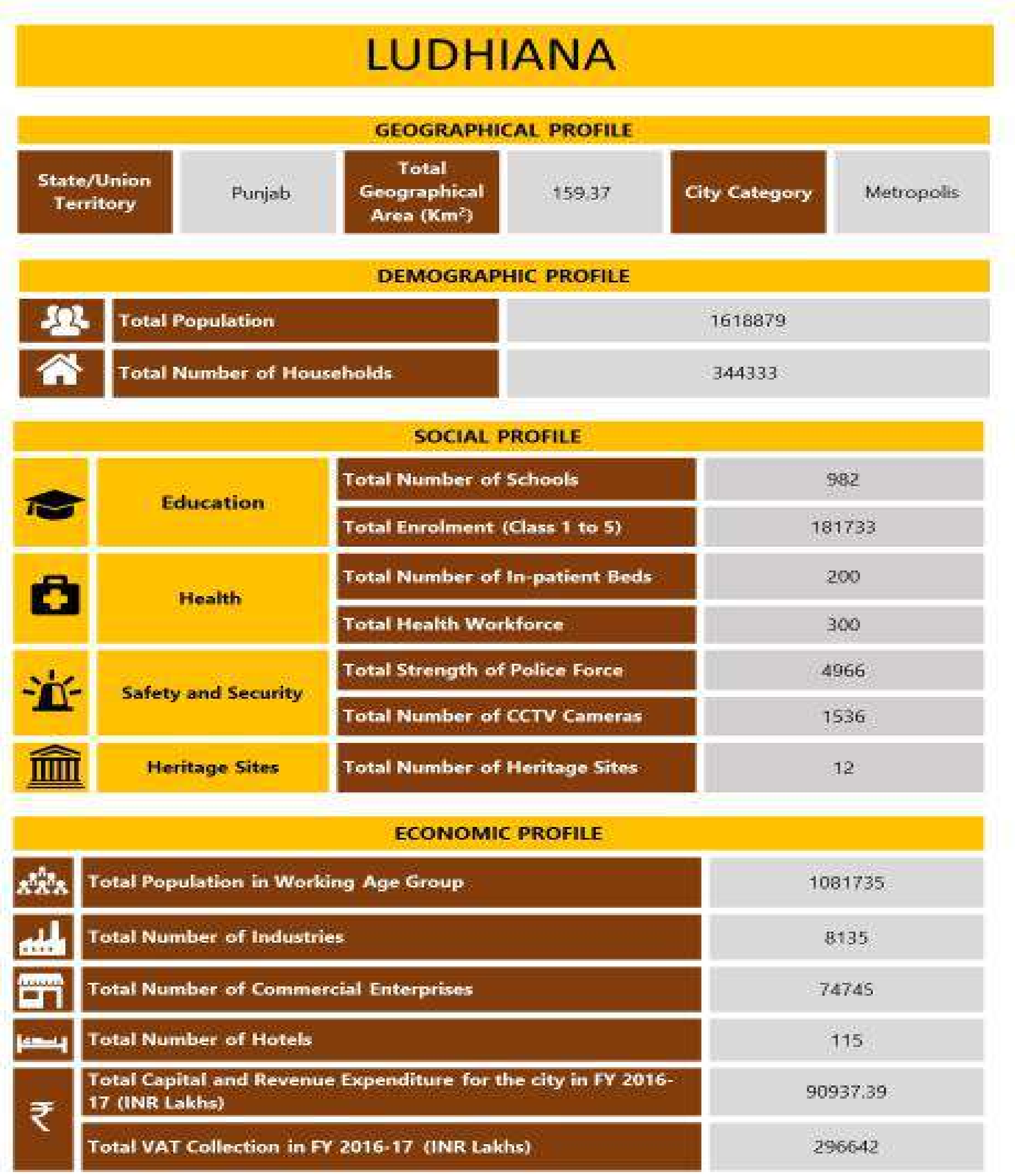
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



LUDHIANA

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	Total Geographical Area (Km²)	159.37	City Category	Metropolis

DEMOGRAPHIC PROFILE

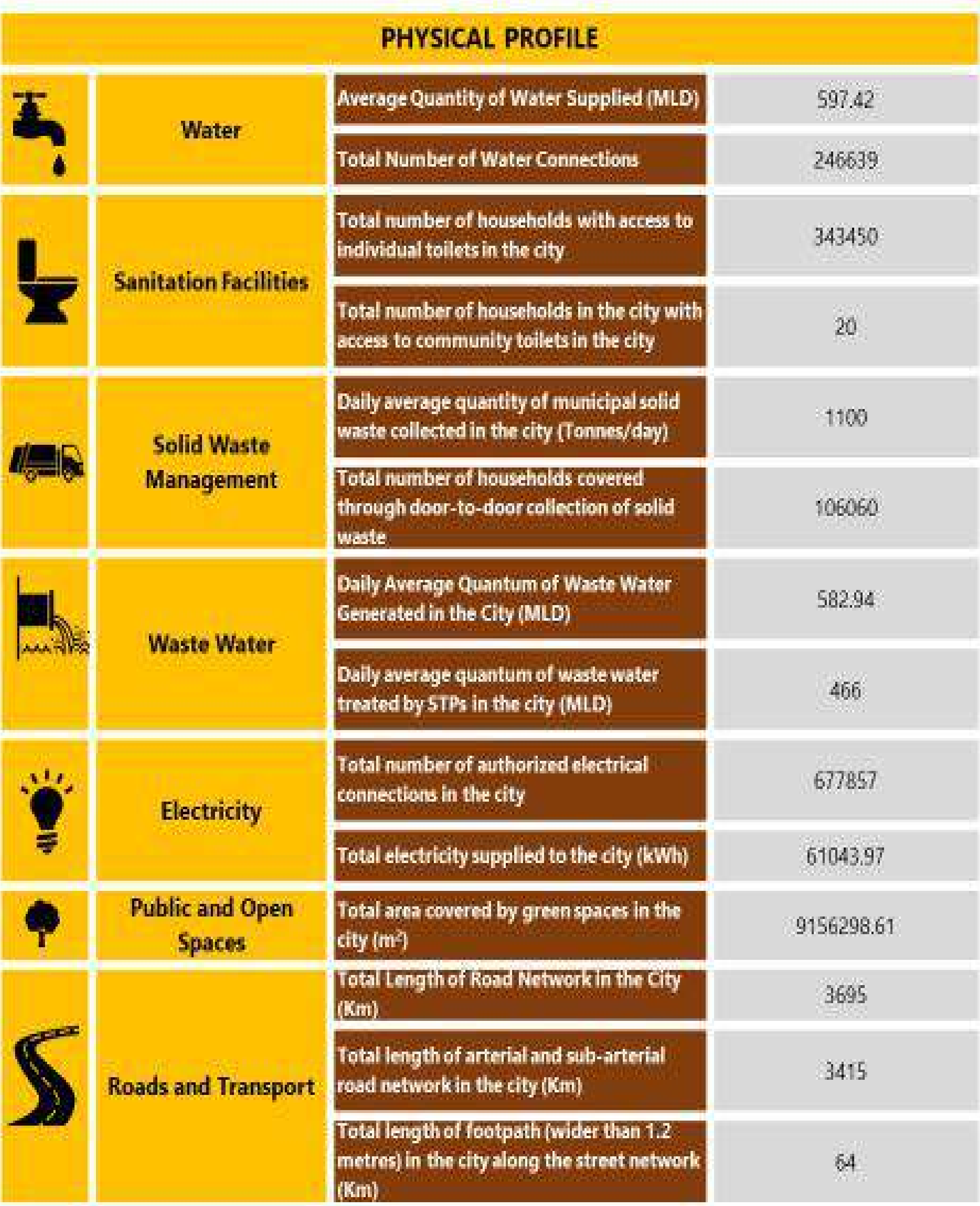
Total Population	1618879
Total Number of Households	344333

SOCIAL PROFILE

Education	Total Number of Schools	982
	Total Enrolment (Class 1 to 5)	181733
Health	Total Number of In-patient Beds	200
	Total Health Workforce	300
Safety and Security	Total Strength of Police Force	4966
	Total Number of CCTV Cameras	1536
Heritage Sites	Total Number of Heritage Sites	12

ECONOMIC PROFILE

Total Population in Working Age Group	1081735
Total Number of Industries	8135
Total Number of Commercial Enterprises	74745
Total Number of Hotels	115
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	90937.39
Total VAT Collection in FY 2016-17 (INR Lakhs)	296642



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	597.42
	Total Number of Water Connections	246639
Sanitation Facilities	Total number of households with access to individual toilets in the city	343450
	Total number of households in the city with access to community toilets in the city	20
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1100
	Total number of households covered through door-to-door collection of solid waste	106060
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	582.94
	Daily average quantum of waste water treated by STPs in the city (MLD)	466
Electricity	Total number of authorized electrical connections in the city	677857
	Total electricity supplied to the city (kWh)	61043.97
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	9156298.61
Roads and Transport	Total Length of Road Network in the City (Km)	3695
	Total length of arterial and sub-arterial road network in the city (Km)	3415
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	64

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city

Pillars of Comprehensive Development	Category	Indicators
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	Compactness	
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW

Pillars of Comprehensive Development	Category	Indicators
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

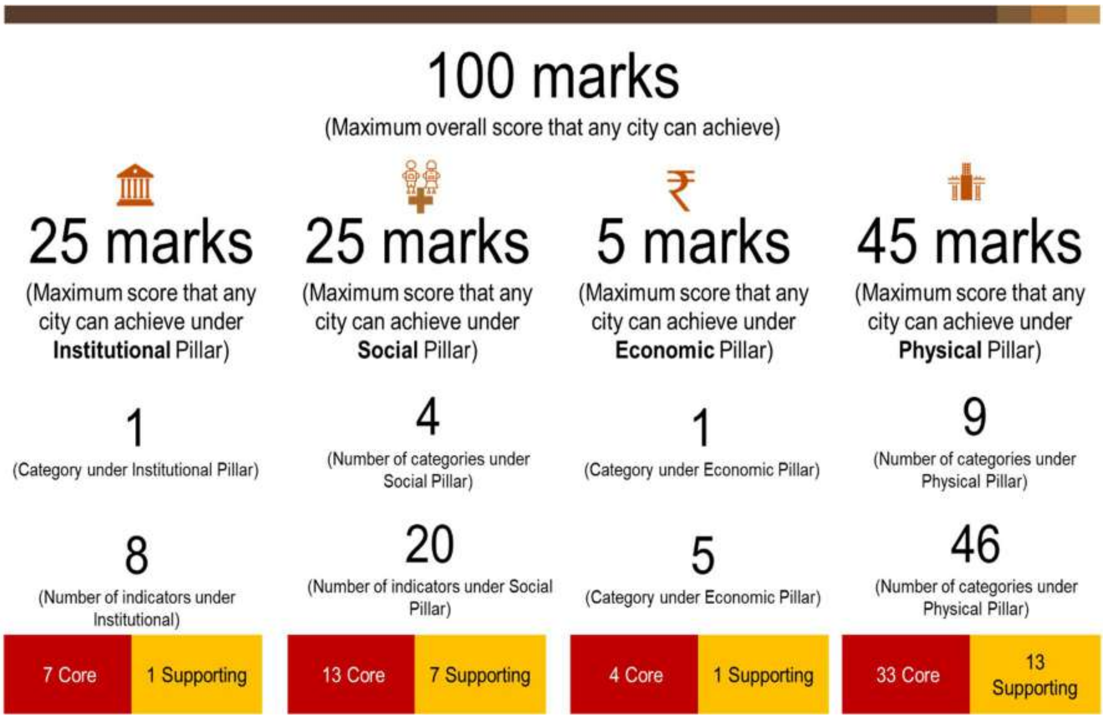
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Municipal Corporation Ludhiana
Urban Local Body	For Park and Recreation Related Questions	Horticulture Department, Municipal Corporation Ludhiana
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Sewerage, Municipal Corporation Ludhiana
Urban Local Body	For Heritage sites related data	No heritage sites available in Ludhiana
Urban Local Body	For Ecological sites related data	No ecological sites available in Ludhiana
Urban Local Body	For Housing related data	Census Department, Municipal Corporation Ludhiana
Urban Local Body	For Building plan related data	Municipal Town Planning, Municipal Corporation Ludhiana
Urban Local Body	For Roads related data	B&R Department, Municipal Corporation Ludhiana
Urban Local Body	For Solid waste management related data	Municipal Health and Sanitation Wing, Municipal Corporation Ludhiana
Urban Local Body	For IT services related data	IT department, Municipal Corporation Ludhiana
Urban Local Body	For Vendor committee related data	Tehbazari Department, Municipal Corporation Ludhiana
Urban Local Body	Any other departments involved in providing data for questions mentioned under	• District Sports Office • Employment Exchange • District Transport Office

Designated data owners	Subcategories	Data owners at city level
	Urban Local Body	• Traffic and Police Department • Property Tax Department
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board
Development Authority	Building Infrastructure	District Town Planning
	Construction planning	District Town Planning
	Green Building	District Town Planning
	Rain water harvesting	District Town Planning
	Universal Design Principle	District Town Planning
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Punjab State Power Corporation Limited
State Disaster management authority		Revenue Department
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
State Health Department	Citizen Services	State Health Department
State Health Department	Disease Prevalence	State Health Department
State Health Department	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Punjab Energy Development Agency
State Sales / Commercial Taxes Department		Excise Department and Taxations Department, Ludhiana
Town and Country Planning Department	Land Use	District and Town Planning, Ludhiana
Traffic and Police Department		Traffic and Police Department, Ludhiana
Transport Authorities	Buses	City Bus Services, Ludhiana
Transport Authorities	Registered Vehicles	District Transport Office, Ludhiana
Transport Authorities	Sub urban rail transport	Not Applicable
Transport Authorities	Mono Rail Authority	Not Applicable
Transport Authorities	Tramways	Not Applicable
Transport Authorities	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 177 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

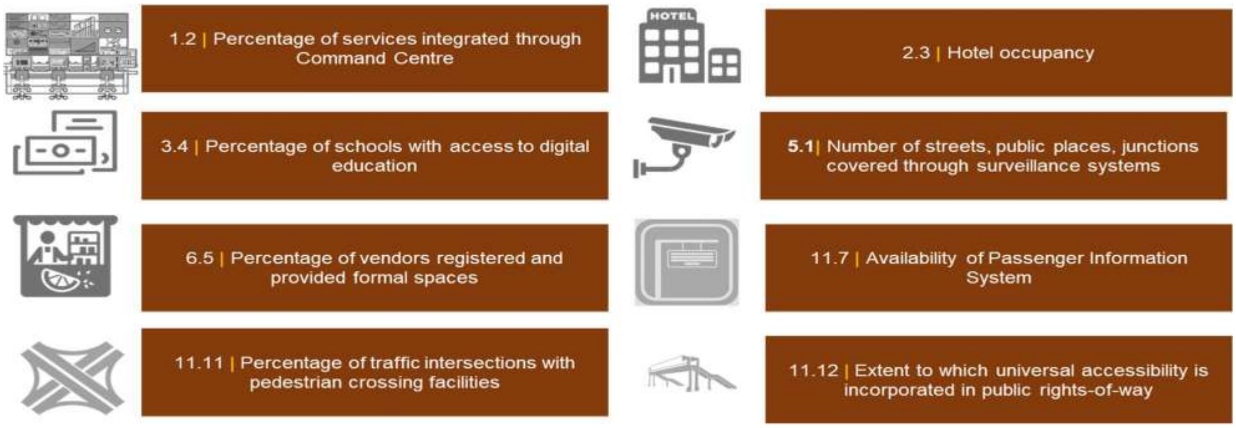
Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	7
DISCOM/Electricity Department	14
Traffic and Police Department	5
Development Authority	1
Pollution Control Board	8
State Renewable Energy Department	0
Town and Country Planning	6
State Health Department	16
Transport Authority	12
Disaster Management	0
Urban Local Body	105
Total	177

* The count of documents is based on first round of submission.

4.4 Data Verification

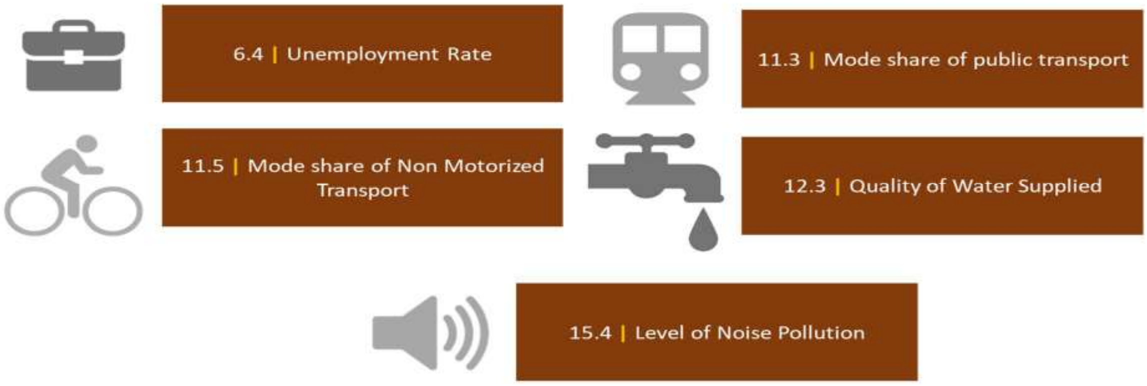
A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

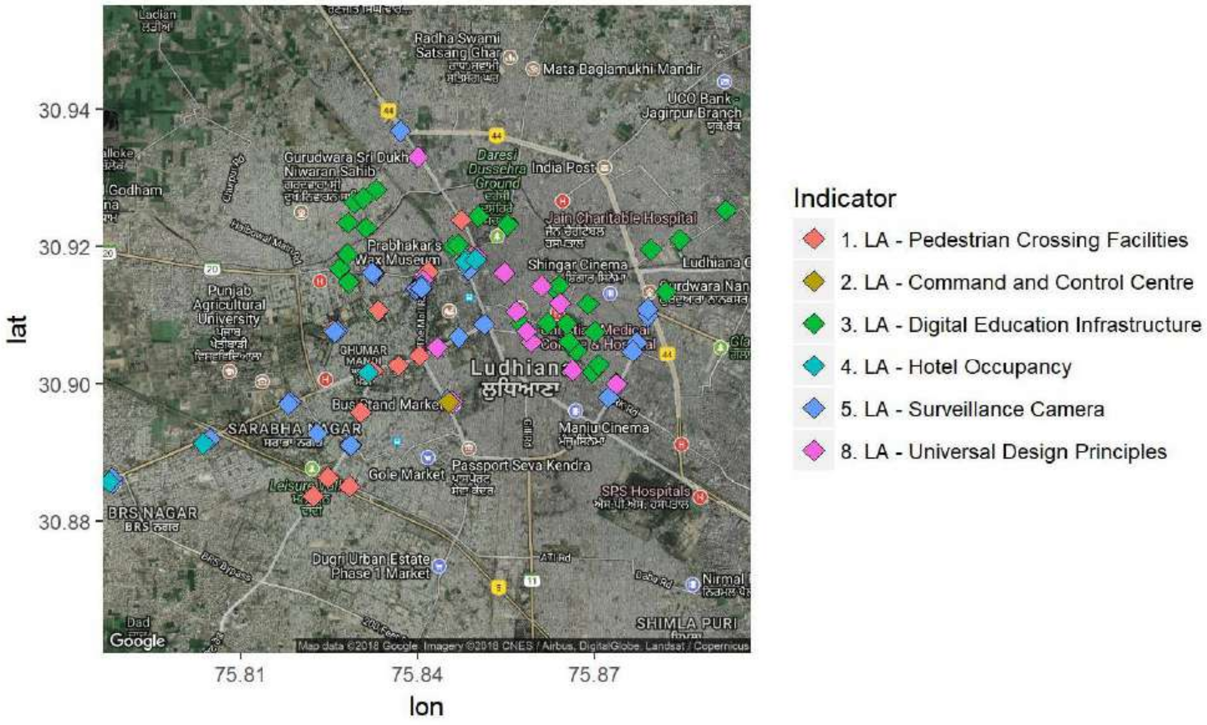
For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
30.94
30.92
30.90
30.88
75.81
75.84
75.87
lon
Ludhiana
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**50.3**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.77**
Description		
Sub Indicators	1.3a Building plan	0.00000108237197
	1.3b Birth/Death Certificate	0.00001513392910
	1.3c water supply	0.00020262
	1.3d solid waste management	0
	1.3e property tax	0.010949058
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.001922678
	1.3i information	0
	1.3j electricity	0.208465797
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.44**
Description		
Sub Indicators	1.4a water supply	9.55
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	4.56
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**92.42**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	6469.33
Denominator	Total demand raised for the year	7000
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**14.88**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1267.13
Denominator	Total O&M cost for providing water supply services during the year	8514.69
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**19.51**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	37148.23
Denominator	Total expenditure (revenue and capital accounts) in the same year	190380.57
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	95
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**331.34**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	301313

Denominator	Total budget of the ULB (capital and revenue)	90937.39
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**24**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	24
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**96.46**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	277957
Denominator	Total population in the age group of 6-14 years	288153
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**98.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	126542
Denominator	Total female population in the age group of 6-14 years	128973
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**29.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	181733
Denominator	Total number of teachers available for primary grades (public and private schools)	6183
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**25.25**
Formula:	*Numerator / Denominator*	

Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	248
Denominator	Total number of schools	982
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**94.09** 94.08511514
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92** 981255078
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**1.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	200
Denominator	Total population of the city	1618879
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**1.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	300
Denominator	Total population of the city	1618879
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7620
Denominator	Total population of the city	1618879
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	829
Denominator	Total population of the city	1618879
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**41.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1536
Denominator	Total length of road network in the city	3695
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**480.58**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7780
Denominator	Total population of the city	1618879
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	870
Denominator	Total crimes recorded in the same year	7780
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**54.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	883
Denominator	Total population of the city	1618879
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**53.1**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	102887
Denominator	Total VAT/GST collection during preceding year	1937.55
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	**Increase in issuance of Construction Permits**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	50
Denominator	Number of construction permits during preceding year	1.5
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2377
Denominator	Total labour force in the city	288153
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	21000
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**27.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	14339
Denominator	Total number of slum and EWS households in the city	524.91
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**5.66**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	9156298.61
Denominator	Total population of the city	1618879
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**0.65**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1052470.94
Denominator	Total population of the city	1618879
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	159370000
Unit	Percentage	

Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1618879
Denominator	Area allocated for residential land use (in hectares)	412380000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**144.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	498991
Denominator	Total number of households in the city	344333
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	2063
Denominator	Total number of electricity connections in the city	677857
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**61360**
Description	Total number of sustained electrical interruptions in a year	61360
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	4057932
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	21470
Denominator	Total energy consumption from all sources	61043.97
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	7146984.25
Denominator	Total quantum of water and waste water handled during the period	31902.6
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	32895360
Denominator	Total number of street light installations	105236

Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	371
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	40326
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	61043.97
Denominator	Total population of the city	1618879
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	152
Denominator	Total area of the city (sq.km)	159.37
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	92
Denominator	Total population of the city	1618879

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	3695
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	3
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronization**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalized intersections that are synchronized	NA
Denominator	Total number of signalized intersections in the city	42
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**22.22**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	4
Denominator	Total available on-street parking spaces in the city	18
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.87**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	64
Denominator	Total length of road network in the city	7390
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**67.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	42

Denominator	Total number of junctions/ intersections on major roads in the city	62
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	190
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**62.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	215090
Denominator	Total number of households in the city	344333
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**369.03**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	597.42
Denominator	Total population of the city	1618879
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	492
Denominator	Total number of samples tested for water quality	691
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	597.42
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	246639
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	126
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	63
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**105.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	407464
Denominator	Total number of properties in the city	384957
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**89.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	343450
Denominator	Total number of properties in the city	384957
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	582.94
Denominator	Total waste water generated in the city per day	582.94
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**41.16**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	205
Denominator	Total waste water received at treatment plants per day	498

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	20
Denominator	Total length of road network in the city	3695
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**73.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	306357
Denominator	Total number of households and establishments in the city	419078
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1100
Denominator	Total quantum of MSW generated in the city	1100
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**8.29**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2737

Denominator	Average MSW generated in the city (tons per month)	33000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**9**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	9
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**27**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	27
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**162**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	162
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	19
Denominator	Total number of noise samples	64
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**76.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	166
Denominator	Total number of samples tested	216
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

MADURAI

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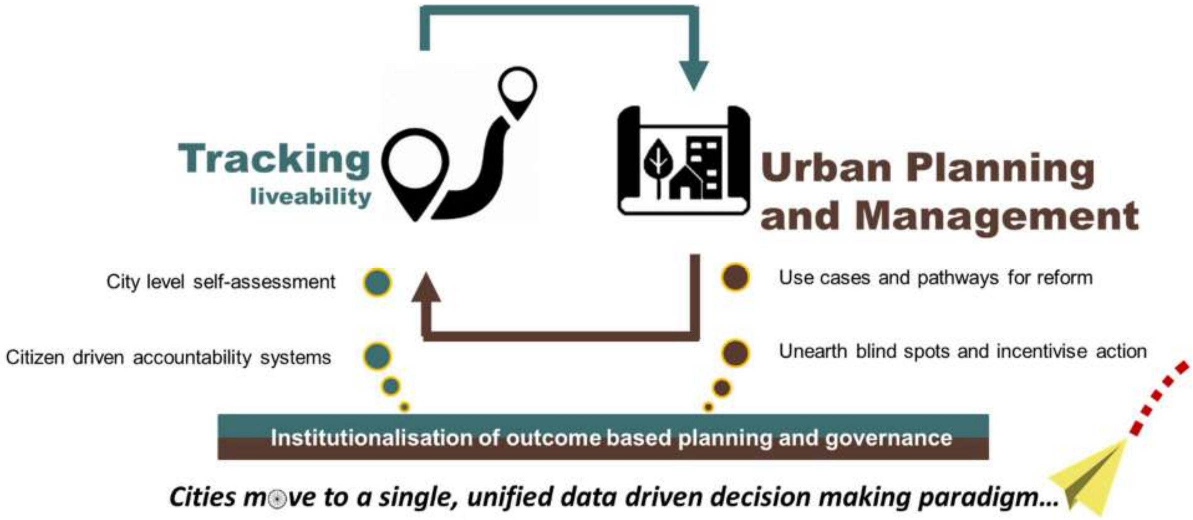
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

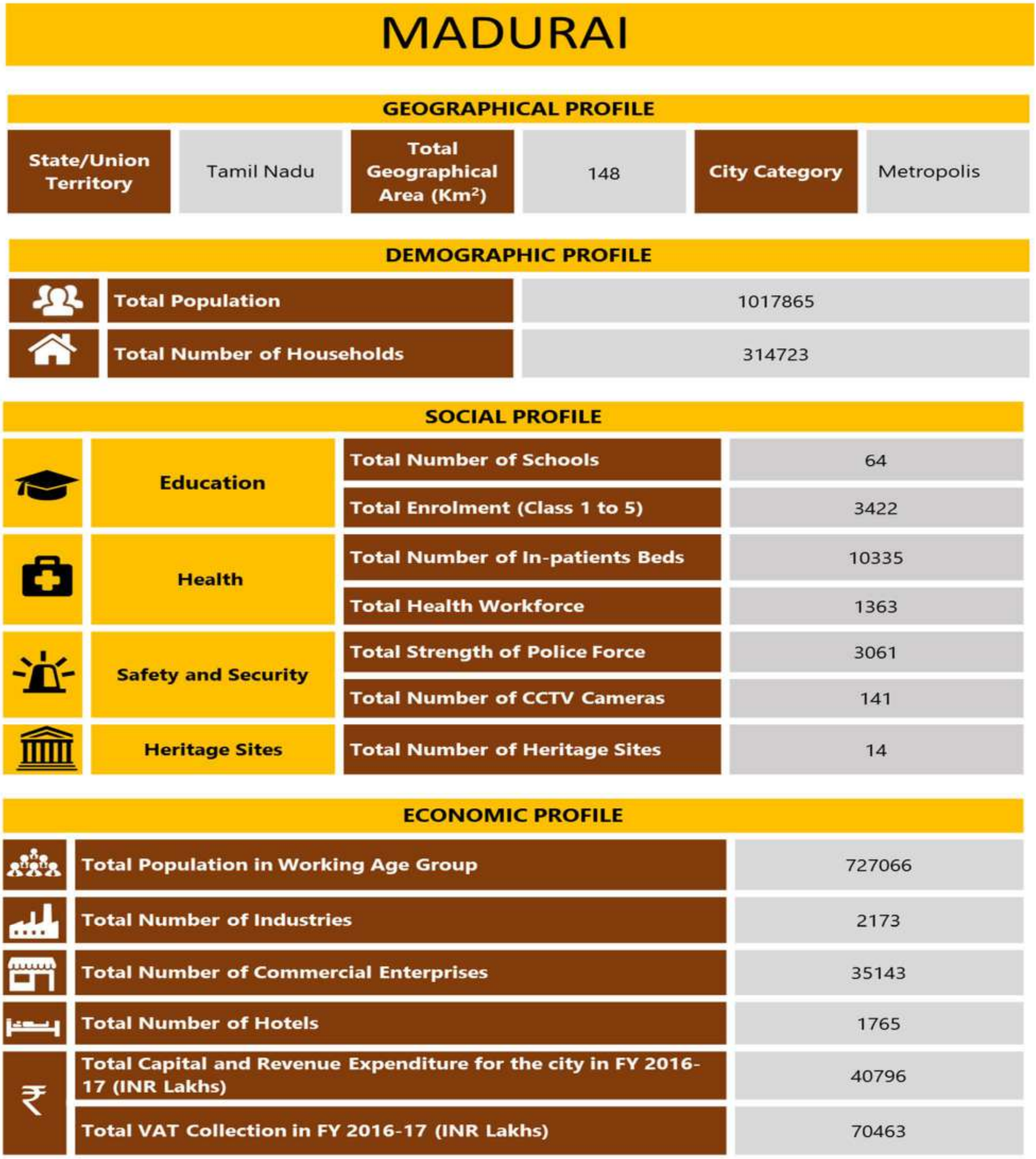

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MADURAI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	148	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

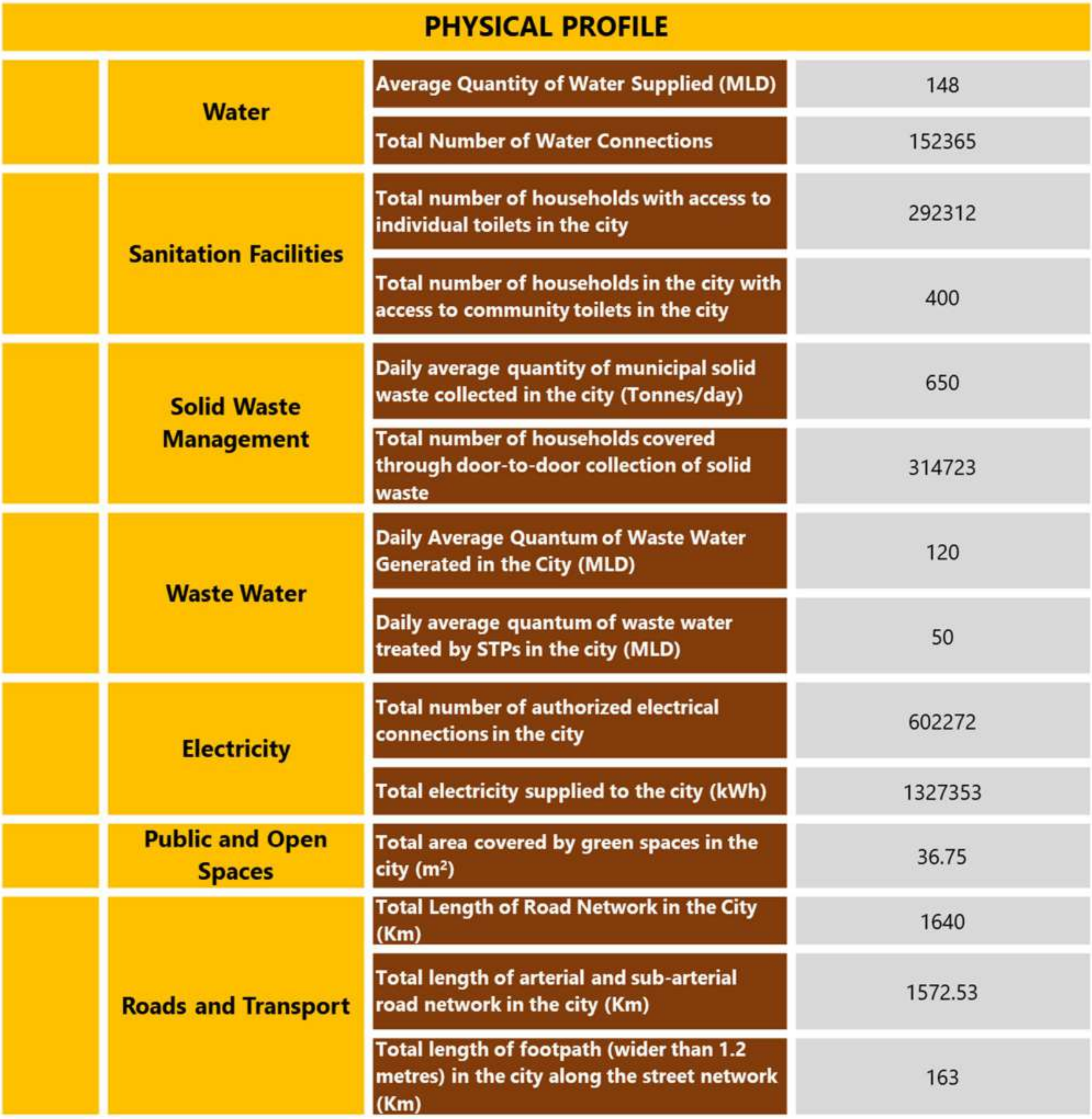
Total Population	1017865
Total Number of Households	314723

SOCIAL PROFILE

Education	**Total Number of Schools**	64
	Total Enrolment (Class 1 to 5)	3422
Health	**Total Number of In-patients Beds**	10335
	Total Health Workforce	1363
Safety and Security	**Total Strength of Police Force**	3061
	Total Number of CCTV Cameras	141
Heritage Sites	**Total Number of Heritage Sites**	14

ECONOMIC PROFILE

Total Population in Working Age Group	727066
Total Number of Industries	2173
Total Number of Commercial Enterprises	35143
Total Number of Hotels	1765
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40796
Total VAT Collection in FY 2016-17 (INR Lakhs)	70463



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	148
		Total Number of Water Connections	152365
	Sanitation Facilities	Total number of households with access to individual toilets in the city	292312
		Total number of households in the city with access to community toilets in the city	400
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
		Total number of households covered through door-to-door collection of solid waste	314723
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
		Daily average quantum of waste water treated by STPs in the city (MLD)	50
	Electricity	Total number of authorized electrical connections in the city	602272
		Total electricity supplied to the city (kWh)	1327353
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	36.75
	Roads and Transport	Total Length of Road Network in the City (Km)	1640
		Total length of arterial and sub-arterial road network in the city (Km)	1572.53
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	163

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

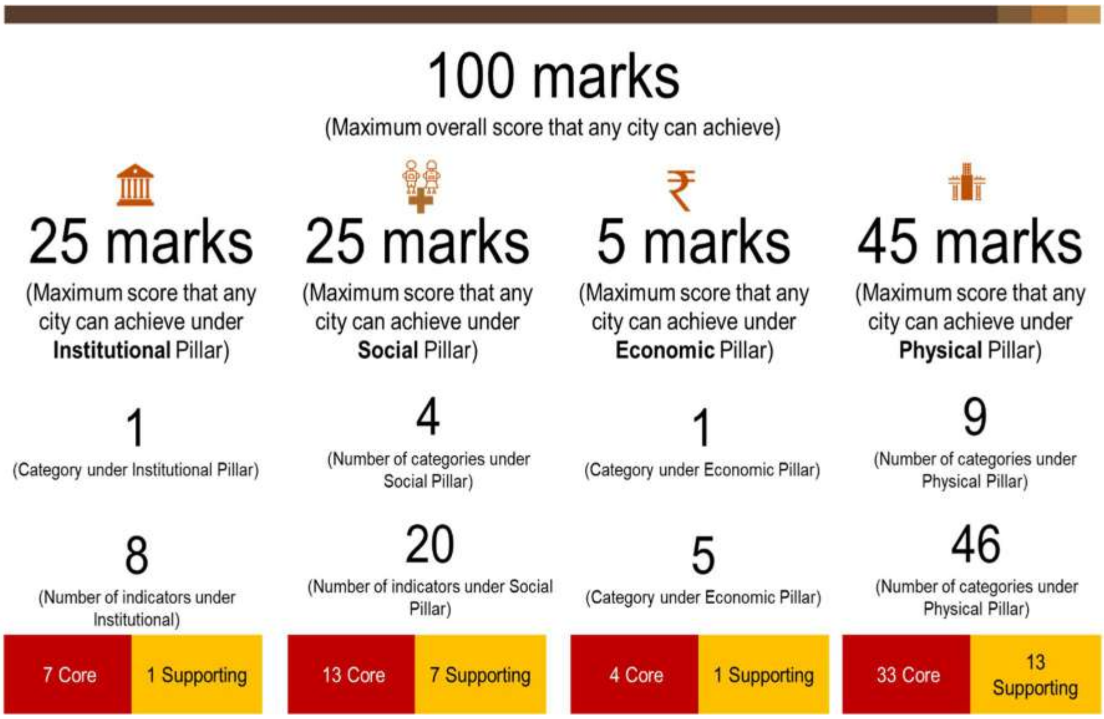
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Revenue Section

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 65 number of documents. Documents submitted include reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	4
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	7
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	7
Transport Authority	6
Disaster Management	1
Urban Local Body	24
Total	65*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

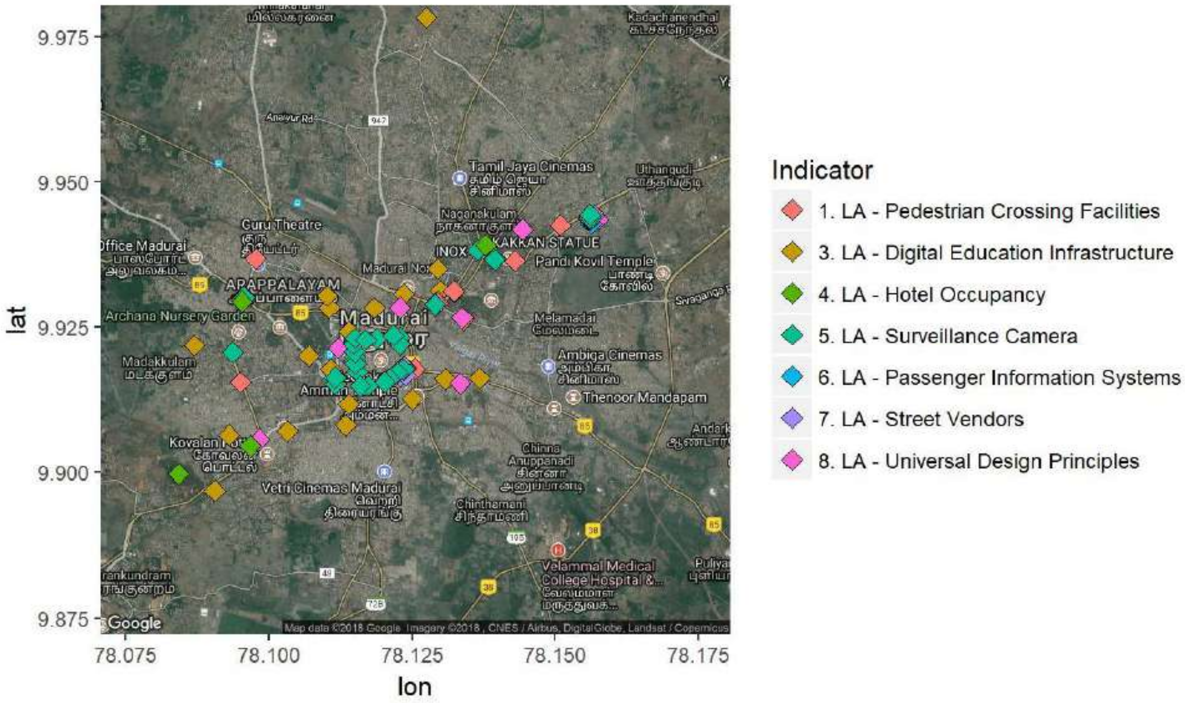
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


9.975
9.950
9.925
9.900
9.875
lat
78.075
78.100
78.125
78.150
78.175
lon
Madurai
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**87.18**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**80.95**
Description	Services integrated through an integrated or a singular operations command centre	17
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**1.45**
Description		
Sub Indicators	1.3a Building plan	0.000818626
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.008961939
	1.3d solid waste management	0.001843073
	1.3e property tax	0.00471889
	1.3f professional tax (RC)	0.000827228
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000986215
	1.3i information	0.098200645
	1.3j electricity	2.49057E-06
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.07**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0.5
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**87.35**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	11008

Denominator	Total demand raised for the year	12602
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**182.35**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1316.59
Denominator	Total O&M cost for providing water supply services during the year	722
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	431
Denominator	Total expenditure (revenue and capital accounts) in the same year	91539
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	100
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	14
Denominator	Total number of historic buildings/sites identified	14
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**73.85**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	48
Denominator	Total number of ecologically important sites identified in the city	65
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**37.14**
Description	Average Occupancy rate of Hotels	37.14285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	NA
Denominator	Total budget of the ULB (capital and revenue)	40796
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**41**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	41
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**4.15**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6654
Denominator	Total population in the age group of 6-14 years	160169

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**5.75**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	4474
Denominator	Total female population in the age group of 6-14 years	77745
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**31.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	3422
Denominator	Total number of teachers available for primary grades (public and private schools)	110
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**23.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	15
Denominator	Total number of schools	64
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**136.3**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	136.3020211
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**75.38**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1222795
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**101.54**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	10335
Denominator	Total population of the city	1017865
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**13.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1363
Denominator	Total population of the city	1017865
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2510
Denominator	Total population of the city	1017865
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	629

Denominator	Total population of the city	1017865
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**8.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	141
Denominator	Total length of road network in the city	1640
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**2705.17**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	27535
Denominator	Total population of the city	1017865
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.76**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	208
Denominator	Total crimes recorded in the same year	27535
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**21.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	215

Denominator	Total population of the city	1017865
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**6.63**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4381
Denominator	Total VAT/GST collection during preceding year	660.82
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-1.36**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-21
Denominator	Total Professional Tax collection during preceding year	1549
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-4.92**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-153
Denominator	Number of construction permits during preceding year	31.07
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	332734

Denominator	Total labour force in the city	160169
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	5448
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**90**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	100156
Denominator	Total number of slum and EWS households in the city	1112.88
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.01**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	94638173400
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total area of green space (sq.m.)	36.75
Denominator	Total population of the city	1017865
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.4**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1421000
Denominator	Total population of the city	1017865
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	721
Denominator	Total area of the city (total area of all land uses)	148000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**3.35**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1017865
Denominator	Area allocated for residential land use (in hectares)	303766
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**153.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	482970
Denominator	Total number of households in the city	314723
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	Data Unavailable
Denominator	Total number of electricity connections in the city	602272
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**650**
Description	Total number of sustained electrical interruptions in a year	650
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	18000
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.01**

Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	839
Denominator	Total energy consumption from all sources	1327420.97
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	309957.6667
Denominator	Total quantum of water and waste water handled during the period	5940
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	17064997.1
Denominator	Total number of street light installations	51297
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1327420.97
Denominator	Total population of the city	1017865
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.18**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	35
Denominator	Total area of the city (sq.km)	148
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	621
Denominator	Total population of the city	1017865
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	80
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	1640
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**30**
Formula:	*Numerator / Denominator*	

Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	3
Denominator	Total number of major transport interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	10
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	18
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**150**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	15
Denominator	Total available on-street parking spaces in the city	10
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**4.97**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total length of footpaths (wider than 1.2 m) available in the city	163
Denominator	Total length of road network in the city	3280
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**138.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	50
Denominator	Total number of junctions/ intersections on major roads in the city	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**1.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	30
Denominator	Total number of public right-of-way areas in the city	2021
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	147739
Denominator	Total number of households in the city	314723
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**145.4**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	148
Denominator	Total population of the city	1017865

Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	48
Denominator	Total number of samples tested for water quality	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**18.92**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	28
Denominator	Quantum of water put into the distribution system (mld)	148
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	152365
Denominator	Total number of water connections in the city	152365
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**49483.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	2969
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	6
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**96.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	304770
Denominator	Total number of properties in the city	316282
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**135.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	428524
Denominator	Total number of properties in the city	316282
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**83.33**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	100
Denominator	Total waste water generated in the city per day	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**351.67**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	211
Denominator	Total waste water received at treatment plants per day	60
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**45.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and	745

	tertiary drains (of pucca construction)	
Denominator	Total length of road network in the city	1640
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**97.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	341669
Denominator	Total number of households and establishments in the city	349866
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	650
Denominator	Total quantum of MSW generated in the city	650
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**8.77**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1710
Denominator	Average MSW generated in the city (tons per month)	19500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**15.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	15.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean	

	concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**24.7**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	24.7
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**78.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	78.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	NA
Denominator	Total number of noise samples	NA
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	1
Denominator	Total number of samples tested	1
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

MANGALORE

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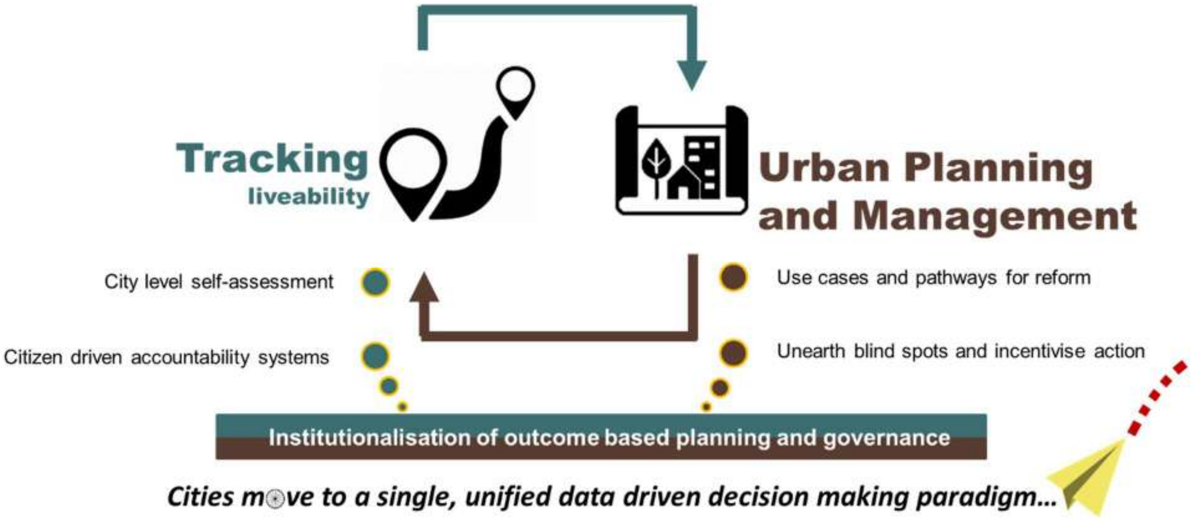
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

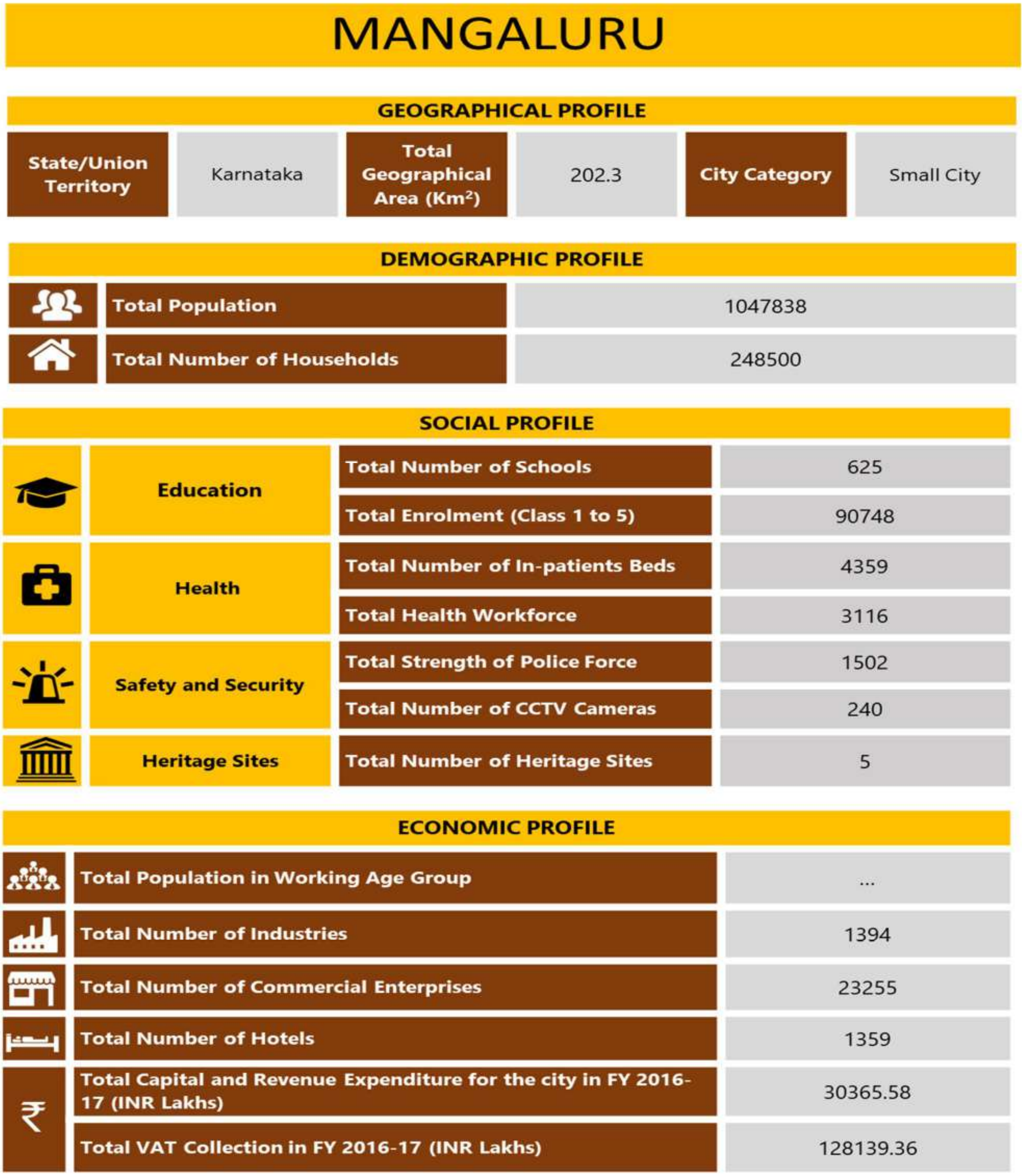
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MANGALURU

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km^2)	202.3	City Category	Small City

DEMOGRAPHIC PROFILE

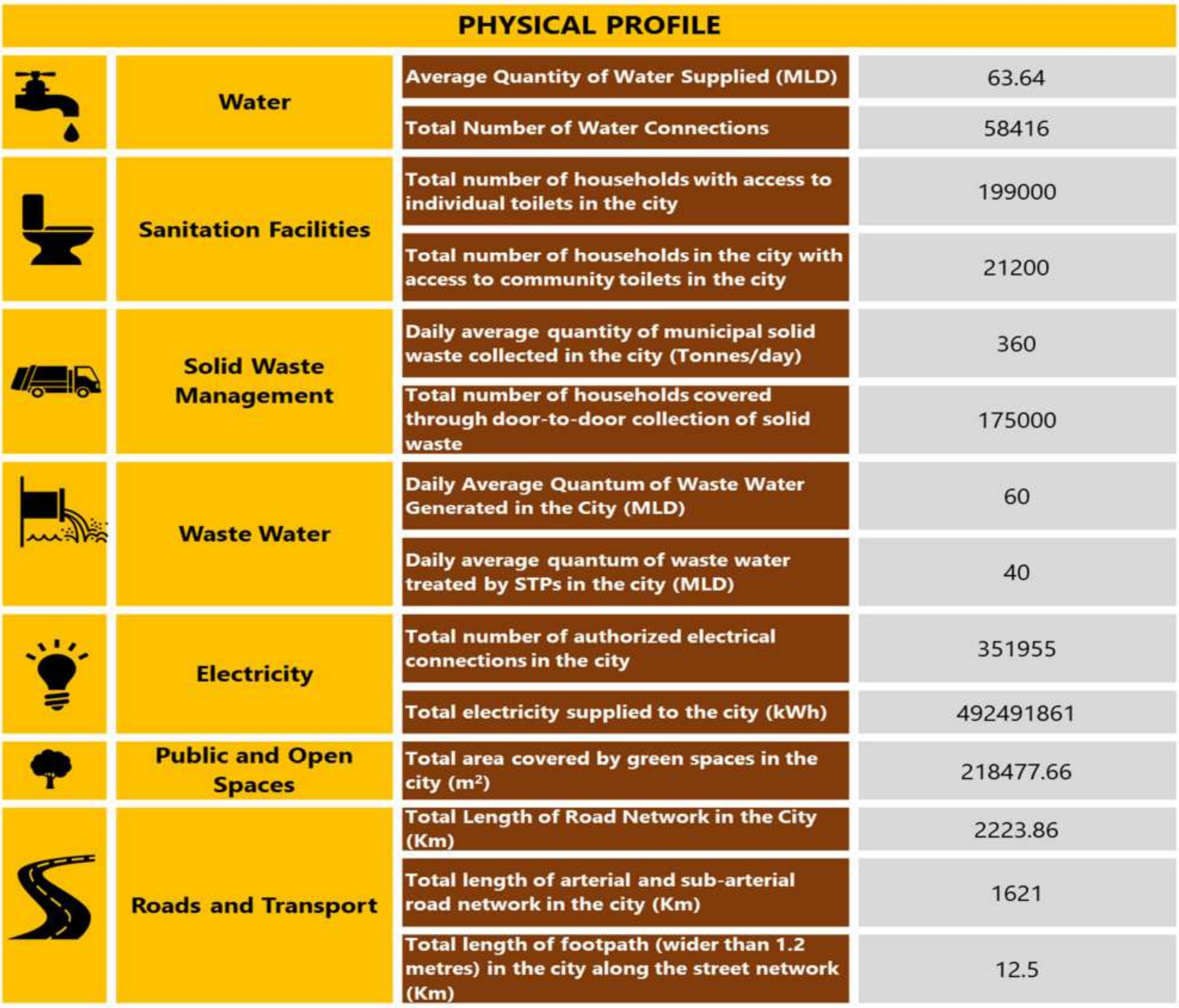
Total Population	1047838
Total Number of Households	248500

SOCIAL PROFILE

Education	Total Number of Schools	625
	Total Enrolment (Class 1 to 5)	90748
Health	Total Number of In-patients Beds	4359
	Total Health Workforce	3116
Safety and Security	Total Strength of Police Force	1502
	Total Number of CCTV Cameras	240
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	1394
Total Number of Commercial Enterprises	23255
Total Number of Hotels	1359
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30365.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	128139.36



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	63.64
	Total Number of Water Connections	58416
Sanitation Facilities	Total number of households with access to individual toilets in the city	199000
	Total number of households in the city with access to community toilets in the city	21200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	360
	Total number of households covered through door-to-door collection of solid waste	175000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	60
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	Total number of authorized electrical connections in the city	351955
	Total electricity supplied to the city (kWh)	492491861
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	218477.66
Roads and Transport	Total Length of Road Network in the City (Km)	2223.86
	Total length of arterial and sub-arterial road network in the city (Km)	1621
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

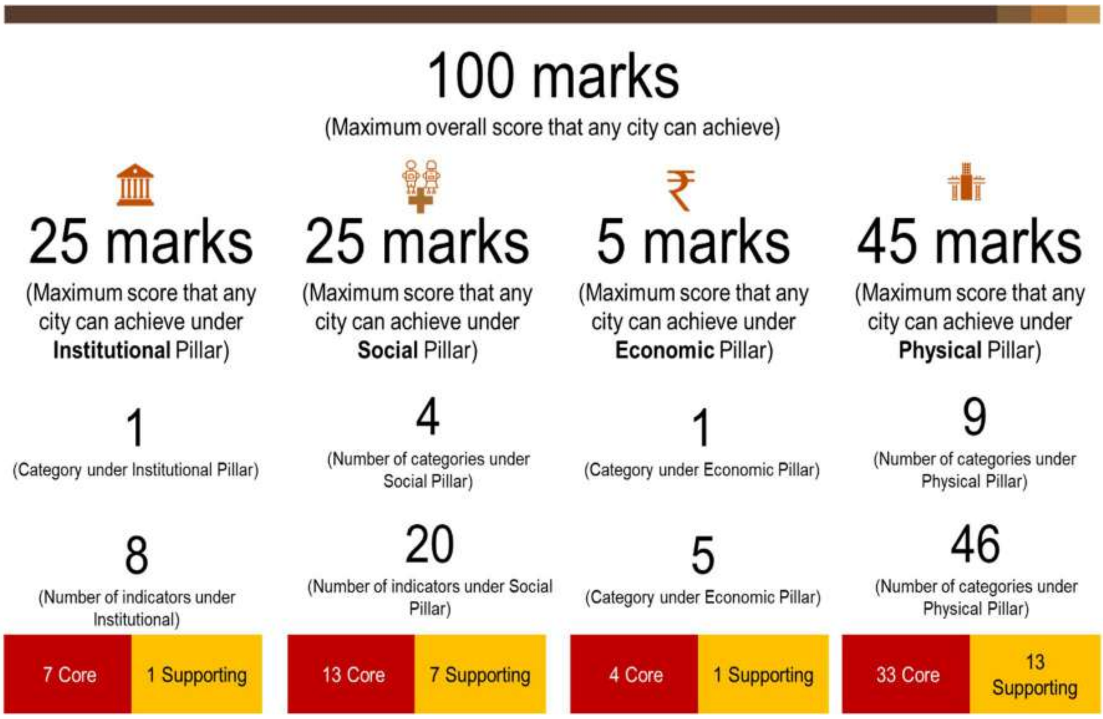
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core	13 Core	4 Core	33 Core
1 Supporting	7 Supporting	1 Supporting	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department MCC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department MCC
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department MCC
Urban Local Body	For Heritage sites related data	Town Planning Department MCC
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. MCC
Urban Local Body	For Building plan related data	Town Planning Department MCC
Urban Local Body	For Roads related data	Engineering Department MCC
Urban Local Body	For Solid waste management related data	Environment Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. MCC (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, Pollution Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution department

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, MCC
	Green Building	Town Planning Department, MCC
	Rain water harvesting	Town Planning Department, MCC
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Mangalore Electricity Supply Company Limited
State Disaster management authority		District Collector Office
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy Development Agency	Renewable Energy	Mangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Deputy Police Commissioner's Office
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Urban Local Body

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 149 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**6**
DISCOM /Electricity Department	**11**
Traffic and Police Department	**10**
Development Authority	**2**
Pollution Control Board	**7**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**14**
Transport Authority	**10**
Disaster Management	**1**
Urban Local Body	**84**
Total	**149***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

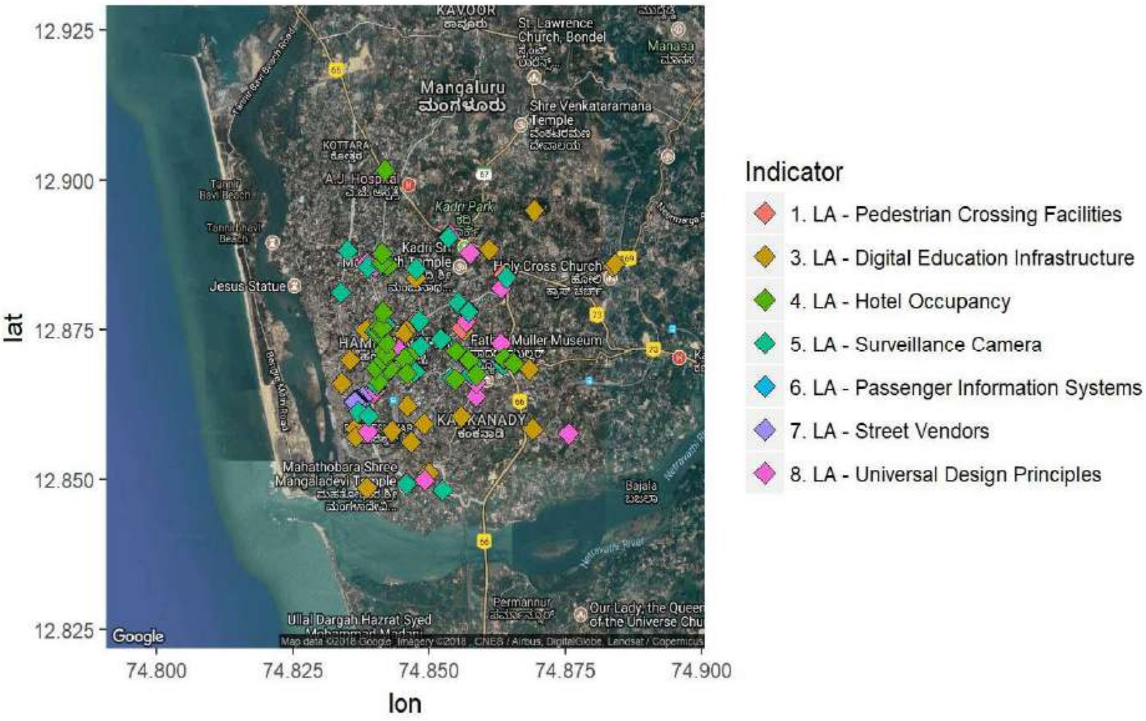
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


KAVOOR
St. Lawrence Church, Bondel
Manasa
Mangaluru
Shree Venkataramana Temple
KOTTARA
A.J. Hospital
Kadri Park
Tannirbhavi Beach
Kadri Sri ... Temple
Holy Cross Church
Jesus Statue
HAM
Muller Museum
KANKANADY
Mahathobara Shree Mangaladevi Temple
Bajala
Ullal Dargah Hazrat Syed Mohammad Madani
Permannur
Our Lady, the Queen of the Universe Chu
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
12.925
12.900
12.875
12.850
12.825
lat
74.800
74.825
74.850
74.875
74.900
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend

etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**70.99**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	0.333333333
	1.1i professional tax	0.75
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**5.34**
Description		
Sub Indicators	1.3a Building plan	0.018432918

	1.3b Birth/Death Certificate	0.010450722
	1.3c water supply	0.021268752
	1.3d solid waste management	NA
	1.3e property tax	0.06322491
	1.3f professional tax (RC)	0.002699408
	1.3g professional tax (EC)	0.00630063
	1.3h complaints/ grievance redressal	0.031616438
	1.3i information	0.001057085
	1.3j electricity	0.325177785
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**106.91**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	8092.05
Denominator	Total demand raised for the year	7569.02
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**100.73**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	3314
Denominator	Total O&M cost for providing water supply services during the year	3290
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**21.04**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	10356.14
Denominator	Total expenditure (revenue and capital accounts) in the same year	49212.51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**70.59**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	12
Denominator	Total number of ecologically important sites identified in the city	17

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	17.17
Denominator	Total budget of the ULB (capital and revenue)	22928.45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**14**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	14
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**84.24**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	58536
Denominator	Total population in the age group of 6-14 years	69488
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**83.57**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	28411

Denominator	Total female population in the age group of 6-14 years	33998
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**28.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	36627
Denominator	Total number of teachers available for primary grades (public and private schools)	1304
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**39.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	119
Denominator	Total number of schools	300
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**120.81**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	120.8140004
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**109.86**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	54081252
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**164.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	8216
Denominator	Total population of the city	499487
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**107.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	5394
Denominator	Total population of the city	499487
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	64
Denominator	Total population of the city	499487
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**1**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	4974
Denominator	Total population of the city	499487
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**15.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	186
Denominator	Total length of road network in the city	1174
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1128.56**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5637
Denominator	Total population of the city	499487
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**5.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	297
Denominator	Total crimes recorded in the same year	5637
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**33.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	166
Denominator	Total population of the city	499487
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**0.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	867
Denominator	Total VAT/GST collection during preceding year	910.2223
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**93.44**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	1097.67
Denominator	Total Professional Tax collection during preceding year	1174.77
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-14.9**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-309
Denominator	Number of construction permits during preceding year	20.74
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	1657
Denominator	Total labour force in the city	69488
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1737.2
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**3.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	359
Denominator	Total number of slum and EWS households in the city	94.91
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	116260.1
Denominator	Total population of the city	499487
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	999464.91
Denominator	Total population of the city	499487
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	132450000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**7.83**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	499487
Denominator	Area allocated for residential land use (in hectares)	63761
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**136.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	178549
Denominator	Total number of households in the city	130897
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	191383
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**25103**
Description	Total number of sustained electrical interruptions in a year	25103
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	3413
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	42729
Denominator	Total energy consumption from all sources	Data Unavailable
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	8350000
Denominator	Total quantum of water and waste water handled during the period	4500
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	18600000
Denominator	Total number of street light installations	64259
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	856257.68
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	Data Unavailable
Denominator	Total population of the city	499487
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	478
Denominator	Total area of the city (sq.km)	132.45
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**2.12**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	1060
Denominator	Total population of the city	499487
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	73.76
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1174
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	9
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.03
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	9
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of signalised intersections in the city	13
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	6
Denominator	Total available on-street parking spaces in the city	6
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	15
Denominator	Total length of road network in the city	2348
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**116.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	35
Denominator	Total number of junctions/ intersections on major roads in the city	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	177
Denominator	Total number of public right-of-way areas in the city	177
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**83.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	108928
Denominator	Total number of households in the city	130897
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**240.25**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	120
Denominator	Total population of the city	499487
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	26
Denominator	Total number of samples tested for water quality	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**35.83**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	43
Denominator	Quantum of water put into the distribution system (mld)	120
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**50.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	88587
Denominator	Total number of water connections in the city	175470
Unit	Percentage	
Benchmark	100%	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**84.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	634
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	746
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**61.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	130637
Denominator	Total number of properties in the city	211578
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**36.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	76635
Denominator	Total number of properties in the city	211578
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**85.71**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	30
Denominator	Total waste water generated in the city per day	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**189.17**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	56.75

Denominator	Total waste water received at treatment plants per day	30
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.28**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	15
Denominator	Total length of road network in the city	1174
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**88.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	141894
Denominator	Total number of households and establishments in the city	160347
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	345
Denominator	Total quantum of MSW generated in the city	345
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**74.59**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	7720
Denominator	Average MSW generated in the city (tons per month)	10350
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7.57**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.57
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**9.75**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	9.75
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**75.42**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	75.42
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1
Denominator	Total number of noise samples	14
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

MEERUT

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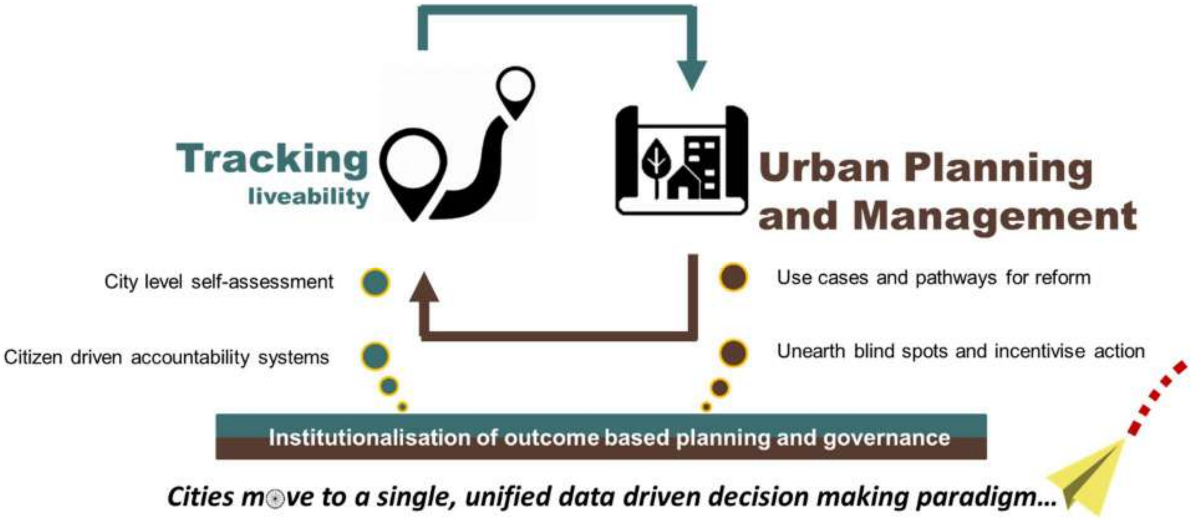
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

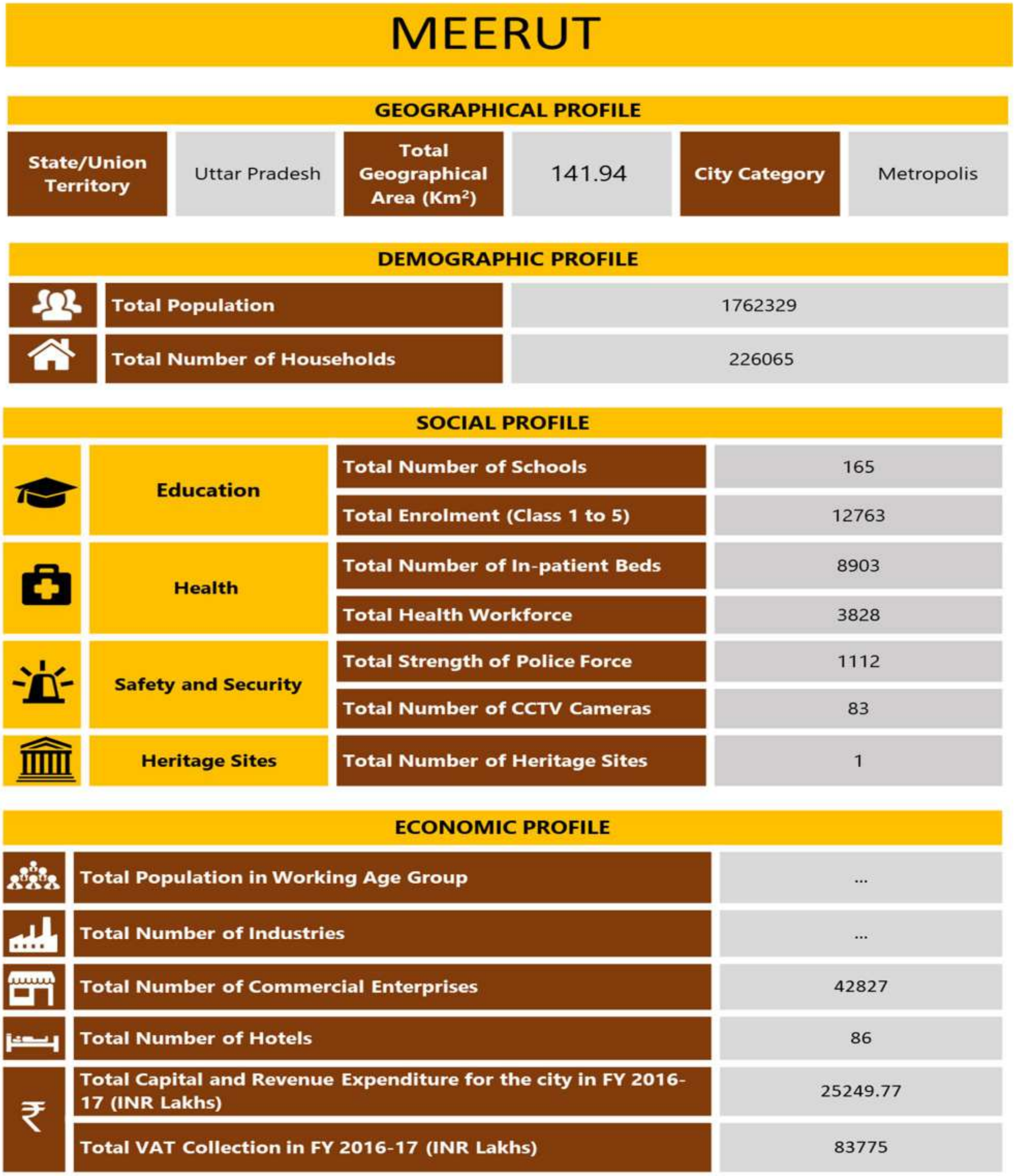
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MEERUT

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	141.94	City Category	Metropolis

DEMOGRAPHIC PROFILE

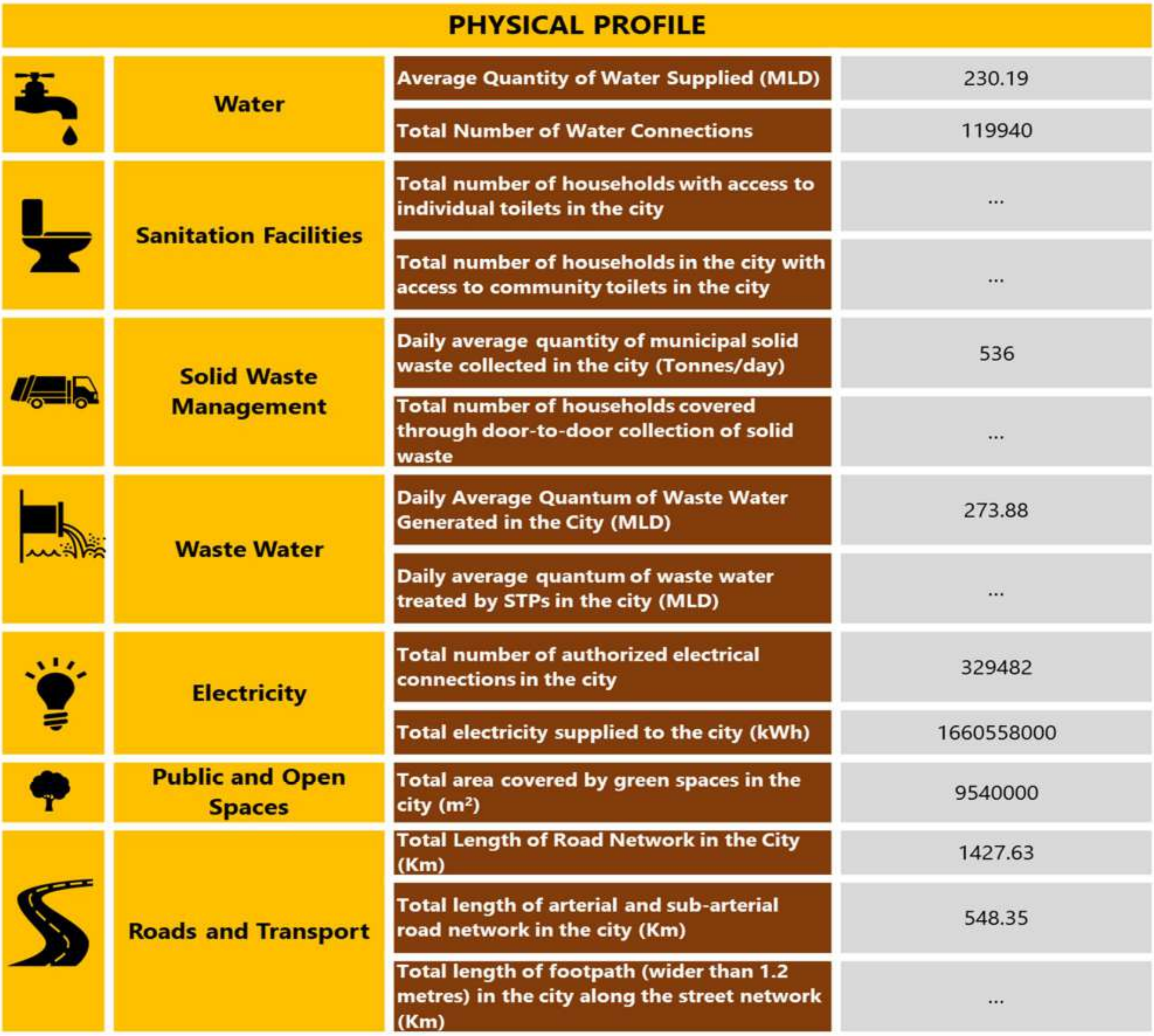
Total Population	1762329
Total Number of Households	226065

SOCIAL PROFILE

Education	Total Number of Schools	165
	Total Enrolment (Class 1 to 5)	12763
Health	Total Number of In-patient Beds	8903
	Total Health Workforce	3828
Safety and Security	Total Strength of Police Force	1112
	Total Number of CCTV Cameras	83
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	42827
Total Number of Hotels	86
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25249.77
Total VAT Collection in FY 2016-17 (INR Lakhs)	83775



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	230.19
	Total Number of Water Connections	119940
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	536
	Total number of households covered through door-to-door collection of solid waste	...
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	273.88
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	329482
	Total electricity supplied to the city (kWh)	1660558000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	9540000
Roads and Transport	Total Length of Road Network in the City (Km)	1427.63
	Total length of arterial and sub-arterial road network in the city (Km)	548.35
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

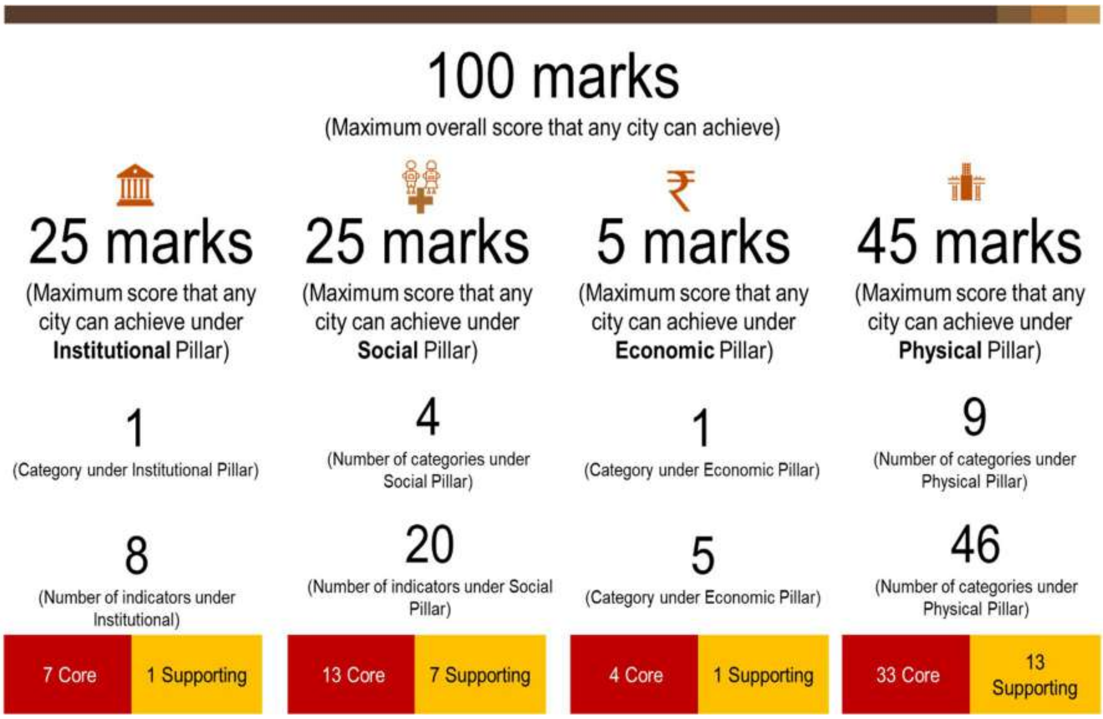
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts section, Meerut Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Garden Section, Meerut Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Water supply, Meerut Nagar Nigam
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Housing, Meerut Nagar Nigam
Urban Local Body	For Building plan related data	Development authority
Urban Local Body	For Roads related data	Development authority, roads
Urban Local Body	For Solid waste management related data	PHED
Urban Local Body	For IT services related data	IT Section, Meerut Nagar Nigam
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	UP Pollution control Board
Development	Building Infrastructure	Development Authority

Designated data owners	Subcategories	Data owners at city level
Authority		
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Development Authority
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM/Electricity Board
State Disaster management authority		State Disaster management authority
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Development Agency
State Sales / Commercial Taxes Department		State Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	RTO
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**12***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

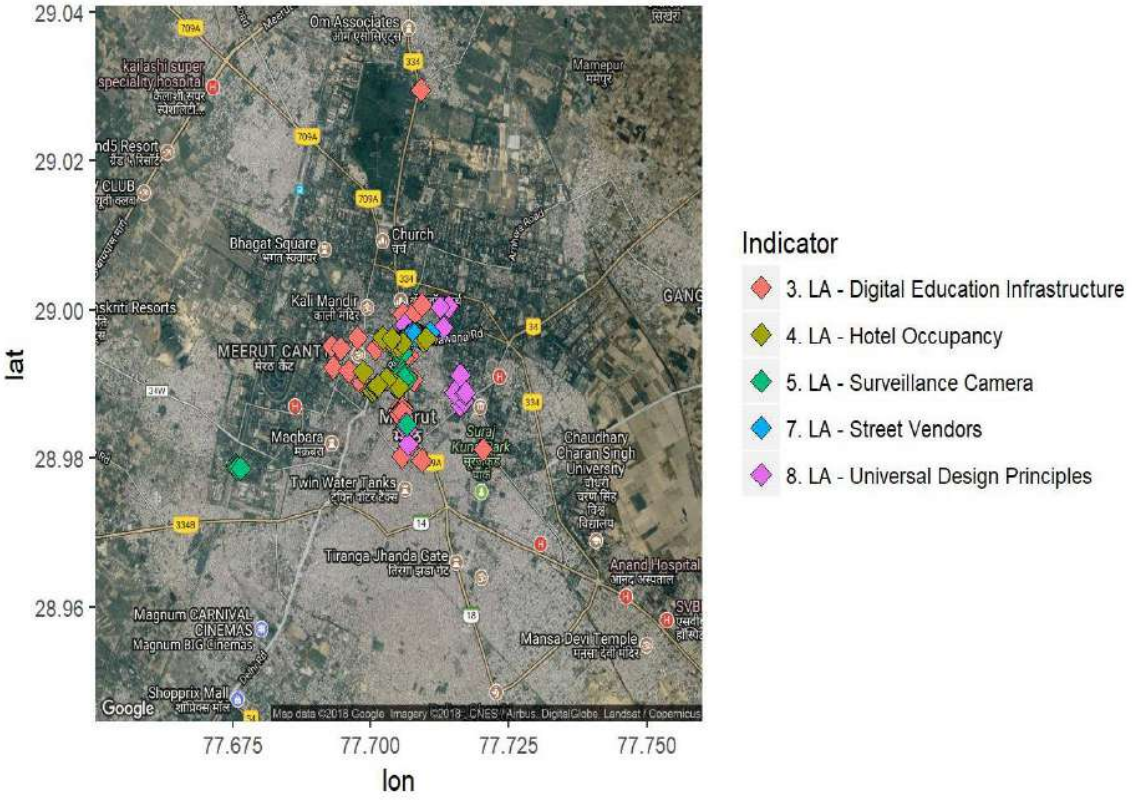
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


29.04
29.02
29.00
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lat
77.675
77.700
77.725
77.750
lon
Om Associates
kailashi super speciality hospital
Mamepur
Bhagat Square
Church
Kali Mandir
MEERUT CANT
Meerut
Maqbara
Twin Water Tanks
Suraj Kund Park
Chaudhary Charan Singh University
Tiranga Jhanda Gate
Anand Hospital
Magnum CARNIVAL CINEMAS
Magnum BIG Cinemas
Mansa Devi Temple
Shopprix Mall
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**67.95**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**1.02**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.005885613
	1.3i information	0.004406214
	1.3j electricity	0.020248451
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.17**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	7
	1.4f parks and recreational spaces	0
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**89.84**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2621.07
Denominator	Total demand raised for the year	2917.49
Unit	Percentage	

Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	0
Denominator	Total O&M cost for providing water supply services during the year	450
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-384.12**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-46855.18
Denominator	Total expenditure (revenue and capital accounts) in the same year	12198.01
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	80
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	25249.77
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**5.21**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	14374
Denominator	Total population in the age group of 6-14 years	276012
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**5.77**

Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	7301
Denominator	Total female population in the age group of 6-14 years	126613
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**60.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	12763
Denominator	Total number of teachers available for primary grades (public and private schools)	212
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**1.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	3
Denominator	Total number of schools	165
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**39.26**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	39.2571269
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**68.08**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	219632
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**68.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	8903
Denominator	Total population of the city	1305429
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**29.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3828
Denominator	Total population of the city	1305429
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	35721
Denominator	Total population of the city	1305429
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1080
Denominator	Total population of the city	1305429
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**5.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	83
Denominator	Total length of road network in the city	1427.63
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**814.98**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	10639
Denominator	Total population of the city	1305429
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1133
Denominator	Total crimes recorded in the same year	10639
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**64.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	838
Denominator	Total population of the city	1305429
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**12.07**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	9021
Denominator	Total VAT/GST collection during preceding year	747.54
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**16.92**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	90
Denominator	Number of construction permits during preceding year	5.32
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	276012
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**4.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	780
Denominator	Total number of vendors in the city	18250
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	Data Unavailable
Denominator	Total number of slum and EWS households in the city	2355.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**7.31**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	9540000
Denominator	Total population of the city	1305429
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.73**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	957500
Denominator	Total population of the city	1305429
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**109.84**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	155900000
Denominator	Total area of the city (total area of all land uses)	141940000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1305429
Denominator	Area allocated for residential land use (in hectares)	62010000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**118.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	268183
Denominator	Total number of households in the city	226065
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	329482
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**11629**
Description	Total number of sustained electrical interruptions in a year	11629
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.65**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	816384
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1495
Denominator	Total energy consumption from all sources	1660558000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	6905.7
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.29**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	38240000
Denominator	Total number of street light installations	42089
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	65748
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1660558000
Denominator	Total population of the city	1305429
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.41**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	100
Denominator	Total area of the city (sq.km)	141.94
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	179
Denominator	Total population of the city	1305429
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.39**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	5.5
Denominator	Total length of road network in the city	1427.63
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	17
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	17
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	13
Denominator	Total number of signalised intersections in the city	13

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	Data Unavailable
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	2855.26
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**3.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	4
Denominator	Total number of public right-of-way areas in the city	125
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**50.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	113726
Denominator	Total number of households in the city	226065
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**176.33**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	230.19
Denominator	Total population of the city	1305429
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**11.73**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	27
Denominator	Quantum of water put into the distribution system (mld)	230.19
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	119940
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**4.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	25
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	615
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	0
Denominator	Total number of properties in the city	254292
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	0
Denominator	Total number of properties in the city	254292
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	273.88
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0

Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.05**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	15
Denominator	Total length of road network in the city	1427.63
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	0
Denominator	Total number of households and establishments in the city	268892
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**58.9**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	536
Denominator	Total quantum of MSW generated in the city	910
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	16080
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7.04**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.04
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**62.17**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	62.166
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**169.21**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	169.206
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	144
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**13.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	48
Denominator	Total number of samples tested	355
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

MORADABAD

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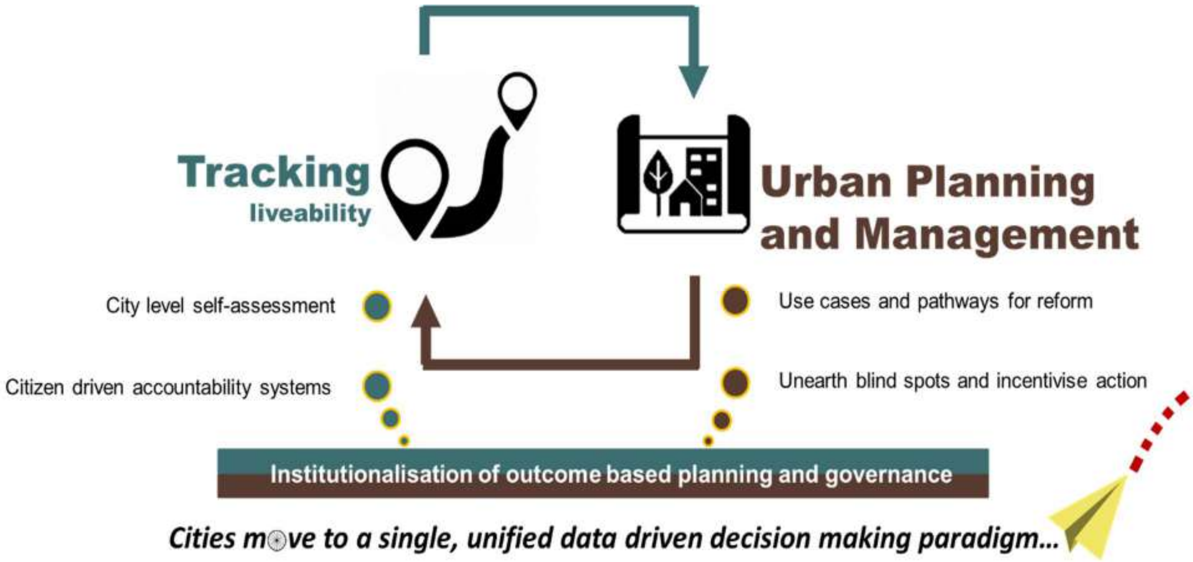
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

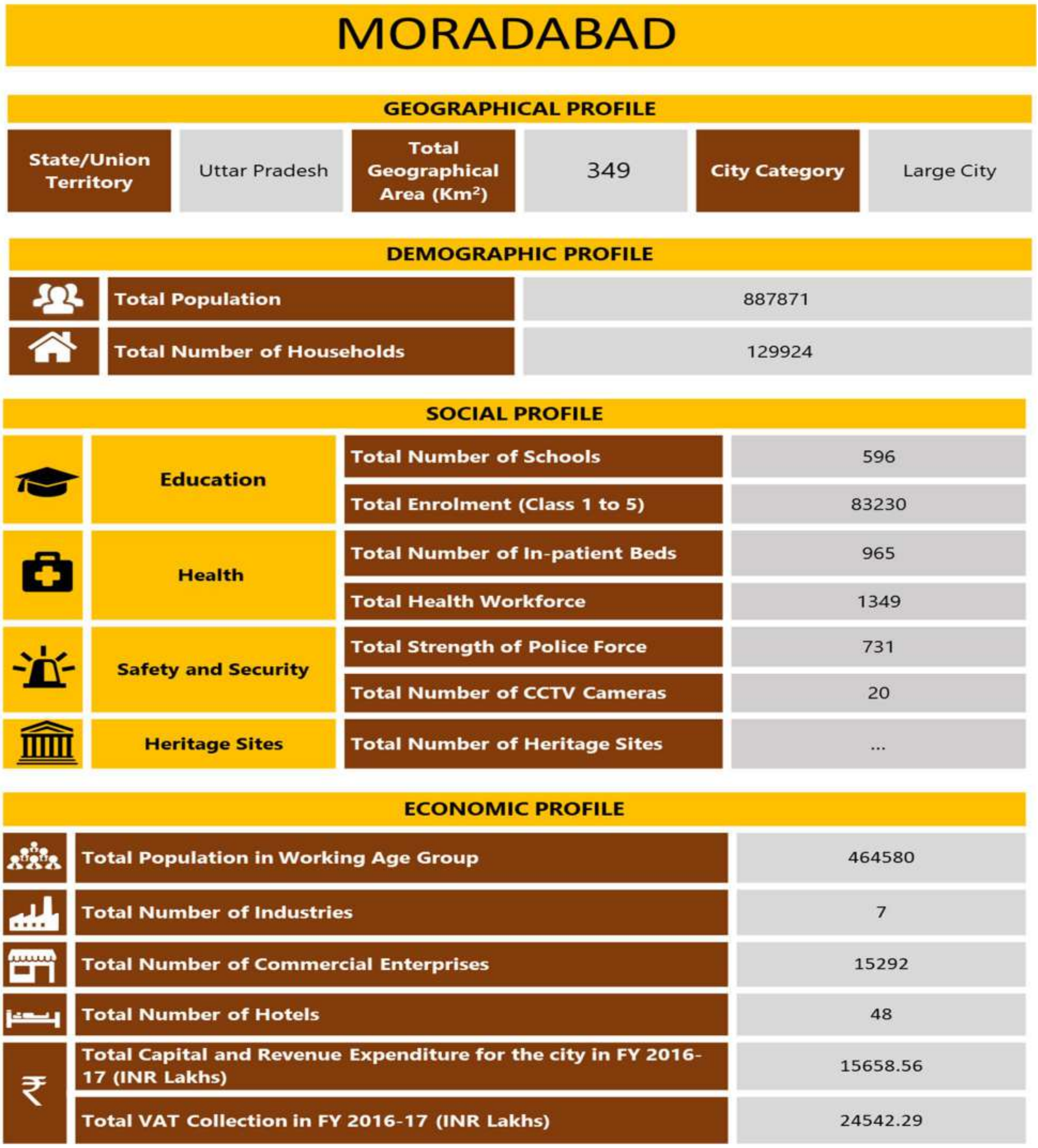
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MORADABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	349	City Category	Large City

DEMOGRAPHIC PROFILE

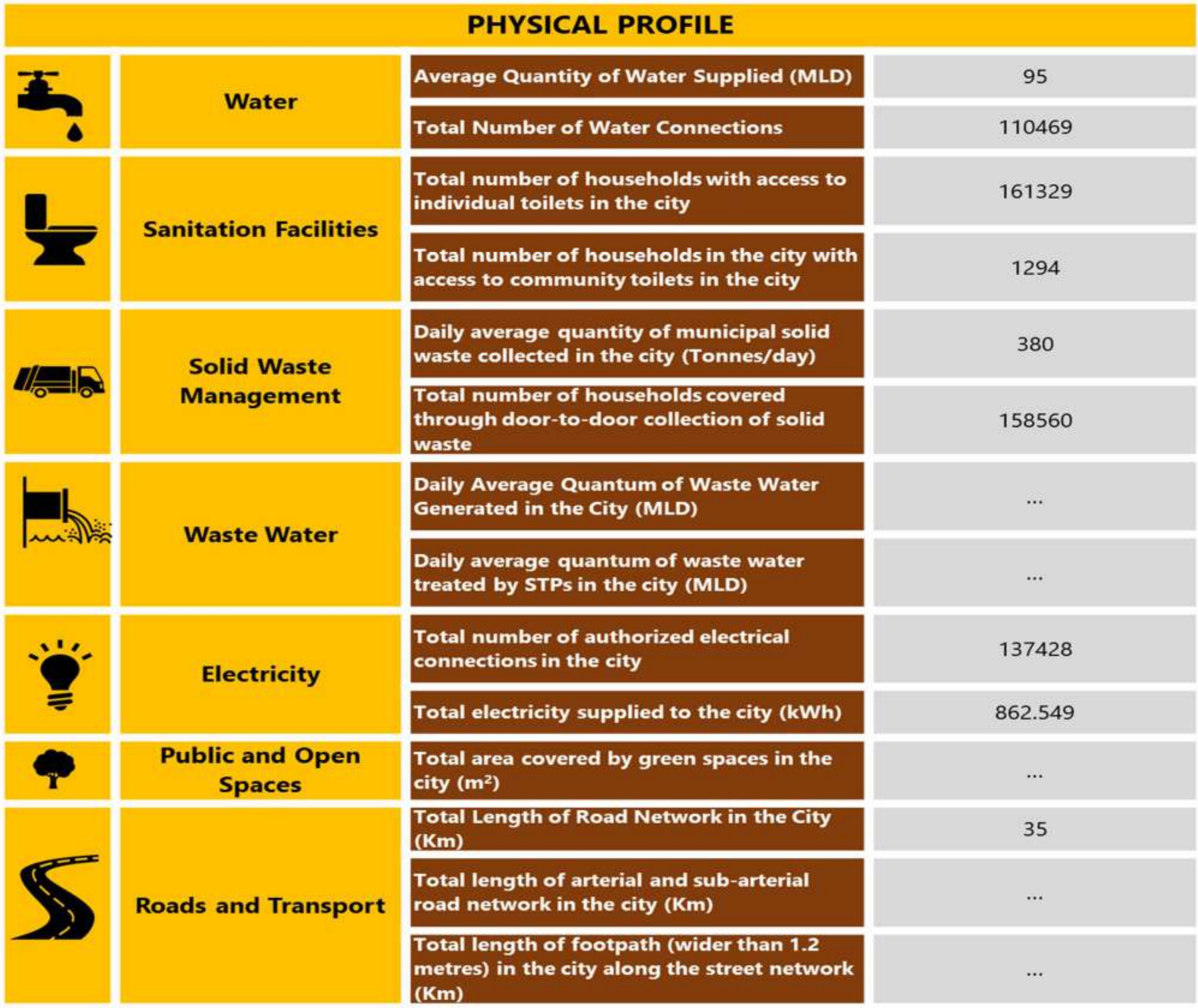
Total Population	887871
Total Number of Households	129924

SOCIAL PROFILE

Education	Total Number of Schools	596
	Total Enrolment (Class 1 to 5)	83230
Health	Total Number of In-patient Beds	965
	Total Health Workforce	1349
Safety and Security	Total Strength of Police Force	731
	Total Number of CCTV Cameras	20
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	464580
Total Number of Industries	7
Total Number of Commercial Enterprises	15292
Total Number of Hotels	48
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15658.56
Total VAT Collection in FY 2016-17 (INR Lakhs)	24542.29



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	95
	Total Number of Water Connections	110469
Sanitation Facilities	Total number of households with access to individual toilets in the city	161329
	Total number of households in the city with access to community toilets in the city	1294
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	380
	Total number of households covered through door-to-door collection of solid waste	158560
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	137428
	Total electricity supplied to the city (kWh)	862.549
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	35
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

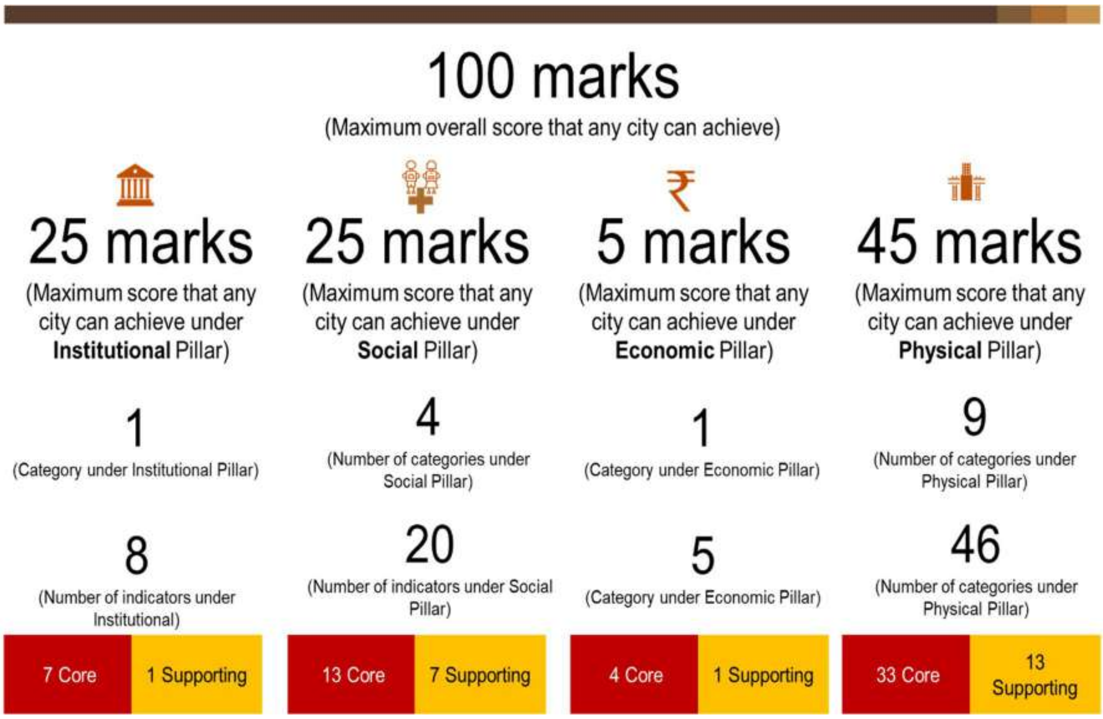
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Nagar Nigam Moradabad
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag, Nagar Nigam Moradabad
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal, vibhag Nagar Nigam Moradabd
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Moradabad
Urban Local Body	For Housing related data	Moradabad Development Authority / Nirmaan Vibhag Nagar Nigam Moradabad
Urban Local Body	For Building plan related data	Moradabad Development Authority Moradabad
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Moradabad
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Moradabad
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Moradabad
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Moradabad
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency moradabad
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Moradabad
Development Authority	Building Infrastructure	Moradabad development Authority Moradabad
	Construction planning	Moradabad development Authority

Designated data owners	Subcategories	Data owners at city level
		Moradabad
	Green Building	Moradabad development Authority Moradabad
	Rain water harvesting	Moradabad development Authority Moradabad
	Universal Design Principle	Moradabad development Authority Moradabad
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Moradabad
State Disaster management authority		State Disaster Management Moradabad [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Moradabad (DIOS)
State Health Department	Health care professionals	UP State Health Department Moradabad (CMO)
	Citizen Services	UP State Health Department Moradabad (CMO)
	Disease Prevalence	UP State Health Department Moradabad (CMO)
	Health Infrastructure	UP State Health Department Moradabad (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Moradabad Zone
Town and Country Planning Department	Land Use	Town and Country Planning Department Moradabad
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Moradabad
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Moradabad
	Registered Vehicles	Regional Transport Office Moradabad
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 27 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**2**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**14**
Total	**27***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

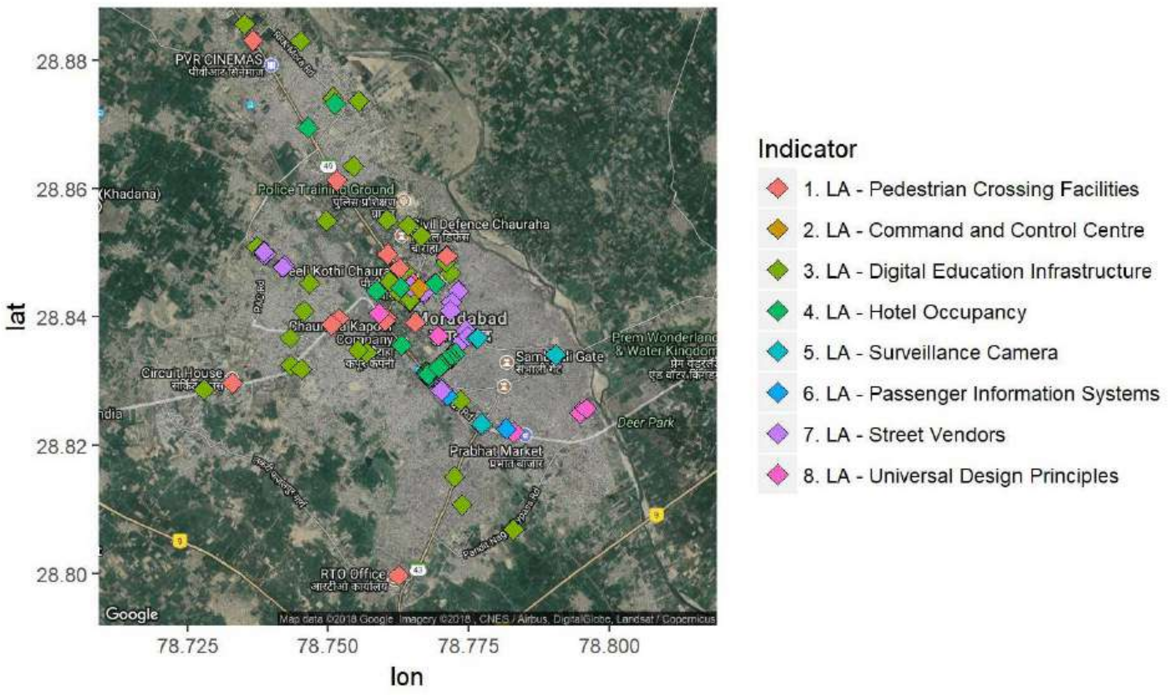
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.88
28.86
28.84
28.82
28.80
lat
78.725
78.750
78.775
78.800
lon
PVR CINEMAS
Police Training Ground
Civil Defence Chauraha
Moradabad
Circuit House
Prabhat Market
Prem Wonderland & Water Kingdom
Deer Park
RTO Office
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**76.92**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**14.29**
Description	Services integrated through an integrated or a singular operations command centre	3
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.81**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0

	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	7.38658E-05
	1.3i information	5.63145E-05
	1.3j electricity	0.064331868
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.25**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	1
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**96.42**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1212.54
Denominator	Total demand raised for the year	1257.6
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**169815.62**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply	5422060

	in a year	
Denominator	Total O&M cost for providing water supply services during the year	3192.91
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**2.16**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	889.18
Denominator	Total expenditure (revenue and capital accounts) in the same year	41147.22
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	70
Denominator	Total number of wards	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**7.14**
Description	Average Occupancy rate of Hotels	7.142857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	15658.56
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**10**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	10
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**63.36**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	125228
Denominator	Total population in the age group of 6-14 years	197644
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**64.31**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	60224
Denominator	Total female population in the age group of 6-14 years	93640

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**29.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	83230
Denominator	Total number of teachers available for primary grades (public and private schools)	2860
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**6.88**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	41
Denominator	Total number of schools	596
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**195.87**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	195.870 46
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**148.84**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1921418 52
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**10.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	965
Denominator	Total population of the city	887871
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**15.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1349
Denominator	Total population of the city	887871
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**21**
Description	Total response time for health-related distress calls received in the city	21
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**4.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	40229
Denominator	Total population of the city	887871
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	553
Denominator	Total population of the city	887871
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**57.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	20
Denominator	Total length of road network in the city	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**346.56**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3077
Denominator	Total population of the city	887871
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**26.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	808
Denominator	Total crimes recorded in the same year	3077
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**52.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	462
Denominator	Total population of the city	887871
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**7.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1806.92
Denominator	Total VAT/GST collection during preceding year	227.3537
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**70.13**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	162
Denominator	Number of construction permits during preceding year	2.31
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	10369
Denominator	Total labour force in the city	197644
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	8750
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	7002
Denominator	Total number of slum and EWS households in the city	1416.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	211520000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	887871
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.41**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	365929
Denominator	Total population of the city	887871
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	349000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	887871
Denominator	Area allocated for residential land use (in hectares)	58558500
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**120.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	155935
Denominator	Total number of households in the city	129924
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	137428
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**750**
Description	Total number of sustained electrical interruptions in a year	750
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	300
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1000070
Denominator	Total energy consumption from all sources	862.549
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	2850
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	61032
Denominator	Total number of street light installations	39684
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	862.549
Denominator	Total population of the city	887871
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	349
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	887871
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	35
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**1**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	8
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	0
Denominator	Total length of road network in the city	70
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	118
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**57.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	75121
Denominator	Total number of households in the city	129924
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**107**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	95
Denominator	Total population of the city	887871
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	953
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**100.53**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	95.5
Denominator	Quantum of water put into the distribution system (mld)	95
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	110469
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**113.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	179328
Denominator	Total number of properties in the city	158587
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	0
Denominator	Total number of properties in the city	158587
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	35
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**118.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	171510
Denominator	Total number of households and establishments in the city	145216
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	380
Denominator	Total quantum of MSW generated in the city	380
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	11400
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**22**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	22
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**40**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	40
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**240**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	240
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	48
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	953
Denominator	Total number of samples tested	953
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

MUZAFFARPUR

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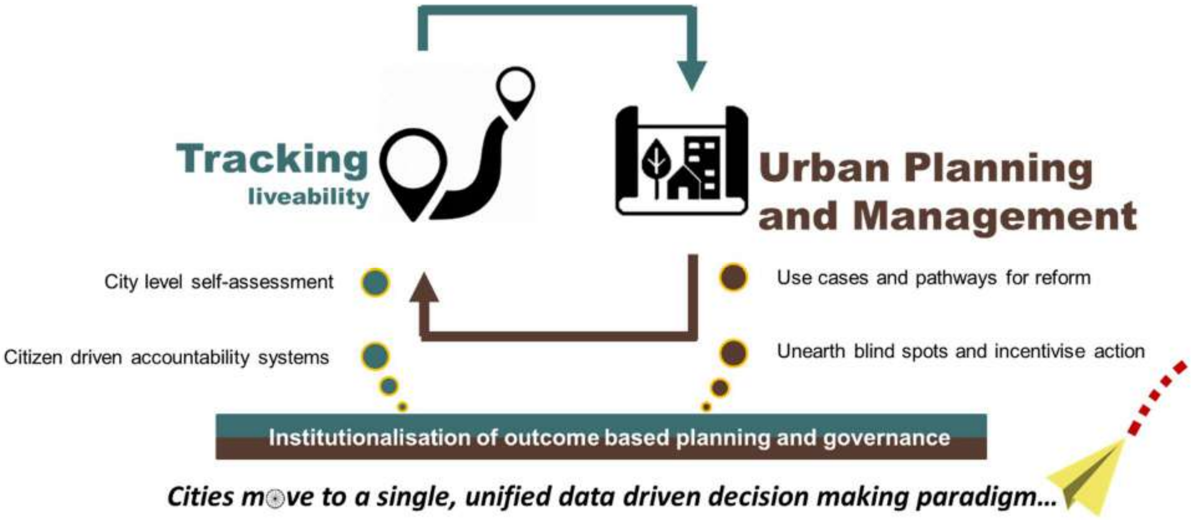
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

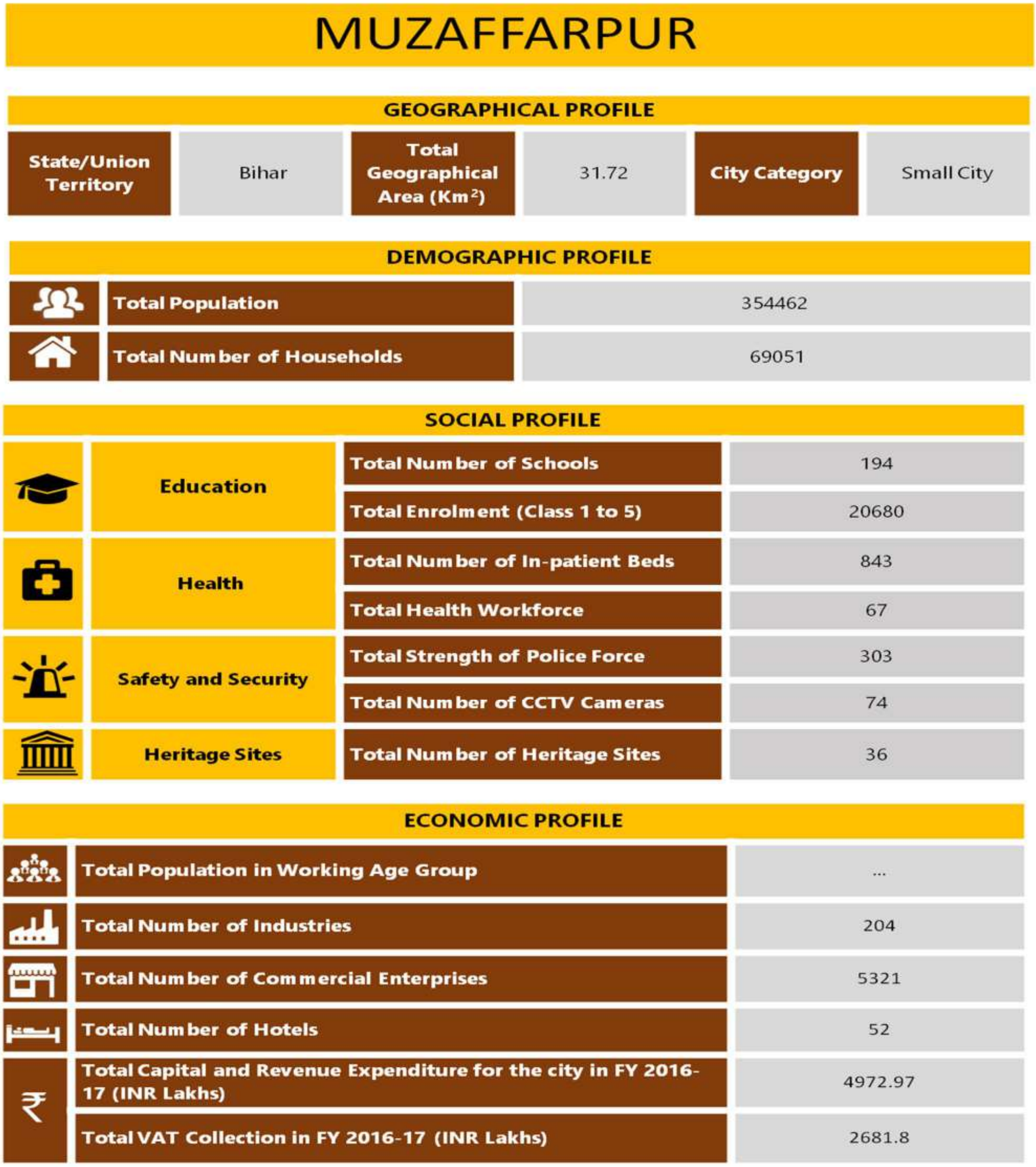
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MUZAFFARPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	**Total Geographical Area (Km^2)**	31.72	**City Category**	Small City

DEMOGRAPHIC PROFILE

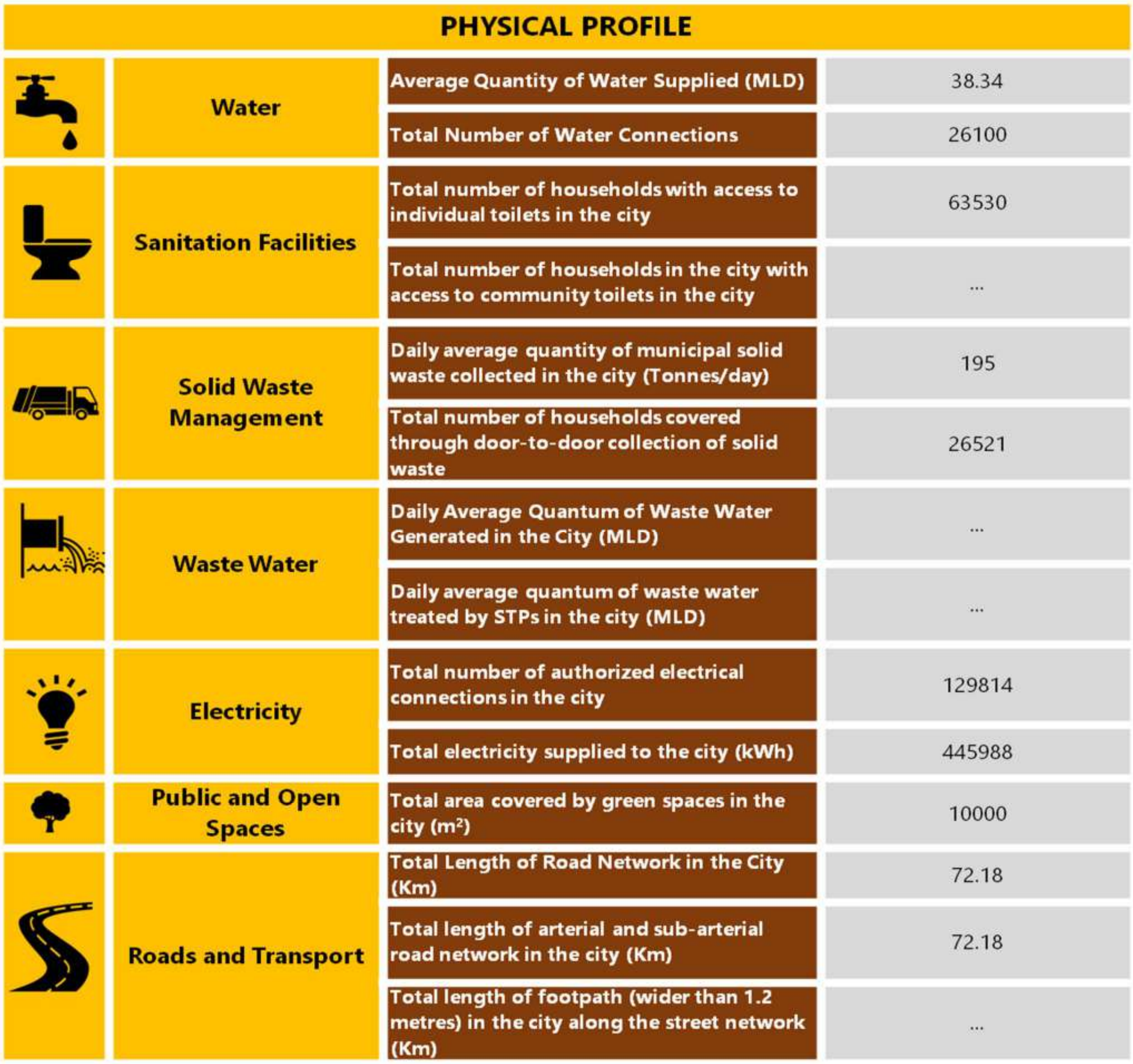
Total Population	354462
Total Number of Households	69051

SOCIAL PROFILE

Education	**Total Number of Schools**	194
	Total Enrolment (Class 1 to 5)	20680
Health	**Total Number of In-patient Beds**	843
	Total Health Workforce	67
Safety and Security	**Total Strength of Police Force**	303
	Total Number of CCTV Cameras	74
Heritage Sites	**Total Number of Heritage Sites**	36

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	204
Total Number of Commercial Enterprises	5321
Total Number of Hotels	52
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4972.97
Total VAT Collection in FY 2016-17 (INR Lakhs)	2681.8



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	38.34
	Total Number of Water Connections	26100
Sanitation Facilities	Total number of households with access to individual toilets in the city	63530
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	195
	Total number of households covered through door-to-door collection of solid waste	26521
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	129814
	Total electricity supplied to the city (kWh)	445988
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10000
Roads and Transport	Total Length of Road Network in the City (Km)	72.18
	Total length of arterial and sub-arterial road network in the city (Km)	72.18
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

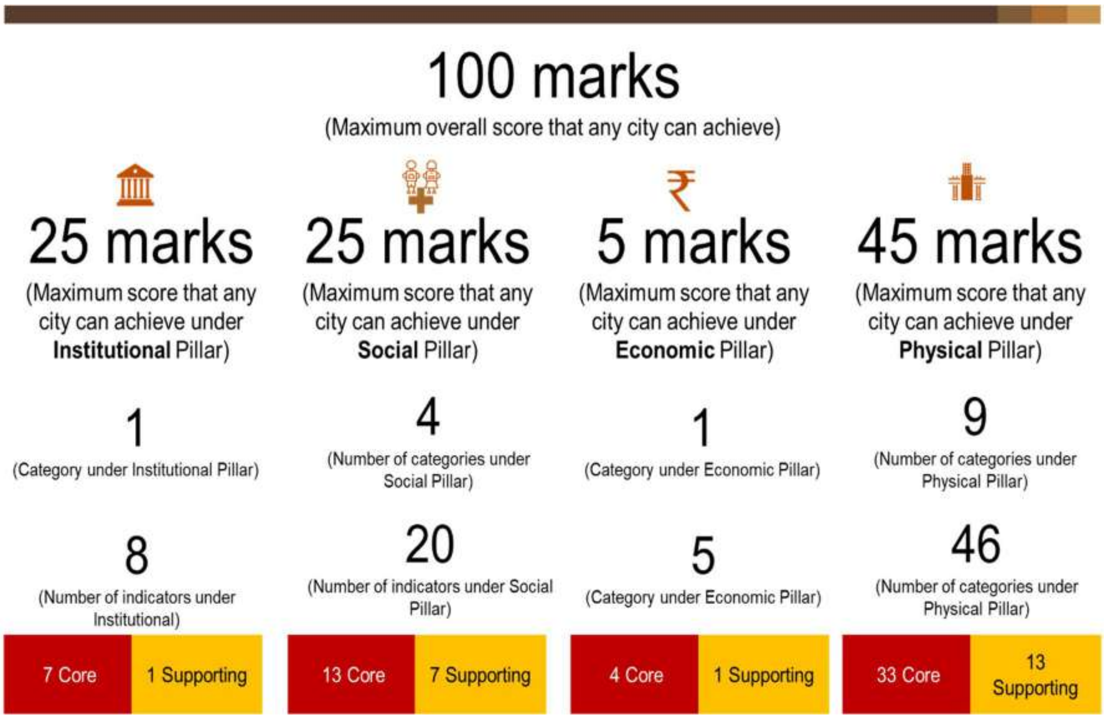
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Heritage sites related data	Muzaffarpur Municipal Corporation
Urban Local Body	For Ecological sites related data	Muzaffarpur Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Muzaffarpur Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Solid waste management related data	Muzaffarpur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For IT services related data	IT section, Muzaffarpur Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Muzaffarpur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar
Development Authority	Building Infrastructure	Engineering Department, Muzaffarpur Municipal Corporation
	Construction planning	Engineering Department, Muzaffarpur Municipal Corporation
	Green Building	Engineering Department, Muzaffarpur Municipal Corporation
	Rain water harvesting	Engineering Department, Muzaffarpur Municipal Corporation
	Universal Design Principle	Engineering Department, Muzaffarpur Municipal Corporation
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development		Bihar Renewable Energy Development Authority

Designated data owners	Subcategories	Data owners at city level
Agency		
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Muzaffarpur Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

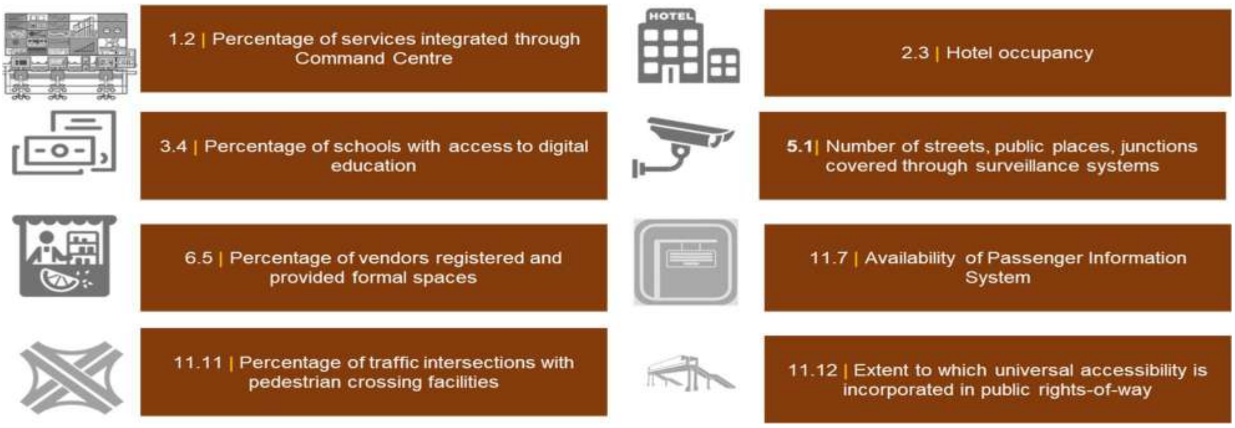
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	4
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	5
Transport Authority	0
Disaster Management	0
Urban Local Body	27
Total	40*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

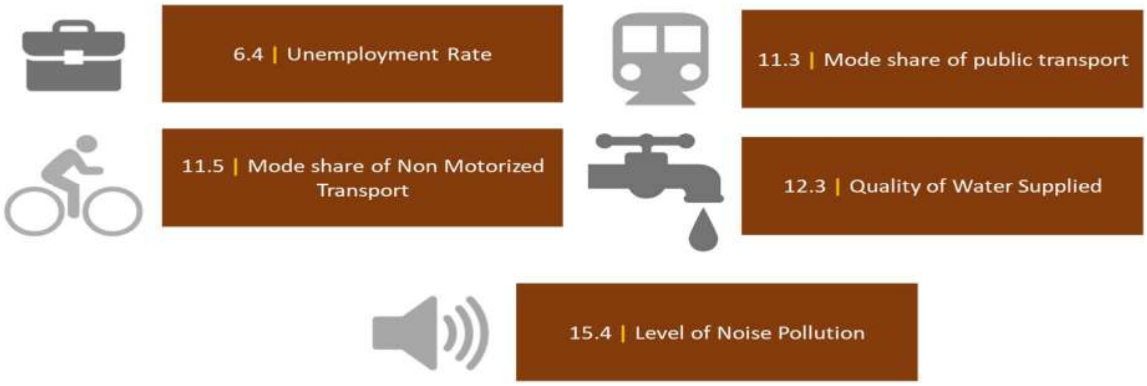
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

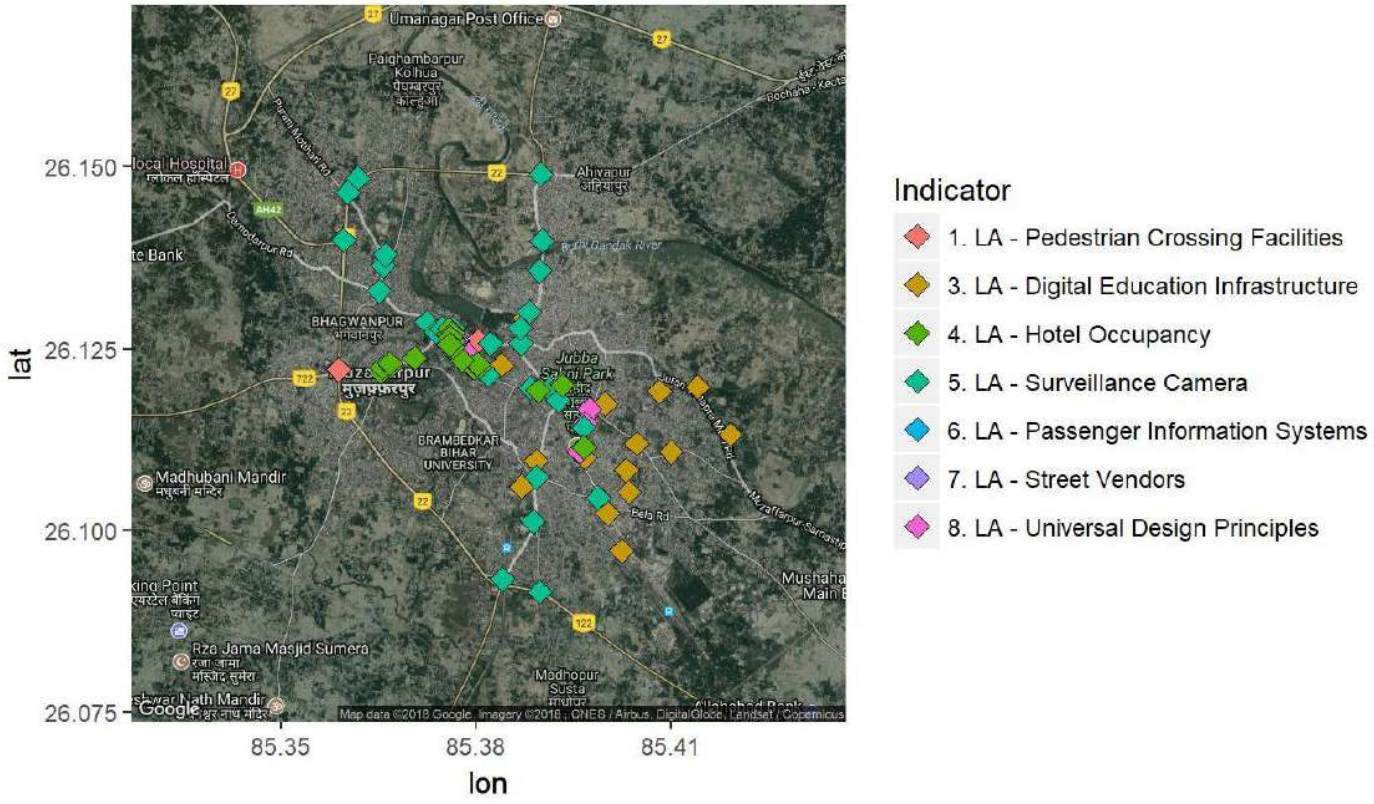
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
26.150
26.125
26.100
26.075
lon
85.35
85.38
85.41
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**52.56**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**23.81**
Description	Services integrated through an integrated or a singular operations command centre	5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.9**

Description		
Sub Indicators	1.3a Building plan	3.07037E-05
	1.3b Birth/Death Certificate	0.004945053
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.001462939
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.002173952
	1.3i information	0.002172306
	1.3j electricity	0.103151432
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**82.6**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1134.59
Denominator	Total demand raised for the year	1373.61

Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	NA
Denominator	Total O&M cost for providing water supply services during the year	11.89
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**213.76**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-17110.81
Denominator	Total expenditure (revenue and capital accounts) in the same year	-8004.55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	49
Denominator	Total number of wards	49
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	36

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**80**
Description	Average Occupancy rate of Hotels	80
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1.03
Denominator	Total budget of the ULB (capital and revenue)	4972.97
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**152**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	152
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in**	**44.53**

	schools	
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	33133
Denominator	Total population in the age group of 6-14 years	74410
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**46.82**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	16385
Denominator	Total female population in the age group of 6-14 years	34999
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**13.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	20680
Denominator	Total number of teachers available for primary grades (public and private schools)	1574
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**12.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	25
Denominator	Total number of schools	194
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**91.35** 91.34654349
Formula:	*Product of ratios of students passing successive grades*	

	(between grades 1 to 5) in 2016-17	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**94.25**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	16816404
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**23.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	843
Denominator	Total population of the city	354462
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**1.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	67
Denominator	Total population of the city	354462
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	NA

Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	4874
Denominator	Total population of the city	354462
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1197
Denominator	Total population of the city	354462
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**102.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	74
Denominator	Total length of road network in the city	72.18
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1156.4**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4099
Denominator	Total population of the city	354462

Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**3.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	142
Denominator	Total crimes recorded in the same year	4099
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**68.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	242
Denominator	Total population of the city	354462
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**16.93**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	5945.89
Denominator	Total VAT/GST collection during preceding year	351.2495
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-**
Formula:	*Numerator / Denominator*	

		Computable
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**35.04**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	48
Denominator	Number of construction permits during preceding year	1.37
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	30032
Denominator	Total labour force in the city	74410
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**13.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	304
Denominator	Total number of vendors in the city	2255
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**16.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1126
Denominator	Total number of slum and EWS households in the city	67.14
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	0
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	10000
Denominator	Total population of the city	354462
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**131.96**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	46776087.12
Denominator	Total population of the city	354462
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability	

	(amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	31720000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	354462
Denominator	Area allocated for residential land use (in hectares)	5779074
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**137.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	95031
Denominator	Total number of households in the city	69051
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	129814
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**36908**
Description	Total number of sustained electrical interruptions in a year	36908
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	60
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	NA
Denominator	Total energy consumption from all sources	452254.4
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on water supply and sewerage services	86.25
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1187
Denominator	Total number of street light installations	5418
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	1300
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	26900
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	452254.4
Denominator	Total population of the city	354462
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.42**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	20
Denominator	Total area of the city (sq.km)	31.72
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	354462
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	72.18
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with	NA

	bicycle parking facility (within 250m radius)	
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	72.18
Denominator	Total length of road network in the city	144.36
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**3.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	22
Denominator	Total number of public right-of-way areas in the city	603
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**36.39**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	25125
Denominator	Total number of households in the city	69051
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**108.16**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	38.34
Denominator	Total population of the city	354462
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	6
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	38.34
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	26100
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	186
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	186
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**138.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	63966
Denominator	Total number of properties in the city	46140
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**143.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	66000
Denominator	Total number of properties in the city	46140
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	72.18
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**53.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	39713
Denominator	Total number of households and establishments in the city	74372
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**95.12**
Formula:	*Numerator / Denominator*	

Numerator	Total quantum of MSW collected by the ULB or private operator	195
Denominator	Total quantum of MSW generated in the city	205
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	33.8
Denominator	Average MSW generated in the city (tons per month)	5850
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**42.64**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	42.64
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	NA
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**

Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	6
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

NAGPUR

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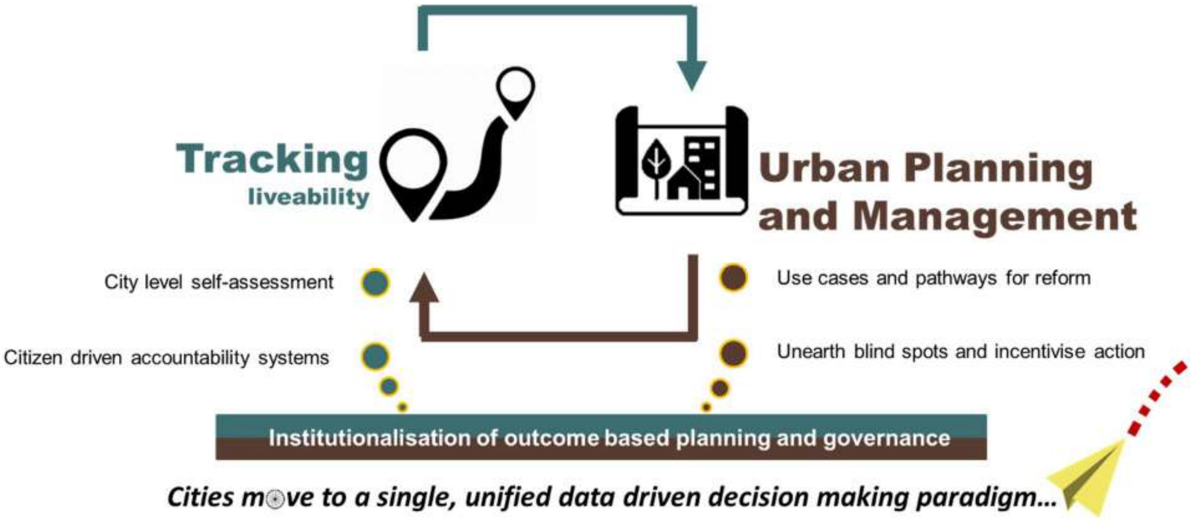
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

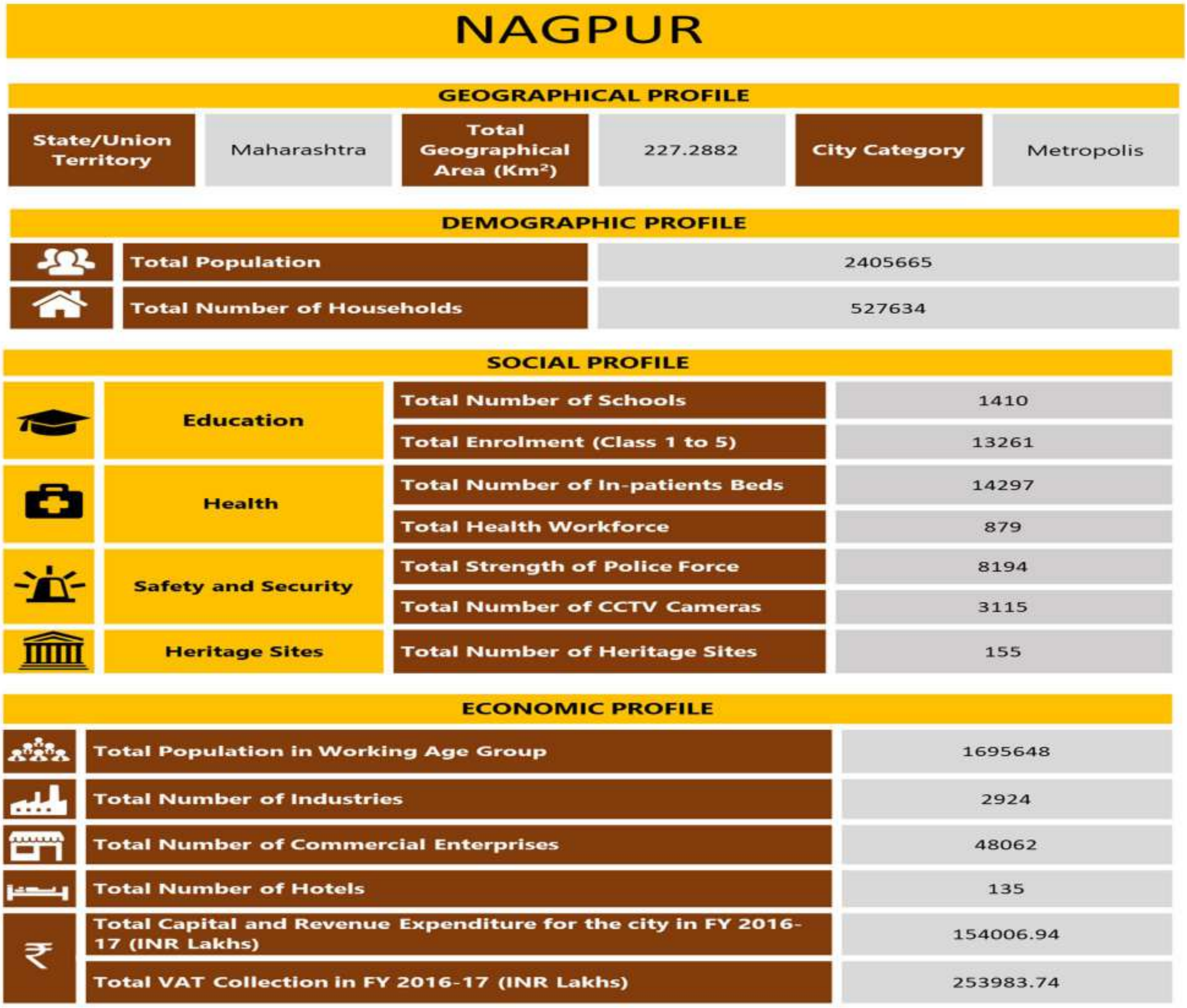

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NAGPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	227.2882	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

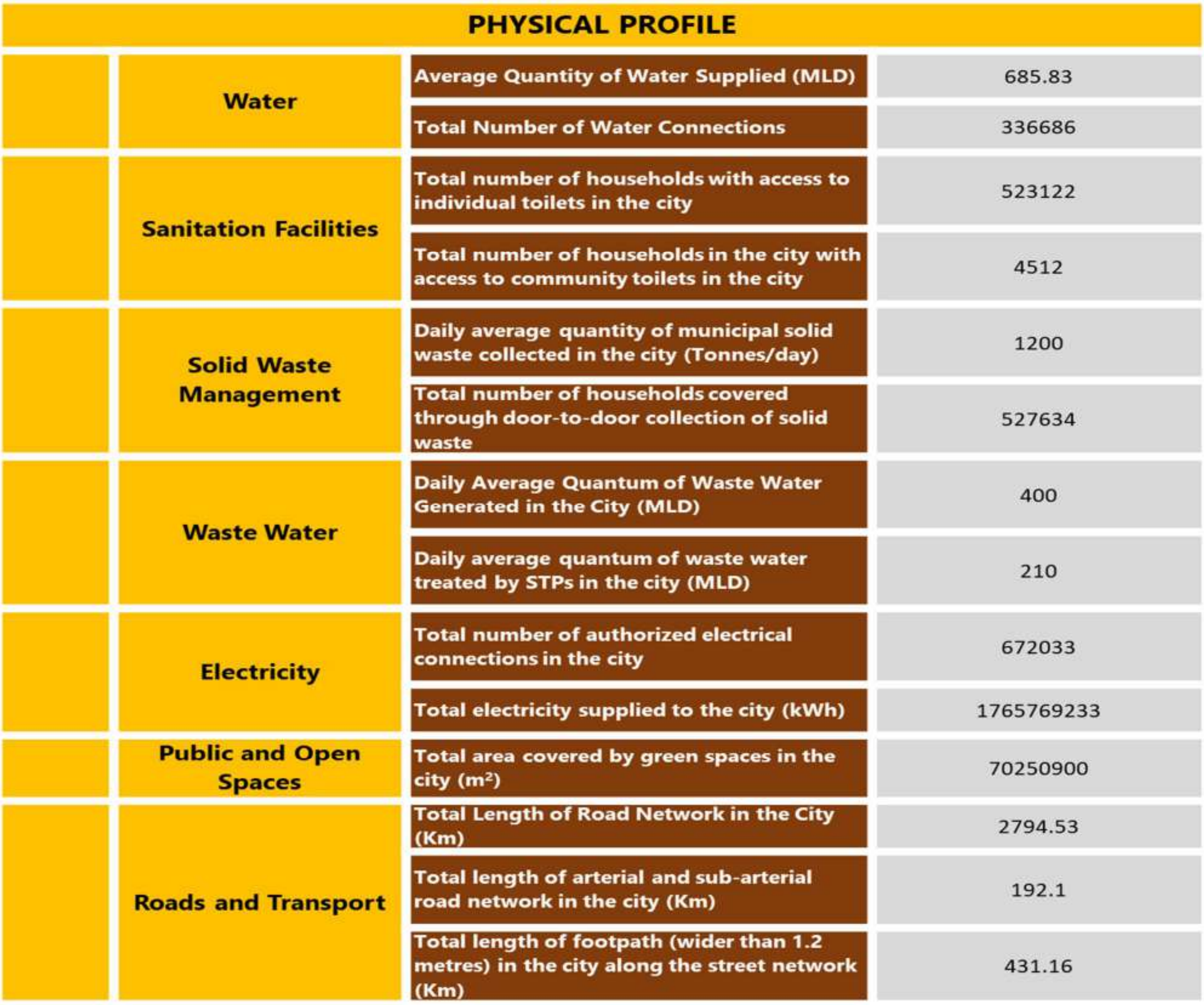
Total Population	2405665
Total Number of Households	527634

SOCIAL PROFILE

Education	**Total Number of Schools**	1410
	Total Enrolment (Class 1 to 5)	13261
Health	**Total Number of In-patients Beds**	14297
	Total Health Workforce	879
Safety and Security	**Total Strength of Police Force**	8194
	Total Number of CCTV Cameras	3115
Heritage Sites	**Total Number of Heritage Sites**	155

ECONOMIC PROFILE

Total Population in Working Age Group	1695648
Total Number of Industries	2924
Total Number of Commercial Enterprises	48062
Total Number of Hotels	135
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	154006.94
Total VAT Collection in FY 2016-17 (INR Lakhs)	253983.74



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	685.83
		Total Number of Water Connections	336686
	Sanitation Facilities	Total number of households with access to individual toilets in the city	523122
		Total number of households in the city with access to community toilets in the city	4512
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1200
		Total number of households covered through door-to-door collection of solid waste	527634
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	400
		Daily average quantum of waste water treated by STPs in the city (MLD)	210
	Electricity	Total number of authorized electrical connections in the city	672033
		Total electricity supplied to the city (kWh)	1765769233
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	70250900
	Roads and Transport	Total Length of Road Network in the City (Km)	2794.53
		Total length of arterial and sub-arterial road network in the city (Km)	192.1
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	431.16

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

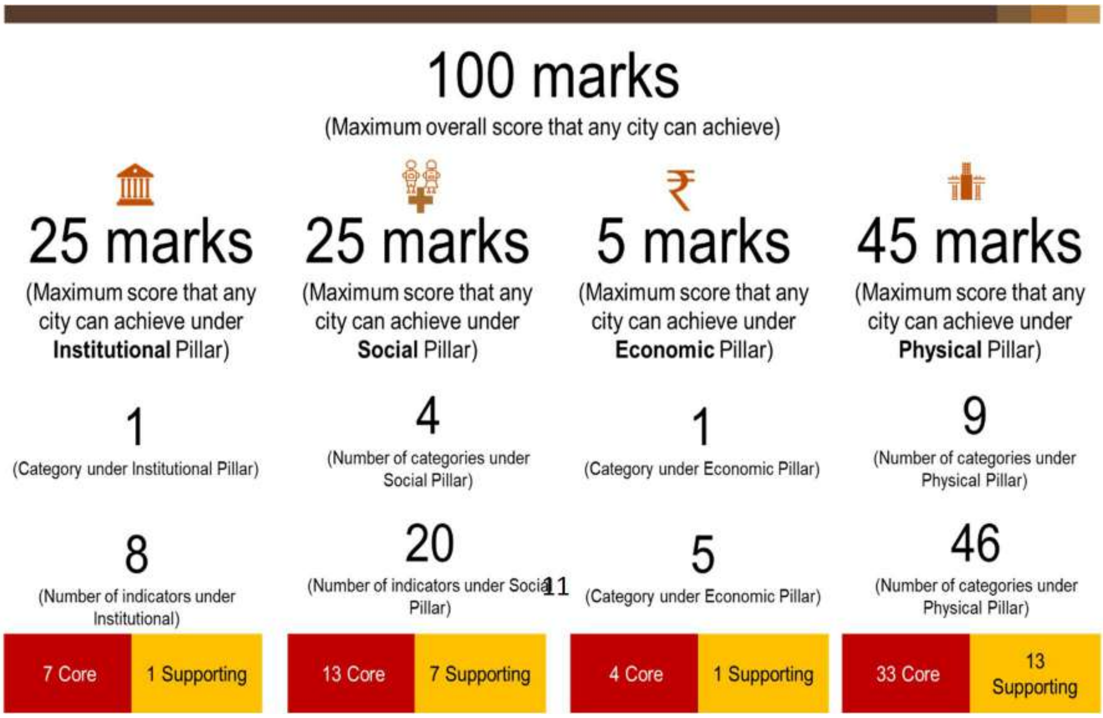
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account and Finance Department
Urban Local Body	For Park and Recreation Related Questions	Garden Department.
Urban Local Body	For Water Supply and Drainage related questions	Water Works Department
Urban Local Body	For Heritage sites related data	Estate Department
Urban Local Body	For Ecological sites related data	Town Planning Department
Urban Local Body	For Housing related data	Slum Department
Urban Local Body	For Building plan related data	General Administration Department
Urban Local Body	For Roads related data	Public Work Department (City Engineer & Development Engineer).
Urban Local Body	For Solid waste management related data	Health Department (Sanitation)
Urban Local Body	For IT services related data	E-Governance Department
Urban Local Body	For Vendor committee related data	Market Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Garden Department, Election Department, Education Department, Zilla Udyog Bhawan, Nagpur Residential Hotel Association,

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Central Board.
Development Authority	Building Infrastructure	Town Planning Department Nagpur Municipal Corporation.
	Construction planning	Town Planning Department Nagpur Municipal Corporation.
	Green Building	Data Unavailable
	Rain water harvesting	Town Planning Department Nagpur Municipal Corporation.
	Universal Design Principle	Town Planning Department Nagpur Municipal Corporation.
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MahaVitran / DISCOM
State Disaster management authority		Fire Brigade Department Nagpur Municipal Corporation
State Education Department		Zilla Parishad Nagpur
State Health Department	Health care professionals	Nagpur Deputy Director Health Services.
	Citizen Services	Nagpur Deputy Director Health Services.
	Disease Prevalence	Nagpur Deputy Director Health Services.
	Health Infrastructure	Nagpur Deputy Director Health Services.
State Renewable Energy Development Agency		Maharashtra Energy Development Agency
State Sales / Commercial Taxes Department		Sales Tax Department Nagpur
Town and Country Planning Department	Land Use	Town Planning Department Nagpur Municipal Corporation.
Traffic and Police Department		Traffic Police Department Nagpur
Transport Authorities	Buses	Transport Departmental
	Registered Vehicles	Deputy RTO Nagpur
	Sub urban rail transport	Central Railway / South East central Railway Nagpur.
	Mono Rail Authority	_
	Tramways	_
	Marine Transport Authority	_

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 59 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**2**
State Renewable Energy Department	**4**
Town and Country Planning	**2**
State Health Department	**1**
Transport Authority	**4**
Disaster Management	**1**
Urban Local Body	**40**
Total	**59***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

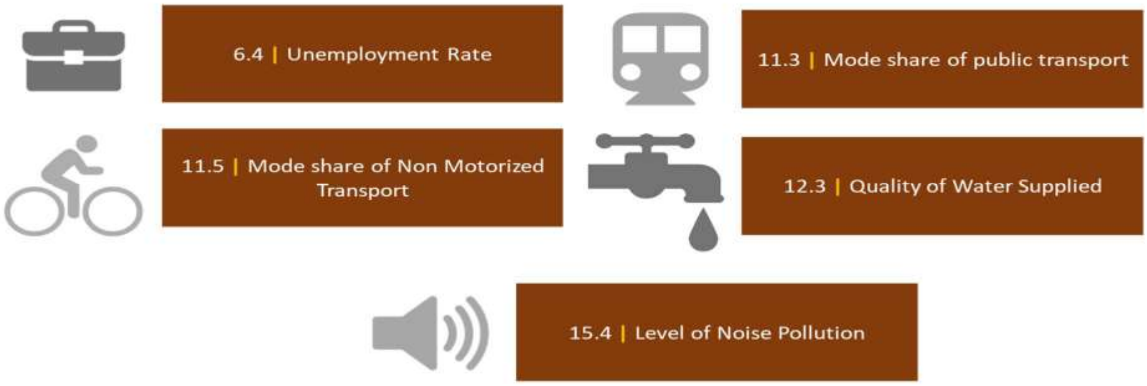
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

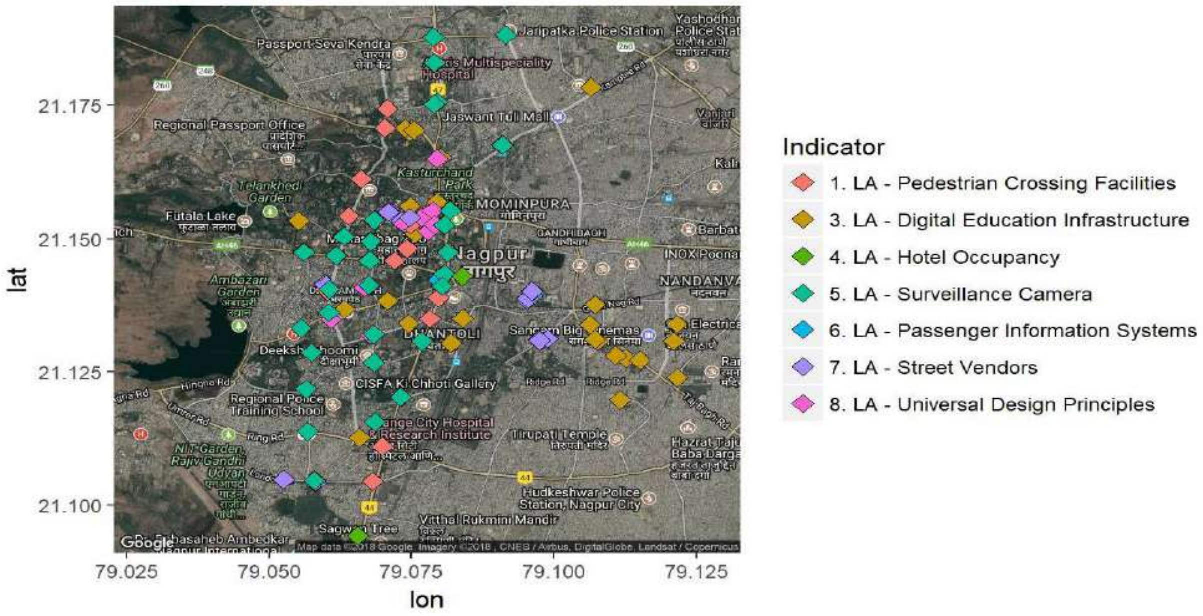
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


21.175
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lon
Nagpur
नागपूर
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
🟥 1. LA - Pedestrian Crossing Facilities
🟧 3. LA - Digital Education Infrastructure
🟩 4. LA - Hotel Occupancy
🟩 5. LA - Surveillance Camera
🟦 6. LA - Passenger Information Systems
🟪 7. LA - Street Vendors
🟪 8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**36**
Description	Average citizen services available online	

Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	0.5
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**14.29**
Description	Services integrated through an integrated or a singular operations command centre	3
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**5.19**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	NA
	1.3d solid waste management	0
	1.3e property tax	0.003179308
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0.019357641
	1.3j electricity	0.340789068
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**5.36**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	30
	1.4g building plan	7.5
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**47.22**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	18581.444
Denominator	Total demand raised for the year	39350
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**81.18**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	12226
Denominator	Total O&M cost for providing water supply services during the year	15059.79
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-17.7**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-36561.43
Denominator	Total expenditure (revenue and capital accounts) in the same year	206615.38
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**26.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	10
Denominator	Total number of wards	38
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**7.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	11
Denominator	Total number of historic buildings/sites identified	155
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**25.71**
Description	Average Occupancy rate of Hotels	25.71428571

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.52**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	804.48
Denominator	Total budget of the ULB (capital and revenue)	154006.94
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**1**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	1
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**5.76**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	22389
Denominator	Total population in the age group of 6-14 years	388386
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**5.93**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	11040
Denominator	Total female population in the age group of 6-14 years	186162
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**20.53**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	13261
Denominator	Total number of teachers available for primary grades (public and private schools)	646
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**1.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	20
Denominator	Total number of schools	1410
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**65.97**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	65.97033994
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**85.39**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	9801000
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**59.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	14297
Denominator	Total population of the city	2405665
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	

Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**3.65**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	879
Denominator	Total population of the city	2405665
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**23.49**
Description	Total response time for health-related distress calls received in the city	23.49
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	173
Denominator	Total population of the city	2405665
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	234
Denominator	Total population of the city	2405665
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**111.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	3115
Denominator	Total length of road network in the city	2794.53

Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**718.64**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	17288
Denominator	Total population of the city	2405665
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**6.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1095
Denominator	Total crimes recorded in the same year	17288
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**9.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	222
Denominator	Total population of the city	2405665
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**15.25**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	33614.1
Denominator	Total VAT/GST collection during preceding year	2203.6964
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	14.364
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**210**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	231
Denominator	Number of construction permits during preceding year	1.1
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	184807
Denominator	Total labour force in the city	388386
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**3.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1136
Denominator	Total number of vendors in the city	33770

Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	429
Denominator	Total number of slum and EWS households in the city	1826.44
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.39**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	11049989102048
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**29.2**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	70250900
Denominator	Total population of the city	2405665
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**4.06**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	9764246.62
Denominator	Total population of the city	2405665
Unit	Square metres (sq.m.)	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**33.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	77018200
Denominator	Total area of the city (total area of all land uses)	227288200
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	2405665
Denominator	Area allocated for residential land use (in hectares)	67057000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**110.37**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	582340
Denominator	Total number of households in the city	527634
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**1.27**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	8511
Denominator	Total number of electricity connections in the city	672033
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**10026**
Description	Total number of sustained electrical interruptions in a year	10026
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	45000
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	13335
Denominator	Total energy consumption from all sources	1765770068
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	8779414.583
Denominator	Total quantum of water and waste water handled during the period	26874.9
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	54753086
Denominator	Total number of street light installations	134560
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	26789.99
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1765770068
Denominator	Total population of the city	2405665
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	3850.5
Denominator	Total area of the city (sq.km)	227.2882
Unit	Transport length (kms) per square km	

Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	415
Denominator	Total population of the city	2405665
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	10
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	2794.53
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	4
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1.26
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.2**
Formula:	Numerator / Denominator	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**95.48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	148
Denominator	Total number of signalised intersections in the city	155
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	2
Denominator	Total available on-street parking spaces in the city	8
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**7.71**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	431.16
Denominator	Total length of road network in the city	5589.06
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**122.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	155
Denominator	Total number of junctions/ intersections on major roads in the city	127
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**77.82**
Formula:	*Numerator / Denominator*	

Numerator	Number of public right-of-way areas designed as per universal design principles	1161.16
Denominator	Total number of public right-of-way areas in the city	1492.16
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**44.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	234925
Denominator	Total number of households in the city	527634
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**285.09**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	685.83
Denominator	Total population of the city	2405665
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	17374
Denominator	Total number of samples tested for water quality	18253
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**21.17**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	145.221

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Quantum of water put into the distribution system (mld)	685.83
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**93.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	313777
Denominator	Total number of water connections in the city	336686
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**25.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	86
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	341
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**102.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	581015
Denominator	Total number of properties in the city	568284
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**98.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	560797

Denominator	Total number of properties in the city	568284
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	100
Denominator	Total waste water generated in the city per day	400
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	210
Denominator	Total waste water received at treatment plants per day	210
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**50.3**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1405.7
Denominator	Total length of road network in the city	2794.53
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	575696
Denominator	Total number of households and establishments in the city	575696
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Total quantum of MSW collected by the ULB or private operator	1200
Denominator	Total quantum of MSW generated in the city	1200
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**16.67**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	6000
Denominator	Average MSW generated in the city (tons per month)	36000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11.12**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11.116
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**32.08**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	32.082
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**94.16**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	94.16
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	88
Denominator	Total number of noise samples	88

Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**95.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	17374
Denominator	Total number of samples tested	18253
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

NAMCHI

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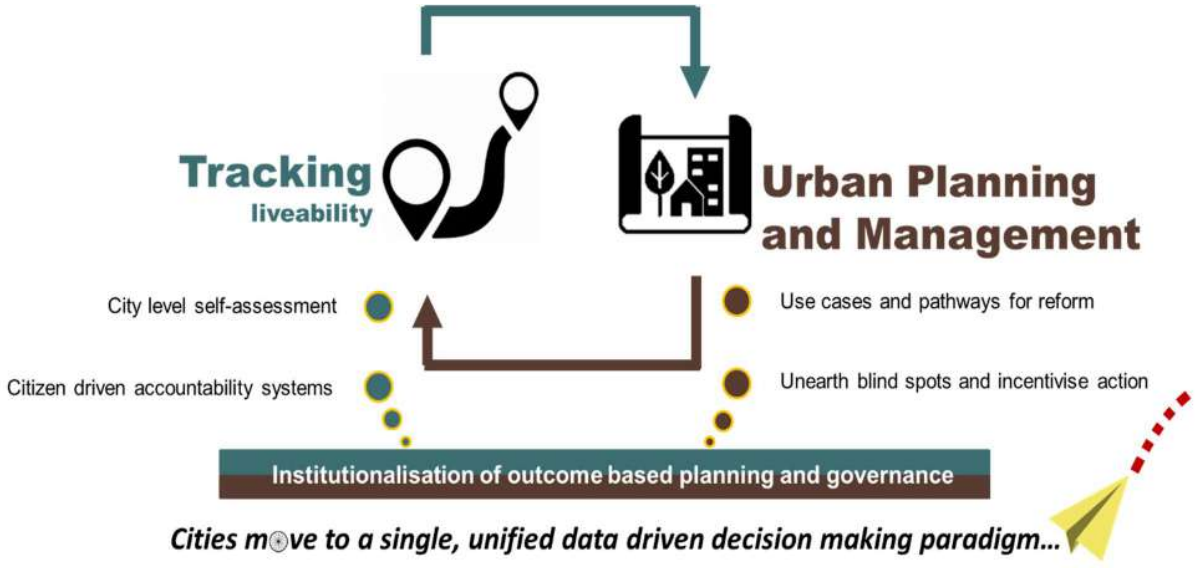
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more ‘liveable.’ The overarching goal of these initiatives is to move from an input-based approach to a ‘citizen centric-outcome based’ assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of ‘Liveability Standards’ relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an ‘Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

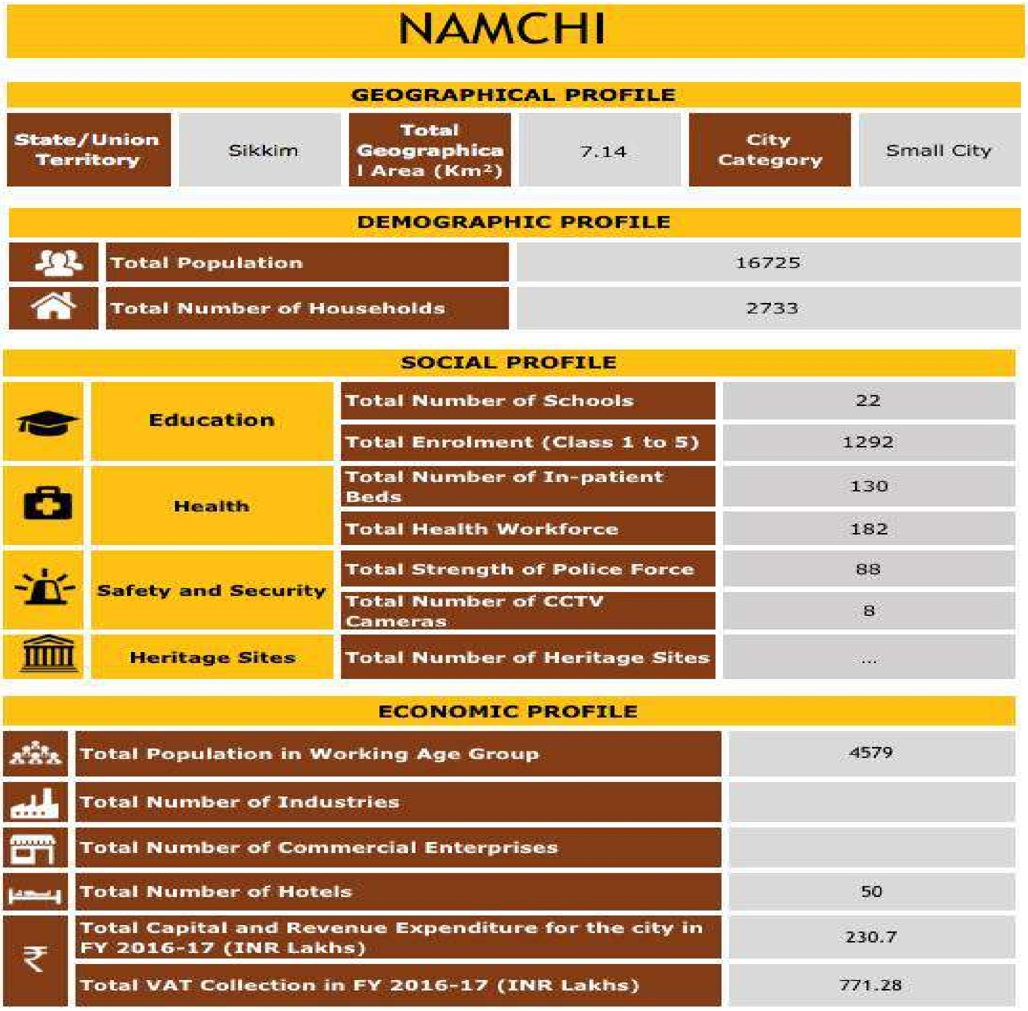
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city’s liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NAMCHI

GEOGRAPHICAL PROFILE

State/Union Territory	Sikkim	Total Geographical Area (Km^2)	7.14	City Category	Small City

DEMOGRAPHIC PROFILE

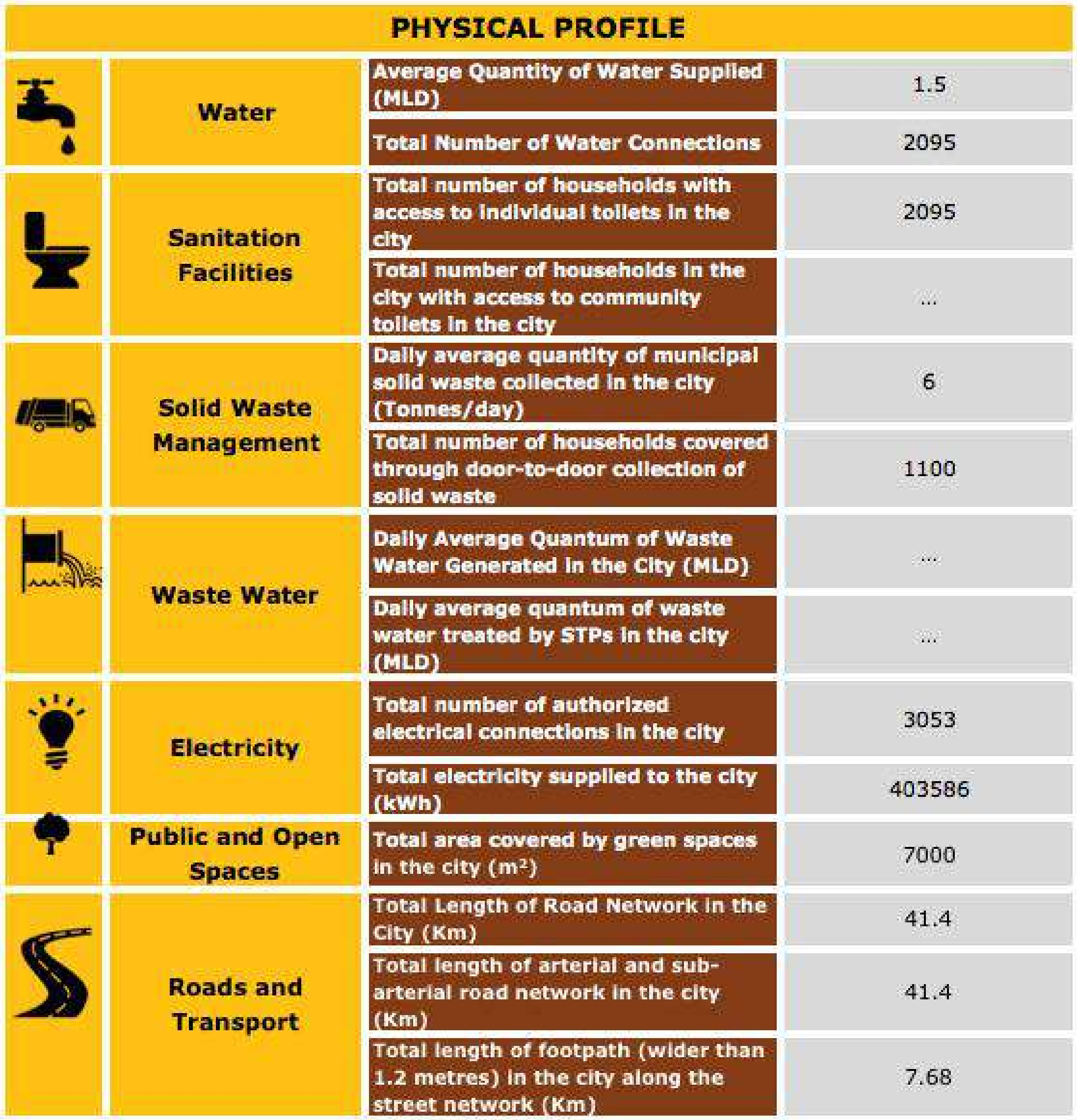
Total Population	16725
Total Number of Households	2733

SOCIAL PROFILE

Education	Total Number of Schools	22
	Total Enrolment (Class 1 to 5)	1292
Health	Total Number of In-patient Beds	130
	Total Health Workforce	182
Safety and Security	Total Strength of Police Force	88
	Total Number of CCTV Cameras	8
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	4579
Total Number of Industries	
Total Number of Commercial Enterprises	
Total Number of Hotels	50
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	230.7
Total VAT Collection in FY 2016-17 (INR Lakhs)	771.28



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	1.5
	Total Number of Water Connections	2095
Sanitation Facilities	Total number of households with access to individual toilets in the city	2095
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	6
	Total number of households covered through door-to-door collection of solid waste	1100
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	3053
	Total electricity supplied to the city (kWh)	403586
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7000
Roads and Transport	Total Length of Road Network in the City (Km)	41.4
	Total length of arterial and sub-arterial road network in the city (Km)	41.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.68

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the perfor-

mance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population

Pillars of Comprehensive Development	Category	Indicators
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	Category	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

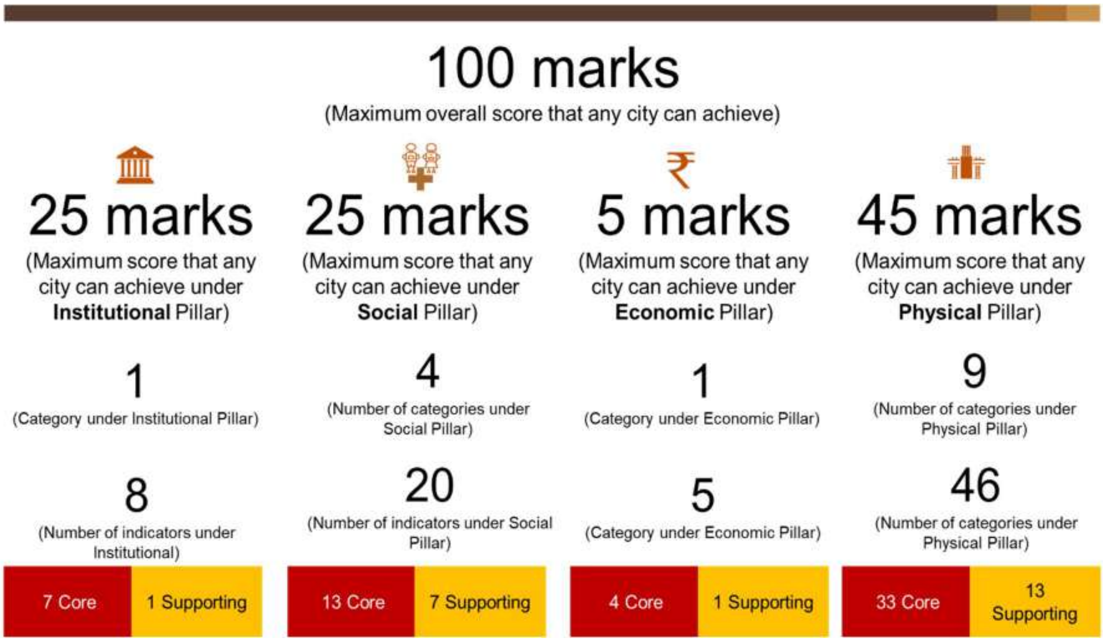
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal council Namchi
Urban Local Body	For Park and Recreation Related	UD&HD (urban development and

	Questions	housing department)
Urban Local Body	For Water Supply and Drainage related questions	PHED (water security and public health engineering department)
Urban Local Body	For Heritage sites related data	Municipal council Namchi
Urban Local Body	For Ecological sites related data	Municipal council Namchi
Urban Local Body	For Housing related data	UD&HD (urban development and housing department)
Urban Local Body	For Building plan related data	UD&HD (urban development and housing department)
Urban Local Body	For Roads related data	UD&HD (urban development and housing department)
Urban Local Body	For Solid waste management related data	Municipal council namchi
Urban Local Body	For IT services related data	Municipal council namchi
Urban Local Body	For Vendor committee related data	Municipal council namchi
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Municipal council namchi
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State pollution control board Gangtok
Development Authority	Building Infrastructure	UD&HD (urban development and housing department)
	Construction planning	UD&HD (urban development and housing department)
	Green Building	UD&HD (urban development and housing department)
	Rain water harvesting	UD&HD (urban development and housing department)
	Universal Design Principle	UD&HD (urban development and housing department)
DISCOM/Electricity Board	Electrical Connection/ Grievance	Energy and power department

	Redressal/ Power supply	namchi
State Disaster management authority		District collector office namchi
State Education Department		HRDD(human resource and development department) south
State Health Department	Health care professionals	Healthcare, human services and family welfare department namchi
	Citizen Services	Healthcare, human services and family welfare department namchi
	Disease Prevalence	Healthcare, human services and family welfare department namchi
	Health Infrastructure	Healthcare, human services and family welfare department namchi
State Renewable Energy Development Agency		SREDA GANGTOK
State Sales / Commercial Taxes Department		Sales and commercial tax Department Gangtok
Town and Country Planning Department	Land Use	UD&HD (urban development and housing department)
Traffic and Police Department		SNT (sikkim nationalised transport department) south
Transport Authorities	Buses	SNT (sikkim nationalised transport department) south
	Registered Vehicles	Motor vechile department south
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	6
Total	7

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

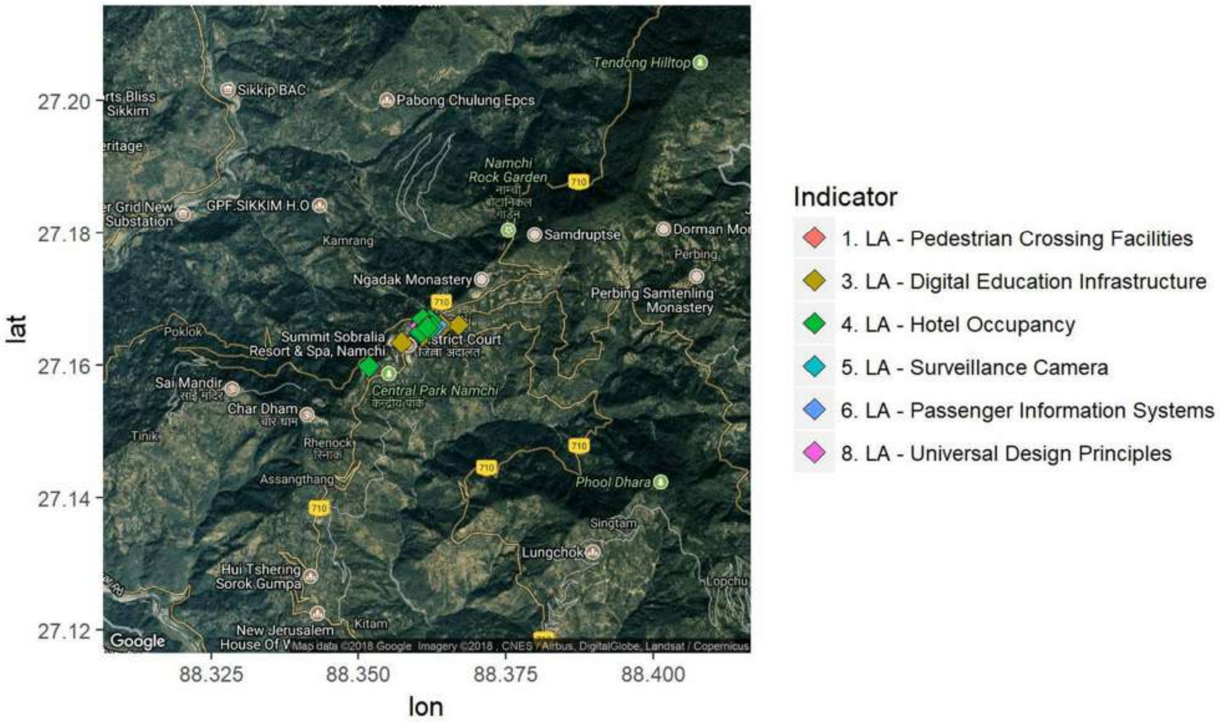
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


27.20
27.18
27.16
27.14
27.12
lat
88.325
88.350
88.375
88.400
lon
Tendong Hilltop
Sikkip BAC
Pabong Chulung Epcs
Namchi Rock Garden
GPF SIKKIM H.O
Samdruptse
Dorman Mo
Kamrang
Perbing
Ngadak Monastery
Perbing Samtenling Monastery
Poklok
Summit Sobralia Resort & Spa, Namchi
strict Court
Sai Mandir
Central Park Namchi
Char Dham
Tinik
Rhenock
Assangthang
Phool Dhara
Singtam
Lungchok
Hui Tshering Sorok Gumpa
Lopchu
New Jerusalem House Of V
Kitam
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**2.37**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.307692307692308
	1.1k Grievance redressal	0
	1.1l electricity	0
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0

	1.4b solid waste	NA
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**191.25**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	15.3
Denominator	Total O&M cost for providing water supply services during the year	8
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-61.34**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-147.75
Denominator	Total expenditure (revenue and capital accounts) in	240.87

	the same year	
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	7
Denominator	Total number of wards	7
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

\

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**70**
Description	Average Occupancy rate of Hotels	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	230.7
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**10**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	10
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**54.92**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	2211
Denominator	Total population in the age group of 6-14 years	4026

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**79.56**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	1569
Denominator	Total female population in the age group of 6-14 years	1972
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**7.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	1292
Denominator	Total number of teachers available for primary grades (public and private schools)	166
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**31.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	7
Denominator	Total number of schools	22
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**168.08**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	

Numerator	Percentage	168.07595 1124547
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**107.49**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	189673
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**106.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	130
Denominator	Total population of the city	12190
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**149.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	182
Denominator	Total population of the city	12190
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**9**
Description	Total response time for health-related distress calls received in the city	9
Unit	Minutes and seconds	

Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**5.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	724
Denominator	Total population of the city	12190
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	21
Denominator	Total population of the city	12190
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**19.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	8
Denominator	Total length of road network in the city	41.4
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**295.32**
Formula:	Numerator / Denominator	36

Numerator	Total number of crimes recorded in a year	12190
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**8.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	3
Denominator	Total crimes recorded in the same year	36
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	
Denominator	Total population of the city	12190
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-14.16**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total	-12717849

	VAT/GST collection during preceding year)	
Denominator	Total VAT/GST collection during preceding year	898462.74
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**100**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	25
Denominator	Number of construction permits during preceding year	0.25
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable

Denominator	Total labour force in the city	15146
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**528.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2000
Denominator	Total number of vendors in the city	378.65
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	107
Denominator	Total number of slum and EWS households in the city	23.53
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.57**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	7000
Denominator	Total population of the city	12190
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.47**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	30140.56
Denominator	Total population of the city	12190
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	33835
Denominator	Total area of the city (total area of all land uses)	7140000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	12190

Denominator	Area allocated for residential land use (in hectares)	1275460
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**78.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at house-hold level	2146
Denominator	Total number of households in the city	2733
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	3053
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**133**
Description	Total number of sustained electrical interruptions in a year	133
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.43**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	15340
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	
Denominator	Total energy consumption from all sources	Data Unavailable
Unit	Percentage	403586
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	28044
Denominator	Total number of street light installations	221
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	3500
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	403586
Denominator	Total population of the city	12190
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	300
Denominator	Total area of the city (sq.km)	7.14
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.07**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available	13

	per day	
Denominator	Total population of the city	12190
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	2
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	41.4
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	Data

		Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**9.28**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	7.6866

Denominator	Total length of road network in the city	82.8
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	3
Denominator	Total number of junctions/ intersections on major roads in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**11.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	4
Denominator	Total number of public right-of-way areas in the city	35
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**76.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	2091
Denominator	Total number of households in the city	2733
Unit	Percentage	
Benchmark	100%	

Indicator No: 12.2	**Per capita supply of water**	**123.05**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1.5
Denominator	Total population of the city	12190
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	12
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0.5
Denominator	Quantum of water put into the distribution system (mld)	1.5
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	Data Unavailable
Denominator	Total number of water connections in the city	2095
Unit	Percentage	

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	21
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**69833.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	2095
Denominator	Total number of properties in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**91100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	2733
Denominator	Total number of properties in the city	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-**

		Computable
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	41.4
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**58.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	1600
Denominator	Total number of households and establishments in the	2733

	city	
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	6
Denominator	Total quantum of MSW generated in the city	6
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through re-use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	180
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**5.73**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	5.73
Unit	μg/m3	
Benchmark	Annual mean concentration of 50 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**2.59**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	2.59
Unit	μg/m3	

Benchmark	Annual mean concentration of 40 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**23.65**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	23.65
Unit	μg/m3	
Benchmark	Annual mean concentration of 60 μg/m3 OR Mean concentration over 24 hours of 100 μg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

NASHIK

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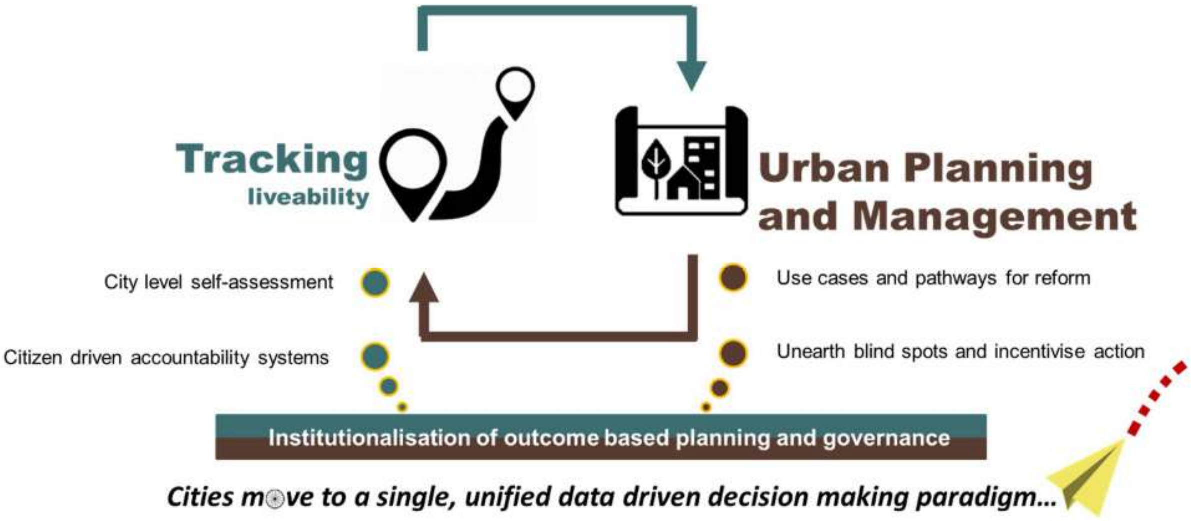
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

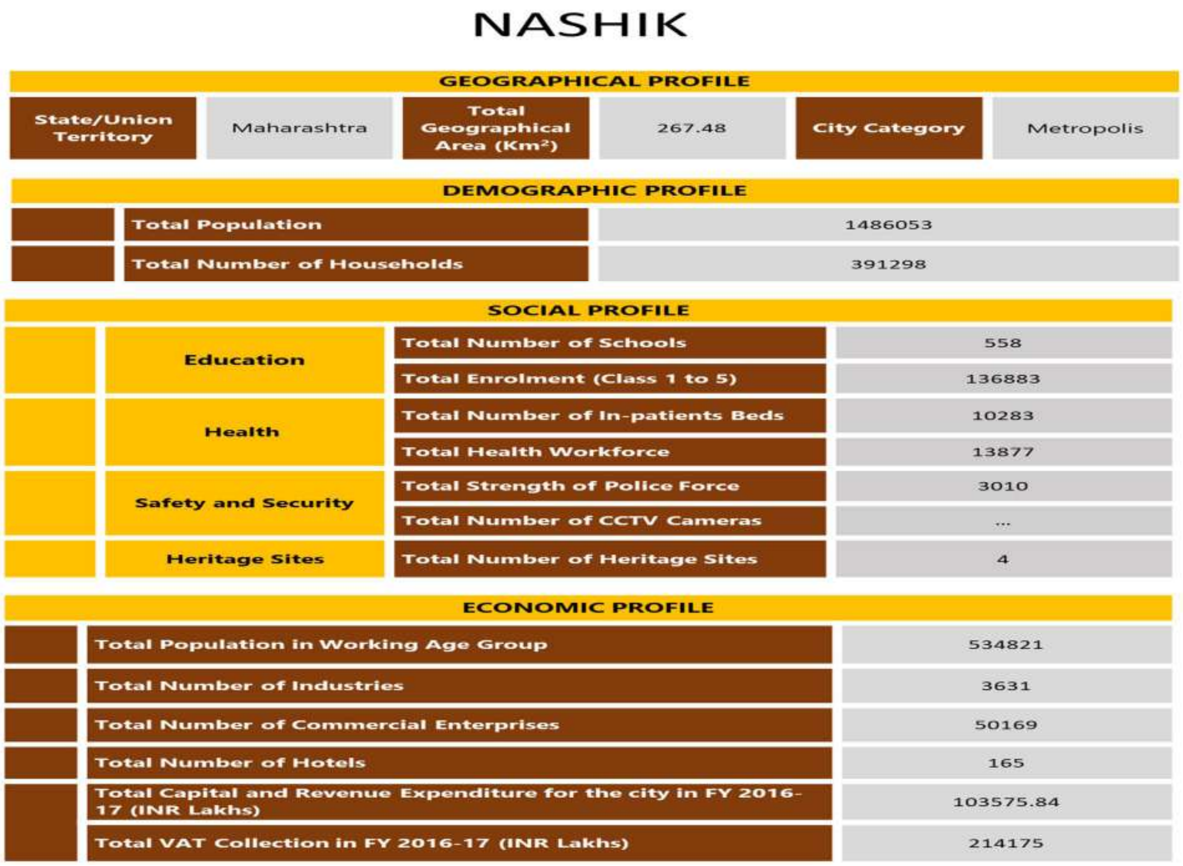

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NASHIK

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	267.48	City Category	Metropolis

DEMOGRAPHIC PROFILE

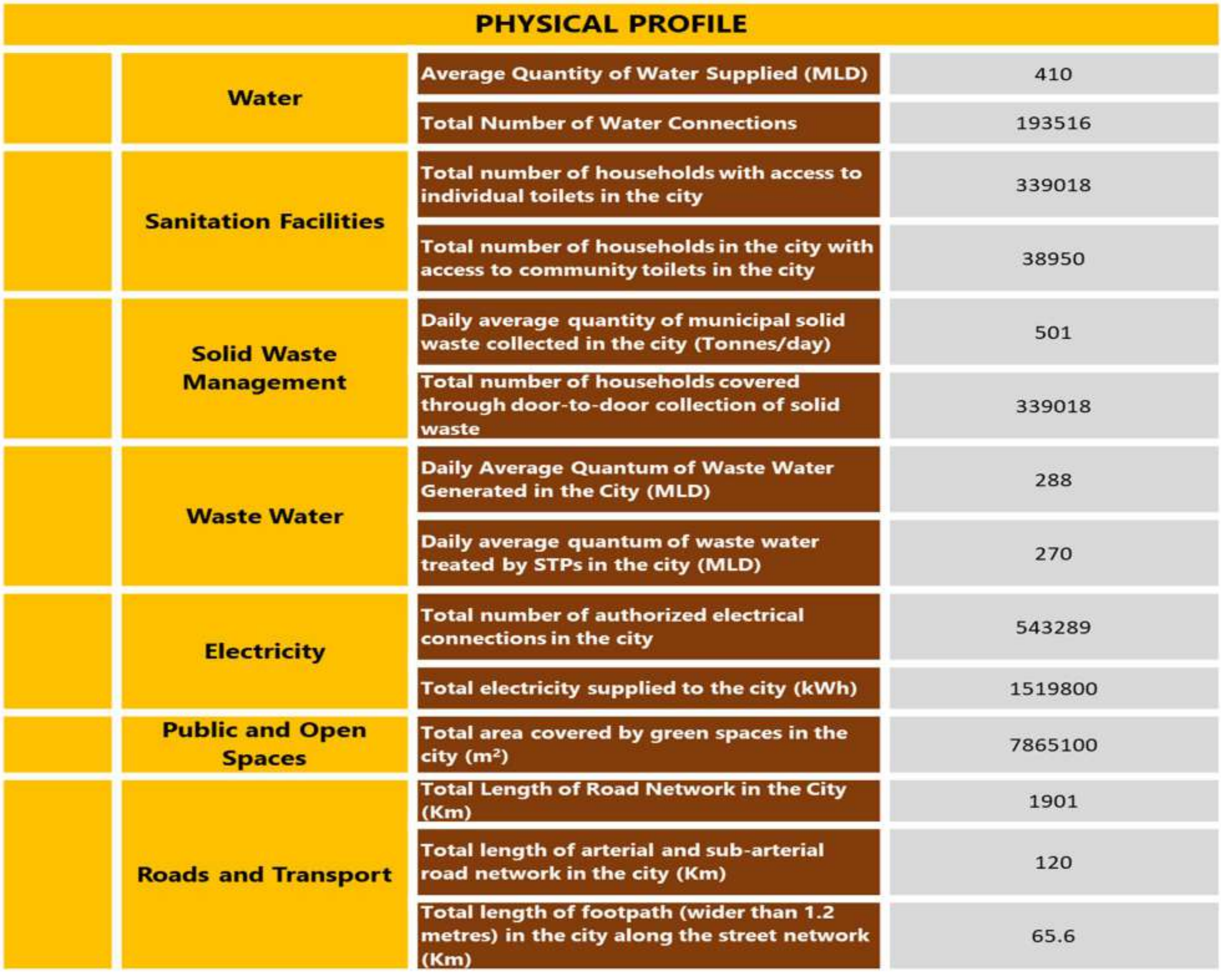
Total Population	1486053
Total Number of Households	391298

SOCIAL PROFILE

Education	Total Number of Schools	558
	Total Enrolment (Class 1 to 5)	136883
Health	Total Number of In-patients Beds	10283
	Total Health Workforce	13877
Safety and Security	Total Strength of Police Force	3010
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	534821
Total Number of Industries	3631
Total Number of Commercial Enterprises	50169
Total Number of Hotels	165
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	103575.84
Total VAT Collection in FY 2016-17 (INR Lakhs)	214175



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	410
		Total Number of Water Connections	193516
	Sanitation Facilities	Total number of households with access to individual toilets in the city	339018
		Total number of households in the city with access to community toilets in the city	38950
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	501
		Total number of households covered through door-to-door collection of solid waste	339018
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	288
		Daily average quantum of waste water treated by STPs in the city (MLD)	270
	Electricity	Total number of authorized electrical connections in the city	543289
		Total electricity supplied to the city (kWh)	1519800
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7865100
	Roads and Transport	Total Length of Road Network in the City (Km)	1901
		Total length of arterial and sub-arterial road network in the city (Km)	120
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	65.6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

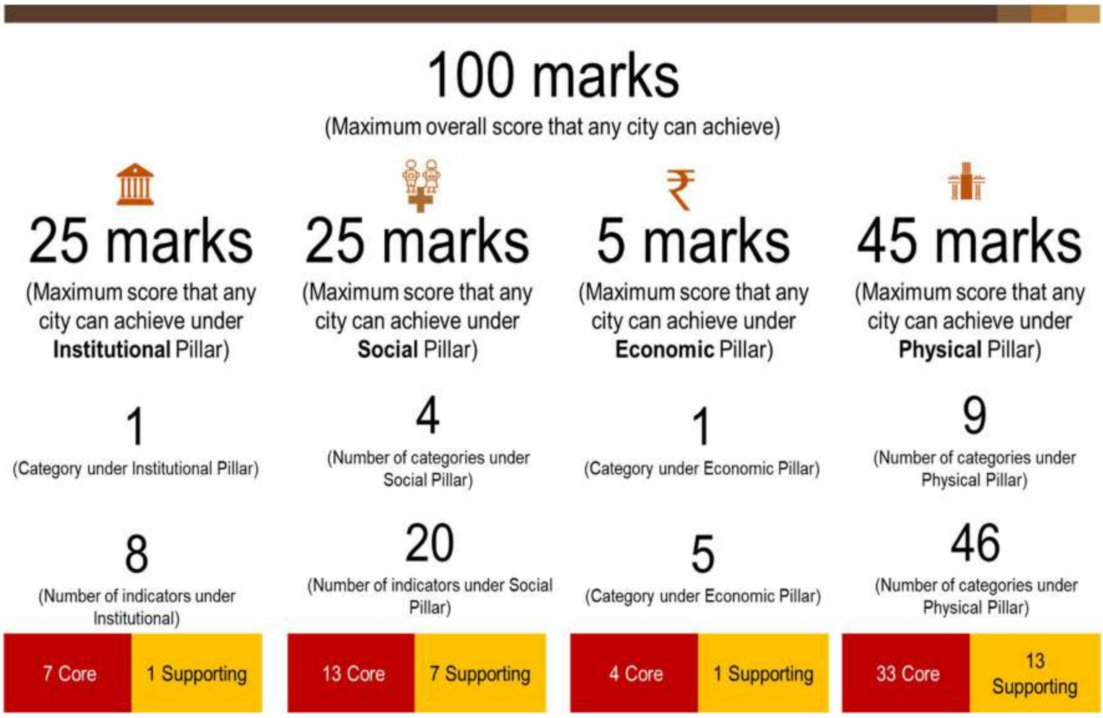
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Nashik Municipal Corporation Excise Department
Urban Local Body	For Park and Recreation Related Questions	Town Planning, NMC District Collectorate office, NMC
Urban Local Body	For Water Supply and Drainage related questions	Maharashtra Industrial development Corporation, Nashik Public work department, Nashik Irrigation Department, Nashik
Urban Local Body	For Heritage sites related data	Tourism department
Urban Local Body	For Ecological sites related data	NMC
Urban Local Body	For Housing related data	Maharashtra Housing Development Corporation, Slum Department, NMC
Urban Local Body	For Building plan related data	Town Planning, NMC
Urban Local Body	For Roads related data	Town Planning, NMC
Urban Local Body	For Solid waste management related data	Waste Management Department, NMC
Urban Local Body	For IT services related data	IT Department, NMC
Urban Local Body	For Vendor committee related data	Nashik Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board
Development Authority	Building Infrastructure	Town Planning, NMC
	Construction planning	Town Planning, NMC
	Green Building	Town Planning, NMC
	Rain water harvesting	Town Planning, NMC
	Universal Design Principle	Town Planning, NMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM, Nashik Maharashtra State Electricity Development Corporation
State Disaster management authority		Fire fight and disaster management unit, NMC
State Education Department		District Education Department Education Department, NMC
State Health Department	Health care professionals	Civil Hospital, Nashik

Designated data owners	Subcategories	Data owners at city level
	Citizen Services	Civil Hospital, Nashik
	Disease Prevalence	Civil Hospital, Nashik
	Health Infrastructure	Civil Hospital, Nashik Road and Transport Department
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Taxes department, Nashik
Town and Country Planning Department	Land Use	Town Planning, NMC
Traffic and Police Department		Commissioner of Police, Nashik
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Maharashtra State Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 83 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**1**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**5**
Development Authority	**0**

Pollution Control Board	**5**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**4**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**62**
Total	**83***

* The count of documents is based on first round of submission.

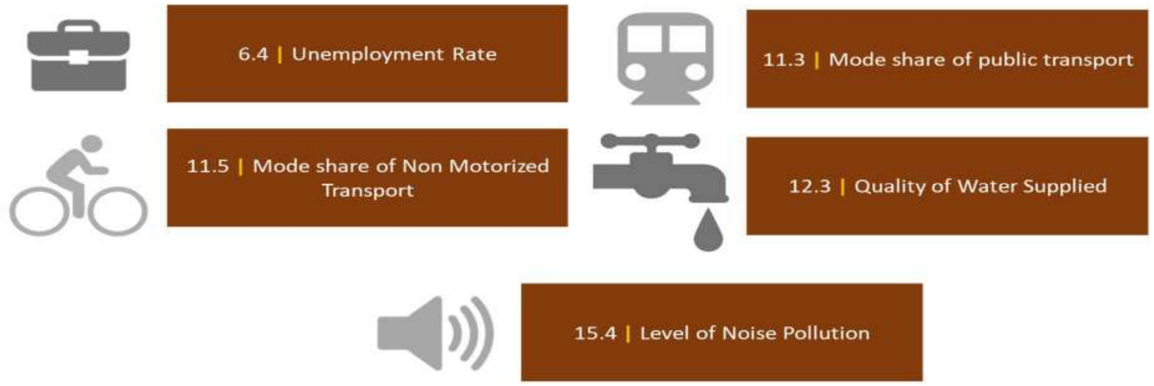
4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried out to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**81.46**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.34**
Description		
Sub Indicators	1.3a Building plan	0.0000238365622981008
	1.3b Birth/Death Certificate	0.000124659
	1.3c water supply	0.008318604

	1.3d solid waste management	0.0000773862035876244
	1.3e property tax	0.009479125
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.00139598
	1.3i information	4.71046456620322E-06
	1.3j electricity	0.167792832
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	4
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**96.96**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	14870.47
Denominator	Total demand raised for the year	15336.1
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**47.21**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2937

Denominator	Total O&M cost for providing water supply services during the year	6220.54
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**21.34**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	47764.49
Denominator	Total expenditure (revenue and capital accounts) in the same year	223858.45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	31
Denominator	Total number of wards	31
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**22.78**
Description	Average Occupancy rate of Hotels	22.78
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	444.71
Denominator	Total budget of the ULB (capital and revenue)	103575.84
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**77**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	77
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**85.66**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	218273
Denominator	Total population in the age group of 6-14 years	254813
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**84.49**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	99270
Denominator	Total female population in the age group of 6-14 years	117498
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**43.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	136883
Denominator	Total number of teachers available for primary grades (public and private schools)	3144
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**24.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	135
Denominator	Total number of schools	558
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**105.45**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	105.4475933
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**104.71**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	737936264
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**69.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	10283

Denominator	Total population of the city	1486053
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**93.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	13877
Denominator	Total population of the city	1486053
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	12608
Denominator	Total population of the city	1486053
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	987
Denominator	Total population of the city	1486053
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	0
Denominator	Total length of road network in the city	1901
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**397.9**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5913
Denominator	Total population of the city	1486053
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**18.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1098
Denominator	Total crimes recorded in the same year	5913
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**14.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	218
Denominator	Total population of the city	1486053
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-22.81**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-63283

Denominator	Total VAT/GST collection during preceding year	2774.58
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-2.08**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-133.71
Denominator	Total Professional Tax collection during preceding year	6427.65
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**30.19**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	503
Denominator	Number of construction permits during preceding year	16.66
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	11592
Denominator	Total labour force in the city	254813
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**35.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	3400

Denominator	Total number of vendors in the city	9620
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**10.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	10624
Denominator	Total number of slum and EWS households in the city	1014.65
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**21.11**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	31742381023200
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**5.29**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	7865100
Denominator	Total population of the city	1486053
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	4300349
Denominator	Total population of the city	1486053

Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	267477500
Denominator	Total area of the city (total area of all land uses)	267480000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1486053
Denominator	Area allocated for residential land use (in hectares)	128357800
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**115.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	450319
Denominator	Total number of households in the city	391298
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	543289
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2025**
Description	Total number of sustained electrical interruptions in a year	2025
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	233772
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1424
Denominator	Total energy consumption from all sources	1519800
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	4592049.667
Denominator	Total quantum of water and waste water handled during the period	20400
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	39300499
Denominator	Total number of street light installations	75455
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1529323
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1519800
Denominator	Total population of the city	1486053
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	6356.3
Denominator	Total area of the city (sq.km)	267.48
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	130
Denominator	Total population of the city	1486053
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	6.6
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1901
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**20**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1.99
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.8**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	4
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

	synchronised	
Denominator	Total number of signalised intersections in the city	39
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	1628
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.73**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	65.6
Denominator	Total length of road network in the city	3802
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**82.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	68
Denominator	Total number of junctions/ intersections on major roads in the city	82
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	1079
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**93.82**
Formula:	*Numerator / Denominator*	

Numerator	Total number of households with direct water supply connection	367101
Denominator	Total number of households in the city	391298
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**275.9**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	410
Denominator	Total population of the city	1486053
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	9715
Denominator	Total number of samples tested for water quality	9835
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	410
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**99.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	192992
Denominator	Total number of water connections in the city	193516
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**34.62**
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	573
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1655
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**91.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	430107
Denominator	Total number of properties in the city	468468
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**84.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	394323
Denominator	Total number of properties in the city	468468
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**93.75**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	270
Denominator	Total waste water generated in the city per day	288
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	270

Denominator	Total waste water received at treatment plants per day	270
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**18.85**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	358.25
Denominator	Total length of road network in the city	1901
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**87.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	387315
Denominator	Total number of households and establishments in the city	441467
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**89.78**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	501
Denominator	Total quantum of MSW generated in the city	558
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**3.37**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	506
Denominator	Average MSW generated in the city (tons per month)	15030
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11.55**

Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11.55
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**24.04**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	24.04
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**81.21**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	81.21
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	48
Denominator	Total number of noise samples	750
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**88.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	60
Denominator	Total number of samples tested	68
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

NAVI MUMBAI

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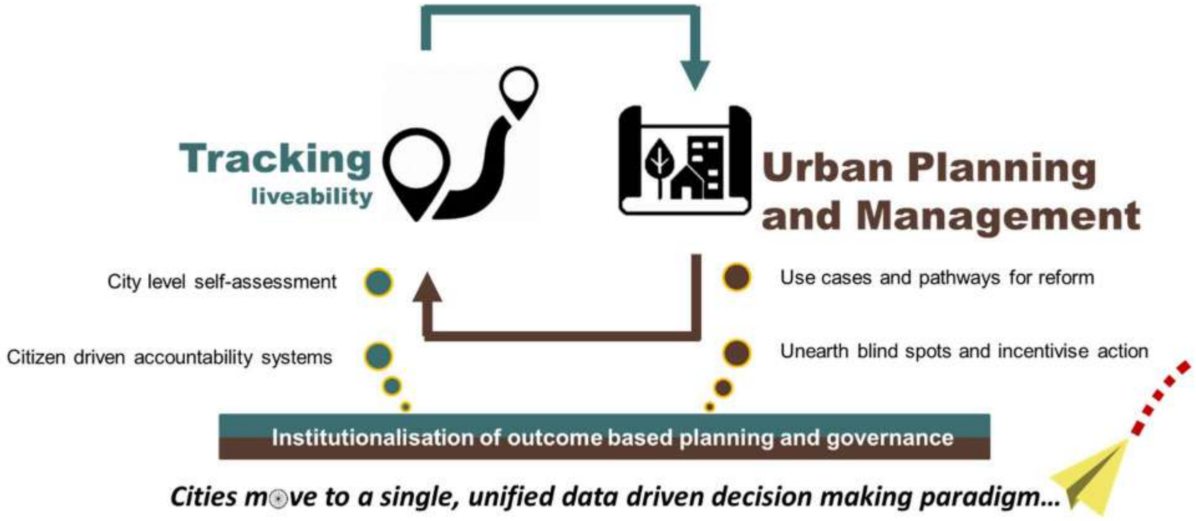
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

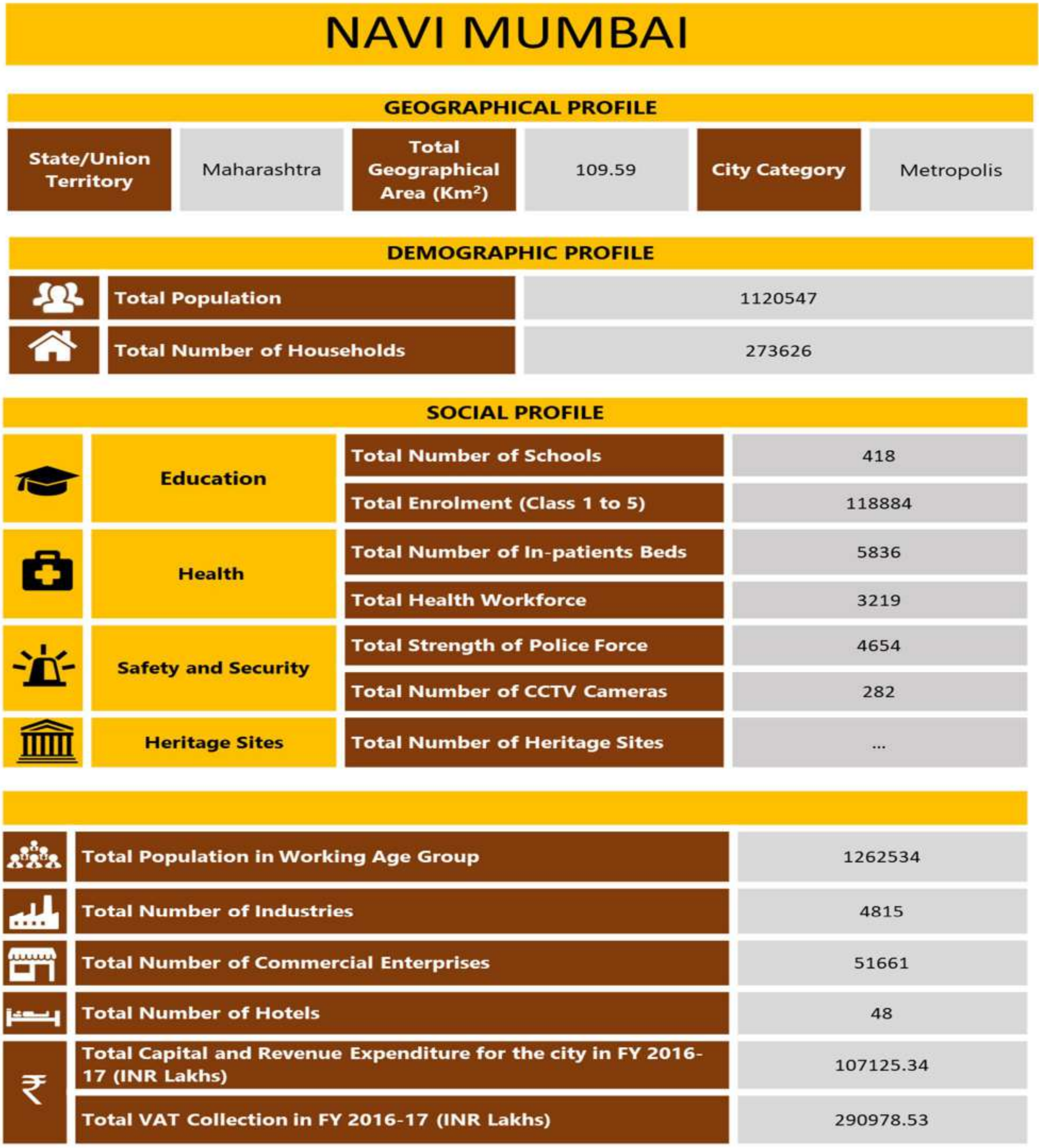
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NAVI MUMBAI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	109.59	**City Category**	Metropolis

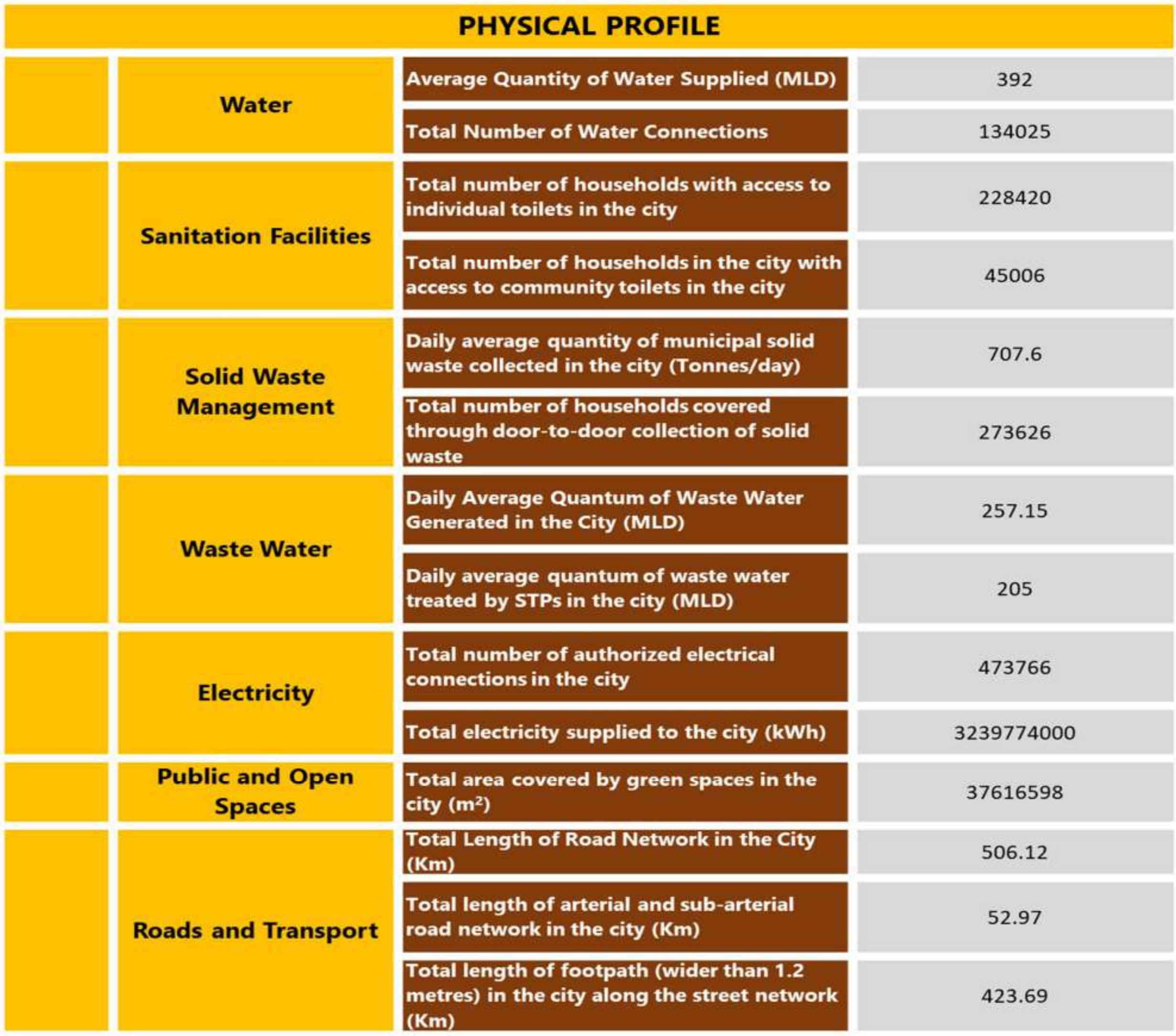
DEMOGRAPHIC PROFILE

Total Population	1120547
Total Number of Households	273626

SOCIAL PROFILE

Education	**Total Number of Schools**	418
	Total Enrolment (Class 1 to 5)	118884
Health	**Total Number of In-patients Beds**	5836
	Total Health Workforce	3219
Safety and Security	**Total Strength of Police Force**	4654
	Total Number of CCTV Cameras	282
Heritage Sites	**Total Number of Heritage Sites**	...

Total Population in Working Age Group	1262534
Total Number of Industries	4815
Total Number of Commercial Enterprises	51661
Total Number of Hotels	48
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	107125.34
Total VAT Collection in FY 2016-17 (INR Lakhs)	290978.53



PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	392
	Total Number of Water Connections	134025
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	228420
	Total number of households in the city with access to community toilets in the city	45006
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	707.6
	Total number of households covered through door-to-door collection of solid waste	273626
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	257.15
	Daily average quantum of waste water treated by STPs in the city (MLD)	205
Electricity	**Total number of authorized electrical connections in the city**	473766
	Total electricity supplied to the city (kWh)	3239774000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	37616598
Roads and Transport	**Total Length of Road Network in the City (Km)**	506.12
	Total length of arterial and sub-arterial road network in the city (Km)	52.97
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	423.69

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

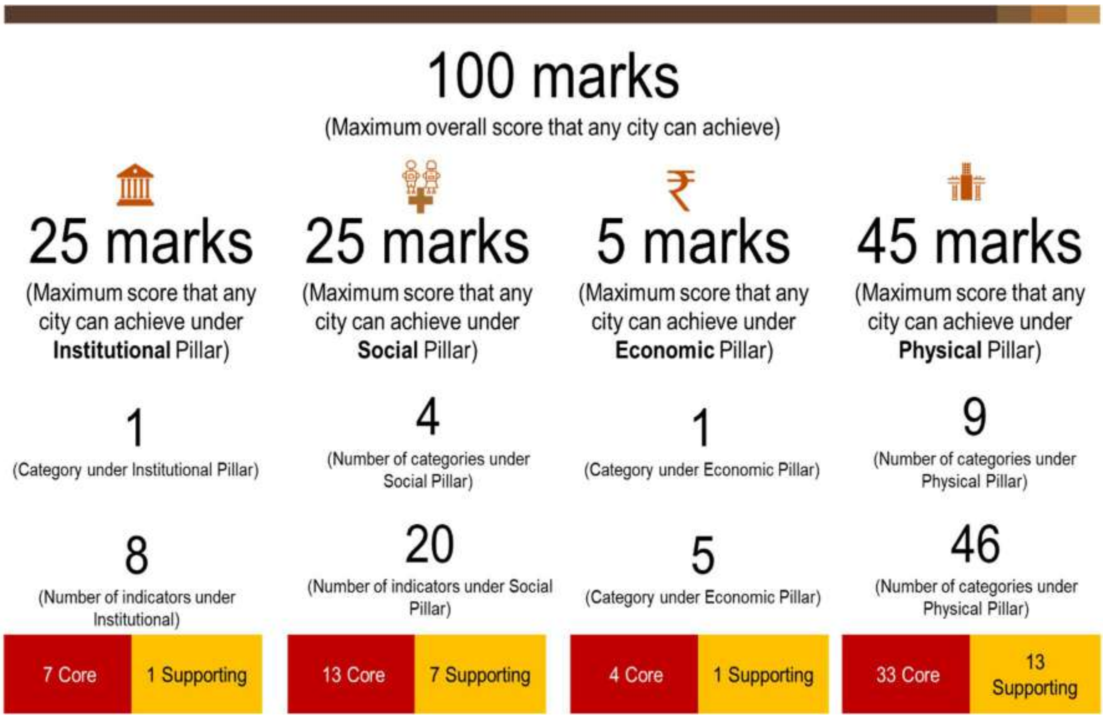
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Garden department
Urban Local Body	For Water Supply and Drainage related questions	Water department
Urban Local Body	For Heritage sites related data	License department
Urban Local Body	For Ecological sites related data	License department
Urban Local Body	For Housing related data	Town planning department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	License department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	City engineer department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department

Designated data owners	Subcategories	Data owners at city level
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Town planning department
State Sales / Commercial Taxes Department		Accounts department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department
	Registered Vehicles	Transport department
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 318 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**20**
Traffic and Police Department	**16**
Development Authority	**38**
Pollution Control Board	**6**
State Renewable Energy Department	**3**
Town and Country Planning	**3**
State Health Department	**26**
Transport Authority	**18**
Disaster Management	**2**
Urban Local Body	**180**
Total	**318***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

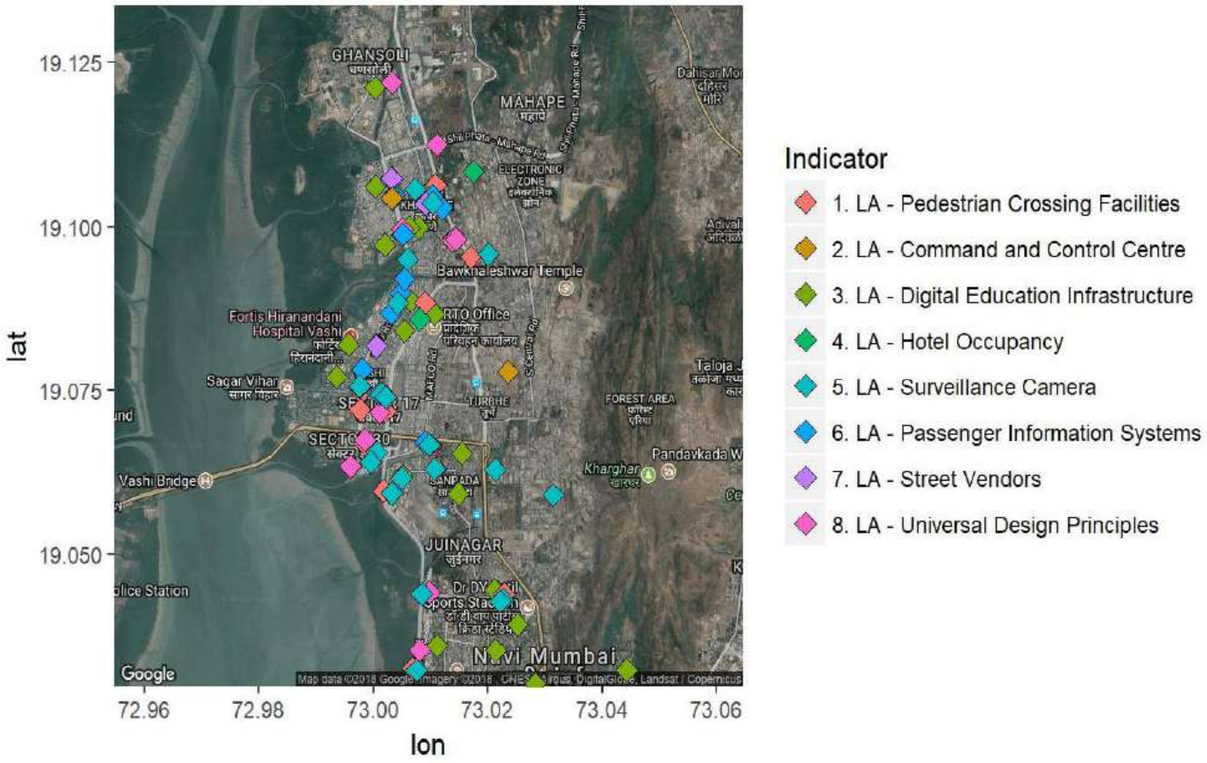
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.125
19.100
19.075
19.050
lat
72.96
72.98
73.00
73.02
73.04
73.06
lon
GHANSOLI
MAHAPE
ELECTRONIC ZONE
Bawkhaleshwar Temple
Fortis Hiranandani Hospital Vashi
RTO Office
Sagar Vihar
Vashi Bridge
TURBHE
FOREST AREA
Kharghar
Pandavkada W
Taloja J
JUINAGAR
SANPADA
Navi Mumbai
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**95.56**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**21.43**
Description	Services integrated through an integrated or a singular operations command centre	4.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**21.66**
Description		
Sub Indicators	1.3a Building plan	0.000478535
	1.3b Birth/Death Certificate	3.07142E-05
	1.3c water supply	4.87472E-05

	1.3d solid waste management	0
	1.3e property tax	8.612E-05
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000559623
	1.3i information	1.428037378
	1.3j electricity	0.303699506
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.21**
Description		
Sub Indicators	1.4a water supply	1.5
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**99.14**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	74651.93
Denominator	Total demand raised for the year	75297.93
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**567.07**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	6841.04

Denominator	Total O&M cost for providing water supply services during the year	1206.38
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**47.47**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	183335.1
Denominator	Total expenditure (revenue and capital accounts) in the same year	386183.31
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**7.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	8
Denominator	Total number of wards	111
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**14.29**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	2
Denominator	Total number of ecologically important sites identified in the city	14
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.3	**Hotel Occupancy**	**39.63**
Description	Average Occupancy rate of Hotels	39.63
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**1.97**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	2108.05
Denominator	Total budget of the ULB (capital and revenue)	107125.34
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**272**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	272
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**100.71**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	185651
Denominator	Total population in the age group of 6-14 years	184336
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**99.89**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	86078
Denominator	Total female population in the age group of 6-14 years	86176
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.3	**Primary education student-teacher ratio**	**40.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	118884
Denominator	Total number of teachers available for primary grades (public and private schools)	2934
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**62.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	261
Denominator	Total number of schools	418
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**99.07**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	99.06973 536
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**97.87**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	48233203 2
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**52.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5836

Denominator	Total population of the city	1120547
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**28.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3219
Denominator	Total population of the city	1120547
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**29**
Description	Total response time for health-related distress calls received in the city	29
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	97
Denominator	Total population of the city	1120547
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	172
Denominator	Total population of the city	1120547
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**55.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	282
Denominator	Total length of road network in the city	506.12
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**223.91**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2509
Denominator	Total population of the city	1120547
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**23.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	598
Denominator	Total crimes recorded in the same year	2509
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**35.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	393
Denominator	Total population of the city	1120547
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**47.25**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	93368.69
Denominator	Total VAT/GST collection during preceding year	1976.0984
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	63.04
Denominator	Total Professional Tax collection during preceding year	10134.89
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**57.25**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	79
Denominator	Number of construction permits during preceding year	1.38
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	1422
Denominator	Total labour force in the city	184336
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**29.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2138
Denominator	Total number of vendors in the city	7326
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	418.05
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**22.88**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	16718096667150
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**33.57**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	37616598
Denominator	Total population of the city	1120547
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.47**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1646533.7

Denominator	Total population of the city	1120547
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**41.55**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	45537100
Denominator	Total area of the city (total area of all land uses)	109590000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1120547
Denominator	Area allocated for residential land use (in hectares)	42499000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**145.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	396894
Denominator	Total number of households in the city	273626
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**97.28**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	460894
Denominator	Total number of electricity connections in the city	473766
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**834**
Description	Total number of sustained electrical interruptions in a year	834
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	71340
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	740000
Denominator	Total energy consumption from all sources	3239821144
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2046031.667
Denominator	Total quantum of water and waste water handled during the period	17910
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.3**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	31354818.6
Denominator	Total number of street light installations	43700
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	425306
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3239821144
Denominator	Total population of the city	1120547
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1152.6
Denominator	Total area of the city (sq.km)	109.59
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**28.66**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	32120
Denominator	Total population of the city	1120547
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	71.2
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0.65
Denominator	Total length of road network in the city	506.12
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**39.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	11
Denominator	Total number of major transport interchanges in the city	28
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	60
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**2.29**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	64
Denominator	Total number of major interchanges in the city	28
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

	synchronised	
Denominator	Total number of signalised intersections in the city	46
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**51.55**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	50
Denominator	Total available on-street parking spaces in the city	97
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**41.86**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	423.69
Denominator	Total length of road network in the city	1012.24
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**132.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	180
Denominator	Total number of junctions/ intersections on major roads in the city	136
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**80.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	714
Denominator	Total number of public right-of-way areas in the city	887
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**43.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	120050
Denominator	Total number of households in the city	273626
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**349.83**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	392
Denominator	Total population of the city	1120547
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	19967
Denominator	Total number of samples tested for water quality	20594
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	392
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**67.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	90306
Denominator	Total number of water connections in the city	134025
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**64.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	117
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	182
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**106.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	326843
Denominator	Total number of properties in the city	307710
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**100.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	309841
Denominator	Total number of properties in the city	307710
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**79.72**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	205
Denominator	Total waste water generated in the city per day	257.15
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	205
Denominator	Total waste water received at treatment plants per day	205
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**108.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	550
Denominator	Total length of road network in the city	506.12
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	325287
Denominator	Total number of households and establishments in the city	325287
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	707.6
Denominator	Total quantum of MSW generated in the city	707.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**41.84**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	8880.96
Denominator	Average MSW generated in the city (tons per month)	21228
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**23.79**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	23.79
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**34.08**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	34.08
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**43.04**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	43.04
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	50
Denominator	Total number of noise samples	115
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	18
Denominator	Total number of samples tested	18
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

NEW TOWN KOLKATA

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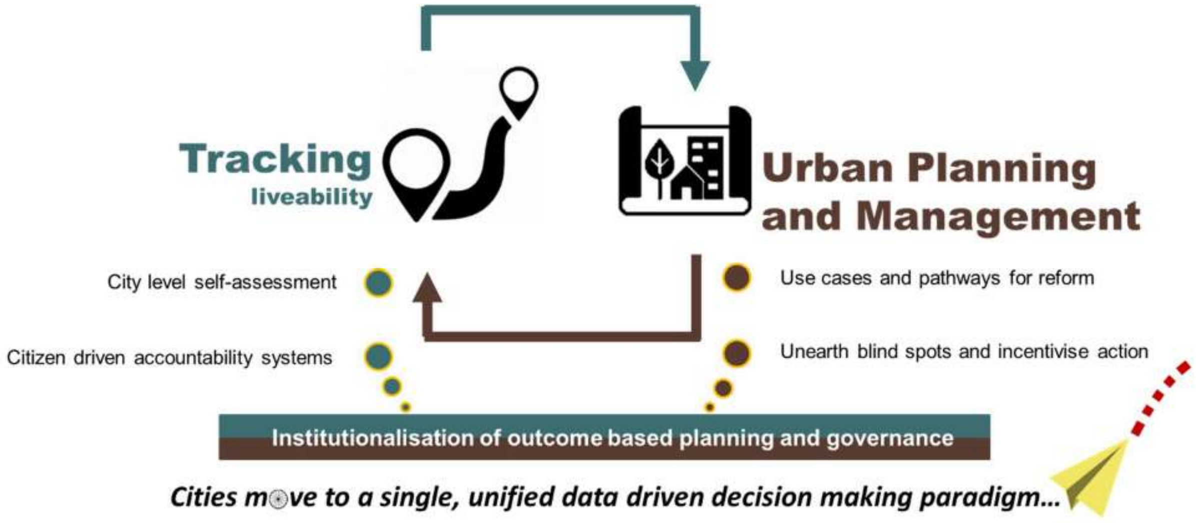
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed

Pillars of Comprehensive Development	Category	Indicators
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water

Pillars of Comprehensive Development	Category	Indicators
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

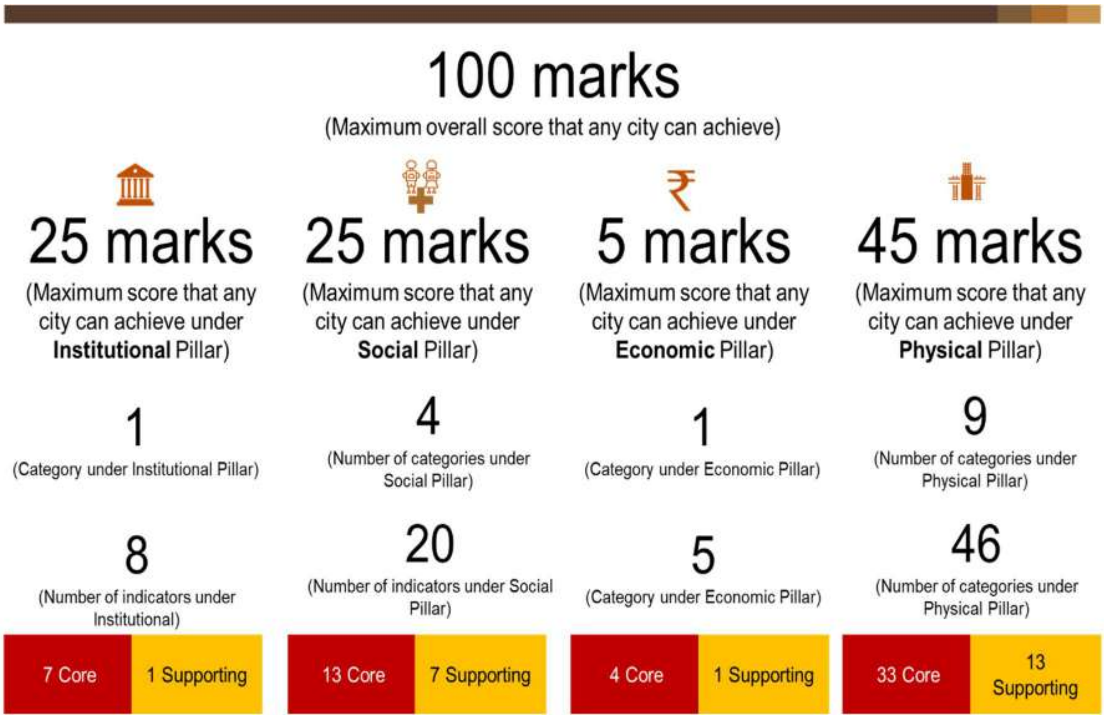
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks

awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to make cities understand the importance and process of liveability assessment. City level assessments didn’t happen as State level workshop could not be conducted despite several meetings and follow ups with Urban development department and SUDA at state level.

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते
Ministry of Urban Development
Government of India

PANAJI

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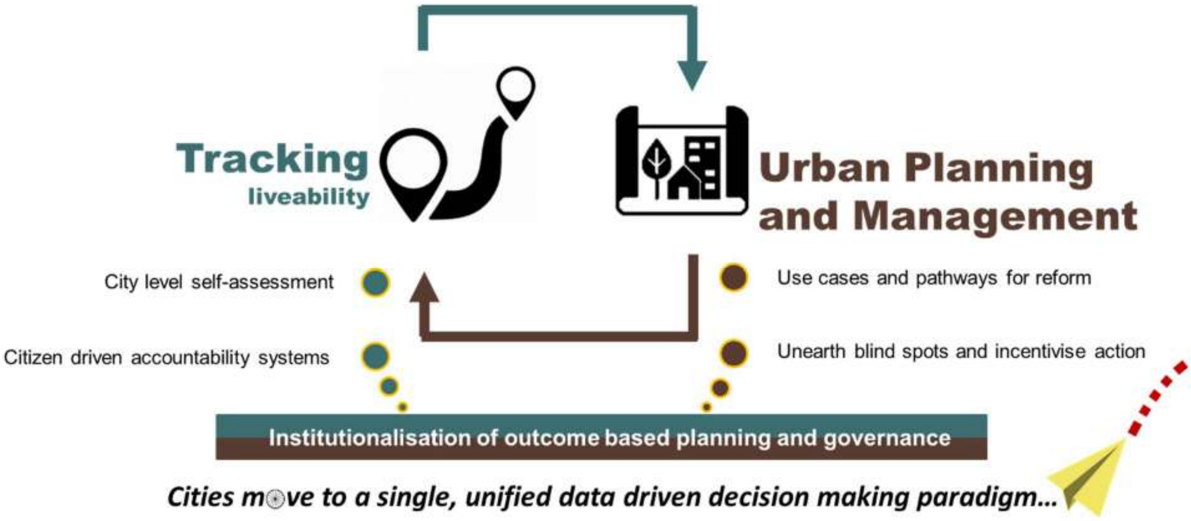
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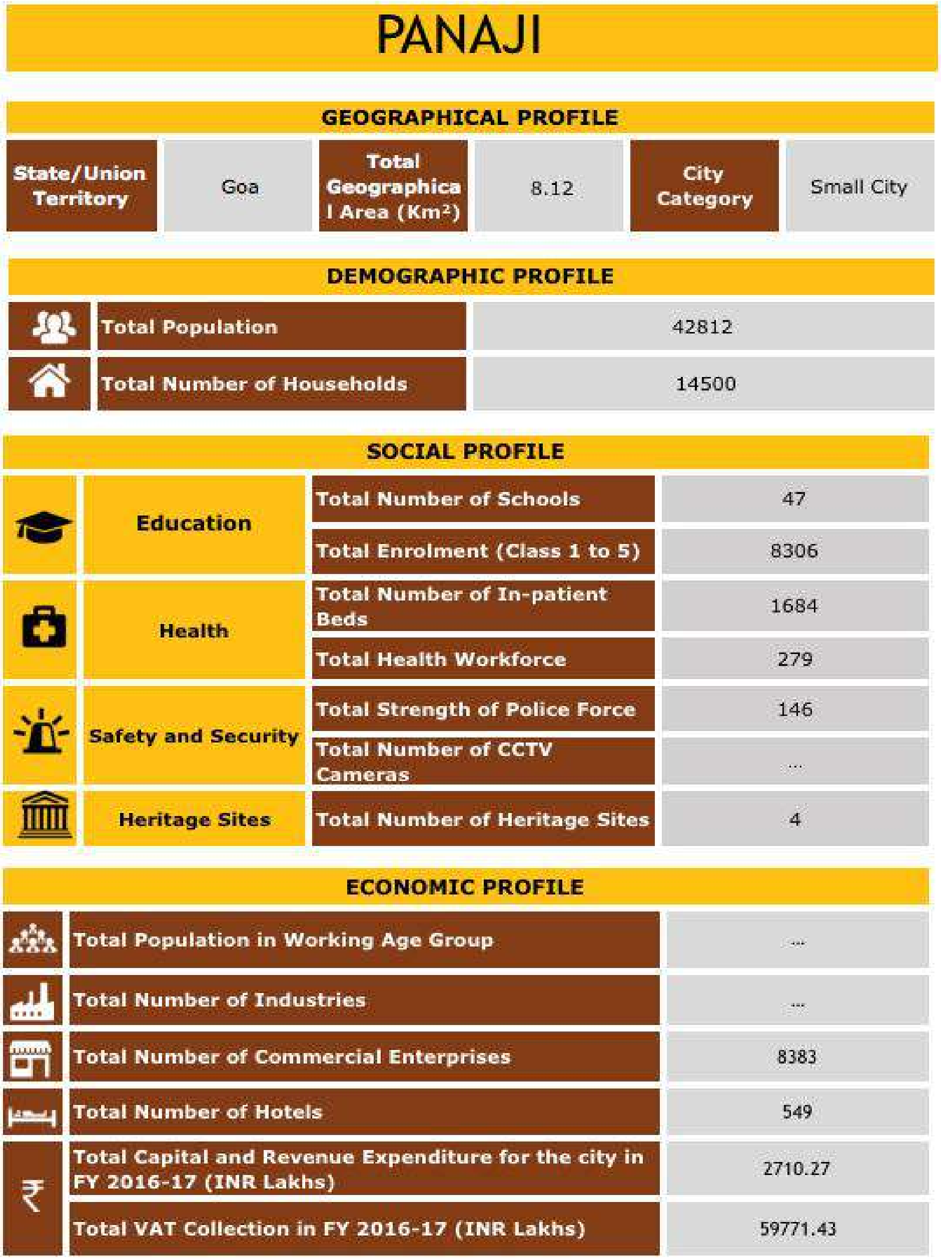
2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PANAJI

GEOGRAPHICAL PROFILE

State/Union Territory	Goa	**Total Geographical Area (Km^2)**	8.12	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	42812
Total Number of Households	14500

SOCIAL PROFILE

Education	**Total Number of Schools**	47
	Total Enrolment (Class 1 to 5)	8306
Health	**Total Number of In-patient Beds**	1684
	Total Health Workforce	279
Safety and Security	**Total Strength of Police Force**	146
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	8383
Total Number of Hotels	549
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2710.27
Total VAT Collection in FY 2016-17 (INR Lakhs)	59771.43

Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure

Pillars of Comprehensive Development	Category	Indicators
Social		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks

Pillars of Comprehensive Development	Category	Indicators
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
		13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2. Scoring and Computing Category Indices of Liveability

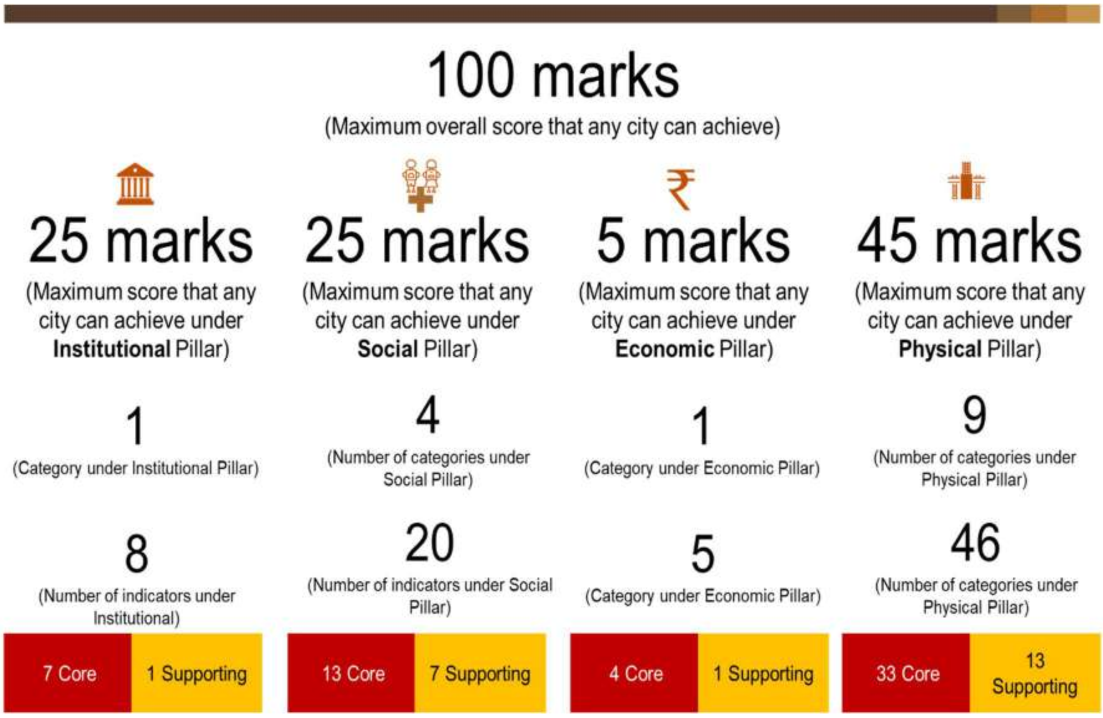
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	**Population range**
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

2.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Corporation of City of Panaji
Urban Local Body	For Park and Recreation Related Questions	Corporation of City of Panaji
Urban Local Body	For Water Supply and Drainage related questions	Public Works Department
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related data	North Goa Planning and Development Authority

Urban Local Body	For Housing related data	Corporation of City of Panaji and North Goa Planning and Development Authority
Urban Local Body	For Building plan related data	Corporation of City of Panaji and North Goa Planning and Development Authority
Urban Local Body	For Roads related data	Transport Department
Urban Local Body	For Solid waste management related data	Corporation of City of Panaji
Urban Local Body	For IT services related data	Corporation of City of Panaji and Department of Information Technology
Urban Local Body	For Vendor committee related data	Corporation of City of Panaji
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Corporation of City of Panaji
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Goa Pollution Control Board
Development Authority	Building Infrastructure	Corporation of City of Panaji and North Goa Planning and Development Authority
	Construction planning	Corporation of City of Panaji
	Green Building	North Goa Planning and Development Authority
	Rain water harvesting	Water Resource Department
	Universal Design Principle	North Goa Planning and Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department
State Disaster management authority		

State Education Department		
State Health Department	Health care professionals	Directorate of Health Services, Panaji
	Citizen Services	Directorate of Health Services, Panaji
	Disease Prevalence	Directorate of Health Services, Panaji
	Health Infrastructure	Directorate of Health Services, Panaji
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Office of the Commissioner of Commercial Taxes
Town and Country Planning Department	Land Use	Town and Country Planning Department and North Goa Planning and Development Authority
Traffic and Police Department		
Transport Authorities	Buses	Directorate of Transport
	Registered Vehicles	Directorate of Transport
	Sub urban rail transport	Directorate of Transport
	Mono Rail Authority	Directorate of Transport
	Tramways	Directorate of Transport

	Marine Transport Authority	River Navigation Department

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 30 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	3
DISCOM/Electricity Department	2
Traffic and Police Department	3
Development Authority	2
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	1
Transport Authority	4
Disaster Management	0

Urban Local Body	13
Total	30

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

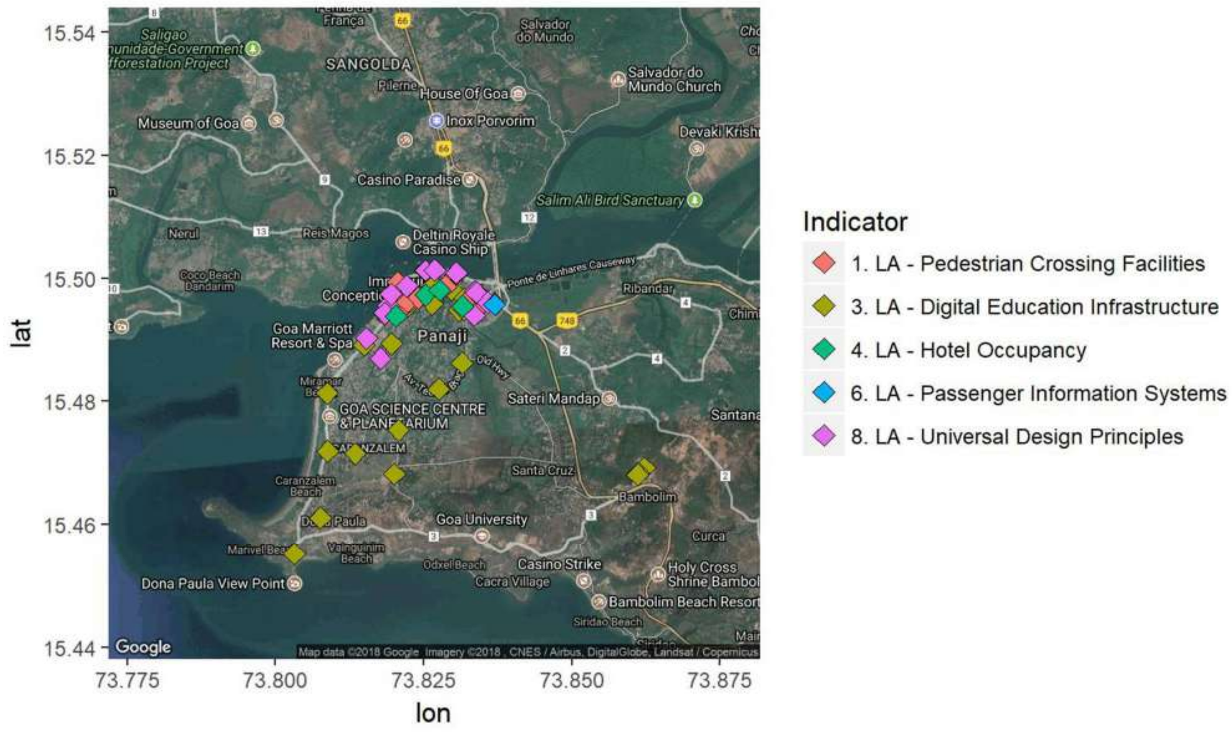
11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit


15.54
15.52
15.50
15.48
15.46
15.44
lat
73.775
73.800
73.825
73.850
73.875
lon
SANGOLDA
House Of Goa
Inox Porvorim
Museum of Goa
Casino Paradise
Salim Ali Bird Sanctuary
Deltin Royale Casino Ship
Salvador do Mundo Church
Reis Magos
Nerul
Coco Beach Dandarim
Goa Marriott Resort & Spa
Panaji
Ribandar
Sateri Mandap
GOA SCIENCE CENTRE & PLANETARIUM
Caranzalem Beach
Santa Cruz
Bambolim
Goa University
Dona Paula View Point
Casino Strike
Holy Cross Shrine Bambolim
Bambolim Beach Resort
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

The following map presents the indicators audited at city level.

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**29.19**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0

	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333333333
	1.1i professional tax	0
	1.1j information	0.461538461538462
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2330.41**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0

	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.00481670290126696
	1.3i information	NA
	1.3j electricity	46.603451116053
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.33**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	1
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0

Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**54.55**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1246.89594
Denominator	Total demand raised for the year	2285.96708
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**4649135350**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	92982707
Denominator	Total O&M cost for providing water supply services during the year	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**2.37**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	170.83
Denominator	Total expenditure (revenue and capital accounts) in the same year	7197.7
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**

Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	30
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Table 1 List of Pillars, Categories and Indicators……………………………………………………….9

Table 2 Details on Population Range …………………………………………………………………..13

Table 4: Data owner wise number of secondary documents submitted by city …………………..20

Table 5: Details of Indicator Values ……………………………………………………………………..24

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	37
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**72.81**
Description	Average Occupancy rate of Hotels	72.81
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	2710.27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**19.31**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	13693
Denominator	Total population in the age group of 6-14 years	70923
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**19.97**
Formula:	*Numerator / Denominator*	

Numerator	Total female enrolment in primary and secondary schools (public and private	6820
Denominator	Total female population in the age group of 6-14 years	34158
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**29.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	8306
Denominator	Total number of teachers available for primary grades (public and private schools)	281
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**74.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	35
Denominator	Total number of schools	47
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**143.09**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	143.091598839753
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.6	**Percentage of students completing secondary education**	**99.64**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	3247446
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**420.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1684
Denominator	Total population of the city	40017
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**69.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	279
Denominator	Total population of the city	40017
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**44.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	17634
Denominator	Total population of the city	40017
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	0.28
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	111
Denominator	Total population of the city	40017
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	Data Unavailable
Denominator	Total length of road network in the city	77
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**247.39**
Formula:	Numerator / Denominator	99
Numerator	Total number of crimes recorded in a year	40017
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**15.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	15
Denominator	Total crimes recorded in the same year	99
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**22.49**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	9
Denominator	Total population of the city	40017
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**3.36**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1945.36
Denominator	Total VAT/GST collection during preceding year	578.2607
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**32**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	8
Denominator	Number of construction permits during preceding year	0.25
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	353253
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	8831.325
Unit	Percentage	
Benchmark	100%	

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**28.64**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1146105

Denominator	Total population of the city	40017
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.13**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	85064
Denominator	Total population of the city	40017
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	8120000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	40017
Denominator	Area allocated for residential land use (in hectares)	Data Unavailable
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**104.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	15100
Denominator	Total number of households in the city	14500
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	63
Denominator	Total number of electricity connections in the city	24282
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**30**
Description	Total number of sustained electrical interruptions in a year	30
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.72**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	4265
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	24007.4
Denominator	Total energy consumption from all sources	228
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on water supply and sewerage services	36.2925
Denominator	Total quantum of water and waste water handled during the period	750
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2170860
Denominator	Total number of street light installations	2600
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	64780.72

Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	228
Denominator	Total population of the city	40017
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	50
Denominator	Total area of the city (sq.km)	8.12
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**23.19**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	928
Denominator	Total population of the city	40017

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	77
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable

Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.25**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable
Denominator	Total length of road network in the city	154
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	23
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**42.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	6213
Denominator	Total number of households in the city	14500
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**349.85**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	14
Denominator	Total population of the city	40017
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	

Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	14
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	11110
Denominator	Total number of water connections in the city	11110
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**76.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	18475
Denominator	Total number of properties in the city	24000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**11.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	2800
Denominator	Total number of properties in the city	24000
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	12
Denominator	Total waste water generated in the city per day	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**93.33**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	11.2
Denominator	Total waste water received at treatment plants per day	12
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	77
Denominator	Total length of road network in the city	77
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	22883
Denominator	Total number of households and establishments in the city	22883
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	50
Denominator	Total quantum of MSW generated in the city	50
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through re-use**	**12**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	180

Denominator	Average MSW generated in the city (tons per month)	1500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**3.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	3.1
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**19.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	19.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**75.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	75.2

Unit	μg/m3	
Benchmark	Annual mean concentration of 60 μg/m3 OR Mean concentration over 24 hours of 100 μg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

PASIGHAT

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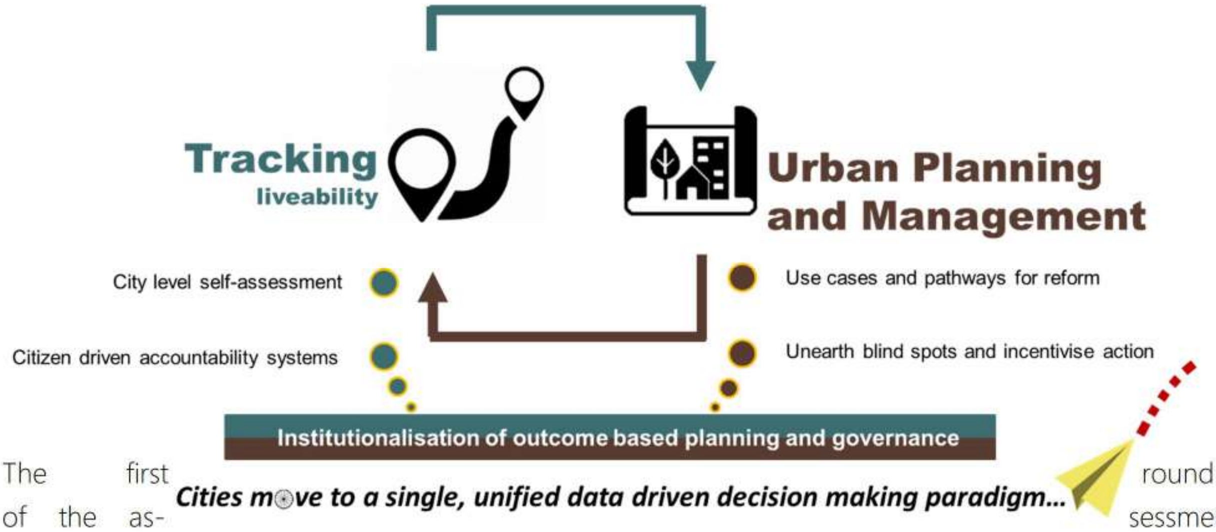
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

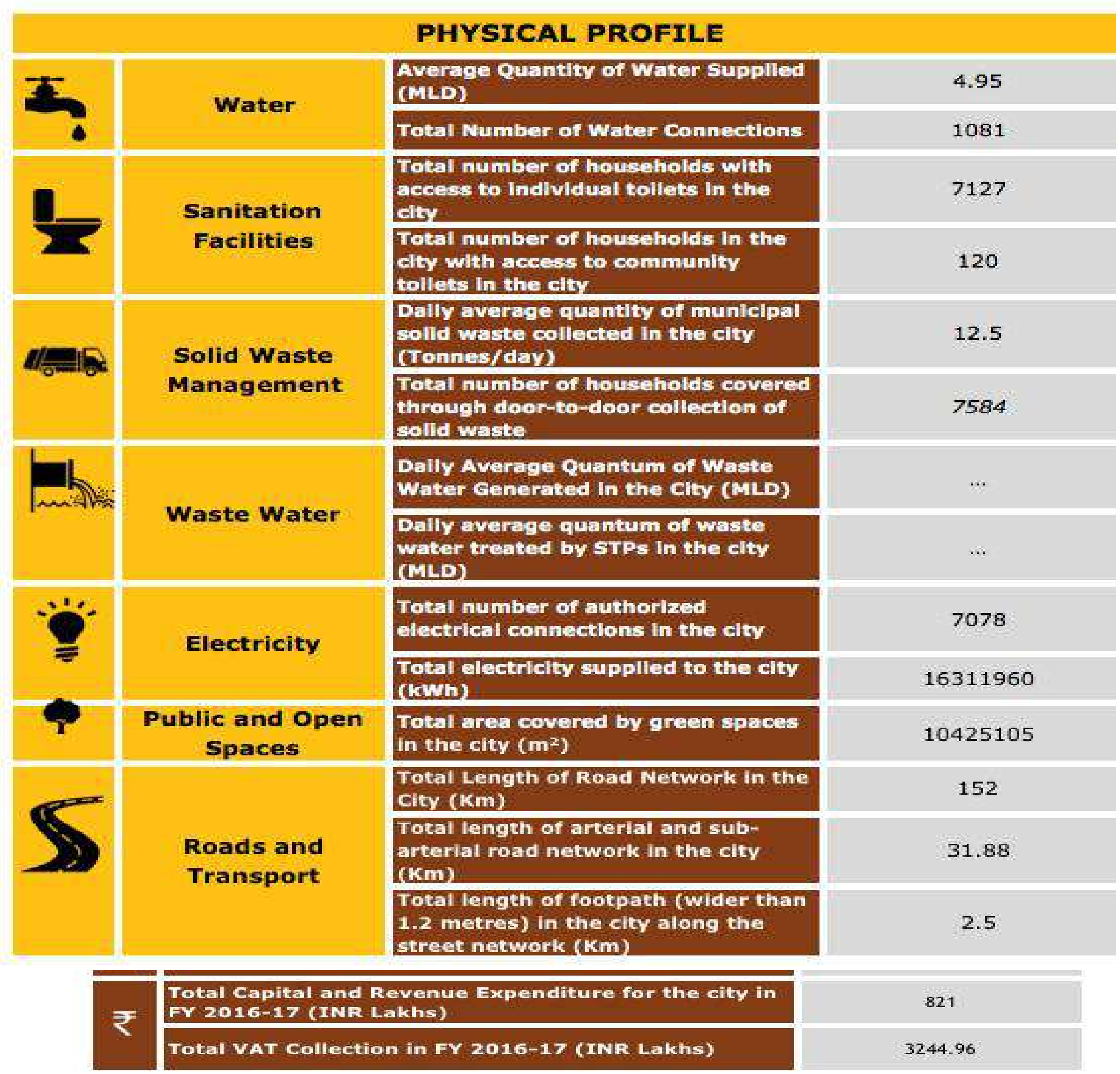

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment

commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	4.95
	Total Number of Water Connections	1081
Sanitation Facilities	Total number of households with access to individual toilets in the city	7127
	Total number of households in the city with access to community toilets in the city	120
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	12.5
	Total number of households covered through door-to-door collection of solid waste	7584
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	7078
	Total electricity supplied to the city (kWh)	16311960
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10425105
Roads and Transport	Total Length of Road Network in the City (Km)	152
	Total length of arterial and sub-arterial road network in the city (Km)	31.88
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.5
₹	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	821
	Total VAT Collection in FY 2016-17 (INR Lakhs)	3244.96

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the perfor-

mance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year

Pillars of Comprehensive Development	Category	Indicators
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through re-use
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

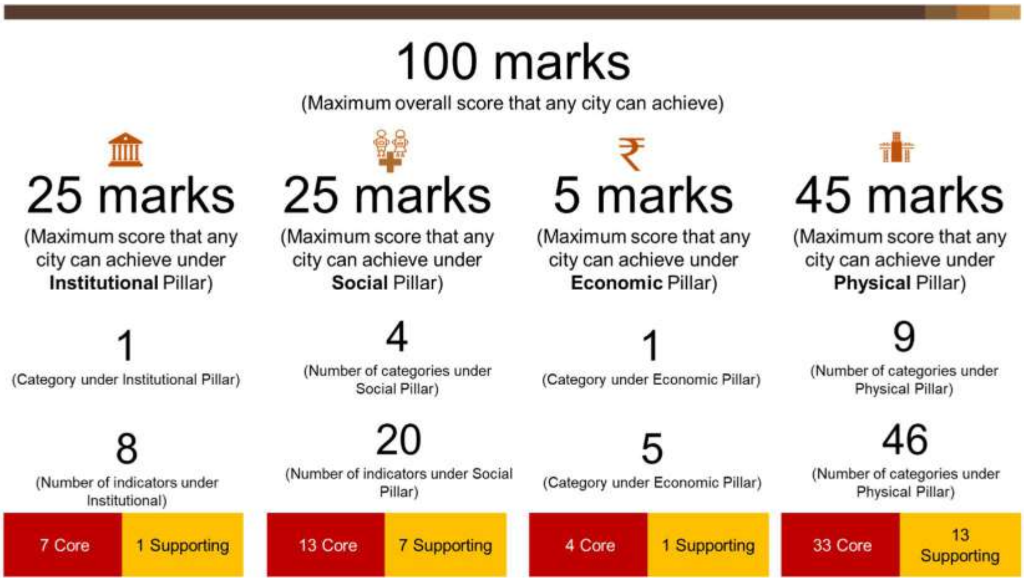
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions

on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal department
Urban Local Body	For Park and Recreation Related Questions	Municipal department
Urban Local Body	For Water Supply and Drainage related questions	Water department
Urban Local Body	For Heritage sites related data	Municipal council
Urban Local Body	For Ecological sites related data	Municipal council and town planning department
Urban Local Body	For Housing related data	Town planning department
Urban Local Body	For Building plan related data	Town planning department
Urban Local Body	For Roads related data	District Transport department
Urban Local Body	For Solid waste management related data	Municipal council
Urban Local Body	For IT services related data	Municipal council
Urban Local Body	For Vendor committee related data	Municipal council and town planning g Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	No
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning department
	Construction planning	TownTown planning department
	Green Building	Town planning department

	Rain water harvesting	Town planning department
	Universal Design Principle	Town planning department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	By Electrical department
State Disaster management authority		Filled data by district disaster management officer itself
State Education Department		Collected data from Udice education department
State Health Department	Health care professionals	Collected data from office of general hospital pasighat.
	Citizen Services	Collected data by district medical officer.
	Disease Prevalence	This data has taken from the Ashamed diagnostic lab pasighat by the nodel officer
	Health Infrastructure	Collected data from all the hospitals of pasighat city.
State Renewable Energy Development Agency		Data feed by project officer of Arunachal Pradesh energy Development Agency who itself is the nodal officer .
State Sales / Commercial Taxes Department		All the datas were feed by superintendent of tax and exice Development.
Town and Country Planning Department	Land Use	Data feed by secretary Municipal council .
Traffic and Police Department		
Transport Authorities	Buses	datas were feed by district transport officer.
	Registered Vehicles	Datas were feed by district transport officer.
	Sub urban rail transport	Rail service is not available in the pasigha.Confirmation given by district transport officer.

	Mono Rail Authority	Rail service is not available in Pasighat.Confirmation given by district transport officer.
	Tramways	Service not available.Confirmation given by district transport officer.
	Marine Transport Authority	Service not available.Confirmation given by district transport officer.

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 0 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0

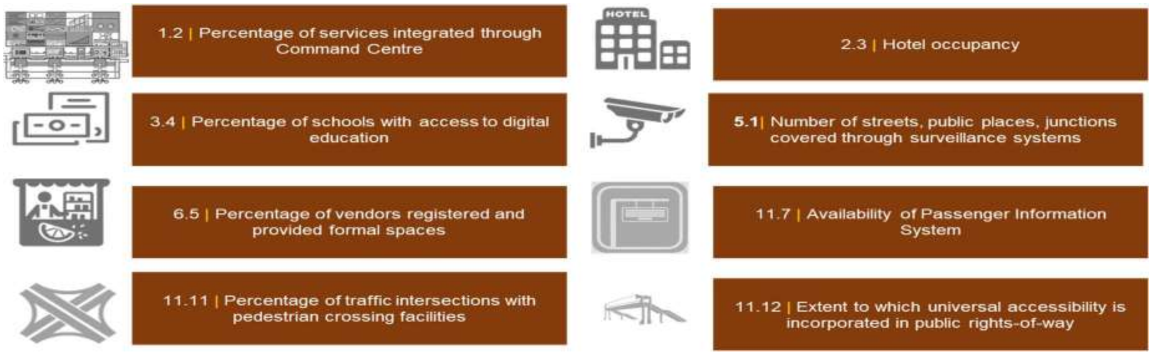
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	0

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

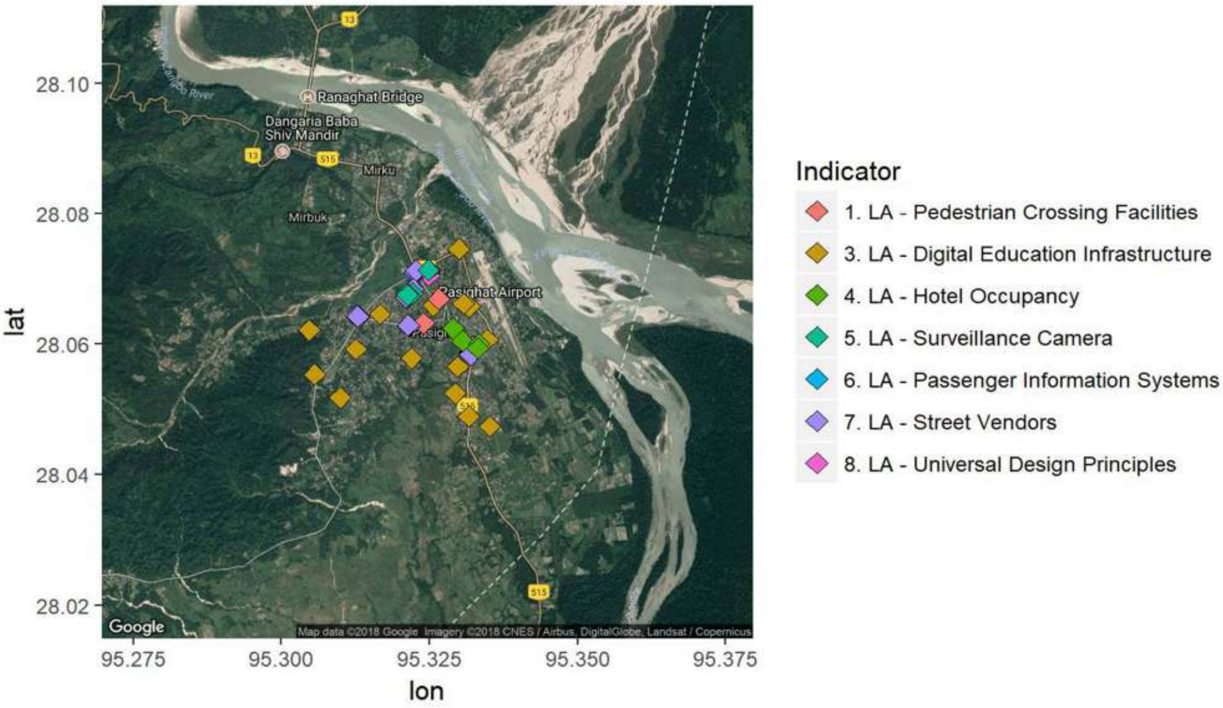
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Ranaghat Bridge
Dangaria Baba Shiv Mandir
Mirku
Mirbuk
Pasighat Airport
Pasighat
13
515
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
28.10
28.08
28.06
28.04
28.02
lon
95.275
95.300
95.325
95.350
95.375
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**6.8**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0

	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	00.384615384615385
	1.1k Grievance redressal	0.5
	1.1l electricity	0
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0
	1.3c water supply	NA
	1.3d solid waste management	0

	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**77.38**
Description		
Sub Indicators	1.4a water supply	306
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	3.5
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	0

Denominator	Total demand raised for the year	0
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**34470630.77**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2240591
Denominator	Total O&M cost for providing water supply services during the year	6.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-373.18
Denominator	Total expenditure (revenue and capital accounts) in the same year	-373.18
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	12
Denominator	Total number of wards	12
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**9.29**
Description	Average Occupancy rate of Hotels	9.28571428571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	821

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**96.86**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6199
Denominator	Total population in the age group of 6-14 years	6400
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**99.13**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3101
Denominator	Total female population in the age group of 6-14 years	3226
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**16.8**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	3494
Denominator	Total number of teachers available for primary grades (public and private schools)	208
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	28
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**237.74**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	237.742984470574
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**124.4**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	839937
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**81.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	200
Denominator	Total population of the city	24656
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	24656
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	114
Denominator	Total population of the city	24656
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	79
Denominator	Total population of the city	24656
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.54**

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	132
Denominator	Total population of the city	24656
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	Data Unavailable
Denominator	Total length of road network in the city	152
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1241.08**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	306
Denominator	Total population of the city	24656
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**17.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups	54

	(women, children and elderly) in a year	
Denominator	Total crimes recorded in the same year	306
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	0
Denominator	Total population of the city	24656
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**38.35**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	899.46
Denominator	Total VAT/GST collection during preceding year	23.455
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0

Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	18582
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**24.54**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	114

Denominator	Total number of vendors in the city	464.55
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**16.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	208
Denominator	Total number of slum and EWS households in the city	12.46
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**422.82**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	10425105
Denominator	Total population of the city	24656
Unit	Square metres (sq.m.)	

Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**108.68**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2679564
Denominator	Total population of the city	24656
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	105000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	24656
Denominator	Area allocated for residential land use (in hectares)	31000000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical**	**99.31**

	service	
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	7078
Denominator	Total number of households in the city	7127
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	Data Unavailable
Denominator	Total number of electricity connections in the city	7078
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**689**
Description	Total number of sustained electrical interruptions in a year	689
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	31680
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	10
Denominator	Total energy consumption from all sources	16312160
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	148.5
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	60
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.46**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	16312160
Denominator	Total population of the city	24656
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1356
Denominator	Total area of the city (sq.km)	105
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	2
Denominator	Total population of the city	24656
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	30
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	152
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0**

Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	0
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**2.27**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	5
Denominator	Total available on-street parking spaces in the city	220
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.82**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2.5
Denominator	Total length of road network in the city	304
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian**	**100**

	crossing facilities	
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	4
Denominator	Total number of junctions/ intersections on major roads in the city	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	1136
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**13.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	955
Denominator	Total number of households in the city	7127
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**200.76**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	4.95

Denominator	Total population of the city	24656
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	108
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	4.95
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	1081
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of	Data Unavaila-

	designated plot size), commercial and public buildings with RWH facility	ble
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	8593
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable

Denominator	Total waste water generated in the city per day	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	152
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**117.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	9050
Denominator	Total number of households and establishments in the city	7690
Unit	Percentage	
Benchmark	100% door to door collection	

Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**89.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	12.5
Denominator	Total quantum of MSW generated in the city	14
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through re-use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	375
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

PATNA

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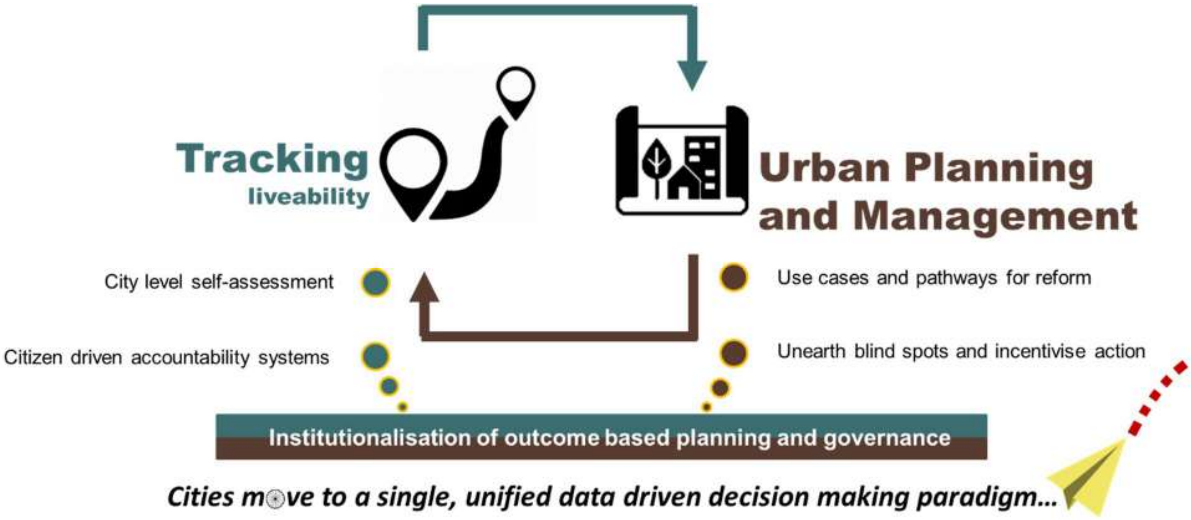
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

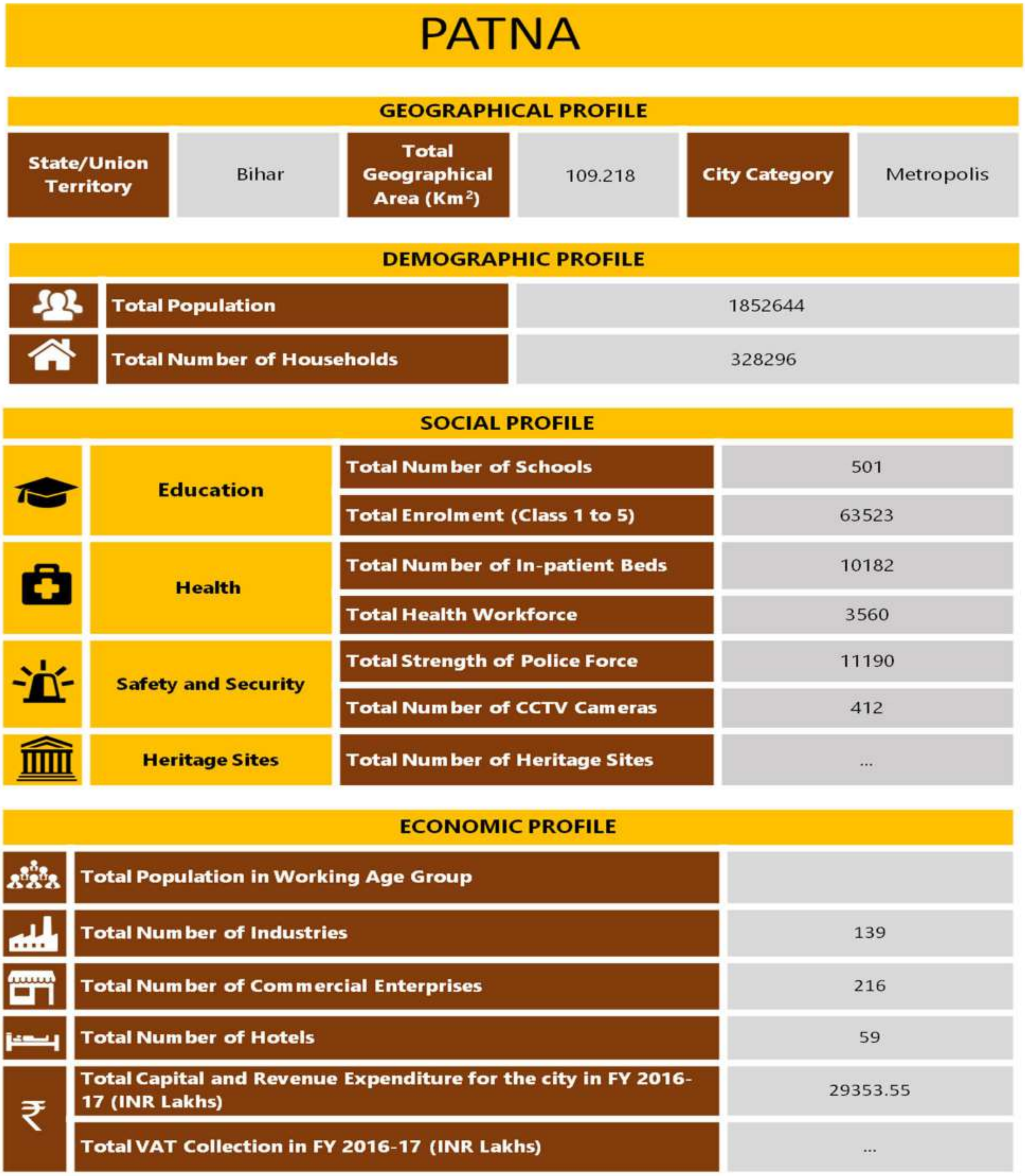
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PATNA

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	**Total Geographical Area (Km²)**	109.218	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1852644
Total Number of Households	328296

SOCIAL PROFILE

Education	**Total Number of Schools**	501
	Total Enrolment (Class 1 to 5)	63523
Health	**Total Number of In-patient Beds**	10182
	Total Health Workforce	3560
Safety and Security	**Total Strength of Police Force**	11190
	Total Number of CCTV Cameras	412
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	139
Total Number of Commercial Enterprises	216
Total Number of Hotels	59
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29353.55
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	132
	Total Number of Water Connections	179695
Sanitation Facilities	Total number of households with access to individual toilets in the city	205814
	Total number of households in the city with access to community toilets in the city	1275
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	754
	Total number of households covered through door-to-door collection of solid waste	94016
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	224.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	121
Electricity	Total number of authorized electrical connections in the city	433805
	Total electricity supplied to the city (kWh)	225143.19
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1660000
Roads and Transport	Total Length of Road Network in the City (Km)	2516
	Total length of arterial and sub-arterial road network in the city (Km)	53
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	26

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

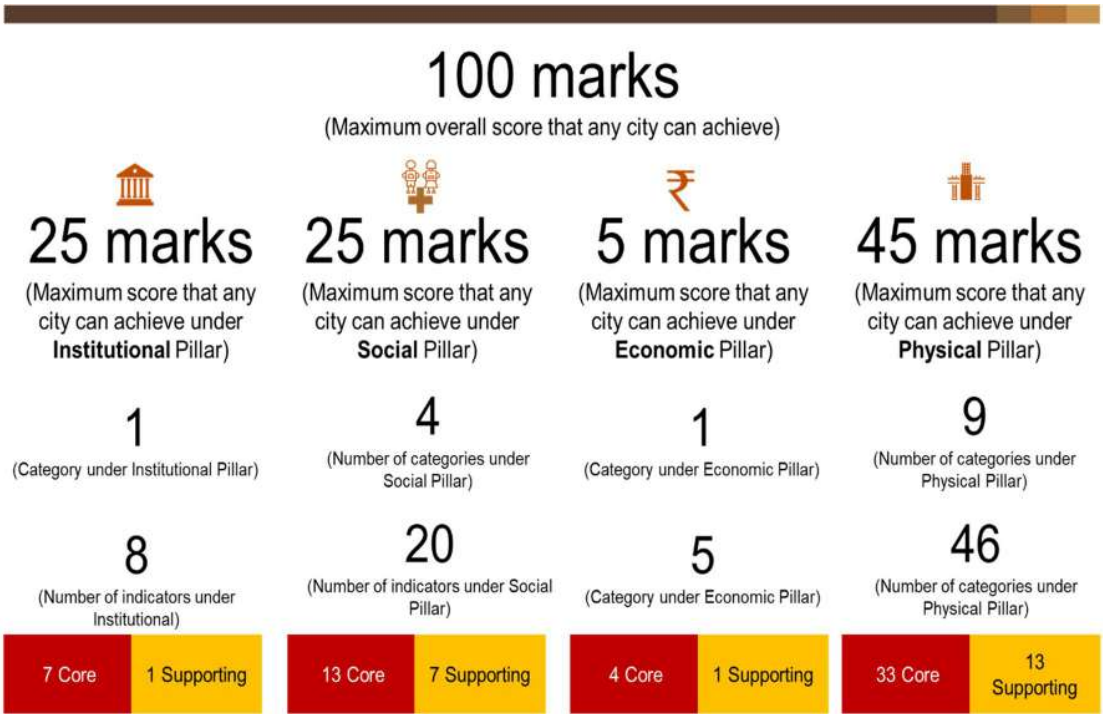
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Patna Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Heritage sites related data	Patna Municipal Corporation
Urban Local Body	For Ecological sites related data	Patna Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Patna Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Solid waste management related data	Patna Municipal Corporation
Urban Local Body	For IT services related data	IT section, Patna Municipal corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Patna Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Engineering Department, Patna Municipal Corporation
	Construction planning	Engineering Department, Patna Municipal Corporation
	Green Building	Engineering Department, Patna Municipal Corporation
	Rain water harvesting	Engineering Department, Patna Municipal Corporation
	Universal Design Principle	Engineering Department, Patna Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	State Health Mission
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Patna Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	State Transport Authority, District Transport office
	Registered Vehicles	State Transport Authority, District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 4 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	0
DISCOM /Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	4*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

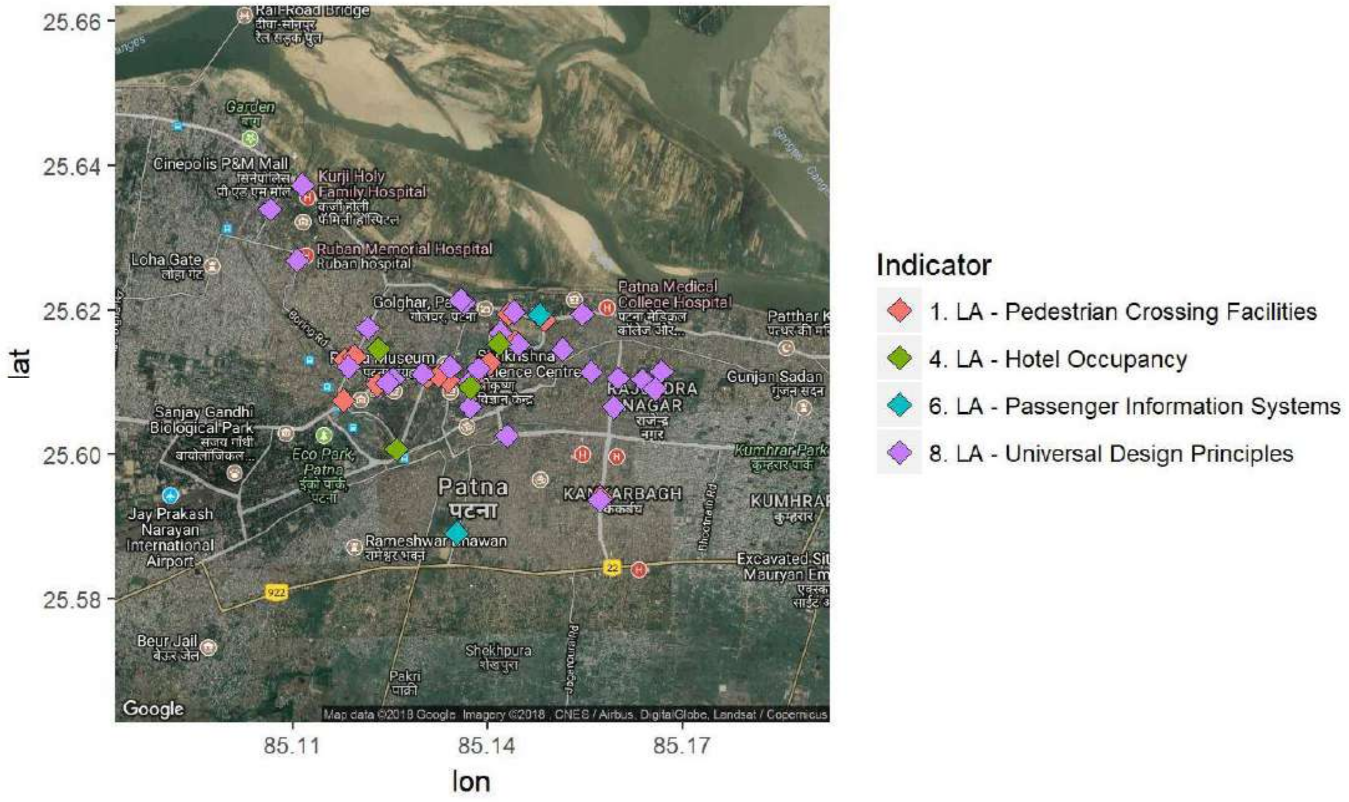
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


25.66
25.64
25.62
25.60
25.58
lat
85.11
85.14
85.17
lon
Rail-Road Bridge
Garden
Cinepolis P&M Mall
Kurji Holy Family Hospital
Ruban Memorial Hospital
Loha Gate
Golghar, Patna
Patna Medical College Hospital
Patna Museum
Srikrishna Science Centre
RAJENDRA NAGAR
Gunjan Sadan
Sanjay Gandhi Biological Park
Eco Park, Patna
Patna
पटना
KANKARBAGH
KUMHRAR
Kumhrar Park
Jay Prakash Narayan International Airport
Rameshwar Bhawan
Excavated Site Mauryan Empire
Beur Jail
Shekhpura
Pakri
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**52.4**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0.5
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.888888889
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**21.43**
Description	Services integrated through an integrated or a singular operations command centre	4.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.8**
Description		
Sub Indicators	1.3a Building plan	0.000172333
	1.3b Birth/Death Certificate	0.0025571
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.029167167
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	6.03615E-06
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	

Indicator No: 1.5	**Tax collected as percentage of tax billed**	**45.85**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4382.27
Denominator	Total demand raised for the year	9557
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	0
Denominator	Total O&M cost for providing water supply services during the year	60
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-1.3**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-613.62
Denominator	Total expenditure (revenue and capital accounts) in the same year	47340.2
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	75
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	14
Denominator	Total number of historic buildings/sites identified	14
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	29353.55
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**110**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	110
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**29.13**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	102943
Denominator	Total population in the age group of 6-14 years	353372
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**32.88**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	54308
Denominator	Total female population in the age group of 6-14 years	165157
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**39.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	63523
Denominator	Total number of teachers available for primary grades (public and private schools)	1615
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital**	**3.19**

	education	
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	16
Denominator	Total number of schools	501
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**22.04** 22.0416907
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**62.18** 179249616
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**60.45**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	10182
Denominator	Total population of the city	1684297
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**21.14**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	3560
Denominator	Total population of the city	1684297
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2884
Denominator	Total population of the city	1684297
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2632
Denominator	Total population of the city	1684297
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**16.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	412

Denominator	Total length of road network in the city	2516
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1580.9**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	26627
Denominator	Total population of the city	1684297
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**2.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	727
Denominator	Total crimes recorded in the same year	26627
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	#VALUE!
Denominator	Total population of the city	1684297
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**128.21**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	100
Denominator	Number of construction permits during preceding year	0.78
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	50146
Denominator	Total labour force in the city	353372
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	12512
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**8.13**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1390
Denominator	Total number of slum and EWS households in the city	171.02
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble** NA
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.99**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1660000
Denominator	Total population of the city	1684297
Unit	Square metres (sq.m.)	

Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**2.64**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	4441344.4
Denominator	Total population of the city	1684297
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	109218000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**33985.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1684297
Denominator	Area allocated for residential land use (in hectares)	49.56
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**103.72**

Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	340504
Denominator	Total number of households in the city	328296
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	433805
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**4324**
Description	Total number of sustained electrical interruptions in a year	4324
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	37872
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.02**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	554
Denominator	Total energy consumption from all sources	225143.19
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	4868908
Denominator	Total quantum of water and waste water handled during the period	7590
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	12600000
Denominator	Total number of street light installations	19001
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0

Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	225143.19
Denominator	Total population of the city	1684297
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	1497131
Denominator	Total area of the city (sq.km)	109.218
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	720
Denominator	Total population of the city	1684297
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	21
Unit	Percentage	
Benchmark		

Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	2516
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.31
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

		Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	53
Denominator	Total available on-street parking spaces in the city	53
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.52**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	26
Denominator	Total length of road network in the city	5032
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of intersections with pedestrian crossing facilities on major roads	31
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**34.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	87
Denominator	Total number of public right-of-way areas in the city	249
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**54.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	179695
Denominator	Total number of households in the city	328296
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**78.37**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	132
Denominator	Total population of the city	1684297
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	132
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	179695
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**121.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	766
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	629
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**41.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	207943
Denominator	Total number of properties in the city	500000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	500000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	224.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**13.47**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	24.2
Denominator	Total waste water received at treatment plants per day	179.68
Unit	Percentage	

Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**47.69**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1200
Denominator	Total length of road network in the city	2516
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**28.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	94016
Denominator	Total number of households and establishments in the city	328512
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**90.52**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	754
Denominator	Total quantum of MSW generated in the city	833
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	22620
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**12.08**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	12.08
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**37.01**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	37.01
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	NA
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	36456
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**28.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	15
Denominator	Total number of samples tested	52
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

PIMPRI CHINWAD

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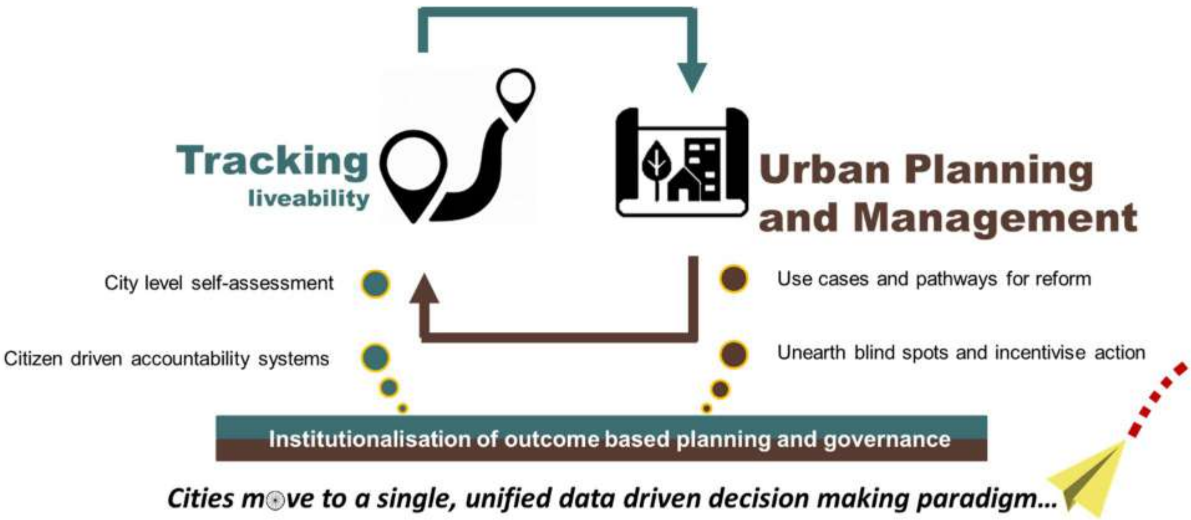
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

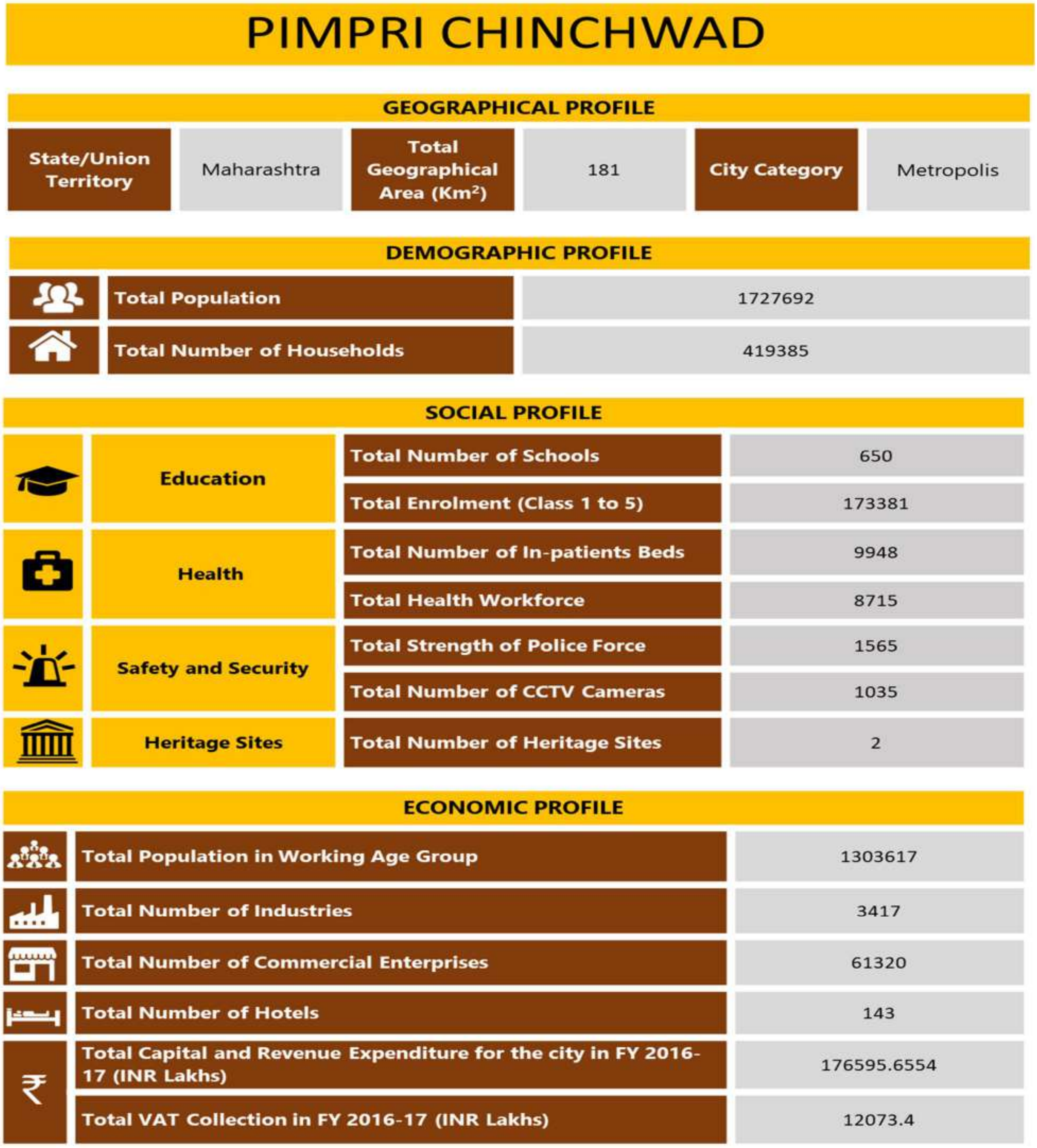
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PIMPRI CHINCHWAD

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	181	City Category	Metropolis

DEMOGRAPHIC PROFILE

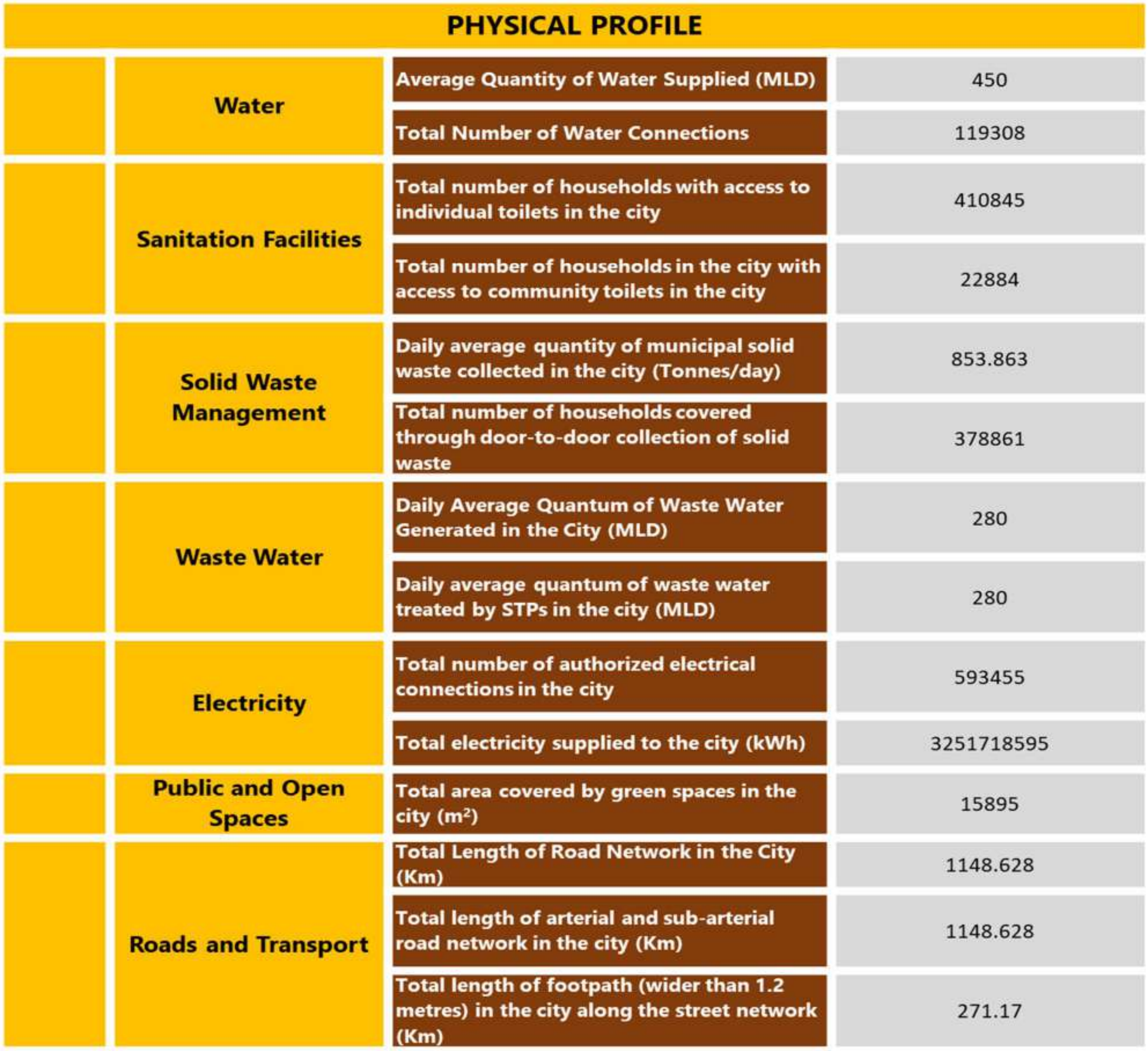
Total Population	1727692
Total Number of Households	419385

SOCIAL PROFILE

Education	Total Number of Schools	650
	Total Enrolment (Class 1 to 5)	173381
Health	Total Number of In-patients Beds	9948
	Total Health Workforce	8715
Safety and Security	Total Strength of Police Force	1565
	Total Number of CCTV Cameras	1035
Heritage Sites	Total Number of Heritage Sites	2

ECONOMIC PROFILE

Total Population in Working Age Group	1303617
Total Number of Industries	3417
Total Number of Commercial Enterprises	61320
Total Number of Hotels	143
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	176595.6554
Total VAT Collection in FY 2016-17 (INR Lakhs)	12073.4



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	450
		Total Number of Water Connections	119308
	Sanitation Facilities	Total number of households with access to individual toilets in the city	410845
		Total number of households in the city with access to community toilets in the city	22884
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	853.863
		Total number of households covered through door-to-door collection of solid waste	378861
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	280
		Daily average quantum of waste water treated by STPs in the city (MLD)	280
	Electricity	Total number of authorized electrical connections in the city	593455
		Total electricity supplied to the city (kWh)	3251718595
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	15895
	Roads and Transport	Total Length of Road Network in the City (Km)	1148.628
		Total length of arterial and sub-arterial road network in the city (Km)	1148.628
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	271.17

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

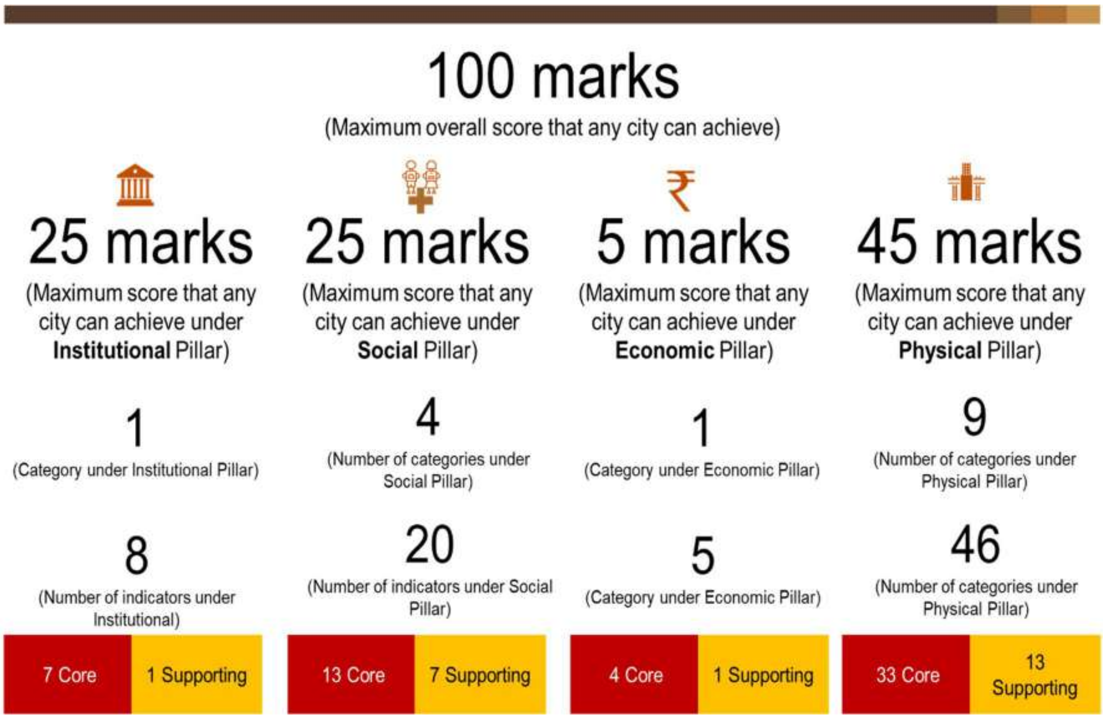
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, PCMC Sales tax deparment
Urban Local Body	For Park and Recreation Related Questions	Garden Department, PCMC Civil Department, PCMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, PCMC
Urban Local Body	For Heritage sites related data	Town Planning Department, PCMC
Urban Local Body	For Ecological sites related data	Town Planning Department, PCMC
Urban Local Body	For Housing related data	Housing Department, PCMC
Urban Local Body	For Building plan related data	Building & Planning Department, PCMC
Urban Local Body	For Roads related data	Roads Department, PCMC
Urban Local Body	For Solid waste management related data	Waste management Department, PCMC Drainage Department, PCMC
Urban Local Body	For IT services related data	IT Department, PCMC
Urban Local Body	For Vendor committee related data	PCMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Environment Department, PCMC
Development Authority	Building Infrastructure	Building & Planning Department, PCMC
	Construction planning	Town Planning, PCMC
	Green Building	Building & Planning Department, PCMC
	Rain water harvesting	Building & Planning Department, PCMC
	Universal Design Principle	Building & Planning Department, PCMC

Designated data owners	Subcategories	Data owners at city level
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department, PCMC Maharashtra Electricity Board,
State Disaster management authority		Disaster Department, PCMC
State Education Department		State Education Department Education Department, PCMC
State Health Department	Health care professionals	Health Department, PCMC
	Citizen Services	Health Department, PCMC
	Disease Prevalence	Health Department, PCMC
	Health Infrastructure	Health Department, PCMC
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Town Planning department, PCMC
Traffic and Police Department		Office of Sub-Commissioner of Police
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Road Transport system, PCMC
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 90 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	4
DISCOM/Electricity Department	1
Traffic and Police Department	2
Development Authority	1
Pollution Control Board	0
State Renewable Energy Department	6
Town and Country Planning	0
State Health Department	2
Transport Authority	8
Disaster Management	0
Urban Local Body	66
Total	90*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

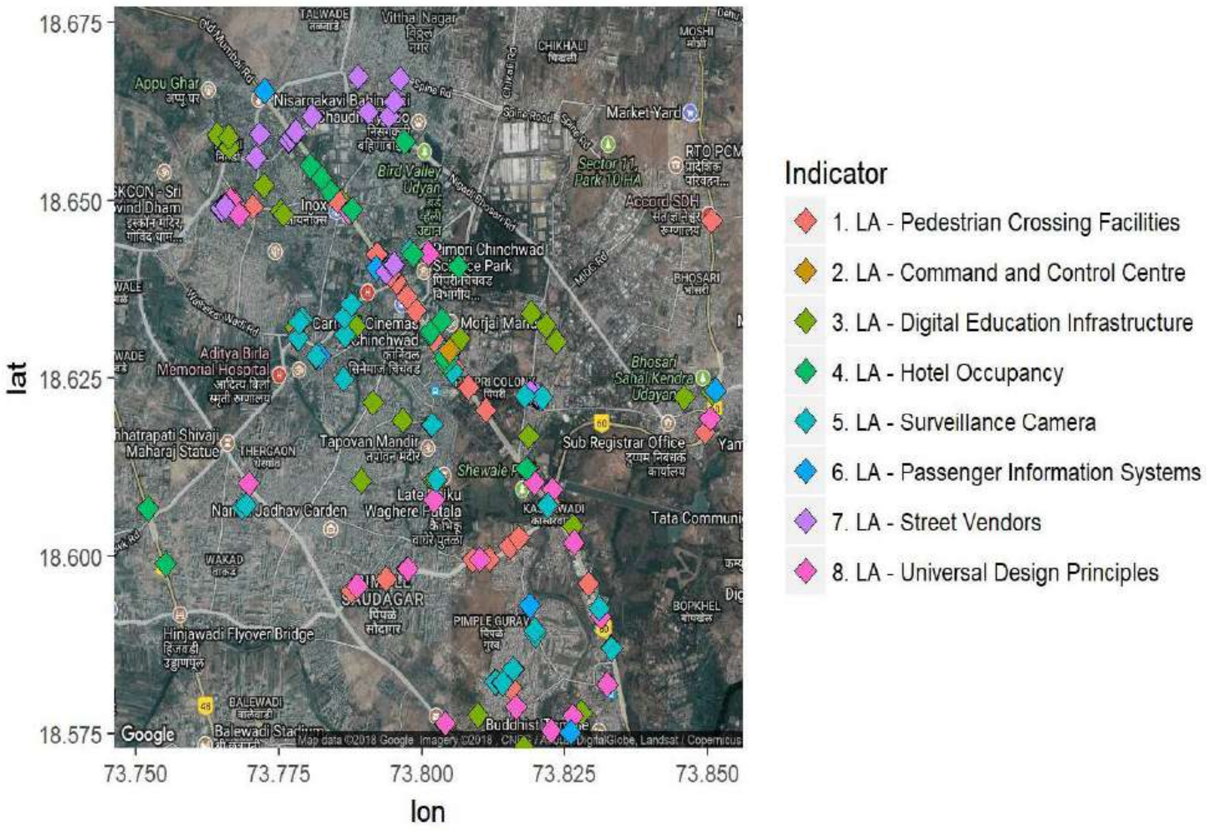
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


18.675
18.650
18.625
18.600
18.575
lat
73.750
73.775
73.800
73.825
73.850
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Appu Ghar
Nisargakavi Bahinabai
Bird Valley Udyan
Market Yard
Pimpri Chinchwad Science Park
Morjai Mandir
Aditya Birla Memorial Hospital
Tapovan Mandir
Sub Registrar Office
Tata Communi
Jodhav Garden
Laterikhu
Waghere Putala
WAKAD
PIMPLE SAUDAGAR
PIMPLE GURAV
Hinjawadi Flyover Bridge
BALEWADI
Balewadi Stadium
Buddhist Temple
BHOSARI
Bhosari Sahal Kendra Udyan
BOPKHEL
CHIKHALI
MOSHI
TALWADE
Vitthal Nagar
Sector 11 Park 10 HA
Accord SDH
RTO PCM
Chhatrapati Shivaji Maharaj Statue
THERGAON
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**81.89**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0.75
	1.1d solid waste management	0.75
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	0.333333333
	1.1i professional tax	1
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.888888889
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**14.29**
Description	Services integrated through an integrated or a singular operations command centre	3
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**3.83**
Description		

Sub Indicators	1.3a Building plan	0.01730407
	1.3b Birth/Death Certificate	0.043970607
	1.3c water supply	0.031724129
	1.3d solid waste management	0.018734821
	1.3e property tax	0.010424593
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000208949
	1.3i information	0.001759573
	1.3j electricity	0.181954824
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.43**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	3
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**37.39**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	39068.20287
Denominator	Total demand raised for the year	104481.774
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water**	**28.4**

	supply services	
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	3110.62
Denominator	Total O&M cost for providing water supply services during the year	10952.1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**41.31**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	196456.529
Denominator	Total expenditure (revenue and capital accounts) in the same year	475515.529
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	32
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**19.23**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects	5

	for restoration	
Denominator	Total number of ecologically important sites identified in the city	26
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**54.88**
Description	Average Occupancy rate of Hotels	54.875
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1177.17796
Denominator	Total budget of the ULB (capital and revenue)	176595.6554
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**135**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	135
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**96.24**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	263794
Denominator	Total population in the age group of 6-14 years	274101
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**95.75**
Formula:	*Numerator / Denominator*	

Numerator	Total female enrolment in primary and secondary schools (public and private	121515
Denominator	Total female population in the age group of 6-14 years	126903
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**226.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	173381
Denominator	Total number of teachers available for primary grades (public and private schools)	765
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**50.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	328
Denominator	Total number of schools	650
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**146.62**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	146.6242728
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**153.19**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	857378985
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**57.58**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	9948
Denominator	Total population of the city	1727692
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**50.44**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	8715
Denominator	Total population of the city	1727692
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	Data Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**3.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	52126
Denominator	Total population of the city	1727692
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	517
Denominator	Total population of the city	1727692
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**90.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1035
Denominator	Total length of road network in the city	1148.628
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**293.22**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5066
Denominator	Total population of the city	1727692
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**12.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	637
Denominator	Total crimes recorded in the same year	5066
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**19.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	344
Denominator	Total population of the city	1727692
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**9.61**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1058.19
Denominator	Total VAT/GST collection during preceding year	110.1521
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**68.41**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	628
Denominator	Number of construction permits during preceding year	9.18
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	49441
Denominator	Total labour force in the city	274101
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**36.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	3946
Denominator	Total number of vendors in the city	10830
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**1.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	2213
Denominator	Total number of slum and EWS households in the city	1350.82
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.04**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	17316923927
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	15895
Denominator	Total population of the city	1727692
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.44**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	5934799.55

Denominator	Total population of the city	1727692
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	181000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1727692
Denominator	Area allocated for residential land use (in hectares)	107000000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**50.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	213311
Denominator	Total number of households in the city	419385
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**57.97**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	344026
Denominator	Total number of electricity connections in the city	593455
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**798**
Description	Total number of sustained electrical interruptions in a year	798
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	87734
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	Data Unavailable
Denominator	Total energy consumption from all sources	3251718595
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	582143.6042
Denominator	Total quantum of water and waste water handled during the period	21900
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	37951976
Denominator	Total number of street light installations	74889
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	78284.68
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1863268.61
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3251718595
Denominator	Total population of the city	1727692
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	17660.57
Denominator	Total area of the city (sq.km)	181
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	1000
Denominator	Total population of the city	1727692
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	8.92
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**3.74**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	43
Denominator	Total length of road network in the city	1148.628
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**65.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	15
Denominator	Total number of major transport interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**2.61**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	60
Denominator	Total number of major interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

	synchronised	
Denominator	Total number of signalised intersections in the city	75
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**11.8**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	271.17
Denominator	Total length of road network in the city	2297.256
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**153.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	350
Denominator	Total number of junctions/ intersections on major roads in the city	228
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**99.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	843
Denominator	Total number of public right-of-way areas in the city	851
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	419385
Denominator	Total number of households in the city	419385
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**260.46**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	450
Denominator	Total population of the city	1727692
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	71288
Denominator	Total number of samples tested for water quality	71288
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**38.57**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	173.56
Denominator	Quantum of water put into the distribution system (mld)	450
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	119308
Denominator	Total number of water connections in the city	119308
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**68.7**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1069
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1556
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**110.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	498791
Denominator	Total number of properties in the city	450761
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**84.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	380167
Denominator	Total number of properties in the city	450761
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**85.71**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	240
Denominator	Total waste water generated in the city per day	280
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**116.67**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	280
Denominator	Total waste water received at treatment plants per day	240
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**20.49**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	235.37
Denominator	Total length of road network in the city	1148.628
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**91.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	440181
Denominator	Total number of households and establishments in the city	480705
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**106.16**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	853.863
Denominator	Total quantum of MSW generated in the city	804.327
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**24.38**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	6244.83
Denominator	Average MSW generated in the city (tons per month)	25615.89
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**16.96**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	16.96
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**29.74**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	29.74
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**51.47**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	51.47
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	33
Denominator	Total number of noise samples	33
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	600
Denominator	Total number of samples tested	600
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

PORT-BLAIR

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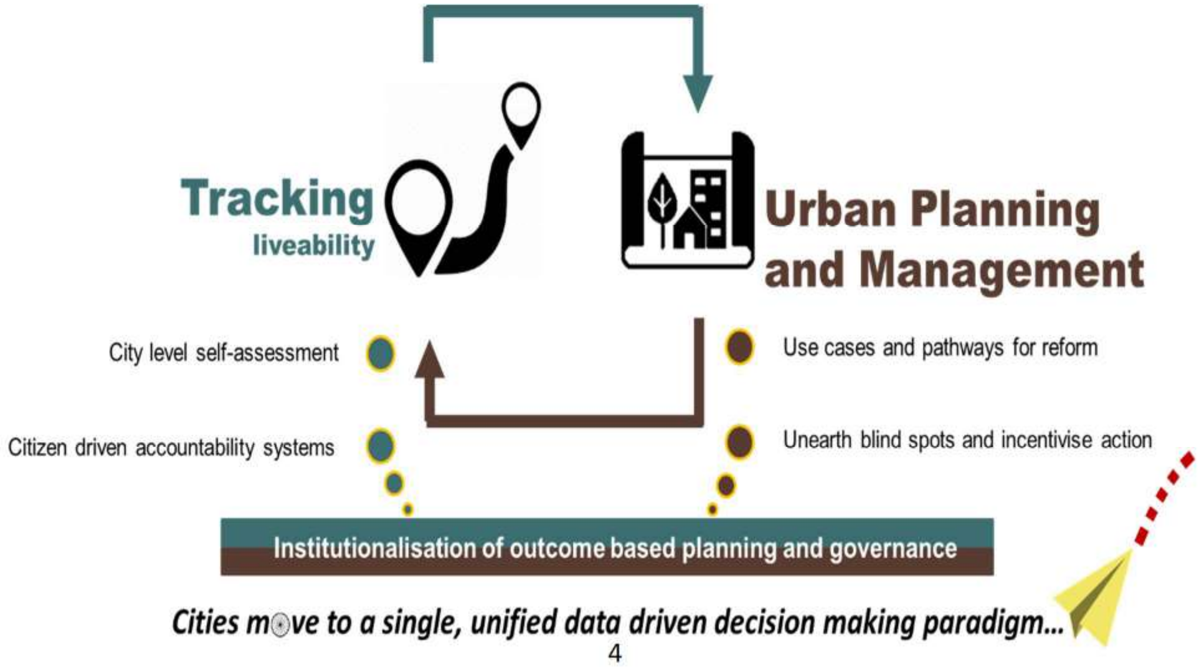
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

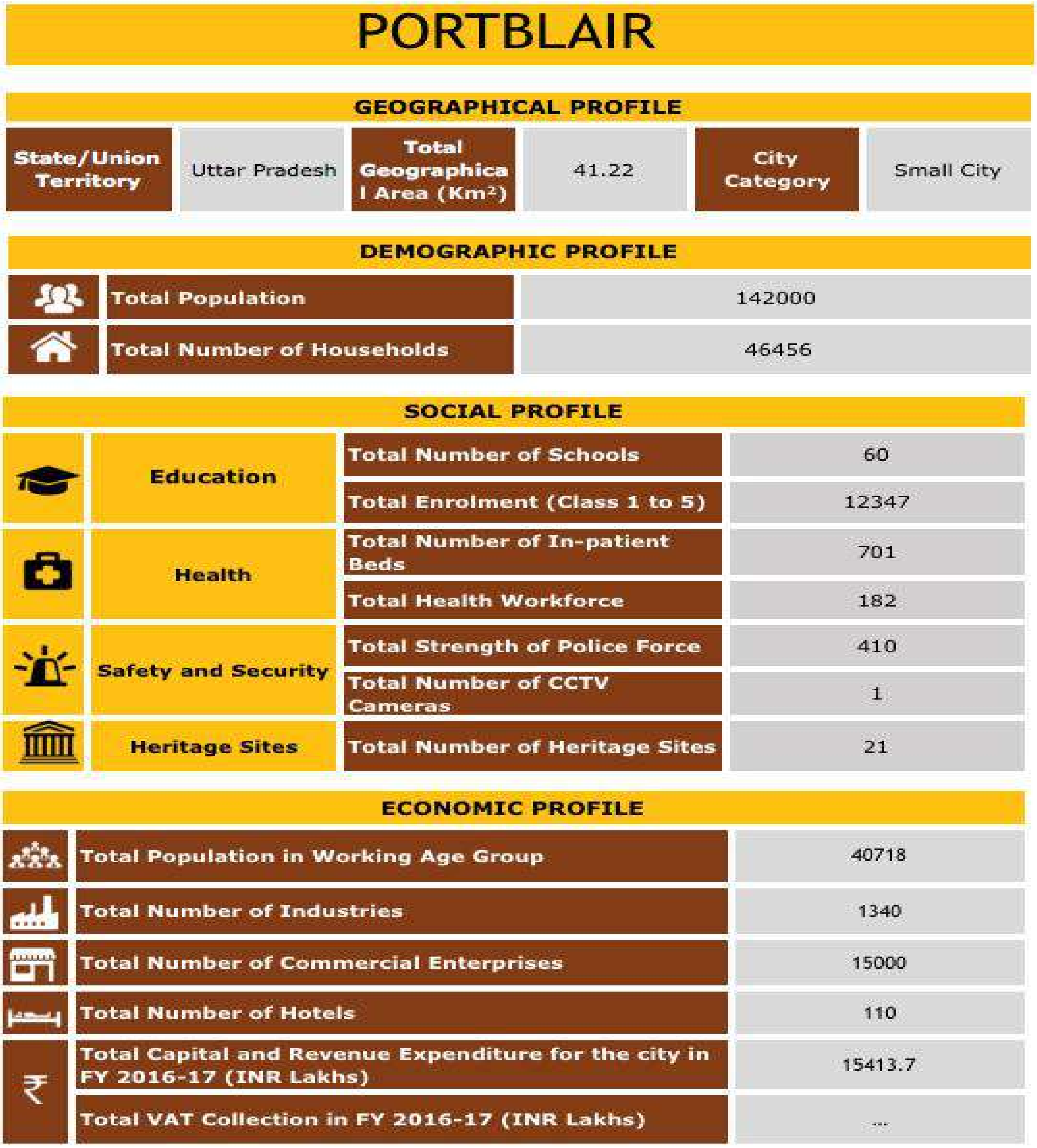
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PORTBLAIR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	41.22	**City Category**	Small City

DEMOGRAPHIC PROFILE

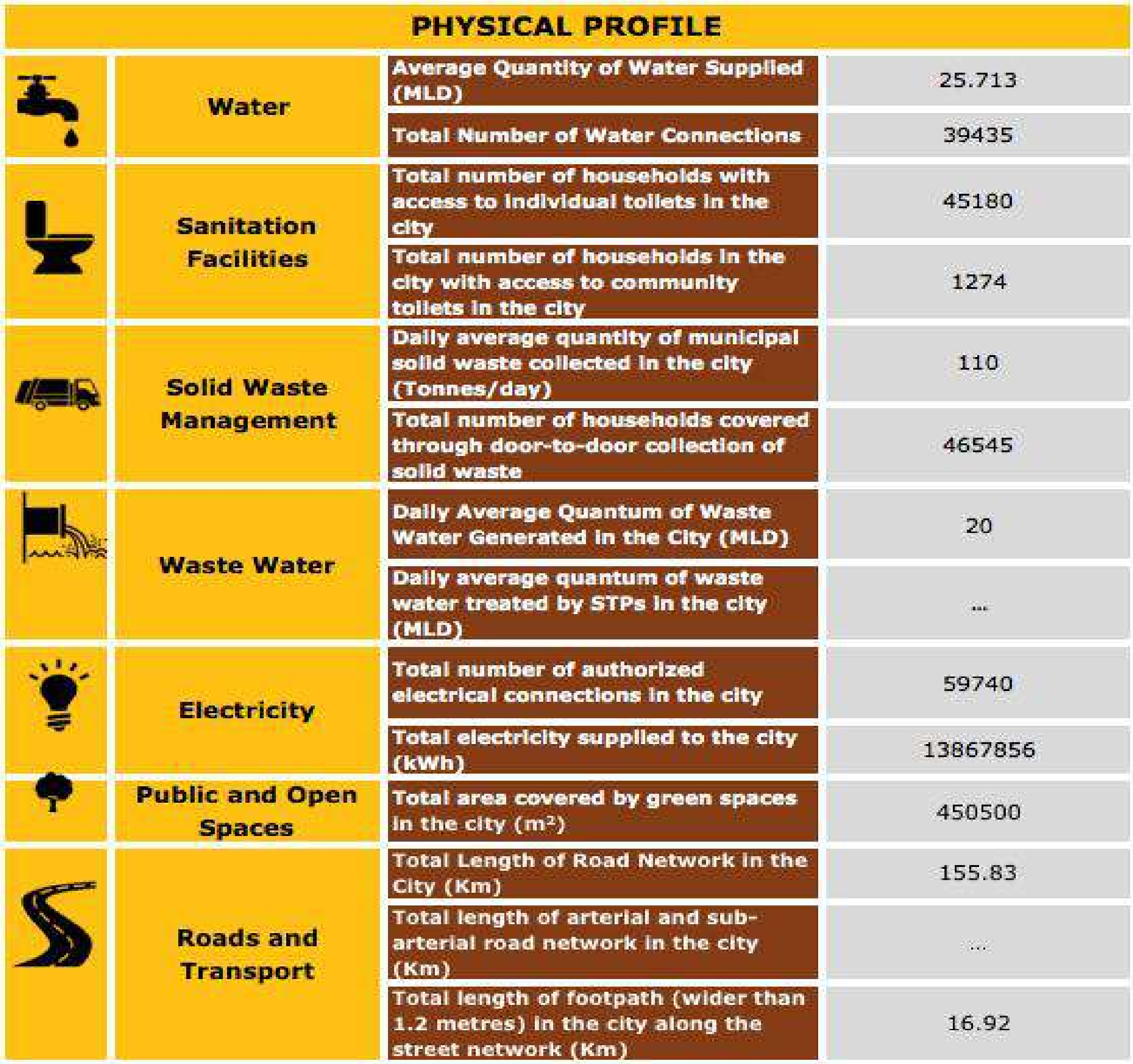
Total Population	142000
Total Number of Households	46456

SOCIAL PROFILE

Education	**Total Number of Schools**	60
	Total Enrolment (Class 1 to 5)	12347
Health	**Total Number of In-patient Beds**	701
	Total Health Workforce	182
Safety and Security	**Total Strength of Police Force**	410
	Total Number of CCTV Cameras	1
Heritage Sites	**Total Number of Heritage Sites**	21

ECONOMIC PROFILE

Total Population in Working Age Group	40718
Total Number of Industries	1340
Total Number of Commercial Enterprises	15000
Total Number of Hotels	110
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15413.7
Total VAT Collection in FY 2016-17 (INR Lakhs)	---



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	25.713
	Total Number of Water Connections	39435
Sanitation Facilities	Total number of households with access to individual toilets in the city	45180
	Total number of households in the city with access to community toilets in the city	1274
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	110
	Total number of households covered through door-to-door collection of solid waste	46545
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	20
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	59740
	Total electricity supplied to the city (kWh)	13867856
Public and Open Spaces	Total area covered by green spaces in the city (m²)	450500
Roads and Transport	Total Length of Road Network in the City (Km)	155.83
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	16.92

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal

Pillars of Comprehensive Development	Category	Indicators
		spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains

Pillars of Comprehensive Development	Category	Indicators
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

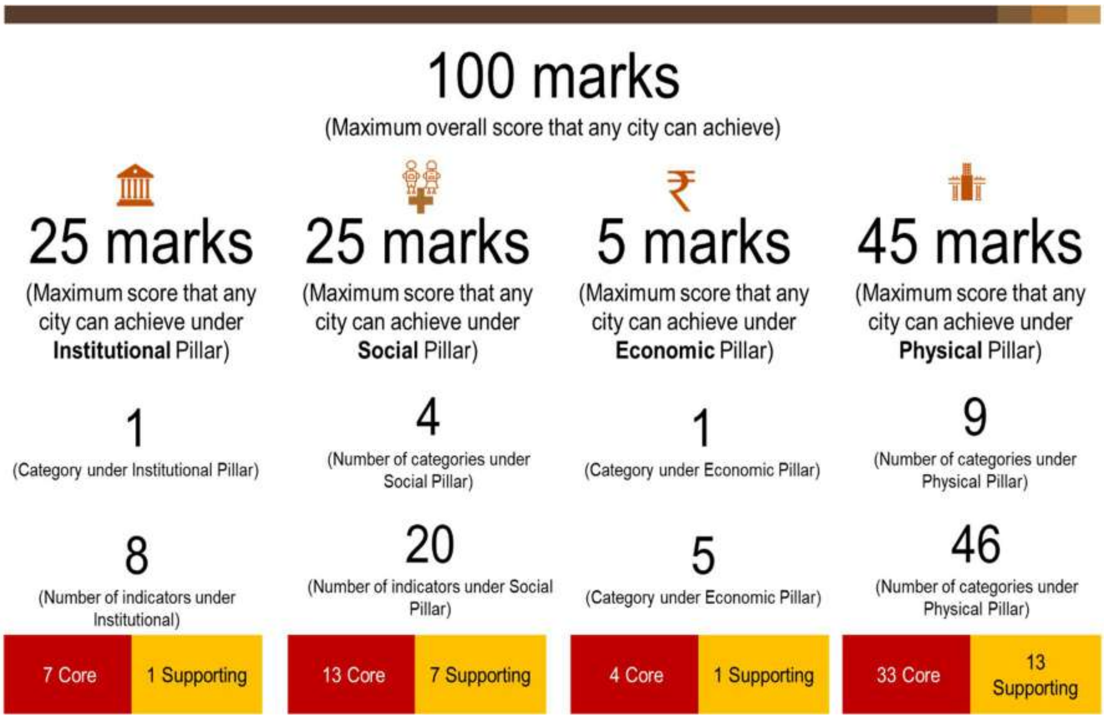
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Port Blair Municipal Council
Urban Local Body	For Park and Recreation Related Questions	Port Blair Municipal Council
Urban Local Body	For Water Supply and Drainage related questions	Port Blair Municipal Council
Urban Local Body	For Heritage sites related data	ART AND CULTURE
Urban Local Body	For Ecological sites related data	FOREST DEPARTMENT
Urban Local Body	For Housing related data	Port Blair Municipal Council
Urban Local Body	For Building plan related data	APWD/ Port Blair Municipal Council
Urban Local Body	For Roads related data	Port Blair Municipal Council
Urban Local Body	For Solid waste management related data	Port Blair Municipal Council
Urban Local Body	For IT services related data	Port Blair Municipal Council
Urban Local Body	For Vendor committee related data	Port Blair Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	HEALTH, EDUCATION,ELECTRICITY DEPARTMENT,POLLUTION CONTROL,DISASTER MANAGEMENT,APWD,PBMC,STATE TRANSPORT DEPARTMENT,POLICE DEPARTMENT.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	POLLUTION CONTROL / APWD
Development Authority	Building Infrastructure	APWD/ Port Blair Municipal Council
	Construction planning	APWD/ Port Blair Municipal Council

	Green Building	Port Blair Municipal Council
	Rain water harvesting	Port Blair Municipal Council
	Universal Design Principle	APWD/ Port Blair Municipal Council
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ELECTRICITY DEPARTMENT
State Disaster management authority		DISASTER MANAGEMENT
State Education Department		DIRECTORATE OF EDUCATION DEPARTMENT
State Health Department	Health care professionals	DD HEALTH
	Citizen Services	DD,PLANNING
	Disease Prevalence	DD, HEALTH
	Health Infrastructure	NRHM & STATE HEALTH SOCIETY
State Renewable Energy Development Agency		ELECTRICITY DEPARTMENT
State Sales / Commercial Taxes Department		OFFICE OF DEPUTY COMMISSIONER
Town and Country Planning Department	Land Use	APWD
Traffic and Police Department		POLICE DEPARTMENT
Transport Authorities	Buses	STATE TRANSPORT DEPARMENT
	Registered Vehicles	STATE TRANSPORT DEPARMENT
	Sub urban rail transport	NOT APPLICABLE
	Mono Rail Authority	NOT APPLICABLE
	Tramways	NOT APPLICABLE
	Marine Transport Authority	MARINE DEPARTMENT

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

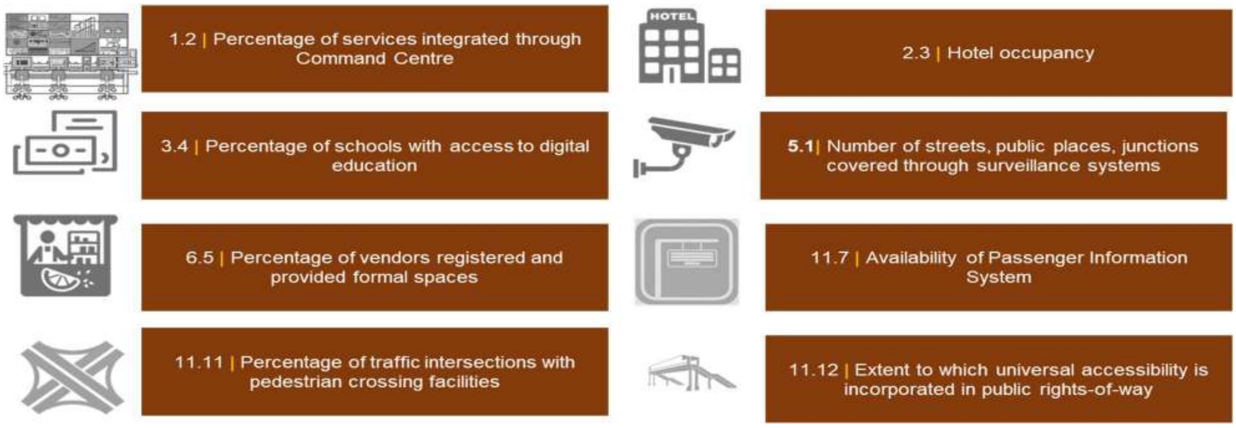
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	12
Development Authority	0
Pollution Control Board	12
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	1
Transport Authority	0
Disaster Management	1
Urban Local Body	12
Total	40

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

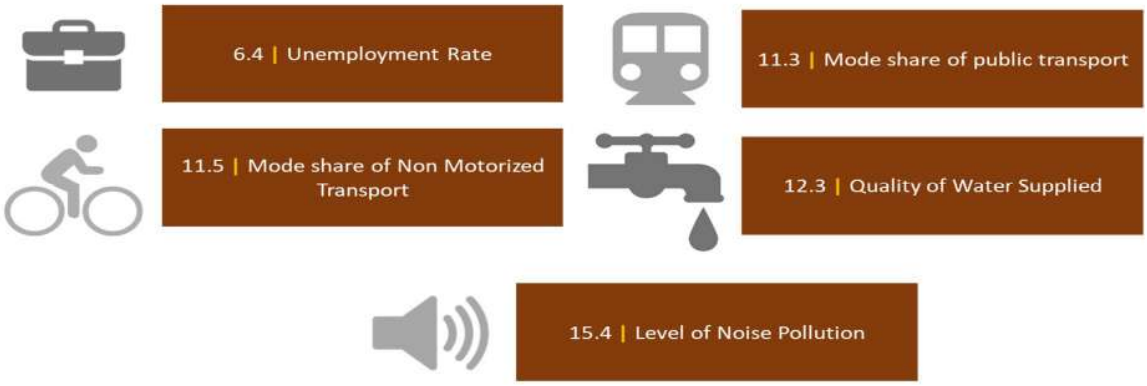
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

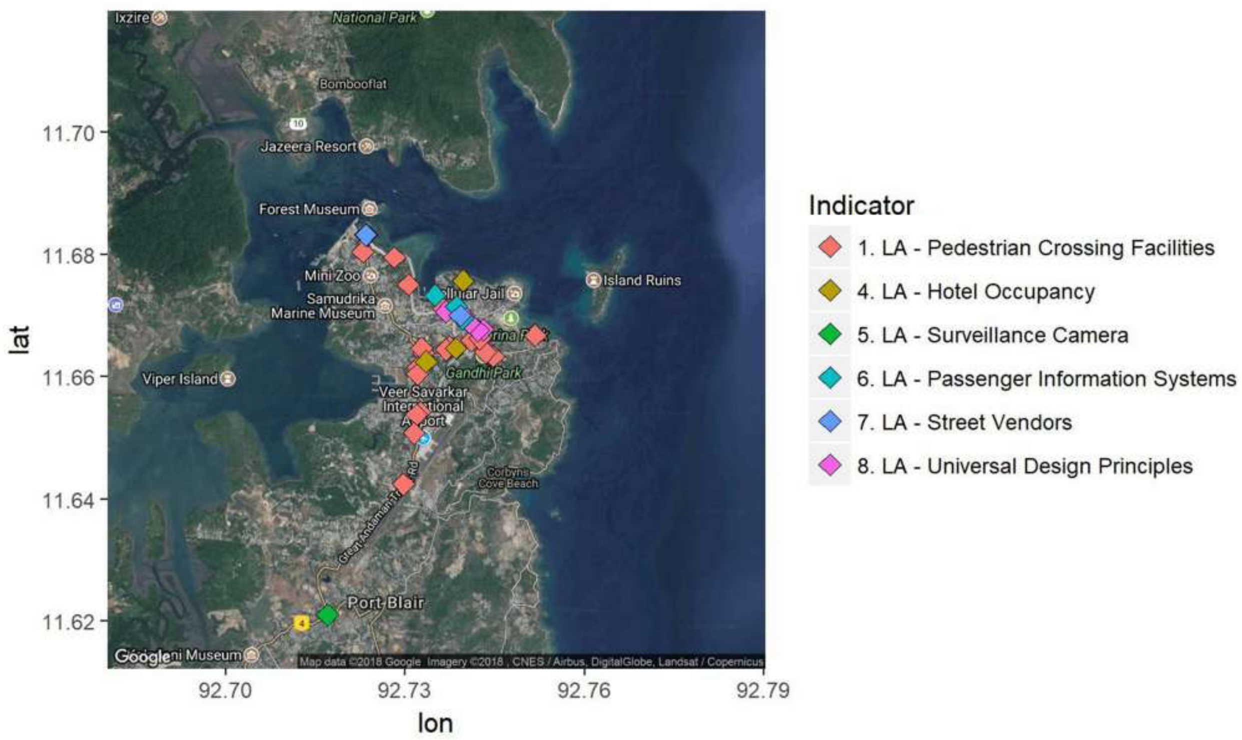
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Ixzire
National Park
Bombooflat
10
Jazeera Resort
Forest Museum
Mini Zoo
Samudrika Marine Museum
Cellular Jail
Island Ruins
Marina Park
Gandhi Park
Viper Island
Veer Savarkar International Airport
Corbyns Cove Beach
Great Andaman Trunk Rd
Port Blair
4
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
11.70
11.68
11.66
11.64
11.62
lat
92.70
92.73
92.76
92.79
lon
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water

Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**23.37**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.538461538461538
	1.1k Grievance redressal	0
	1.1l electricity	0
	1.1m Building plan	0

Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**4.6**
Description		

Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	23
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**114.11**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	399.4
Denominator	Total demand raised for the year	350
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**92.87**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1296.29
Denominator	Total O&M cost for providing water supply services during the year	1395.84
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-30.34**
Formula:	*Numerator / Denominator*	

Numerator	Total capital expenditure during a year	-9395.64
Denominator	Total expenditure (revenue and capital accounts) in the same year	30964.33
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	24
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**37.14**
Description	Average Occupancy rate of Hotels	37.1428571428571
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	5.63
Denominator	Total budget of the ULB (capital and revenue)	15413.7
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**35**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	35
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**111.75**

Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	19816
Denominator	Total population in the age group of 6-14 years	17732
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**113.51**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	9698
Denominator	Total female population in the age group of 6-14 years	8544
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**16.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	12347
Denominator	Total number of teachers available for primary grades (public and private schools)	731
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**45**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	27
Denominator	Total number of schools	60
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**92.87**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	92.874655 72946
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**101.46**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	6196619
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**64.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	701
Denominator	Total population of the city	108058
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**16.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	182

Denominator	Total population of the city	108058
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**13**
Description	Total response time for health-related distress calls received in the city	13
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	97
Denominator	Total population of the city	108058
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	82
Denominator	Total population of the city	108058
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0.64**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	1
Denominator	Total length of road network in the city	155.83
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1096.63**
Formula:	Numerator / Denominator	1185
Numerator	Total number of crimes recorded in a year	108058
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**4.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	52
Denominator	Total crimes recorded in the same year	1185
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**18.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	20
Denominator	Total population of the city	108058
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NC
Denominator	Total Professional Tax collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-10.34**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-27
Denominator	Number of construction permits during preceding year	2.61
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	44816
Denominator	Total labour force in the city	17732
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	443.3
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**20.03**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	122
Denominator	Total number of slum and EWS households in the city	6.09

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**22.22**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	28684694668
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**4.17**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	450500
Denominator	Total population of the city	108058
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**4.99**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	539550.29
Denominator	Total population of the city	108058
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**63.43**

Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	26147254
Denominator	Total area of the city (total area of all land uses)	41220000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	108058
Denominator	Area allocated for residential land use (in hectares)	20629000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**106.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at house-hold level	49429
Denominator	Total number of households in the city	46456
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	59740
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**3942**
Description	Total number of sustained electrical interruptions in a year	3942
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1939
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	59870
Denominator	Total energy consumption from all sources	13919656
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	528116

Denominator	Total quantum of water and waste water handled during the period	771.39
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	13632
Denominator	Total number of street light installations	13504
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	13919656
Denominator	Total population of the city	108058
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	310
Denominator	Total area of the city (sq.km)	41.22
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.44**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	156
Denominator	Total population of the city	108058
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	45
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	155.83
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facili-**	**66.67**

	ties	
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	0.04
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.33**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**5.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	16.92
Denominator	Total length of road network in the city	311.66
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**67.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	33
Denominator	Total number of junctions/ intersections on major roads in the city	49
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	9
Denominator	Total number of public right-of-way areas in the city	381
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**81.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	37887
Denominator	Total number of households in the city	46456
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**237.96**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	25.713
Denominator	Total population of the city	108058
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	1887
Denominator	Total number of samples tested for water quality	1887
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	25.713
Unit	Percentage	

Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**2.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	1140
Denominator	Total number of water connections in the city	39435
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	4
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**134.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	46964
Denominator	Total number of properties in the city	35000
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**129.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	45180
Denominator	Total number of properties in the city	35000
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	20
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	20
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**3.21**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	5
Denominator	Total length of road network in the city	155.83
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**90.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	55346
Denominator	Total number of households and establishments in the city	61456
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	110
Denominator	Total quantum of MSW generated in the city	110
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**24.82**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	819
Denominator	Average MSW generated in the city (tons per month)	3300
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**14.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	14.9
Unit	µg/m3	

Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**10.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	10.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**51.29**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	51.29
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	44
Denominator	Total number of noise samples	44
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	4
Denominator	Total number of samples tested	4
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

PUDUCHERRY

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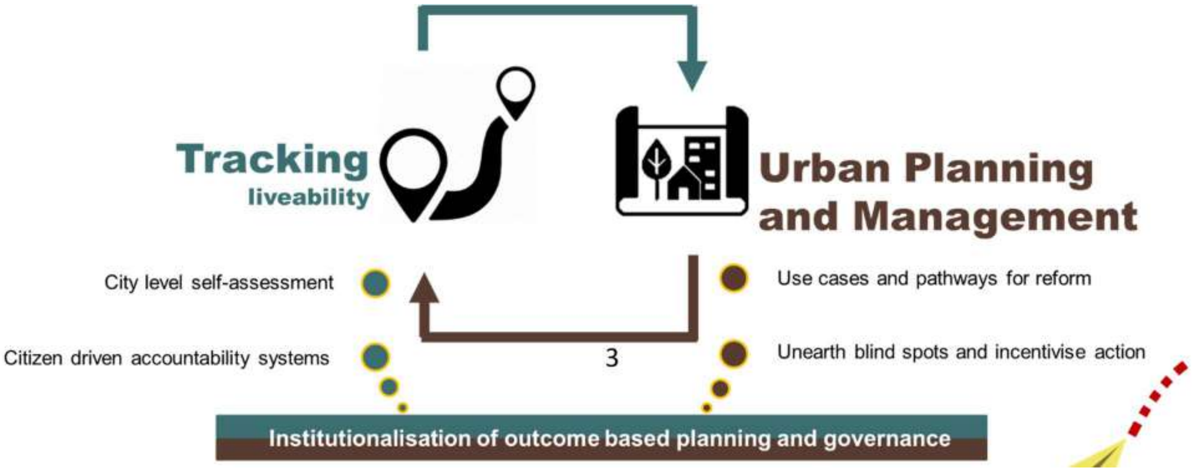
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more ‘liveable.’ The overarching goal of these initiatives is to move from an input-based approach to a ‘citizen centric-outcome based’ assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of ‘Liveability Standards’ relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an ‘Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

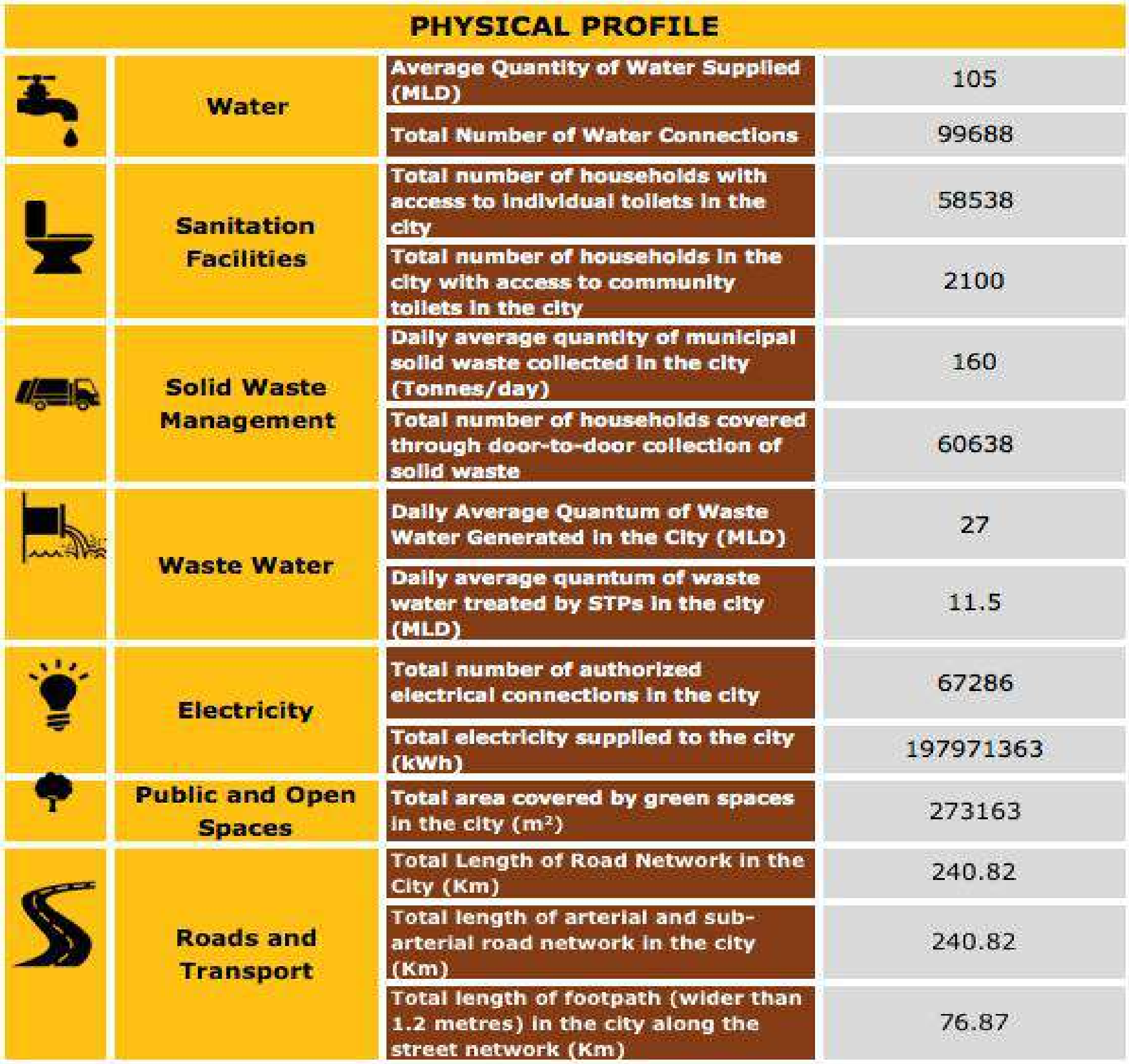
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city’s liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

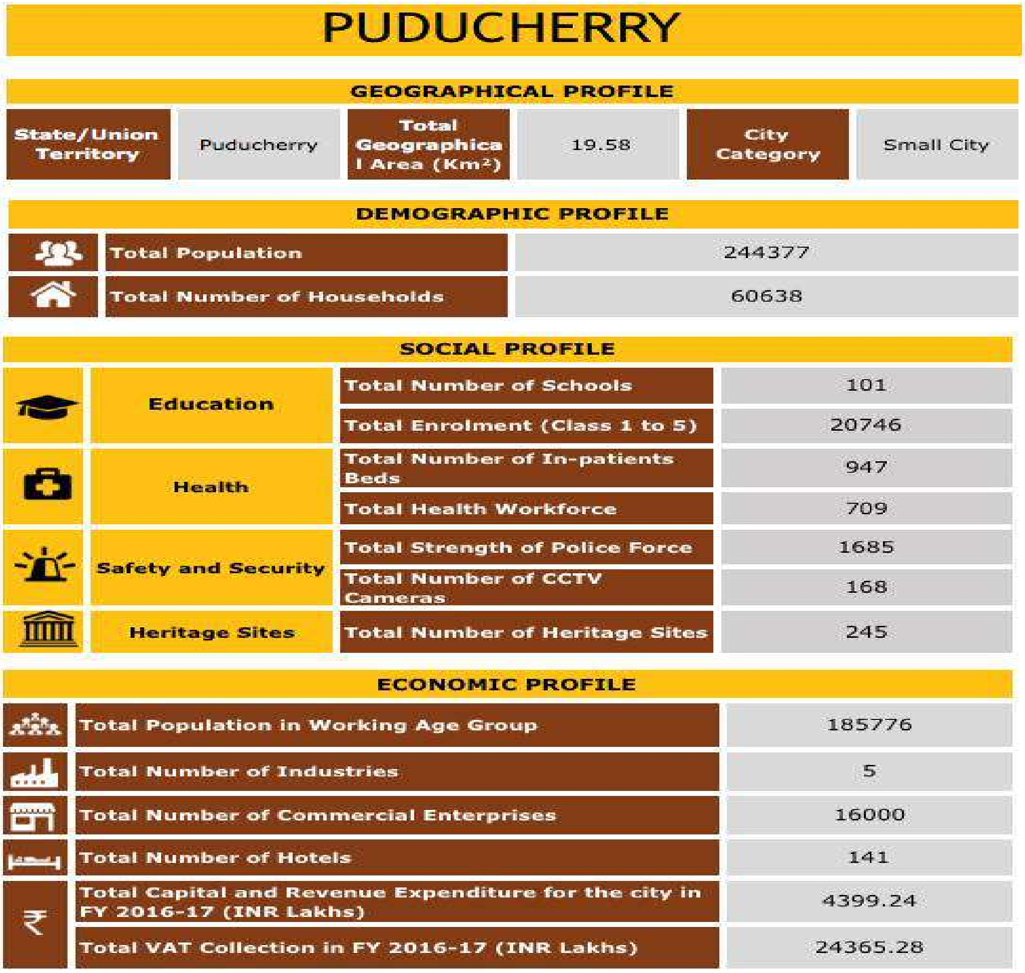
2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	105
	Total Number of Water Connections	99688
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	58538
	Total number of households in the city with access to community toilets in the city	2100
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	160
	Total number of households covered through door-to-door collection of solid waste	60638
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	27
	Daily average quantum of waste water treated by STPs in the city (MLD)	11.5
Electricity	**Total number of authorized electrical connections in the city**	67286
	Total electricity supplied to the city (kWh)	197971363
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	273163
Roads and Transport	**Total Length of Road Network in the City (Km)**	240.82
	Total length of arterial and sub-arterial road network in the city (Km)	240.82
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	76.87



PUDUCHERRY

GEOGRAPHICAL PROFILE

State/Union Territory	Puducherry	Total Geographical Area (Km^2)	19.58	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	244377
Total Number of Households	60638

SOCIAL PROFILE

Education	Total Number of Schools	101
	Total Enrolment (Class 1 to 5)	20746
Health	Total Number of In-patients Beds	947
	Total Health Workforce	709
Safety and Security	Total Strength of Police Force	1685
	Total Number of CCTV Cameras	168
Heritage Sites	Total Number of Heritage Sites	245

ECONOMIC PROFILE

Total Population in Working Age Group	185776
Total Number of Industries	5
Total Number of Commercial Enterprises	16000
Total Number of Hotels	141
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4399.24
Total VAT Collection in FY 2016-17 (INR Lakhs)	24365.28

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive

development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through re-use
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

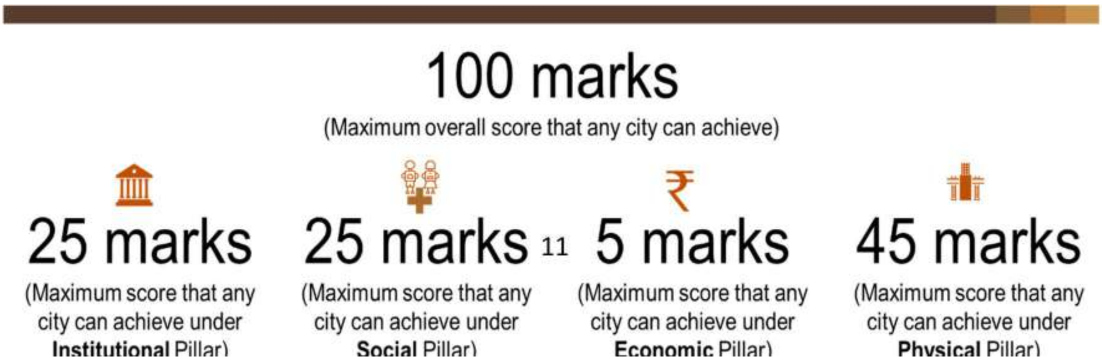
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under Institutional Pillar)

25 marks

(Maximum score that any city can achieve under Social Pillar)

5 marks

(Maximum score that any city can achieve under Economic Pillar)

45 marks

(Maximum score that any city can achieve under Physical Pillar)

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Pondicherry Municipality
Urban Local Body	For Park and Recreation Related Questions	Pondicherry Municipality
Urban Local Body	For Water Supply and Drainage related questions	Public Works Department
Urban Local Body	For Heritage sites related data	Department of Art and Culture
Urban Local Body	For Ecological sites related data	Department of Forest and wildlife
Urban Local Body	For Housing related data	Puducherry Slum Clearance Board & Puducherry Planning Authority
Urban Local Body	For Building plan related data	Puducherry Planning Authority
Urban Local Body	For Roads related data	Pondicherry Municipality / Transport Department

Urban Local Body	For Solid waste management related data	Pondicherry Municipality/ Swatchitha Corporation
Urban Local Body	For IT services related data	Pondicherry Municipality IT wing
Urban Local Body	For Vendor committee related data	Pondicherry Municipality (Revenue Office)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Pondicherry Municipality
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board, Department of Science and Technology and Public Works Department-Water supply
Development Authority	Building Infrastructure	Puducherry Planning Authority
	Construction planning	Puducherry Planning Authority
	Green Building	Puducherry Planning Authority
	Rain water harvesting	Puducherry Planning Authority
	Universal Design Principle	Puducherry Planning Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department
State Disaster management authority		Revenue Officer –Disaster Management, Puducherry Collectorate
State Education Department		Department of School Education
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency		Renewable Energy Agency, Puducherry

State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Puducherry Planning Authority
Traffic and Police Department		Police/Police Department
Transport Authorities	Buses	Transport Department
	Registered Vehicles	Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 59 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	2
DISCOM/Electricity Department	1

Traffic and Police Department	7
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	39
Total	59

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

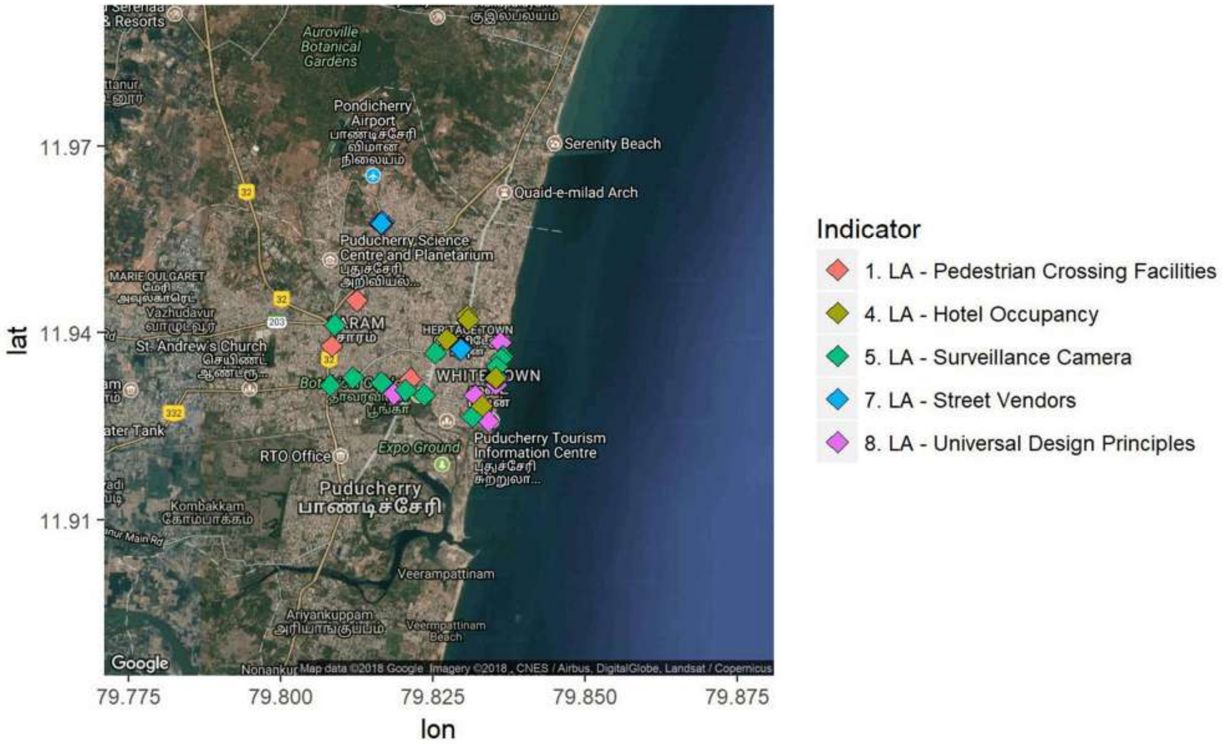
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
11.97
11.94
11.91
lon
79.775
79.800
79.825
79.850
79.875
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles
Auroville Botanical Gardens
Pondicherry Airport
Serenity Beach
Quaid-e-milad Arch
Puducherry Science Centre and Planetarium
St. Andrew's Church
HERITAGE TOWN
WHITE TOWN
RTO Office
Expo Ground
Puducherry Tourism Information Centre
Puducherry
Kombakkam
Veerampattinam
Ariyankuppam
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**32.35**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0

	1.1g fogging	0
	1.1h property tax	0.666666666666667
	1.1i professional tax	0
	1.1j information	0.538461538461538
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA

	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**4**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	28
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**82.8**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	663.09
Denominator	Total demand raised for the year	800.88

Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**107.11**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	407
Denominator	Total O&M cost for providing water supply services during the year	380
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**212.39**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-20039.8
Denominator	Total expenditure (revenue and capital accounts) in the same year	-9435.45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	42
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**

Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites re-stored/preserved/brought under adaptive reuse	21
Denominator	Total number of historic buildings/sites identified	21
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**44.39**
Description	Average Occupancy rate of Hotels	44.392
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	4399.24
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**93.62**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	34772
Denominator	Total population in the age group of 6-14 years	37140
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**89.08**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	16205
Denominator	Total female population in the age group of 6-14 years	18191
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**24.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	20746

Denominator	Total number of teachers available for primary grades (public and private schools)	844
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**46.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	47
Denominator	Total number of schools	101
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**100.68**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	100.68164535932
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**100.03**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	22884447
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**38.75**

Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	947
Denominator	Total population of the city	244377
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**29.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	709
Denominator	Total population of the city	244377
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**5.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	14474
Denominator	Total population of the city	244377
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases	1428

	in a year	
Denominator	Total population of the city	244377
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**69.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	168
Denominator	Total length of road network in the city	240.82
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**741.07**
Formula:	Numerator / Denominator	1811
Numerator	Total number of crimes recorded in a year	244377
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	**208**
Denominator	Total crimes recorded in the same year	1811
Unit	Percentage	

Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**2.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	6
Denominator	Total population of the city	244377
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.87**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2968.74
Denominator	Total VAT/GST collection during preceding year	213.9654
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-28.13**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	**-45**
Denominator	Total Professional Tax collection during preceding year	160
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst	

	cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**13.75**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	51
Denominator	Number of construction permits during preceding year	3.71
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	55984
Denominator	Total labour force in the city	37140
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	2838
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**8.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	644
Denominator	Total number of slum and EWS households in the city	72.69
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**1.12**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	273163
Denominator	Total population of the city	244377
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.97**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	726193

Denominator	Total population of the city	244377
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**5.5**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1076819.742
Denominator	Total area of the city (total area of all land uses)	19580000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	244377
Denominator	Area allocated for residential land use (in hectares)	5921045.289
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**22.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at house-hold level	13470
Denominator	Total number of households in the city	60638
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**50.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	34272
Denominator	Total number of electricity connections in the city	67286
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1679**
Description	Total number of sustained electrical interruptions in a year	1679
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.61**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	114135
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	15046
Denominator	Total energy consumption from all sources	327971363
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	408.333333333333
Denominator	Total quantum of water and waste water handled during the period	3495
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	130000000
Denominator	Total number of street light installations	7900
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	13856.85
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.77**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	327971363
Denominator	Total population of the city	244377
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	48.63
Denominator	Total area of the city (sq.km)	19.58
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	52
Denominator	Total population of the city	244377
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	20
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	240.82
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	15
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**

Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	11
Denominator	Total number of signalised intersections in the city	11
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	3
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**15.96**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	76.87
Denominator	Total length of road network in the city	481.64
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**111.11**

Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	10
Denominator	Total number of junctions/ intersections on major roads in the city	9
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1
Denominator	Total number of public right-of-way areas in the city	304
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	106
Denominator	Total number of households in the city	60638
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	60638
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution	105

	system	
Denominator	Total population of the city	244377
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	73
Denominator	Total number of samples tested for water quality	73
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0
Denominator	Quantum of water put into the distribution system (mld)	105
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**99.89**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	99575
Denominator	Total number of water connections in the city	99688
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**89.66**
Formula:	*Numerator / Denominator*	

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	347
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	347
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**171.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	73419
Denominator	Total number of properties in the city	42739
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**152.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	65272
Denominator	Total number of properties in the city	42739
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**42.59**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	11.5

Denominator	Total waste water generated in the city per day	27
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**404.35**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	46.5
Denominator	Total waste water received at treatment plants per day	11.5
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**13.45**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	32.398
Denominator	Total length of road network in the city	240.82
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**98.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	75488
Denominator	Total number of households and establishments in the city	76638

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	160
Denominator	Total quantum of MSW generated in the city	160
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through re-use**	**94.16**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	4519.69
Denominator	Average MSW generated in the city (tons per month)	4800
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**12.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	12.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean con-	

	centration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**41**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	41
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	2
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	2
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

PUNE

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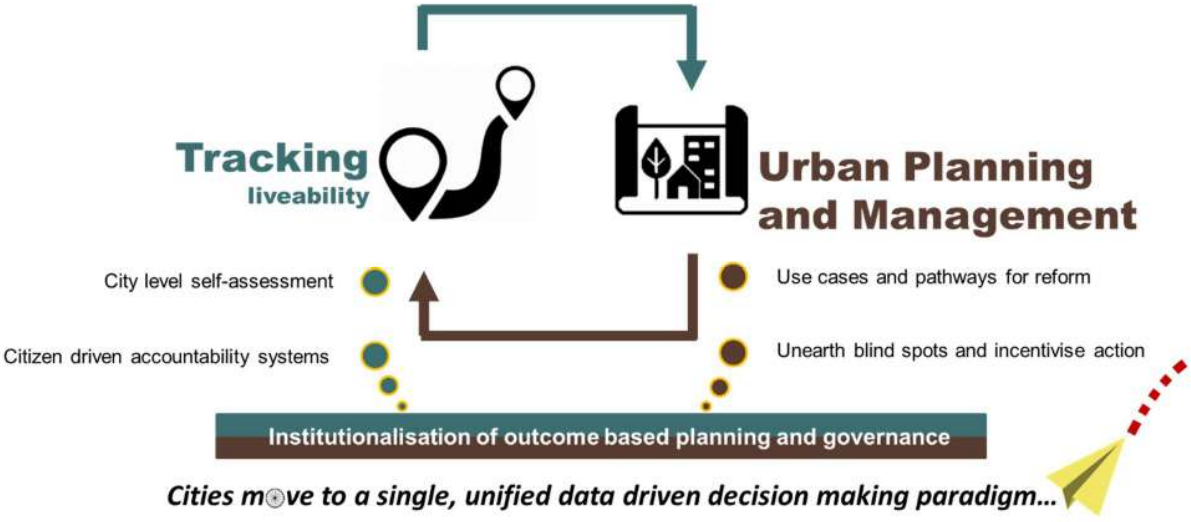
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

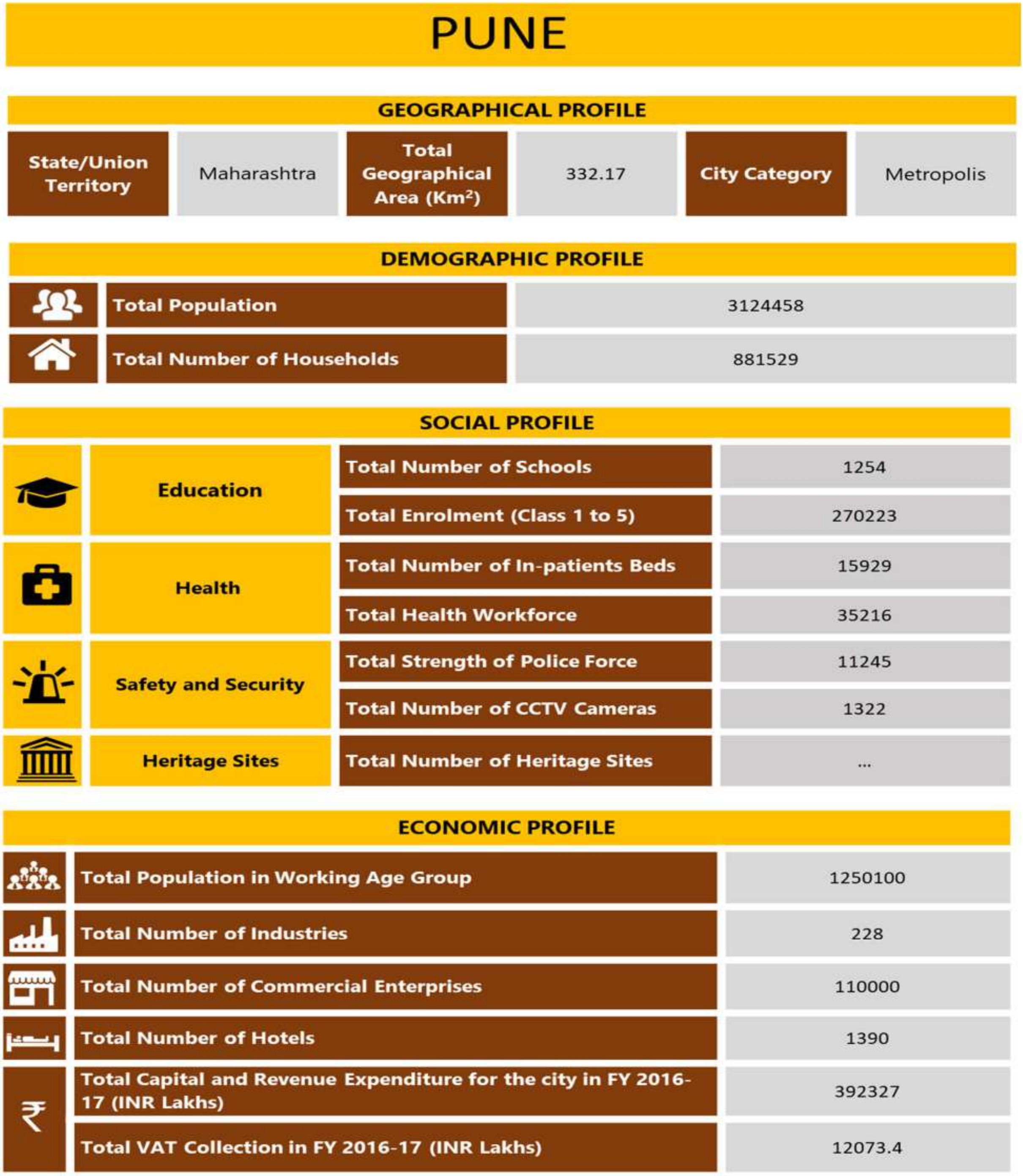
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PUNE

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	332.17	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

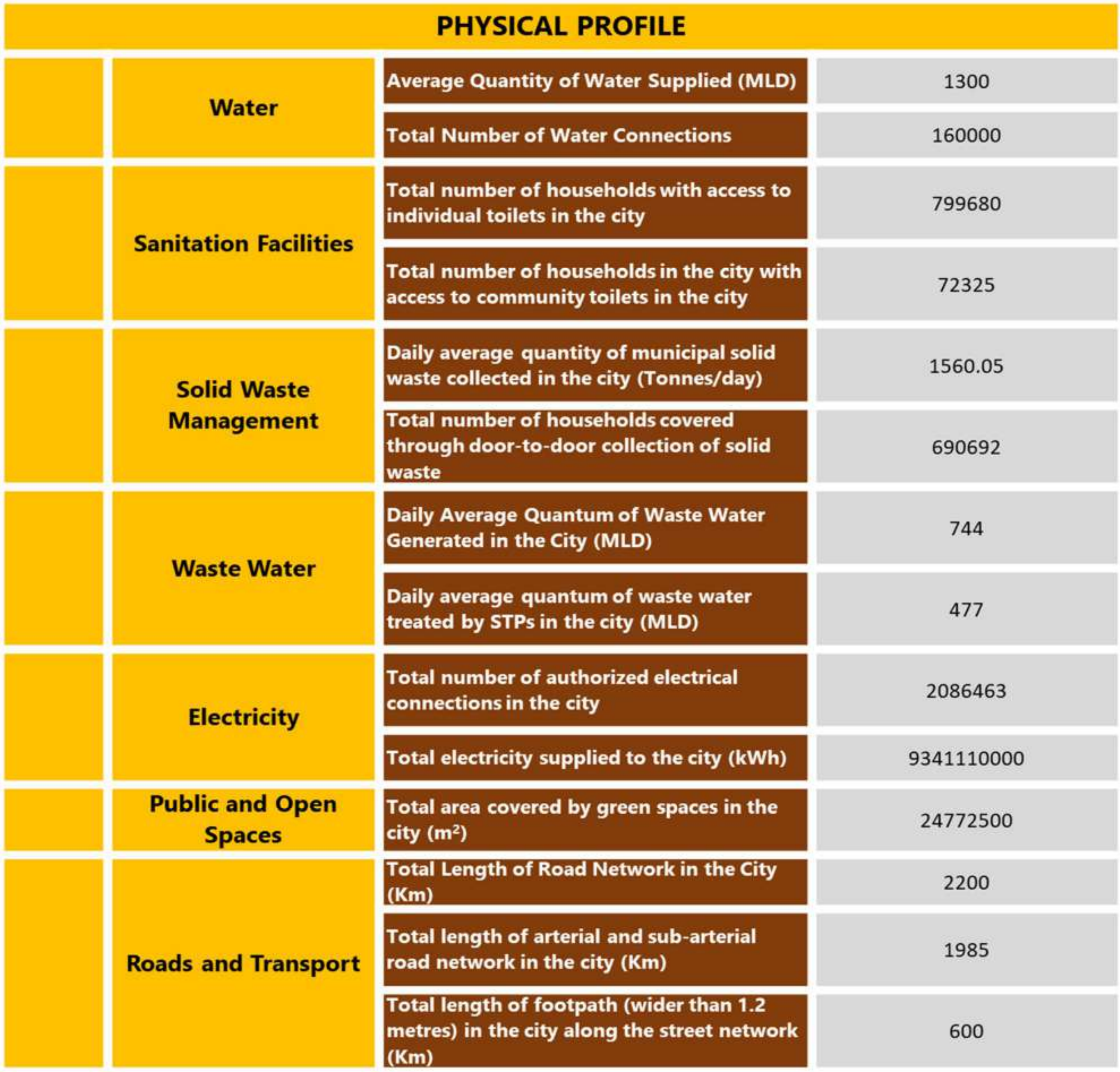
Total Population	3124458
Total Number of Households	881529

SOCIAL PROFILE

Education	**Total Number of Schools**	1254
	Total Enrolment (Class 1 to 5)	270223
Health	**Total Number of In-patients Beds**	15929
	Total Health Workforce	35216
Safety and Security	**Total Strength of Police Force**	11245
	Total Number of CCTV Cameras	1322
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	1250100
Total Number of Industries	228
Total Number of Commercial Enterprises	110000
Total Number of Hotels	1390
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	392327
Total VAT Collection in FY 2016-17 (INR Lakhs)	12073.4



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	1300
		Total Number of Water Connections	160000
	Sanitation Facilities	Total number of households with access to individual toilets in the city	799680
		Total number of households in the city with access to community toilets in the city	72325
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1560.05
		Total number of households covered through door-to-door collection of solid waste	690692
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	744
		Daily average quantum of waste water treated by STPs in the city (MLD)	477
	Electricity	Total number of authorized electrical connections in the city	2086463
		Total electricity supplied to the city (kWh)	9341110000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	24772500
	Roads and Transport	Total Length of Road Network in the City (Km)	2200
		Total length of arterial and sub-arterial road network in the city (Km)	1985
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	600

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

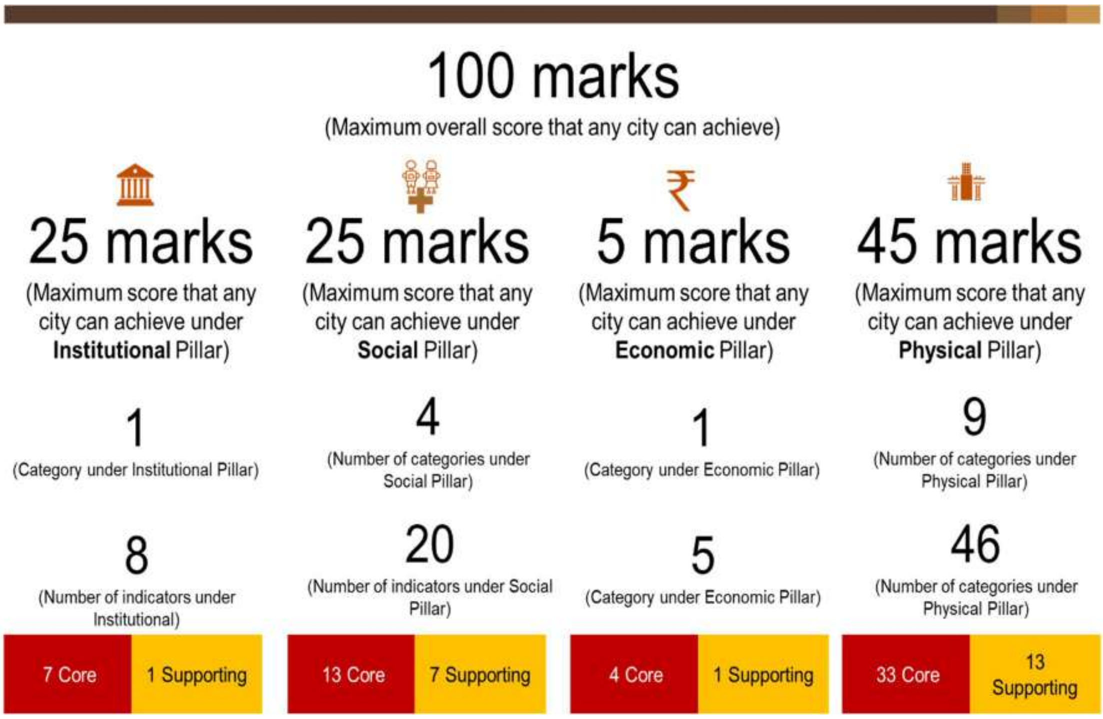
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Mrs. Ulka Kalaskar CAFO PMC
Urban Local Body	For Park and Recreation Related Questions	Mr. Ashok Ghorpade Superintendent garden dept.
Urban Local Body	For Water Supply and Drainage related questions	V. G. Kulkarni Chief Engg. (Water supply and sewerage), PMC and Mr. Mule A.E.(sewerage) PMC
Urban Local Body	For Heritage sites related data	Mrs. Harshada shinde EE, PMC
Urban Local Body	For Ecological sites related data	Mr. Mangesh Dighe (Environment Officer) PMC
Urban Local Body	For Housing related data	Mr. Dinesh Rokade Dept. director, PMAY, PMC
Urban Local Body	For Building plan related data	Mr.Nillesh Saitwal Building and plan permission
Urban Local Body	For Roads related data	Mr. Anoop Gajjalwar J.E. (project) Road Department.PMC.
Urban Local Body	For Solid waste management related data	Mr. Suresh Jagatap JMC (Solid Waste Management), PMC
Urban Local Body	For IT services related data	Mr. Rahul Jagtap HOD, IT, PMC
Urban Local Body	For Vendor committee related data	Mr. Madhav Jagtap DMC (encroachment), PMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Sarv Siksha Abhiyan department, Sport Department,Health Department, STP Department,electricity department ,ward office ,D.P cell, property tax department, bhavan department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Mr.Mangesh Dighe HOD Enviornment Dept
Development	Building Infrastructure	Mr.Nillesh Saitwal

Designated data owners	Subcategories	Data owners at city level
Authority		Building and plan permission Department
	Construction planning	Building and plan permission Department
	Green Building	
	Rain water harvesting	Building and plan permission Department
	Universal Design Principle	Building and plan permission Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Distribution Company, Rasta peth, pune.
State Disaster management authority		Disaster Management Cell Pune Municipal Corpporation.
State Education Department		Sarv Shiksha Abhiyan Department
State Health Department	Health care professionals	Health Department,Pune Municipal Corporaton.
	Citizen Services	Health Department,Pune Municipal Corporaton.
	Disease Prevalence	Health Department,Pune Municipal Corporaton.
	Health Infrastructure	Health Department,Pune Municipal Corporaton.
State Renewable Energy Development Agency		Maharashtra State Electricity Distribution Company, Rasta peth, pune and Maharashtra Energy Development Agency,Pune.
State Sales / Commercial Taxes Department		Sales Tax Office,Pune.
Town and Country Planning Department	Land Use	Development Plan cell,Pune Municipal Corporation.
Traffic and Police Department		Traffic head Office and Commissioner of Police Office,pune.
Transport Authorities	Buses	Pune Mhanagar ParivahanMahamandal Limited,, Pune.
	Registered Vehicles	RTO, Pune
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 168 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**7**
DISCOM/Electricity Department	**4**
Traffic and Police Department	**11**
Development Authority	**12**
Pollution Control Board	**5**
State Renewable Energy Department	**2**
Town and Country Planning	**10**
State Health Department	**9**
Transport Authority	**10**
Disaster Management	**2**
Urban Local Body	**94**
Total	**168***

* The count of documents is based on first round of submission.

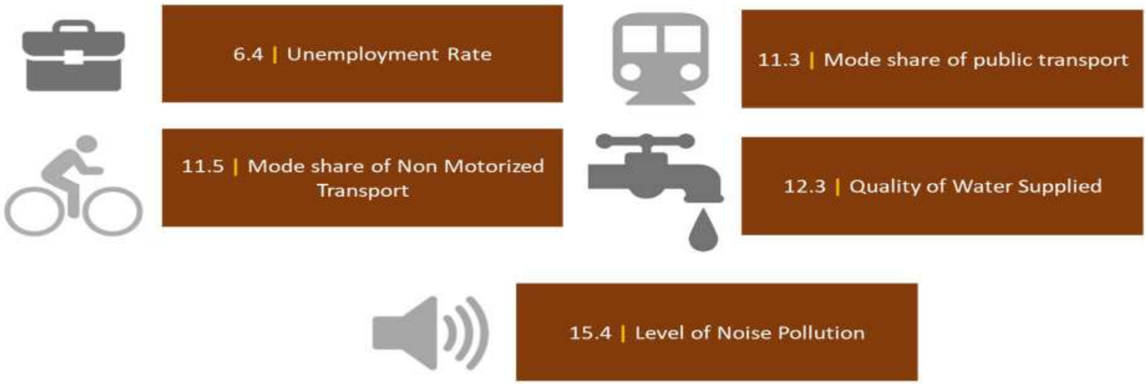
4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

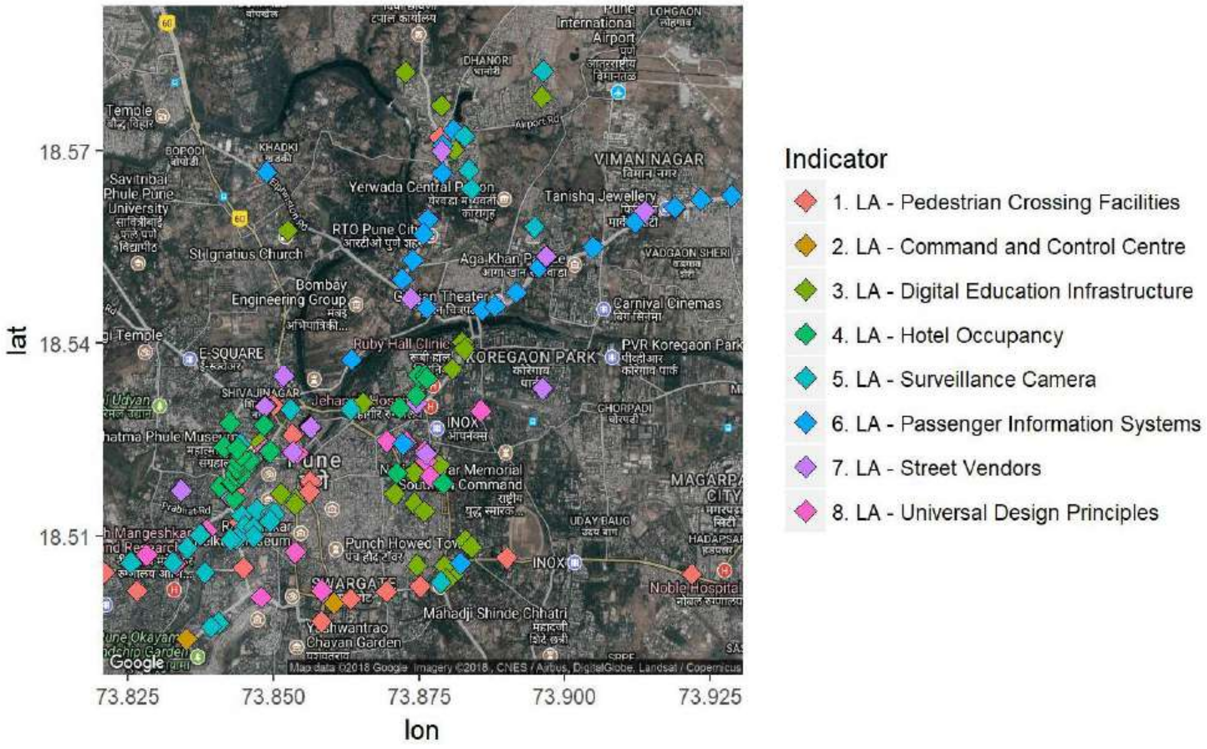
For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
18.57
18.54
18.51
lon
73.825
73.850
73.875
73.900
73.925
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Pune International Airport
DHANORI
VIMAN NAGAR
Yerwada Central Prison
Tanishq Jewellery
RTO Pune City
Savitribai Phule Pune University
KHADKI
BOPODI
St Ignatius Church
Bombay Engineering Group
Aga Khan Palace
Carnival Cinemas
E-SQUARE
Ruby Hall Clinic
KOREGAON PARK
PVR Koregaon Park
SHIVAJINAGAR
INOX
Pune
MAGARPATTA CITY
UDAY BAUG
HADAPSAR
Punch Howed Tower
SWARGATE
Noble Hospital
Mahadji Shinde Chhatri
Yashwantrao Chavan Garden
GHORPADI
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend

etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**80.77**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**40.48**
Description	Services integrated through an integrated or a singular operations command centre	8.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.35**
Description		

Sub Indicators	1.3a Building plan	0.006139439
	1.3b Birth/Death Certificate	0.000742555
	1.3c water supply	0.000301731
	1.3d solid waste management	4.25674E-05
	1.3e property tax	0.000247966
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000887194
	1.3i information	0.099874922
	1.3j electricity	2.80379E-05
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**80.28**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	76508
Denominator	Total demand raised for the year	95298
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water**	**32.39**

	supply services	
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	7161
Denominator	Total O&M cost for providing water supply services during the year	22107
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**36.16**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	355132
Denominator	Total expenditure (revenue and capital accounts) in the same year	981983
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	15
Denominator	Total number of wards	15
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**1.63**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	245
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0

Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**72.14**
Description	Average Occupancy rate of Hotels	72.14285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.87**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	3396.52
Denominator	Total budget of the ULB (capital and revenue)	392327
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**650**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	650
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**89.06**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	425595
Denominator	Total population in the age group of 6-14 years	477870
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**88.83**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	201564

Denominator	Total female population in the age group of 6-14 years	226915
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**13.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	270223
Denominator	Total number of teachers available for primary grades (public and private schools)	19948
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**39**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	489
Denominator	Total number of schools	1254
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**103.58**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	103.5799782
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**98.8**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	2641745645
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**50.98**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	15929
Denominator	Total population of the city	3124458
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**112.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	35216
Denominator	Total population of the city	3124458
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	896
Denominator	Total population of the city	3124458
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2642
Denominator	Total population of the city	3124458
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**60.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1322
Denominator	Total length of road network in the city	2200
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**614.86**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	19211
Denominator	Total population of the city	3124458
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2121
Denominator	Total crimes recorded in the same year	19211
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**48.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1507
Denominator	Total population of the city	3124458
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**9.61**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1058.19
Denominator	Total VAT/GST collection during preceding year	110.1521
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-29.41**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-1226
Denominator	Number of construction permits during preceding year	41.69
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	49441
Denominator	Total labour force in the city	477870
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**79.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	22341
Denominator	Total number of vendors in the city	28229
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**12.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	28148
Denominator	Total number of slum and EWS households in the city	2220.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**22.64**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	1013054828500000
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**7.93**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	24772500
Denominator	Total population of the city	3124458
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.51**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	4709832.53
Denominator	Total population of the city	3124458
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	332170000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	3124458
Denominator	Area allocated for residential land use (in hectares)	90005300
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**204.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	1799792
Denominator	Total number of households in the city	881529
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.11**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	2225
Denominator	Total number of electricity connections in the city	2086463
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**10710**
Description	Total number of sustained electrical interruptions in a year	10710
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.66**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	782609
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	8217915
Denominator	Total energy consumption from all sources	9341110000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	14362573.42
Denominator	Total quantum of water and waste water handled during the period	53310
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	48134517
Denominator	Total number of street light installations	125000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	3252776
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	14752246
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	9341110000
Denominator	Total population of the city	3124458
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	22.7
Denominator	Total area of the city (sq.km)	332.17
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	1945
Denominator	Total population of the city	3124458
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	12.2
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**4.14**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	91
Denominator	Total length of road network in the city	2200
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	5
Denominator	Total number of major transport interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	42.9
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**5.9**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	59
Denominator	Total number of major interchanges in the city	10
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are	0

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

	synchronised	
Denominator	Total number of signalised intersections in the city	218
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**1.64**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	568
Denominator	Total available on-street parking spaces in the city	34678
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**13.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	600
Denominator	Total length of road network in the city	4400
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**51.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	242
Denominator	Total number of junctions/ intersections on major roads in the city	466
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**8.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	160
Denominator	Total number of public right-of-way areas in the city	1872
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**89.16**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	785968
Denominator	Total number of households in the city	881529
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**416.07**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1300
Denominator	Total population of the city	3124458
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	200
Denominator	Total number of samples tested for water quality	200
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**30.77**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	400
Denominator	Quantum of water put into the distribution system (mld)	1300
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**24.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	39466
Denominator	Total number of water connections in the city	160000
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**27.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1584
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	5687
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**98.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	970977
Denominator	Total number of properties in the city	982663
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**80.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	791672
Denominator	Total number of properties in the city	982663
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**79**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	587.76
Denominator	Total waste water generated in the city per day	744
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**124.34**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	705
Denominator	Total waste water received at treatment plants per day	567
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**9.73**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	214
Denominator	Total length of road network in the city	2200
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**79.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	788853
Denominator	Total number of households and establishments in the city	991529
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**94.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1560.05
Denominator	Total quantum of MSW generated in the city	1654.54
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**70.71**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	33092
Denominator	Average MSW generated in the city (tons per month)	46801.5
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**36.73**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	36.73
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**22.02**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	22.02
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**101.52**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	101.52
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	48
Denominator	Total number of noise samples	3888
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**61.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	1273
Denominator	Total number of samples tested	2082
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

RAEBARELI

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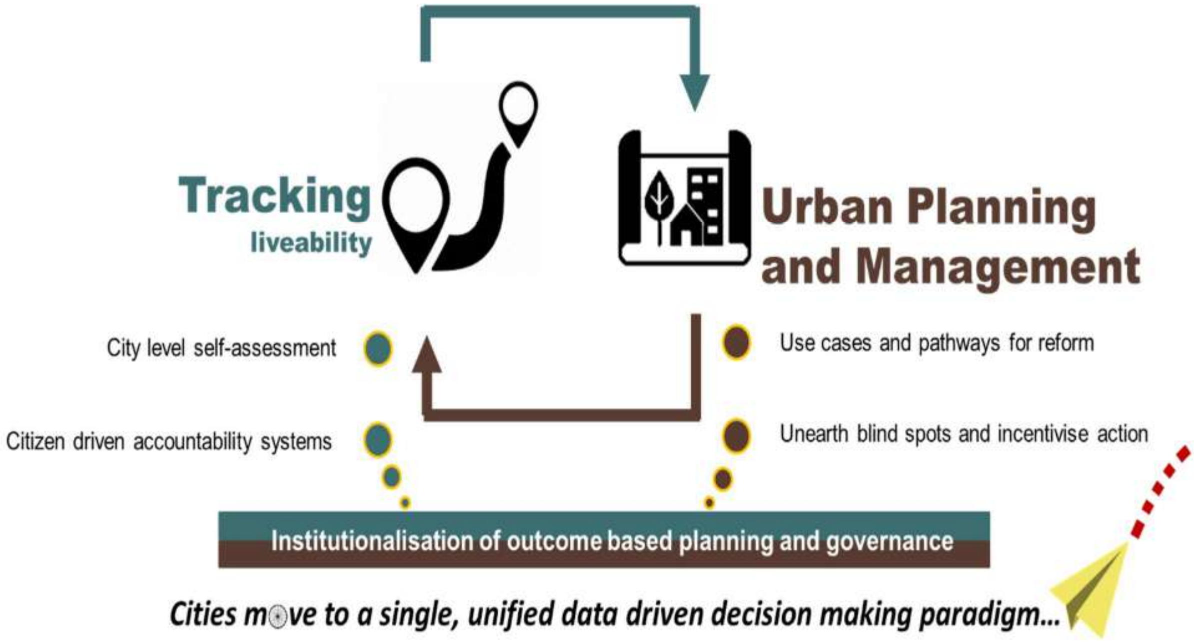
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

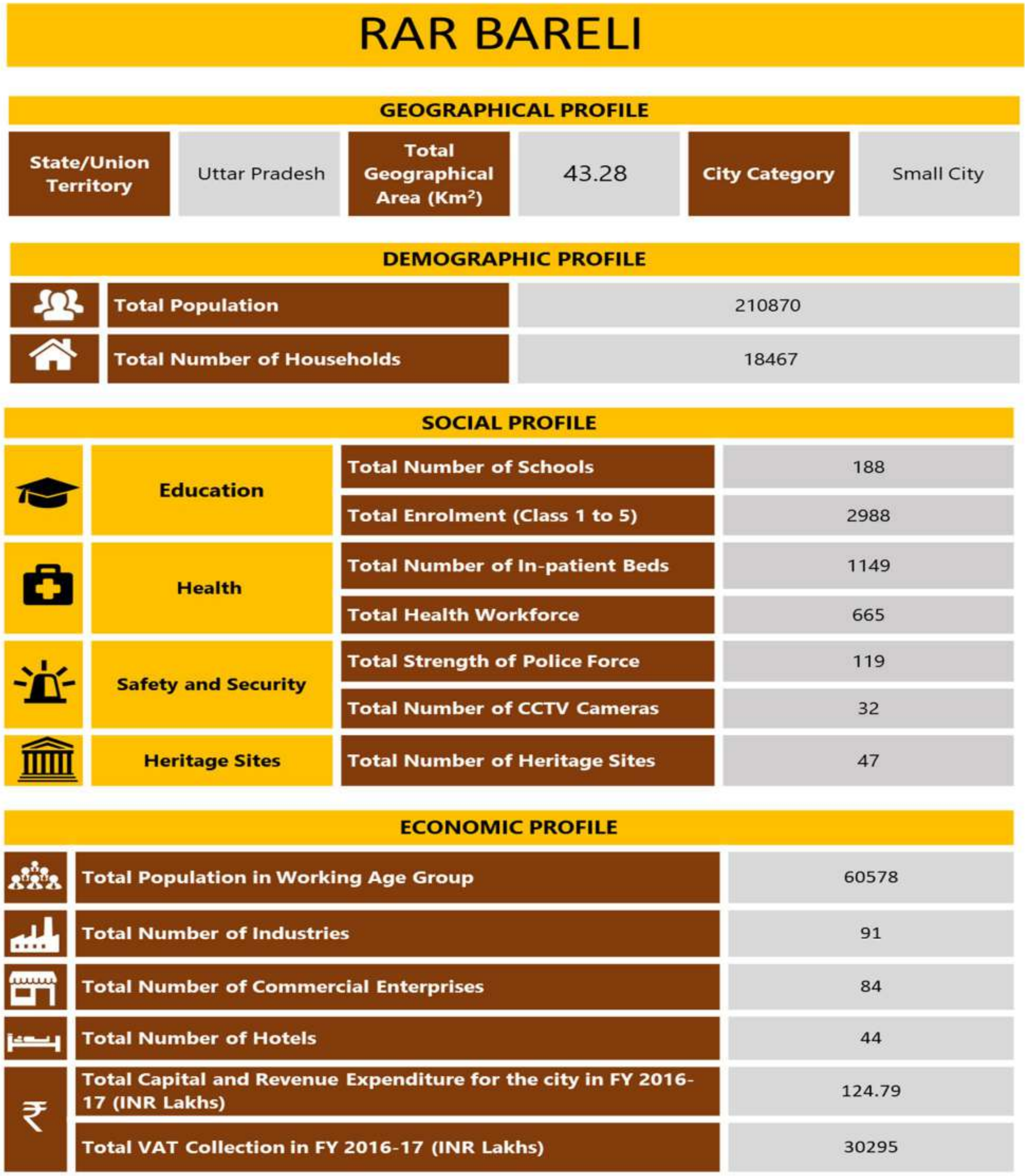
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAR BARELI

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	43.28	**City Category**	Small City

DEMOGRAPHIC PROFILE

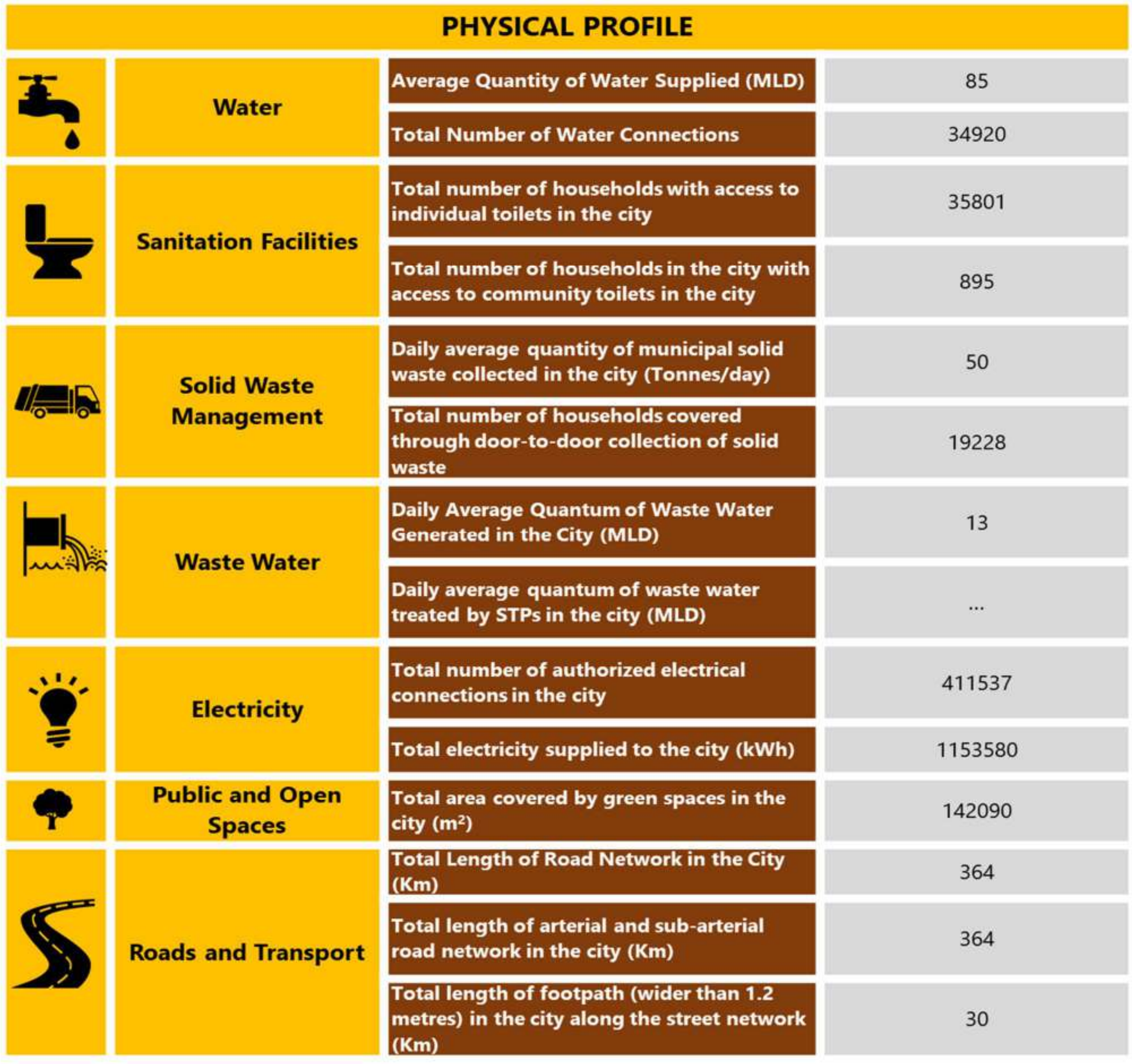
Total Population	210870
Total Number of Households	18467

SOCIAL PROFILE

Education	**Total Number of Schools**	188
	Total Enrolment (Class 1 to 5)	2988
Health	**Total Number of In-patient Beds**	1149
	Total Health Workforce	665
Safety and Security	**Total Strength of Police Force**	119
	Total Number of CCTV Cameras	32
Heritage Sites	**Total Number of Heritage Sites**	47

ECONOMIC PROFILE

Total Population in Working Age Group	60578
Total Number of Industries	91
Total Number of Commercial Enterprises	84
Total Number of Hotels	44
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	124.79
Total VAT Collection in FY 2016-17 (INR Lakhs)	30295



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	85
	Total Number of Water Connections	34920
Sanitation Facilities	Total number of households with access to individual toilets in the city	35801
	Total number of households in the city with access to community toilets in the city	895
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	50
	Total number of households covered through door-to-door collection of solid waste	19228
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	13
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	411537
	Total electricity supplied to the city (kWh)	1153580
Public and Open Spaces	Total area covered by green spaces in the city (m²)	142090
Roads and Transport	Total Length of Road Network in the City (Km)	364
	Total length of arterial and sub-arterial road network in the city (Km)	364
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	30

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

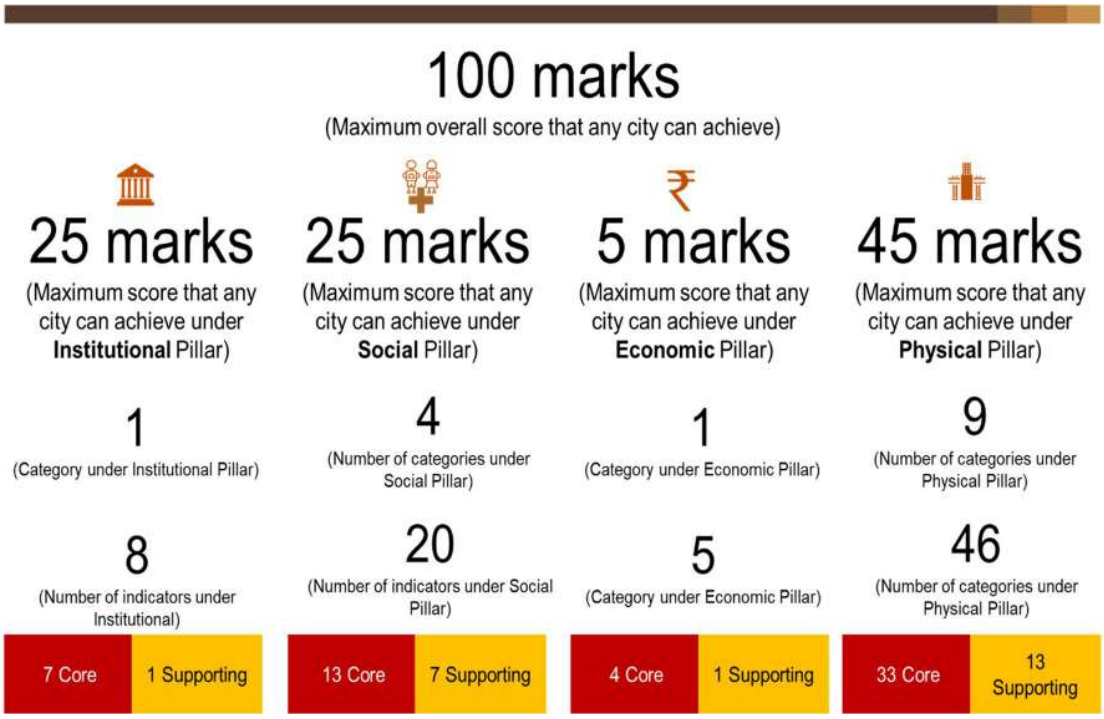
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account department, Raebareli Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Nirman vibhag, Raebareli Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Jal kal vibhag, Raebareli Nagar Nigam
Urban Local Body	For Heritage sites related data	----
Urban Local Body	For Ecological sites related data	-----
Urban Local Body	For Housing related data	Jan gadana
Urban Local Body	For Building plan related data	Raebareli Development Authority
Urban Local Body	For Roads related data	Nirman vibhag, Raebareli Nagar Nigam
Urban Local Body	For Solid waste management related data	Health department, Raebareli Nagar Nigam
Urban Local Body	For IT services related data	Health department, tax Department
Urban Local Body	For Vendor committee related data	Revenue Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Account, light, jal kal public work construction
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Regional office of state Pollution control Board
Development Authority	Building Infrastructure	Raebareli Development authority
	Construction planning	Raebareli Development authority

Designated data owners	Subcategories	Data owners at city level
	Green Building	Raebareli Development authority
	Rain water harvesting	Raebareli Development authority
	Universal Design Principle	Raebareli Development authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Office of the Executive Engineer vidut vitreren khend - first
State Disaster management authority		Office of additional district mejistret finance and Revenue
State Education Department		Office of basic shiksha adhikari
State Health Department	Health care professionals	Office of chief medical officer
	Citizen Services	Office of chief medical officer
	Disease Prevalence	Office of chief medical officer
	Health Infrastructure	Office of chief medical officer
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		District sales/ Commercial Taxes Department
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		
Transport Authorities	Buses	Office of Road ways
	Registered Vehicles	Office of Road Transport officer
	Sub urban rail transport	--
	Mono Rail Authority	--
	Tramways	--
	Marine Transport Authority	--

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

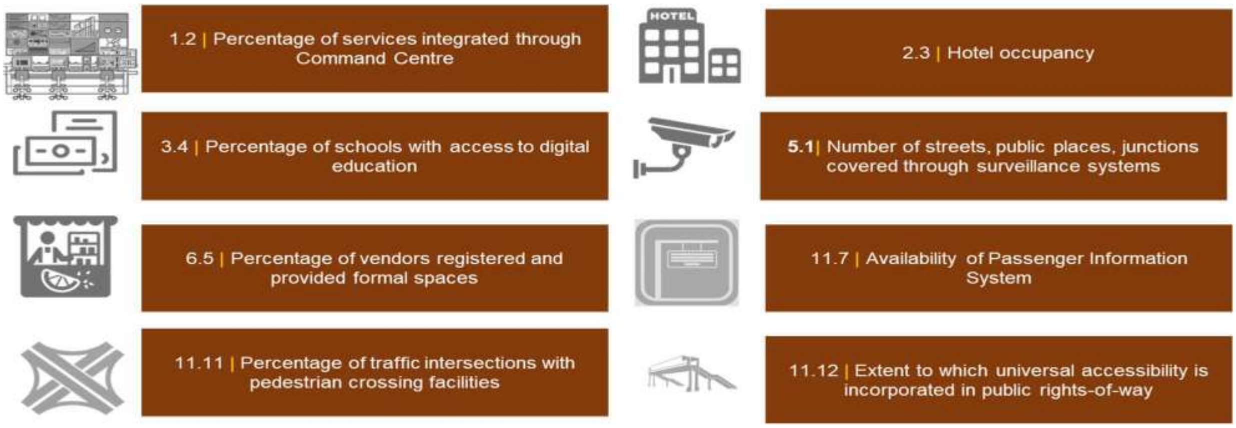
Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**9**
Total	**12***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

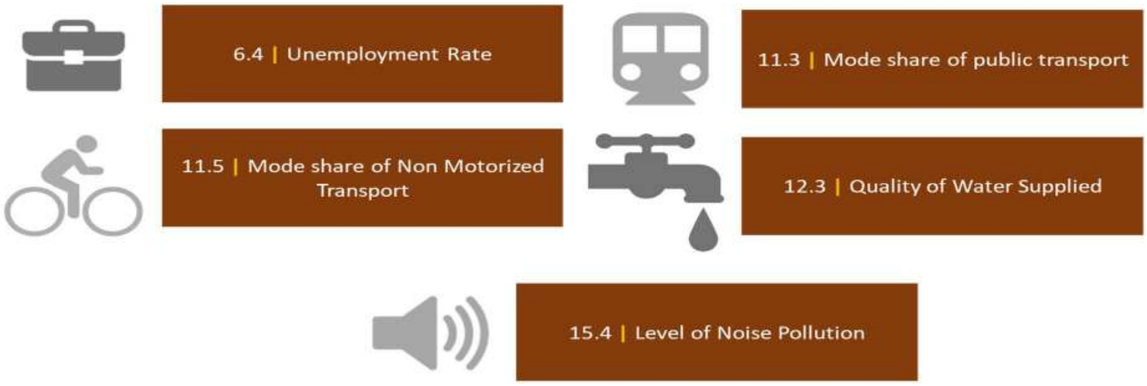
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

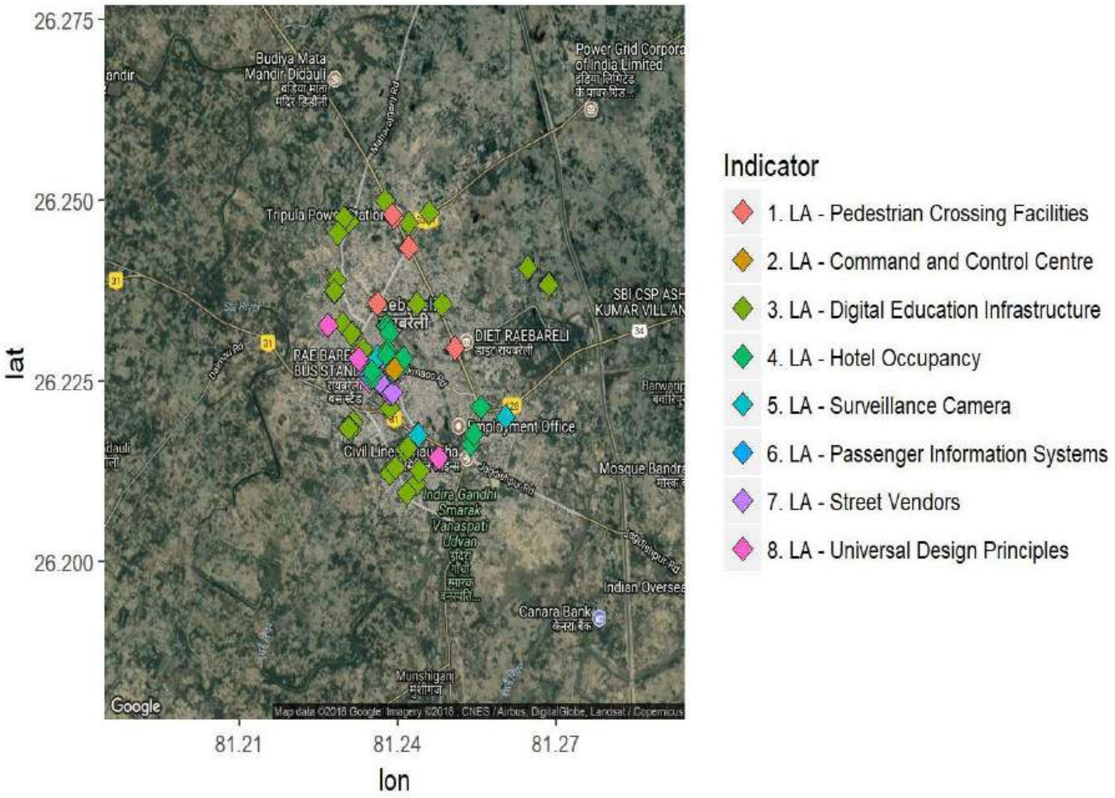
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.275
26.250
26.225
26.200
lat
81.21
81.24
81.27
lon
Budiya Mata Mandir Didauli
Power Grid Corporation of India Limited
Tripula Power Station
RAE BARELI BUS STAND
DIET RAEBAREL
SBI CSP ASHOK KUMAR VILLAN
Employment Office
Civil Lines
Indira Gandhi Smarak Vanaspati Udyan
Mosque Bandra
Indian Overseas
Canara Bank
Munshiganj
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend

etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**82.74**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.49**
Description		

Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.009719661
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**602.67**
Description		
Sub Indicators	1.4a water supply	3603
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	13
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**77.03**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	215.15763
Denominator	Total demand raised for the year	279.31818
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water**	**Non-Computable**

	supply services	
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	NA
Denominator	Total O&M cost for providing water supply services during the year	194.953
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**98.8**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	11782.05481
Denominator	Total expenditure (revenue and capital accounts) in the same year	11925.55481
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	34
Denominator	Total number of wards	34
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects	NA

	for restoration	
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**70**
Description	Average Occupancy rate of Hotels	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	124.7977824
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**2**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	2
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**11.84**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	4333
Denominator	Total population in the age group of 6-14 years	36589
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**12.92**
Formula:	*Numerator / Denominator*	

Numerator	Total female enrolment in primary and secondary schools (public and private	2202
Denominator	Total female population in the age group of 6-14 years	17048
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**3.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	2988
Denominator	Total number of teachers available for primary grades (public and private schools)	852
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	188
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**0.23**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	0.232220844
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**2.89**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	142560
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**60.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1149
Denominator	Total population of the city	191316
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**34.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	665
Denominator	Total population of the city	191316
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**7.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	14264
Denominator	Total population of the city	191316
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	18
Denominator	Total population of the city	191316
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**8.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	32
Denominator	Total length of road network in the city	364
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**714.52**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1367
Denominator	Total population of the city	191316
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	149
Denominator	Total crimes recorded in the same year	1367
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**26.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	51
Denominator	Total population of the city	191316
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**4.76**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1377
Denominator	Total VAT/GST collection during preceding year	289.18
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-3.74**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-4
Denominator	Number of construction permits during preceding year	1.07
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	4361
Denominator	Total labour force in the city	36589
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	914.725
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	199.14
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.01**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	77343756
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.74**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	142090
Denominator	Total population of the city	191316
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.93**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	751455
Denominator	Total population of the city	191316
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**54.54**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	23603800
Denominator	Total area of the city (total area of all land uses)	43280000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	191316
Denominator	Area allocated for residential land use (in hectares)	18092500
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**103.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	39732
Denominator	Total number of households in the city	38467
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered**	**0**

	through smart meters	
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	411537
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**535**
Description	Total number of sustained electrical interruptions in a year	535
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.78**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	20580
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	12.5
Denominator	Total energy consumption from all sources	1153580
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	950
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	15660
Denominator	Total number of street light installations	7316
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1153580
Denominator	Total population of the city	191316
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	43.28
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	191316

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	5
Denominator	Total length of road network in the city	364
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**1**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	2
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**4.12**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	30
Denominator	Total length of road network in the city	728
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	4
Denominator	Total number of junctions/ intersections on major roads in the city	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	111
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**90.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	34920
Denominator	Total number of households in the city	38467
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**444.29**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	85
Denominator	Total population of the city	191316
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	120
Denominator	Total number of samples tested for water quality	1800
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**9.65**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	8.2
Denominator	Quantum of water put into the distribution system (mld)	85
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	34920
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	4
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**96.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	37286
Denominator	Total number of properties in the city	38651
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**184.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	71428
Denominator	Total number of properties in the city	38651
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	13
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	13

Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**15.38**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	56
Denominator	Total length of road network in the city	364
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**50.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	19312
Denominator	Total number of households and establishments in the city	38551
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	50
Denominator	Total quantum of MSW generated in the city	50
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1500
Denominator	Average MSW generated in the city (tons per month)	1500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**11.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	11.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**16.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	16.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**141**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	141
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	NA
Denominator	Total number of noise samples	50
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

RAIPUR

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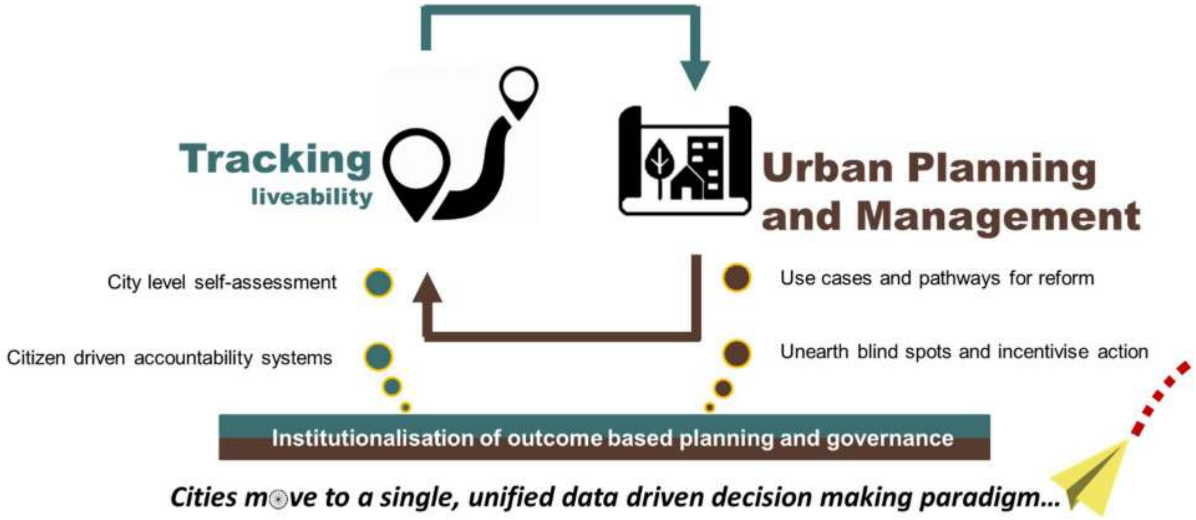
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

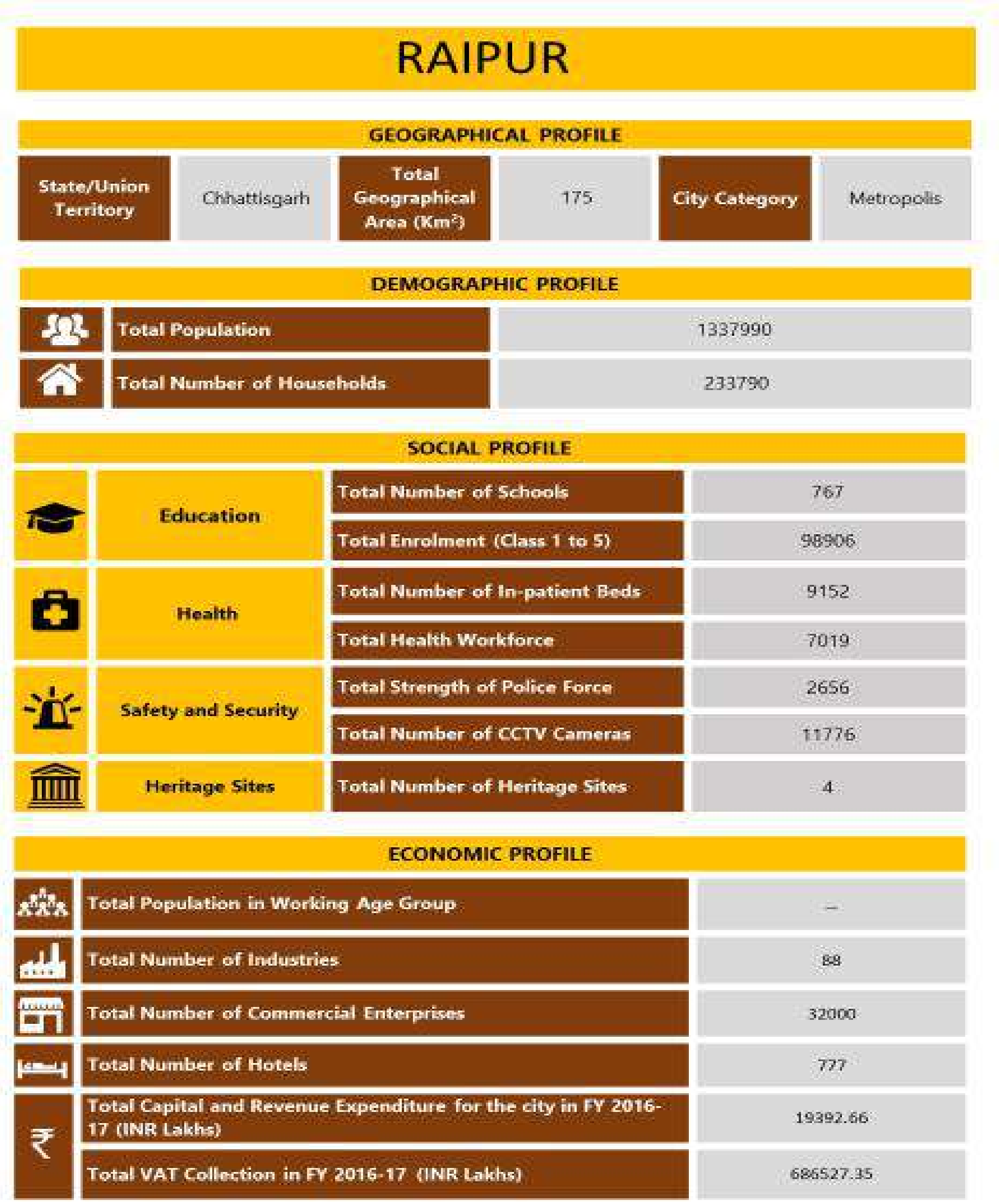
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Chhattisgarh	Total Geographical Area (Km²)	175	City Category	Metropolis

DEMOGRAPHIC PROFILE

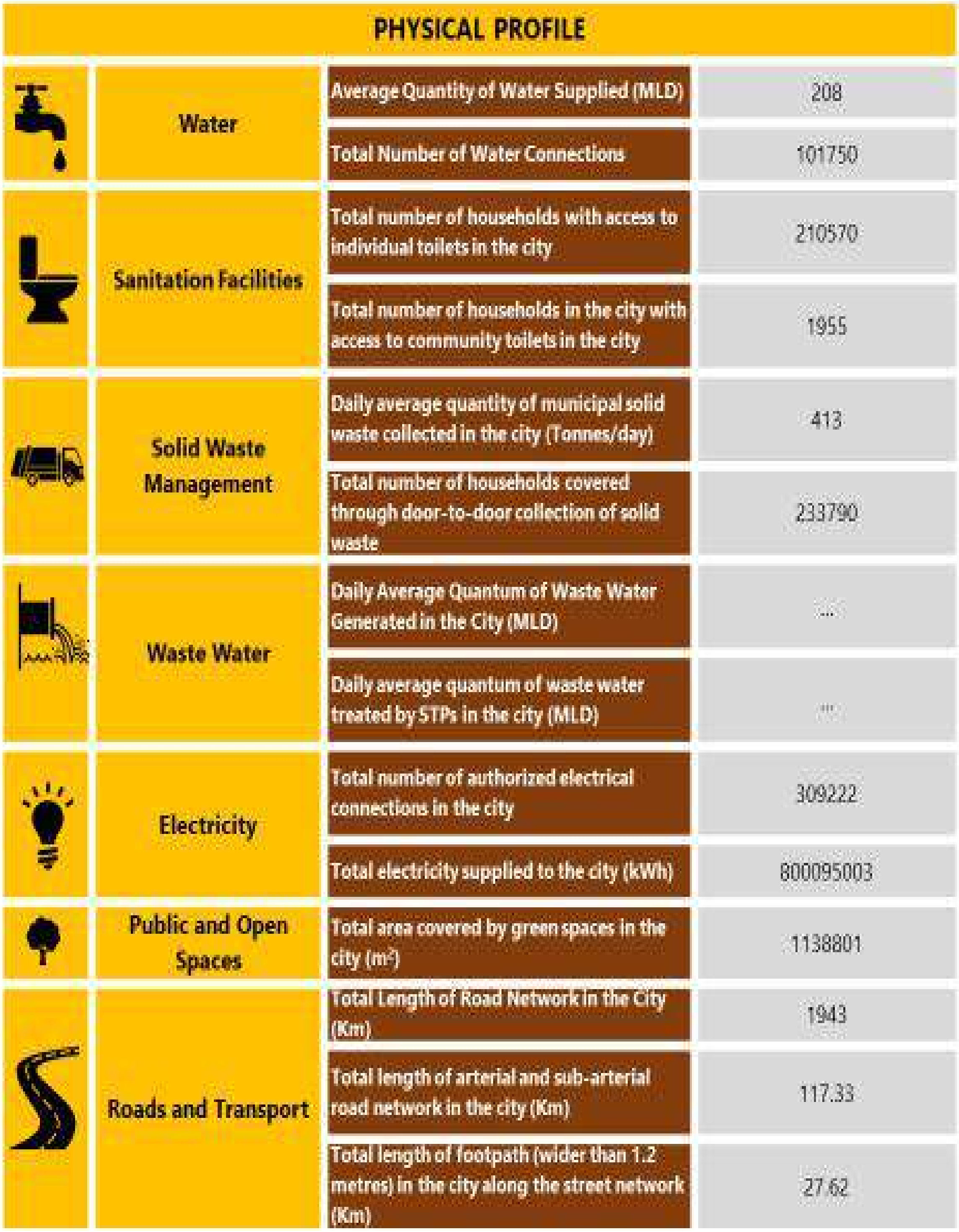
Total Population	1337990
Total Number of Households	233790

SOCIAL PROFILE

Education	Total Number of Schools	767
	Total Enrolment (Class 1 to 5)	98906
Health	Total Number of In-patient Beds	9152
	Total Health Workforce	7019
Safety and Security	Total Strength of Police Force	2656
	Total Number of CCTV Cameras	11776
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	–
Total Number of Industries	88
Total Number of Commercial Enterprises	32000
Total Number of Hotels	777
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	19392.66
Total VAT Collection in FY 2016-17 (INR Lakhs)	686527.35



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	208
	Total Number of Water Connections	101750
Sanitation Facilities	Total number of households with access to individual toilets in the city	210570
	Total number of households in the city with access to community toilets in the city	1955
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	413
	Total number of households covered through door-to-door collection of solid waste	233790
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	....
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	309222
	Total electricity supplied to the city (kWh)	800095003
Public and Open Spaces	Total area covered by green spaces in the city (m²)	1138801
Roads and Transport	Total Length of Road Network in the City (Km)	1943
	Total length of arterial and sub-arterial road network in the city (Km)	117.33
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	27.62

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

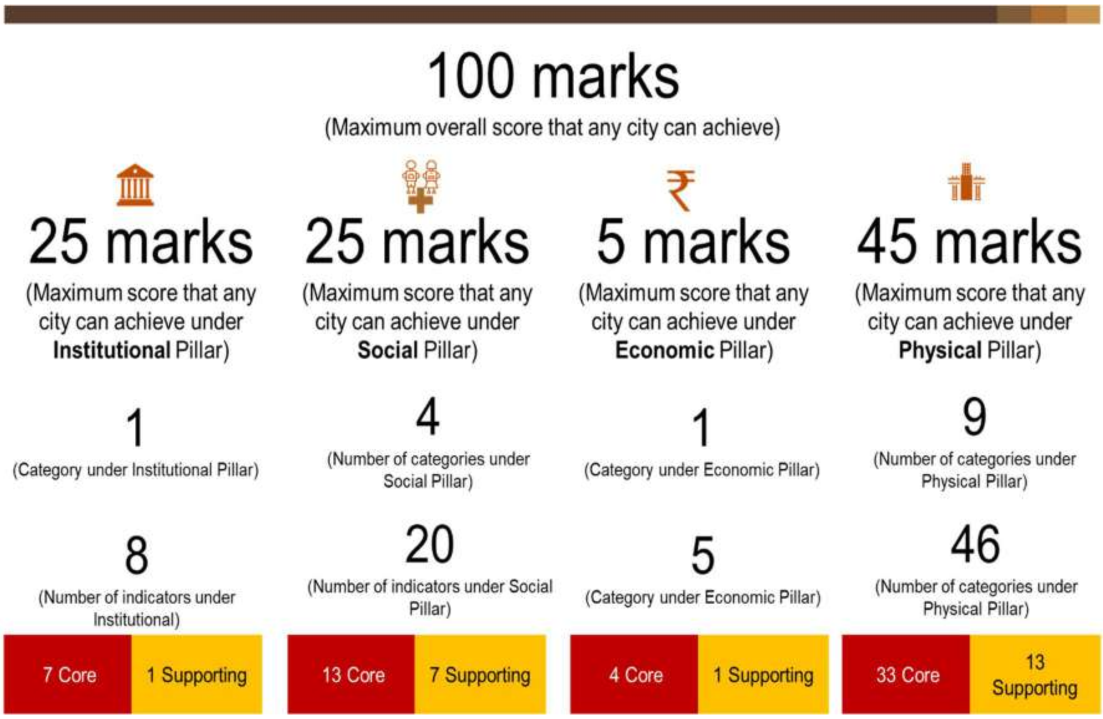
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, RMC
Urban Local Body	For Park and Recreation Related Questions	AMRUT, RMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, RMC
Urban Local Body	For Heritage sites related data	Indian National Trust for Art and Culture Heritage
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	Raipur Municipal Corporation
Urban Local Body	For Building plan related data	Raipur Development Authority
Urban Local Body	For Roads related data	Raipur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Raipur Municipal Corporation
Urban Local Body	For IT services related data	IT Section, RMC
Urban Local Body	For Vendor committee related data	Bazar Bibhag, RMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment Exchange, Census Department
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Chhattisgarh Pollution Control Board
Development Authority	Building Infrastructure	Raipur Development Authority Raipur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Raipur Development Authority Raipur Municipal Corporation
	Green Building	Raipur Development Authority Raipur Municipal Corporation
	Rain water harvesting	Raipur Development Authority Raipur Municipal Corporation
	Universal Design Principle	Raipur Development Authority Raipur Municipal Corporation
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Chhattisgarh State Power Distribution Corporation Limited
State Disaster management authority		Raipur Smart City Limited
State Education Department		District Education Department
State Health Department	Health care professionals	Chhattisgarh Medical and Health organization
State Health Department	Citizen Services	Chhattisgarh Medical and Health organization
State Health Department	Disease Prevalence	Chhattisgarh Medical and Health organization
State Health Department	Health Infrastructure	Chhattisgarh Medical and Health organization
State Renewable Energy Development Agency		Chhattisgarh Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Sale Tax department
Town and Country Planning Department	Land Use	Town and country planning department, Raipur
Traffic and Police Department		Police department, Raipur
Transport Authorities	Buses	City Bus In charge, RMC
Transport Authorities	Registered Vehicles	Road and Transport organization
Transport Authorities	Sub urban rail transport	

Designated data owners	Subcategories	Data owners at city level
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 189 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	4
DISCOM/Electricity Department	16
Traffic and Police Department	25
Development Authority	3
Pollution Control Board	10
State Renewable Energy Department	2
Town and Country Planning	4
State Health Department	24
Transport Authority	9
Disaster Management	1
Urban Local Body	89
Total	189

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

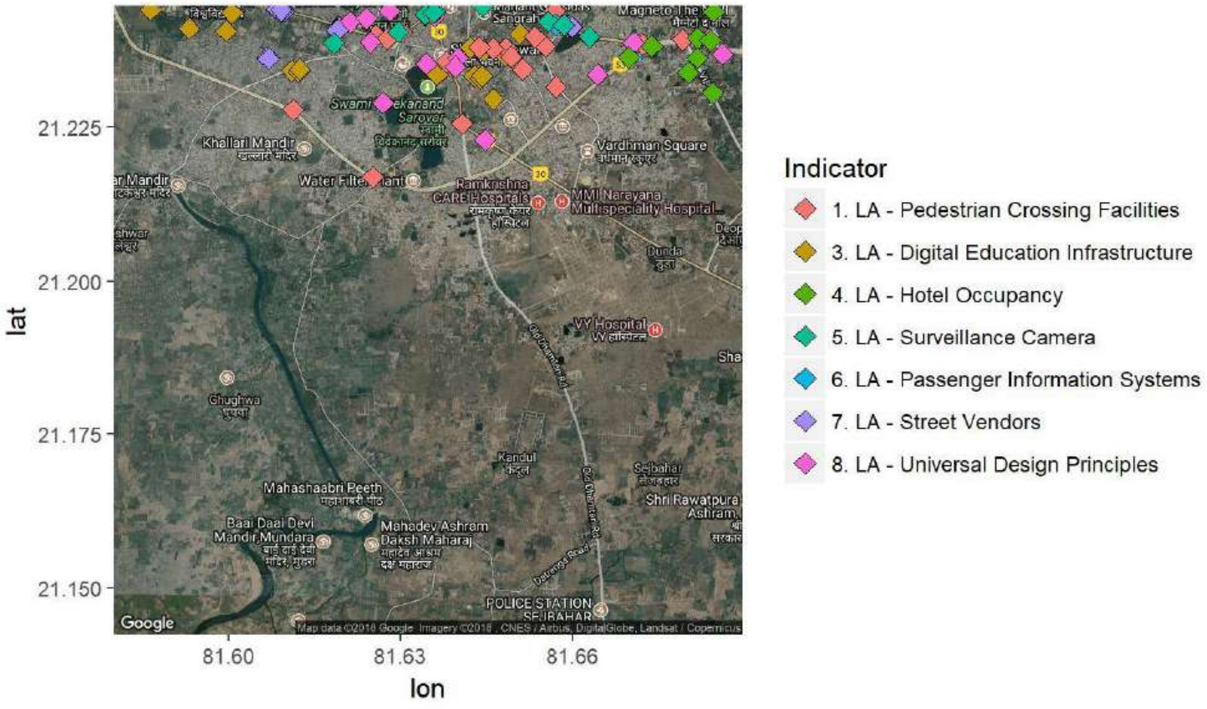
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1| Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
21.225
21.200
21.175
21.150
81.60
81.63
81.66
lon
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**86.54**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.25
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**16.67**
Description	Services integrated through an integrated or a singular operations command centre	3.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**9.91**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0.793024106
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**5.08**
Description		
Sub Indicators	1.4a water supply	6
	1.4b solid waste	6
	1.4c street lights	5.5
	1.4d sewerage	11
	1.4e professional tax	0
	1.4f parks and recreational spaces	NA
	1.4g building plan	2
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**110.81**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4986.34
Denominator	Total demand raised for the year	4500
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**54.33**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1955.8
Denominator	Total O&M cost for providing water supply services during the year	3599.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**110.49**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-19871.71
Denominator	Total expenditure (revenue and capital accounts) in the same year	-17985.46
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**40.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	19
Denominator	Total number of historic buildings/sites identified	47
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**61.43**
Description	Average Occupancy rate of Hotels	61.42857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.01**
Formula:	*Numerator / Denominator*	

Numerator	Budget allocated for cultural/sports activities	2.35
Denominator	Total budget of the ULB (capital and revenue)	19392.66
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**30**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	30
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**81.24**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	155379
Denominator	Total population in the age group of 6-14 years	191252
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**80.62**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	74117
Denominator	Total female population in the age group of 6-14 years	91932
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**24.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	98906
Denominator	Total number of teachers available for primary grades (public and private schools)	4016
Unit	Ratio	
Benchmark	1 teacher for every 30 students	

Indicator No: 3.4	**Percentage of schools with access to digital education**	**13.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	107
Denominator	Total number of schools	767
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.19**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.19400697
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**95.48**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	348333335
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**89.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	9152
Denominator	Total population of the city	1027264
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**68.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	7019
Denominator	Total population of the city	1027264
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	**Average response time in case of health emergencies**	**14.5**
Description	Total response time for health-related distress calls received in the city	14.5
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5771
Denominator	Total population of the city	1027264
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	258
Denominator	Total population of the city	1027264
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**606.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	11776
Denominator	Total length of road network in the city	1943
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**837.27**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	8601
Denominator	Total population of the city	1027264
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**25.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2192
Denominator	Total crimes recorded in the same year	8601
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**25.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	264
Denominator	Total population of the city	1027264
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.72**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	82848.74
Denominator	Total VAT/GST collection during preceding year	6036.7861
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be	

	treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-16.91**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-453
Denominator	Number of construction permits during preceding year	26.79
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	40654
Denominator	Total labour force in the city	191252
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**1.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	50
Denominator	Total number of vendors in the city	4781.3
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**6.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6684
Denominator	Total number of slum and EWS households in the city	1089.44

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**60**
Formula:	*Numerator / Denominator*	213123471830172
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**1.11**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1138801
Denominator	Total population of the city	1027264
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2815783.184
Denominator	Total population of the city	1027264
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**38.13**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	66734000
Denominator	Total area of the city (total area of all land uses)	175000000

Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1027264
Denominator	Area allocated for residential land use (in hectares)	80880000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**107.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	250666
Denominator	Total number of households in the city	233790
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	309222
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**6329**

Description	Total number of sustained electrical interruptions in a year	6329
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.76**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	283318
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	3735.8
Denominator	Total energy consumption from all sources	800100203
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	881471.3333
Denominator	Total quantum of water and waste water handled during the period	6240
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	41040
Denominator	Total number of street light installations	44894
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	335209
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.6**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	800100203
Denominator	Total population of the city	1027264
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	120
Denominator	Total area of the city (sq.km)	175
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles	165

	available per day	
Denominator	Total population of the city	1027264
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	25
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	4
Denominator	Total length of road network in the city	1943
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**18.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	37
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	41
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	27.5
Denominator	Total available on-street parking spaces in the city	27.5
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.71**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	27.62
Denominator	Total length of road network in the city	3886
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**78.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	89
Denominator	Total number of junctions/ intersections on major roads in the city	114
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**94.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	392
Denominator	Total number of public right-of-way areas in the city	415

Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**42.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	99641
Denominator	Total number of households in the city	233790
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**202.48**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	208
Denominator	Total population of the city	1027264
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	55463
Denominator	Total number of samples tested for water quality	56882
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**53.05**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	110.34
Denominator	Quantum of water put into the distribution system (mld)	208
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**10.83**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	11019
Denominator	Total number of water connections in the city	101750
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**104.58**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	2328
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2226
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**108.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	245392.8
Denominator	Total number of properties in the city	226744
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**91.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	207314
Denominator	Total number of properties in the city	226744
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**28.82**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	560
Denominator	Total length of road network in the city	1943
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	265790
Denominator	Total number of households and establishments in the city	265790
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	413
Denominator	Total quantum of MSW generated in the city	413
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**54.26**

Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	6722.26
Denominator	Average MSW generated in the city (tons per month)	12390
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.38**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.38
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**27.32**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	27.32
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**92.25**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	92.25
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	180
Denominator	Total number of noise samples	180
Unit	Percentage	

Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	64
Denominator	Total number of samples tested	64
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

RAJKOT

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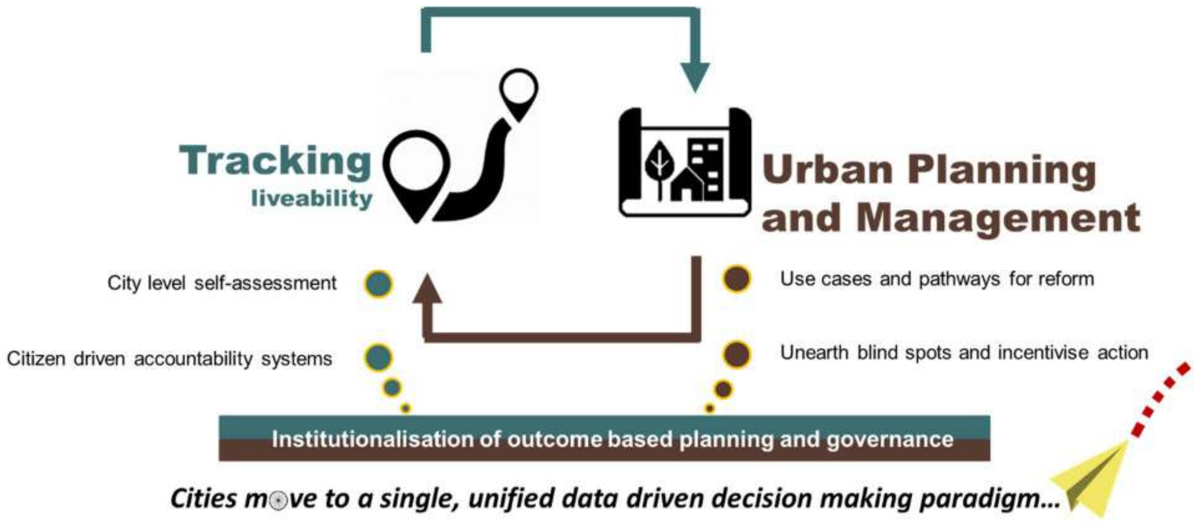
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

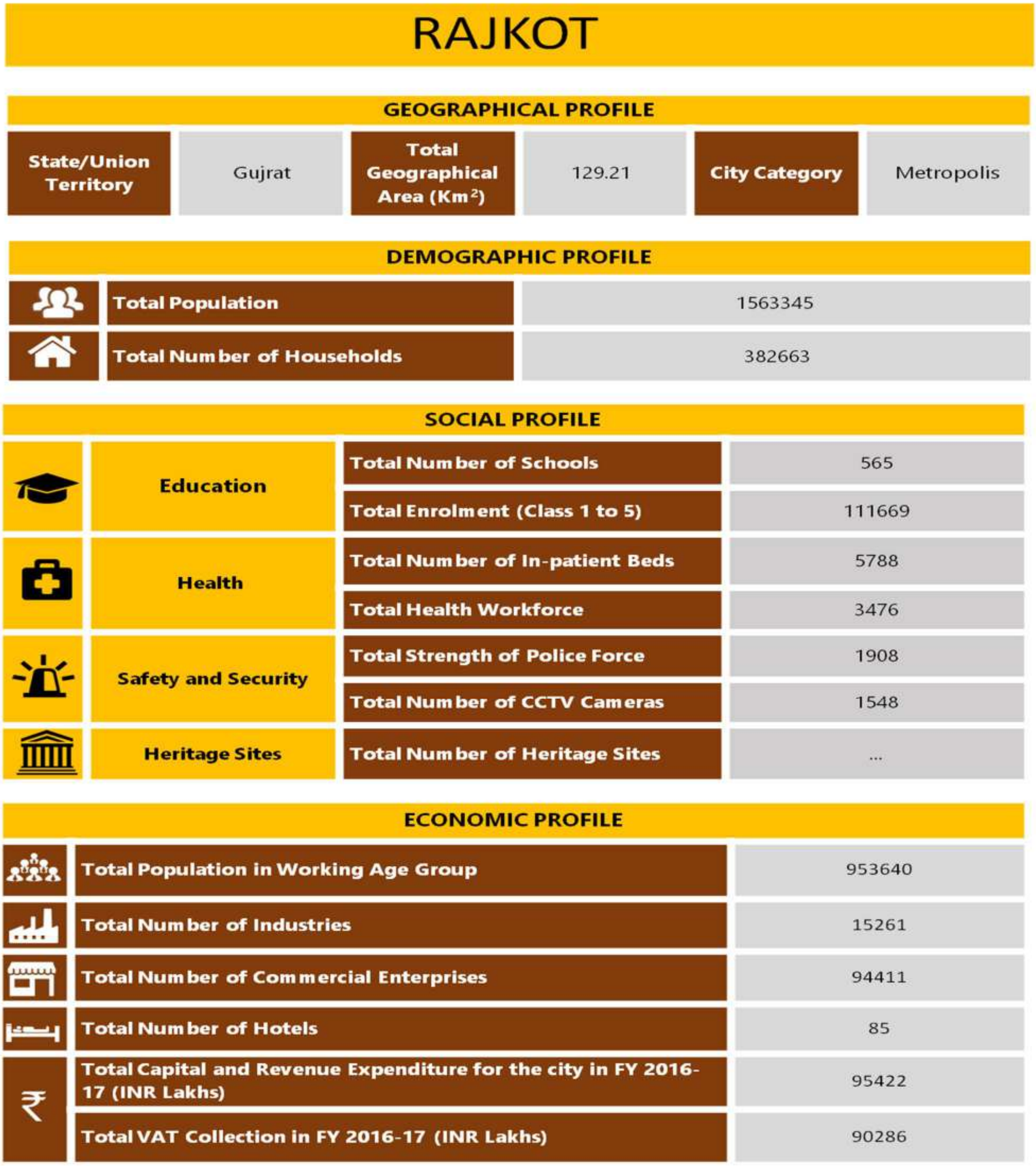
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAJKOT

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km^2)**	129.21	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1563345
Total Number of Households	382663

SOCIAL PROFILE

Education	**Total Number of Schools**	565
	Total Enrolment (Class 1 to 5)	111669
Health	**Total Number of In-patient Beds**	5788
	Total Health Workforce	3476
Safety and Security	**Total Strength of Police Force**	1908
	Total Number of CCTV Cameras	1548
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	953640
Total Number of Industries	15261
Total Number of Commercial Enterprises	94411
Total Number of Hotels	85
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	95422
Total VAT Collection in FY 2016-17 (INR Lakhs)	90286

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	241
	Total Number of Water Connections	328112
Sanitation Facilities	Total number of households with access to individual toilets in the city	317425
	Total number of households in the city with access to community toilets in the city	1275
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	577
	Total number of households covered through door-to-door collection of solid waste	330751
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	170
	Daily average quantum of waste water treated by STPs in the city (MLD)	82
Electricity	Total number of authorized electrical connections in the city	524087
	Total electricity supplied to the city (kWh)	1792140096
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	213030
Roads and Transport	Total Length of Road Network in the City (Km)	1798
	Total length of arterial and sub-arterial road network in the city (Km)	15.2
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	141

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

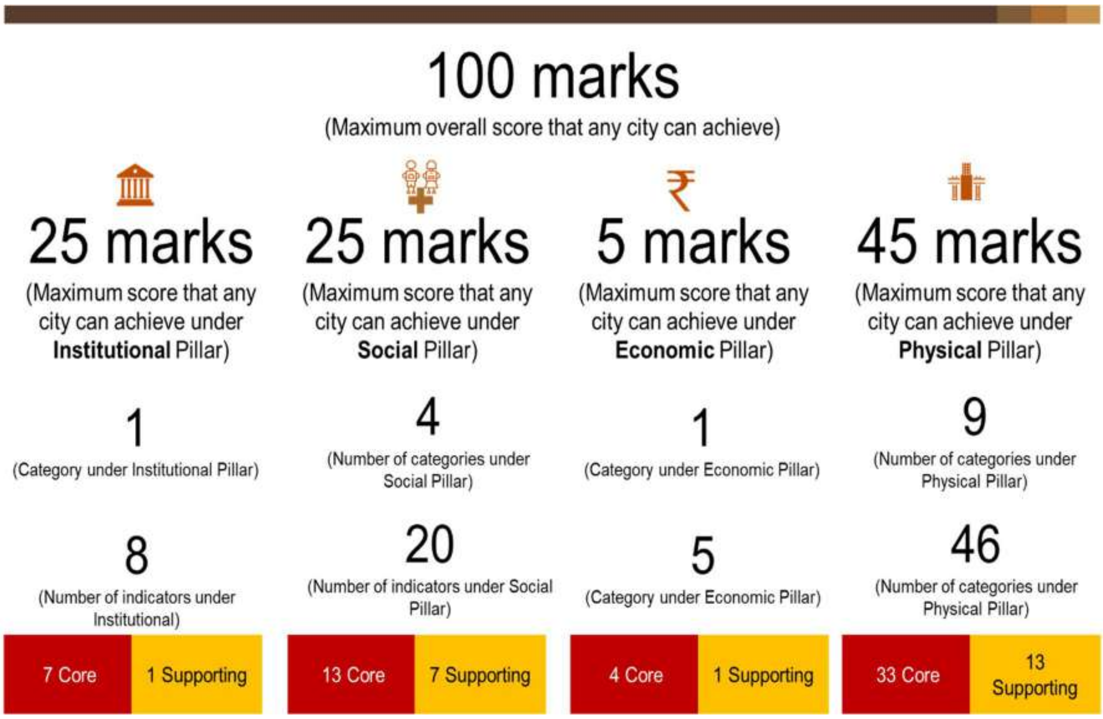
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Park and recreation
Urban Local Body	For Water Supply and Drainage related questions	Drainage department
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	-
Urban Local Body	For Housing related data	-
Urban Local Body	For Building plan related data	Town development
Urban Local Body	For Roads related data	
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	
	Universal Design Principle	
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Pgvcl
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	Health department
	Citizen Services	
	Disease Prevalence	
	Health Infrastructure	
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	
Traffic and Police Department		
Transport Authorities	Buses	
	Registered Vehicles	R.T.O
	Sub urban rail transport	Railway department
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 25 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	3
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	14
Total	25*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

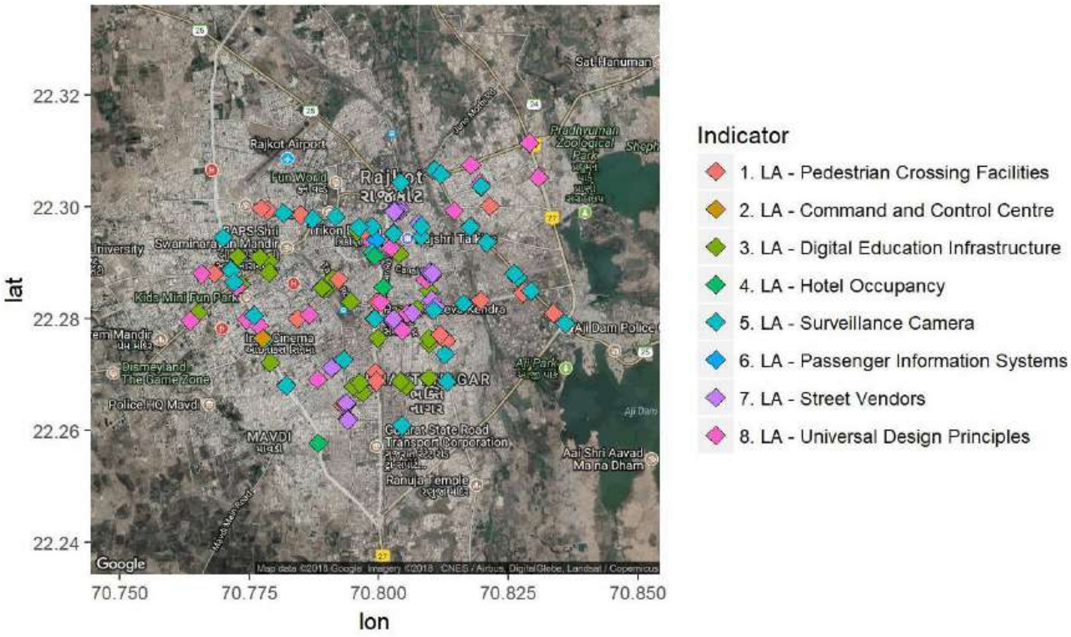
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
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70.800
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lon
Rajkot Airport
Rajkot
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**95.07**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**85.71**
Description	Services integrated through an integrated or a singular operations command centre	18
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.24**

Description		
Sub Indicators	1.3a Building plan	0.00060824
	1.3b Birth/Death Certificate	0.002958183
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0.030521687
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0.026827414
	1.3h complaints/ grievance redressal	0.000104217
	1.3i information	0.050815234
	1.3j electricity	0.011745187
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**45.52**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	28036
Denominator	Total demand raised for the year	61596

Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**23.87**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2483.74
Denominator	Total O&M cost for providing water supply services during the year	10403.24
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**29.11**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	53318
Denominator	Total expenditure (revenue and capital accounts) in the same year	183132
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	18
Denominator	Total number of wards	18
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**27.04**
Description	Average Occupancy rate of Hotels	27.03571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**1.29**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1234
Denominator	Total budget of the ULB (capital and revenue)	95422
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**212**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	212
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**79.33**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	177789
Denominator	Total population in the age group of 6-14 years	224121
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**70.54**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	70435
Denominator	Total female population in the age group of 6-14 years	99853
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**33.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	111669
Denominator	Total number of teachers available for primary grades (public and private schools)	3383
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**81.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	460
Denominator	Total number of schools	565

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**87.41**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	87.41431482
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.48**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	483318030
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**43.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5788
Denominator	Total population of the city	1323363
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**26.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	3476
Denominator	Total population of the city	1323363
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	

Indicator No: 4.3	**Average response time in case of health emergencies**	**10**
Description	Total response time for health-related distress calls received in the city	10
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7484
Denominator	Total population of the city	1323363
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	796
Denominator	Total population of the city	1323363
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**86.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1548
Denominator	Total length of road network in the city	1798
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**389.46**

Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	5154
Denominator	Total population of the city	1323363
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**9.31**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	480
Denominator	Total crimes recorded in the same year	5154
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**14.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	194
Denominator	Total population of the city	1323363
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**19.93**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	15005
Denominator	Total VAT/GST collection during preceding year	752.81
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**22.08**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	320
Denominator	Total Professional Tax collection during preceding year	1449
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**3.99**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	122
Denominator	Number of construction permits during preceding year	30.55
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	9156
Denominator	Total labour force in the city	224121
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**97.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	19572
Denominator	Total number of vendors in the city	20163

Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	8391
Denominator	Total number of slum and EWS households in the city	1902.91
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0** 94502870
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	213030
Denominator	Total population of the city	1323363
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**1.75**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2310779

Denominator	Total population of the city	1323363
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**74.56**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	96340000
Denominator	Total area of the city (total area of all land uses)	129210000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1323363
Denominator	Area allocated for residential land use (in hectares)	73580000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**136.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	521435
Denominator	Total number of households in the city	382663
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	524087
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**3084**
Description	Total number of sustained electrical interruptions in a year	3084
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	110760
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	4960
Denominator	Total energy consumption from all sources	1792142926
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	403199.4167
Denominator	Total quantum of water and waste water handled during the period	9690
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	15745871
Denominator	Total number of street light installations	54532
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1117941.467
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.45**

Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1792142926
Denominator	Total population of the city	1323363
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	233
Denominator	Total area of the city (sq.km)	129.21
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	100
Denominator	Total population of the city	1323363
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	13
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.11**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	19.9

Denominator	Total length of road network in the city	1798
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.37
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**18.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	2

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of signalised intersections in the city	11
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	4
Denominator	Total available on-street parking spaces in the city	4
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**3.92**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	141
Denominator	Total length of road network in the city	3596
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**738.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	133
Denominator	Total number of junctions/ intersections on major roads in the city	18
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**63.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as	665

	per universal design principles	
Denominator	Total number of public right-of-way areas in the city	1054
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**83.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	320787
Denominator	Total number of households in the city	382663
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**182.11**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	241
Denominator	Total population of the city	1323363
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	27015
Denominator	Total number of samples tested for water quality	27182
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**12.45**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	30
Denominator	Quantum of water put into the distribution system (mld)	241
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	526
Denominator	Total number of water connections in the city	328112
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**7.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	233
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	3030
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**94.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	427369
Denominator	Total number of properties in the city	453631
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**70.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	318700
Denominator	Total number of properties in the city	453631
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**79.41**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	135
Denominator	Total waste water generated in the city per day	170
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**140.24**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	115
Denominator	Total waste water received at treatment plants per day	82
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**8.48**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	152.53
Denominator	Total length of road network in the city	1798
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**89.12**
Formula:	*Numerator / Denominator*	

Numerator	Total number of households and establishments covered through doorstep collection	425162
Denominator	Total number of households and establishments in the city	477074
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**98.3**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	577
Denominator	Total quantum of MSW generated in the city	587
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**3.29**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	570
Denominator	Average MSW generated in the city (tons per month)	17310
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**16.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	16.9
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**22.93**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	22.93
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean	

	concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**115.27**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	115.266
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	18
Denominator	Total number of noise samples	18
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	33
Denominator	Total number of samples tested	33
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

RAMPUR

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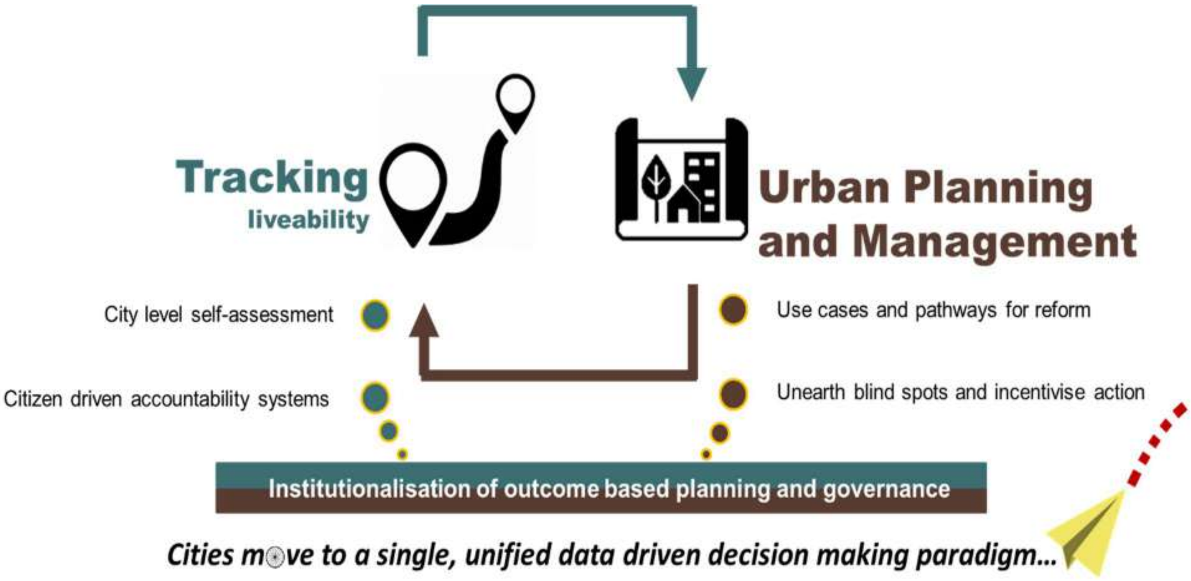
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

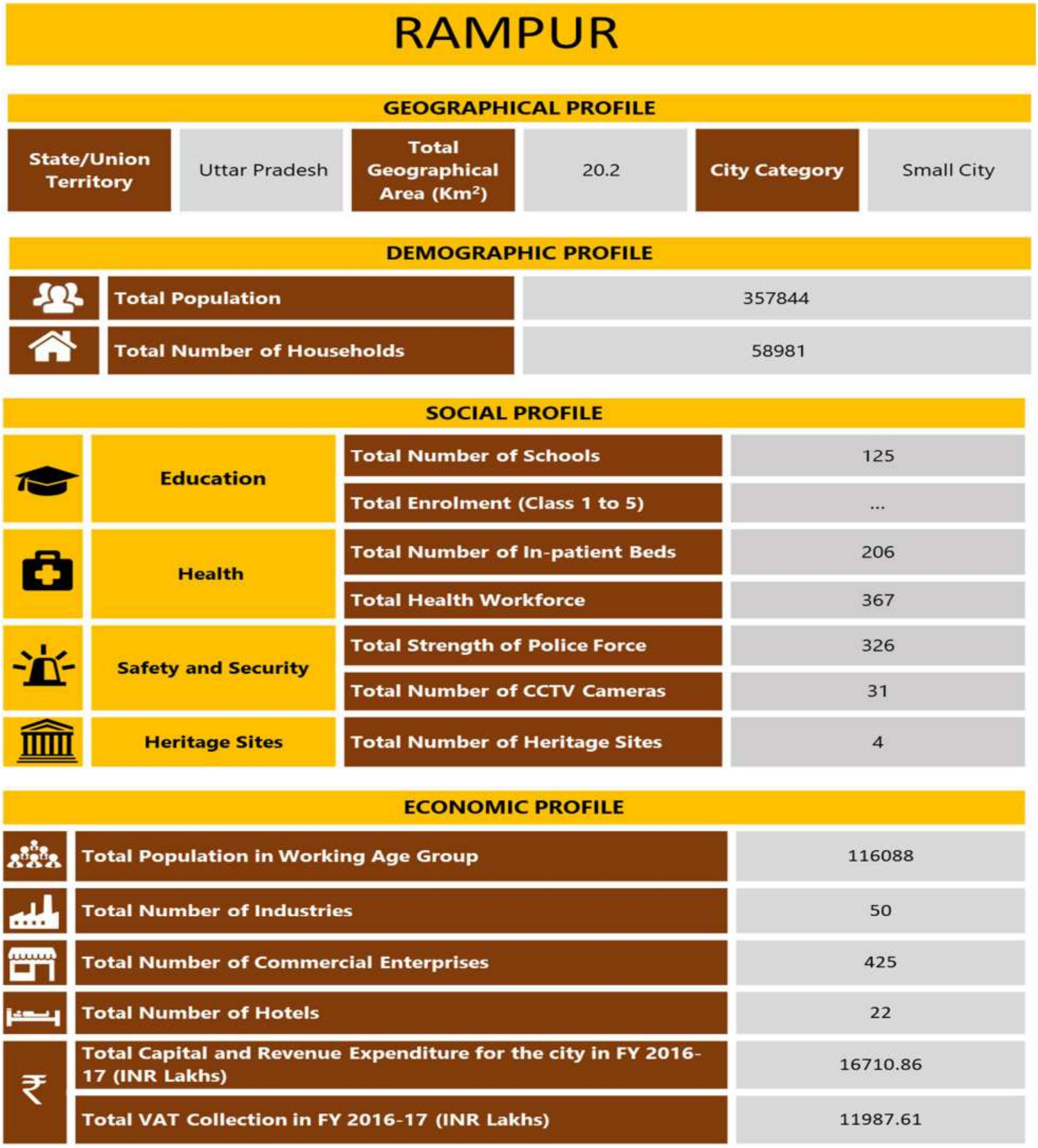
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAMPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	20.2	**City Category**	Small City

DEMOGRAPHIC PROFILE

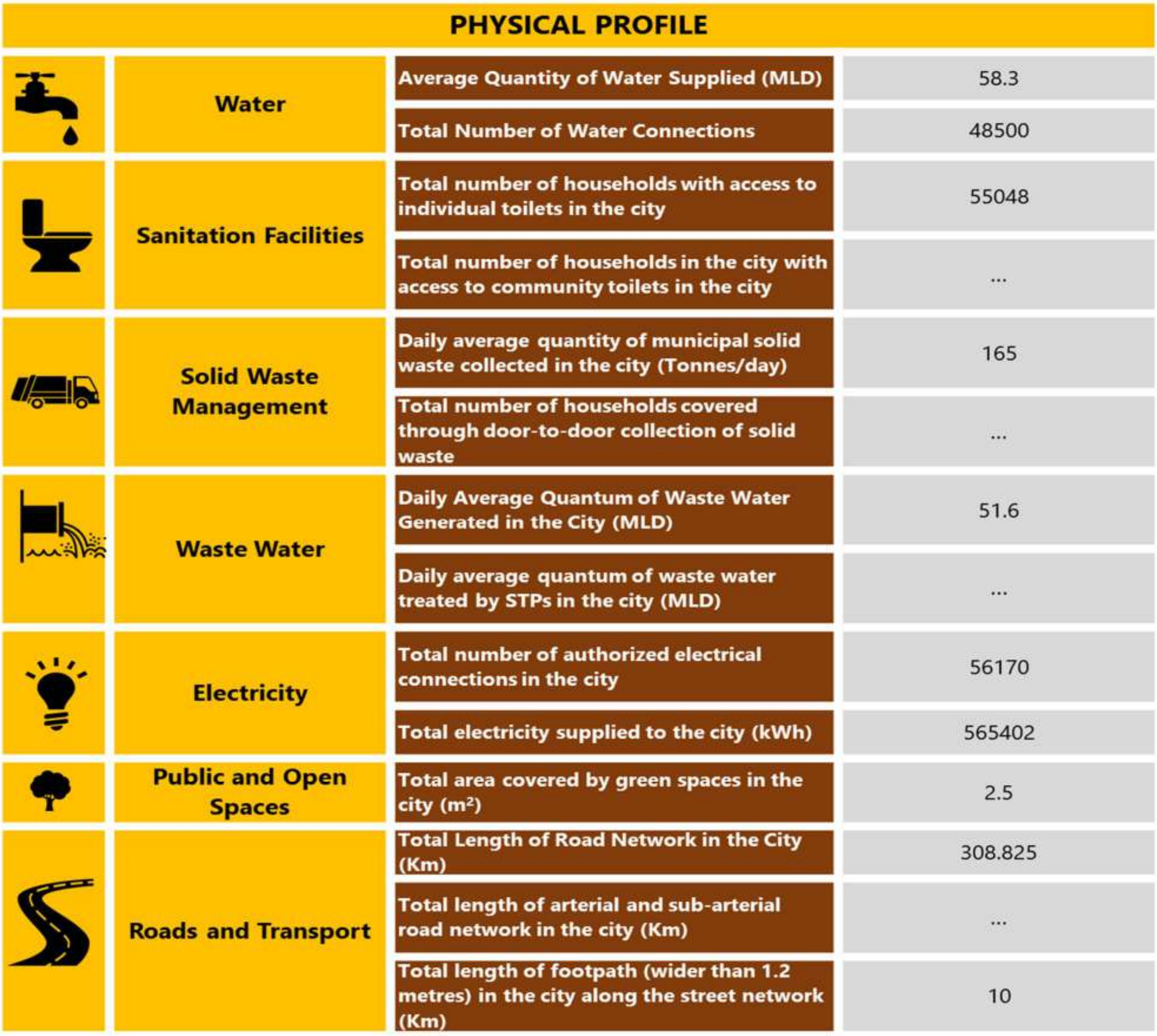
Total Population	357844
Total Number of Households	58981

SOCIAL PROFILE

Education	**Total Number of Schools**	125
	Total Enrolment (Class 1 to 5)	...
Health	**Total Number of In-patient Beds**	206
	Total Health Workforce	367
Safety and Security	**Total Strength of Police Force**	326
	Total Number of CCTV Cameras	31
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	116088
Total Number of Industries	50
Total Number of Commercial Enterprises	425
Total Number of Hotels	22
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	16710.86
Total VAT Collection in FY 2016-17 (INR Lakhs)	11987.61



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	58.3
	Total Number of Water Connections	48500
Sanitation Facilities	Total number of households with access to individual toilets in the city	55048
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	165
	Total number of households covered through door-to-door collection of solid waste	...
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	51.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	56170
	Total electricity supplied to the city (kWh)	565402
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	2.5
Roads and Transport	Total Length of Road Network in the City (Km)	308.825
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	10

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO_2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

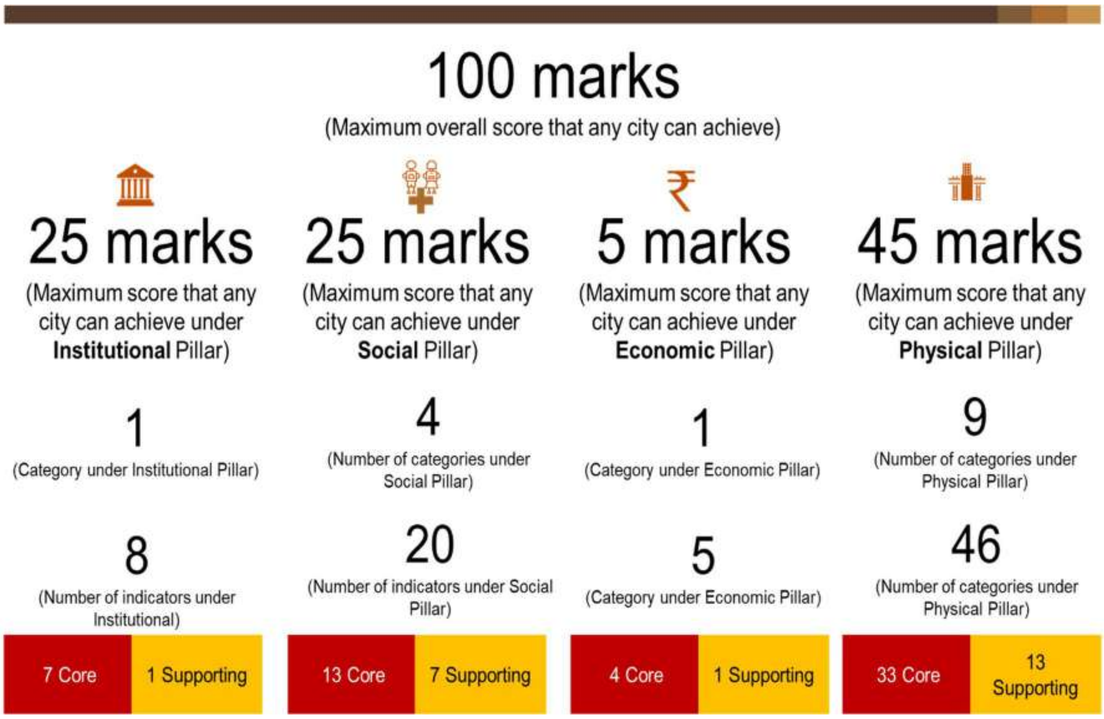
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar Palika Parishad Rampur
Urban Local Body	For Park and Recreation Related Questions	Civil department Nagar Palika Parishad Rampur
Urban Local Body	For Water Supply and Drainage related questions	Jalkal vibhag Nagar Palika Parishad Rampur
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Civil Department Rampur
Urban Local Body	For Housing related data	Moradabad Development Authority / properties tax department Nagar Palika Parishad Rampur
Urban Local Body	For Building plan related data	Rampur Development Authority Rampur
Urban Local Body	For Roads related data	Public Works Department / civil department rampur
Urban Local Body	For Solid waste management related data	Health Department Nagar Palika Parishad Rampur
Urban Local Body	For IT services related data	IT department (main office) Nagar palika parishad Rampur
Urban Local Body	For Vendor committee related data	Tex department ULB Rampur
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Rampur
Central / state	Water Quality, Air	Uttar Pradesh pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Pollution control Board	Quality, Noise Quality	Moradabad
Development Authority	Building Infrastructure	Rampur development Authority Rampur
	Construction planning	Rampur development Authority Rampur
	Green Building	Rampur development Authority Rampur
	Rain water harvesting	Rampur development Authority Rampur
	Universal Design Principle	Rampur development Authority Rampur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Rampur
State Disaster management authority		State Disaster Management Rampur [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Rampur (DIOS)
State Health Department	Health care professionals	UP State Health Department Rampur (CMO)
	Citizen Services	UP State Health Department Rampur (CMO)
	Disease Prevalence	UP State Health Department Rampur (CMO)
	Health Infrastructure	UP State Health Department Rampur (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Rampur
Town and Country Planning Department	Land Use	Town and Country Planning Department Moradabad
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Rampur
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Rampur
	Registered Vehicles	Regional Transport Office Rampur
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**3**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**3**
Town and Country Planning	**1**
State Health Department	**3**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**28**
Total	**45***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

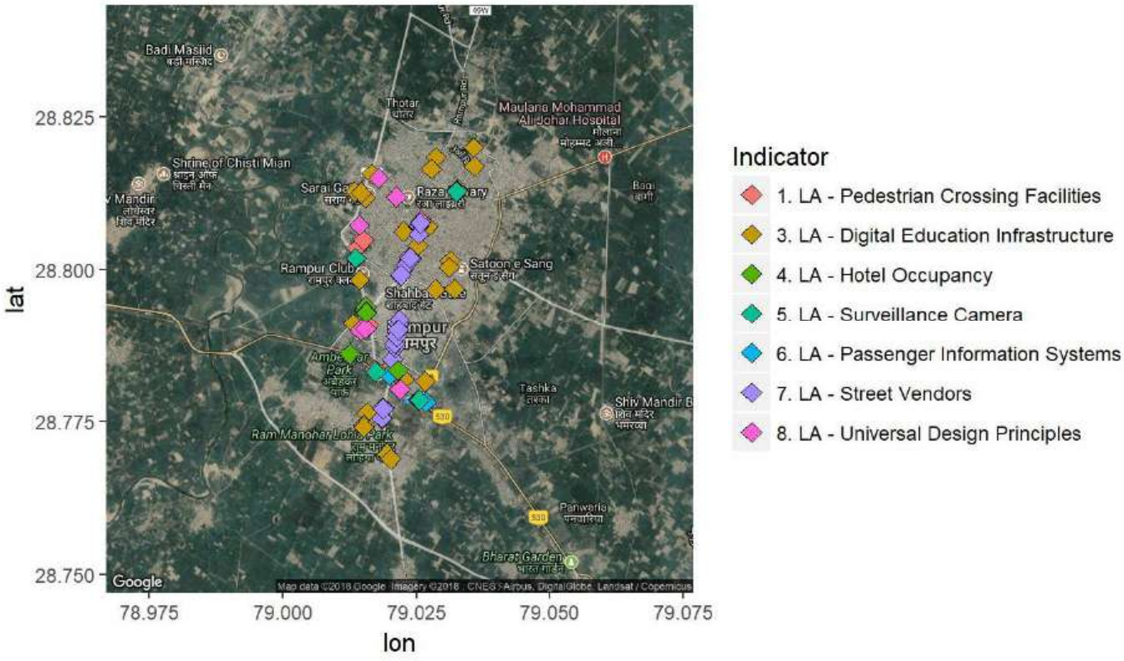
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.825
28.800
28.775
28.750
lat
78.975
79.000
79.025
79.050
79.075
lon
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**57.63**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	0.75
	1.1c trade license	0.75
	1.1d solid waste management	0
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**28.57**
Description	Services integrated through an integrated or a singular operations command centre	6
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.54**
Description		
Sub Indicators	1.3a Building plan	0.000666667
	1.3b Birth/Death Certificate	0.003217927
	1.3c water supply	0.000181818
	1.3d solid waste management	NA

	1.3e property tax	3.4965E-05
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	5.71245E-05
	1.3i information	0.000786934
	1.3j electricity	0.032695389
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.38**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	1.5
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**11.71**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	36.82
Denominator	Total demand raised for the year	314.51
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**1.15**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	7.12
Denominator	Total O&M cost for providing water supply services during the year	617.7
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**46.93**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	17440.35
Denominator	Total expenditure (revenue and capital accounts) in the same year	37160.29
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	43
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**

Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**100.01**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	16711.86
Denominator	Total budget of the ULB (capital and revenue)	16710.86
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	0
Denominator	Total population in the age group of 6-14 years	70205
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	0
Denominator	Total female population in the age group of 6-14 years	33697
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total number of students in primary grades (public and private)	0
Denominator	Total number of teachers available for primary grades (public and private schools)	Data Unavailable
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	125
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**0**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	0
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**0**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	0
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**6.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	206

Denominator	Total population of the city	325313
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**11.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	367
Denominator	Total population of the city	325313
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**43118**
Description	Total response time for health-related distress calls received in the city	43118
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**9.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	30156
Denominator	Total population of the city	325313
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	626
Denominator	Total population of the city	325313
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**10.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	31

Denominator	Total length of road network in the city	308.825
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**945.24**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3075
Denominator	Total population of the city	325313
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**13.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	400
Denominator	Total crimes recorded in the same year	3075
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**18.44**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	60
Denominator	Total population of the city	325313
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**15.66**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1622.86
Denominator	Total VAT/GST collection during preceding year	103.6475
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst	

	cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**486.67**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	1.46
Denominator	Total Professional Tax collection during preceding year	0.3
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**34.39**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	54
Denominator	Number of construction permits during preceding year	1.57
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	14074
Denominator	Total labour force in the city	70205
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1850
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	375
Denominator	Total number of slum and EWS households in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	2.5
Denominator	Total population of the city	325313
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.26**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	411055
Denominator	Total population of the city	325313
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	20200000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	325313
Denominator	Area allocated for residential land use (in hectares)	25558600
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**79.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	46803
Denominator	Total number of households in the city	58981
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	56170
Denominator	Total number of electricity connections in the city	56170
Unit	Percentage	
Benchmark	100%	

Indicator No: 10.3	**Average number of electrical interruptions per year**	**24**
Description	Total number of sustained electrical interruptions in a year	24
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1766
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	6965
Denominator	Total energy consumption from all sources	565402
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	1749
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Blank
Denominator	Total number of street light installations	9700
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst	

	cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	565402
Denominator	Total population of the city	325313
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	395
Denominator	Total area of the city (sq.km)	20.2
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	131
Denominator	Total population of the city	325313
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		

Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	Data Unavailable
Denominator	Total length of road network in the city	308.825
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.62**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	10
Denominator	Total length of road network in the city	617.65
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	12
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**82.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	48500
Denominator	Total number of households in the city	58981
Unit	Percentage	
Benchmark	100%	

Indicator No: 12.2	**Per capita supply of water**	**179.21**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	58.3
Denominator	Total population of the city	325313
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	45
Denominator	Total number of samples tested for water quality	1120
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	58.3
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**25.46**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	12350
Denominator	Total number of water connections in the city	48500
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	0

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**153.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	55048
Denominator	Total number of properties in the city	35750
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	Data Unavailable
Denominator	Total number of properties in the city	35750
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	51.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	308.825

Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	Data Unavailable
Denominator	Total number of households and establishments in the city	59406
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	165
Denominator	Total quantum of MSW generated in the city	165
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	4950
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	

Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	12
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

RANCHI

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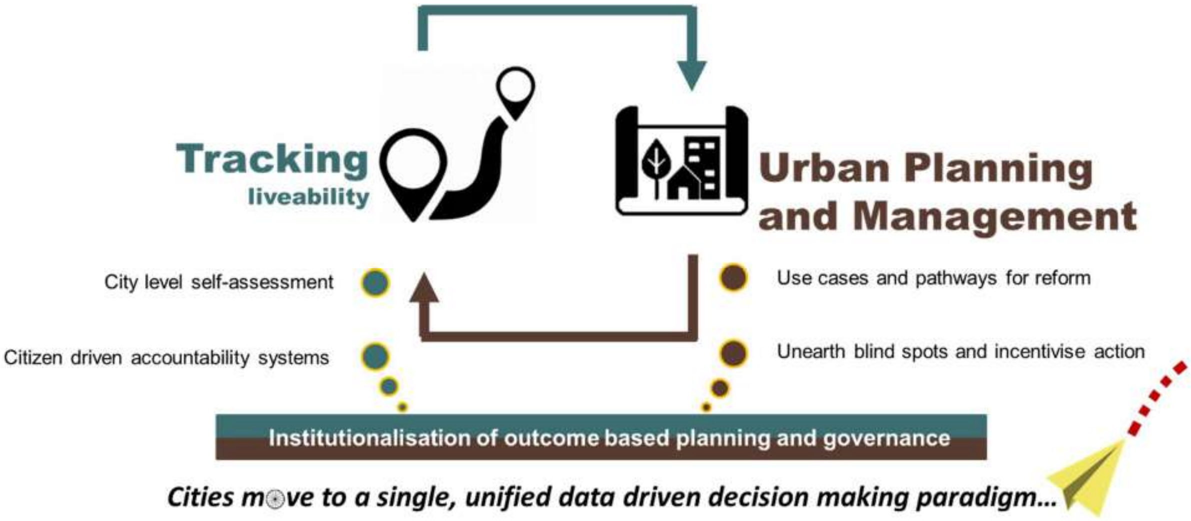
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Jharkhand	Total Geographical Area (Km^2)	175	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1073427
Total Number of Households	239239

SOCIAL PROFILE

Education	Total Number of Schools	319
	Total Enrolment (Class 1 to 5)	80333
Health	Total Number of In-patient Beds	43
	Total Health Workforce	4422
Safety and Security	Total Strength of Police Force	4254
	Total Number of CCTV Cameras	180
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	558688
Total Number of Industries	7
Total Number of Commercial Enterprises	26000
Total Number of Hotels	340
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	18593
Total VAT Collection in FY 2016-17 (INR Lakhs)	513159

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	217
	Total Number of Water Connection	43098
Sanitation Facilities	Total number of households with access to individual toilets in the city	163229
	Total number of households in the city with access to community toilets in the city	1875
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	160
	Total number of households covered through door-to-door collection of solid waste	123863
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	5
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	297409
	Total electricity supplied to the city (kWh)	1084552698
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1011980000
Roads and Transport	Total Length of Road Network in the City (Km)	143
	Total length of arterial and sub-arterial road network in the city (Km)	55
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	171

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal

Pillars of Comprehensive Development	Category	Indicators
		spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle

Pillars of Comprehensive Development	Category	Indicators
		tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

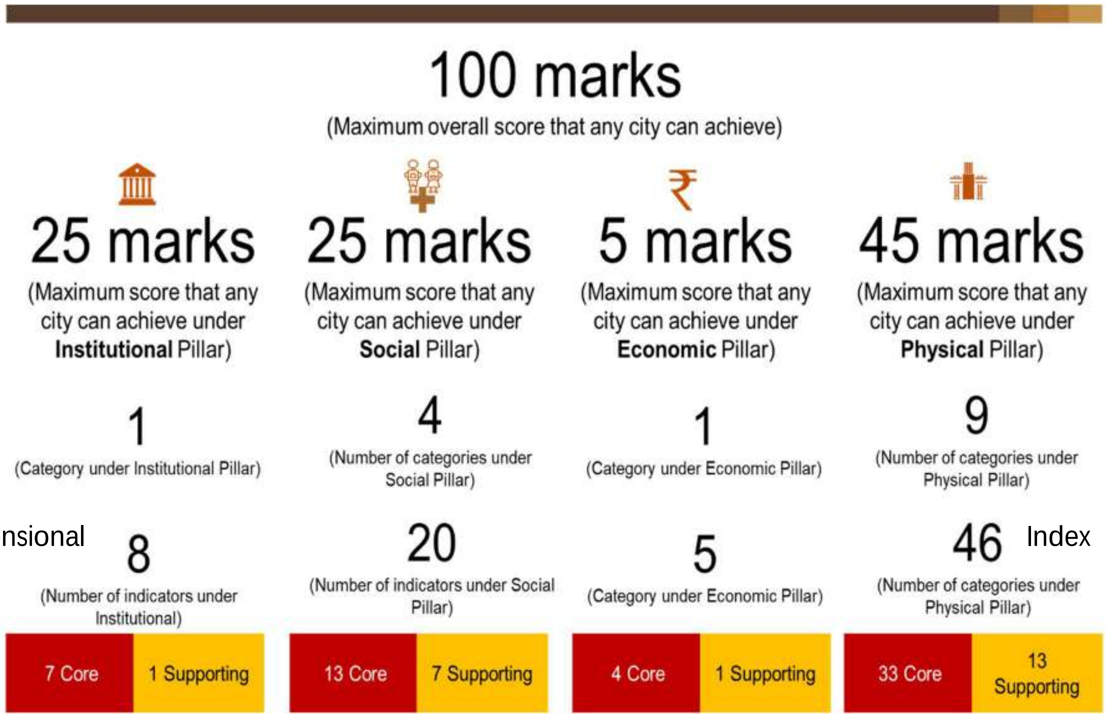
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the

questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Ranchi Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Ranchi Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Ranchi Municipal Corporation
Urban Local Body	For Heritage sites related data	Ranchi Municipal Corporation
Urban Local Body	For Ecological sites related data	Ranchi Municipal Corporation
Urban Local Body	For Housing related data	Ranchi Municipal Corporation
Urban Local Body	For Building plan related data	Ranchi Municipal Corporation
Urban Local Body	For Roads related data	Ranchi Municipal Corporation
Urban Local Body	For Solid waste management related data	Ranchi Municipal Corporation
Urban Local Body	For IT services related data	Ranchi Municipal Corporation
Urban Local Body	For Vendor committee related data	Ranchi Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism department, Excise and taxes department, architecture department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	JharkhandState Pollution Control Board
Development Authority	Building Infrastructure	Greater Ranchi Development Authority
	Construction planning	Greater Ranchi Development Authority
	Green Building	Greater Ranchi Development Authority
	Rain water harvesting	Greater Ranchi Development Authority
	Universal Design Principle	Greater Ranchi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tripura State Electricity Corporation Limited
State Disaster management authority		District Disaster management Office, Ranchi
State Education Department		District Education Department, Ranchi

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	Civil Surgeon, Ranchi
	Citizen Services	Civil Surgeon, Ranchi
	Disease Prevalence	Civil Surgeon, Ranchi
	Health Infrastructure	Civil Surgeon, Ranchi
State Renewable Energy Development Agency		Jharkhand Renewable Energy Development Agency, Ranchi
State Sales / Commercial Taxes Department		Commercial Taxes department, Ranchi
Town and Country Planning Department	Land Use	Town Planning Department, Ranchi
Traffic and Police Department		Office of Commissioner of Police, Ranchi
Transport Authorities	Buses	District Transport Office, Ranchi
	Registered Vehicles	District Transport Office, Ranchi
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 09 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0

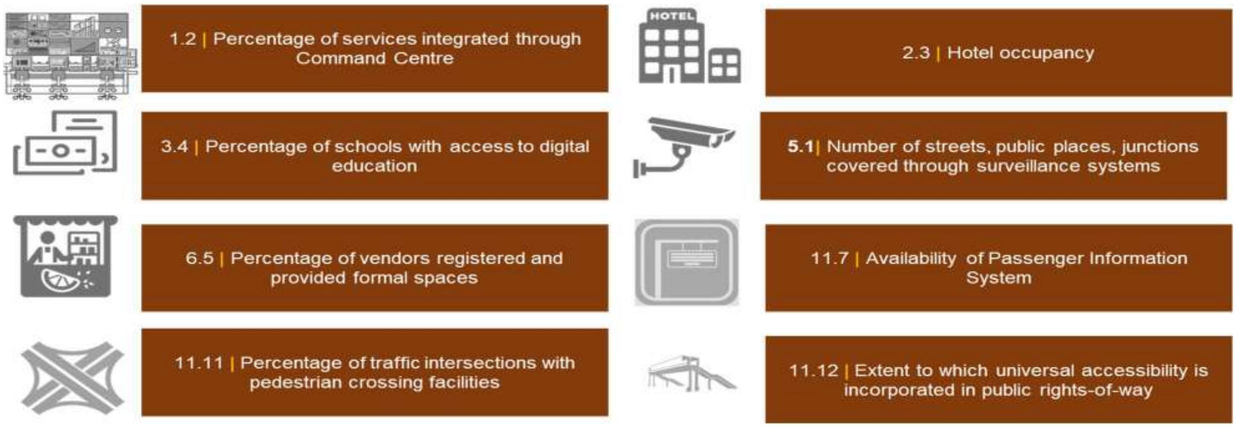
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	1
Transport Authority	0
Disaster Management	0
Urban Local Body	6
Total	09*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

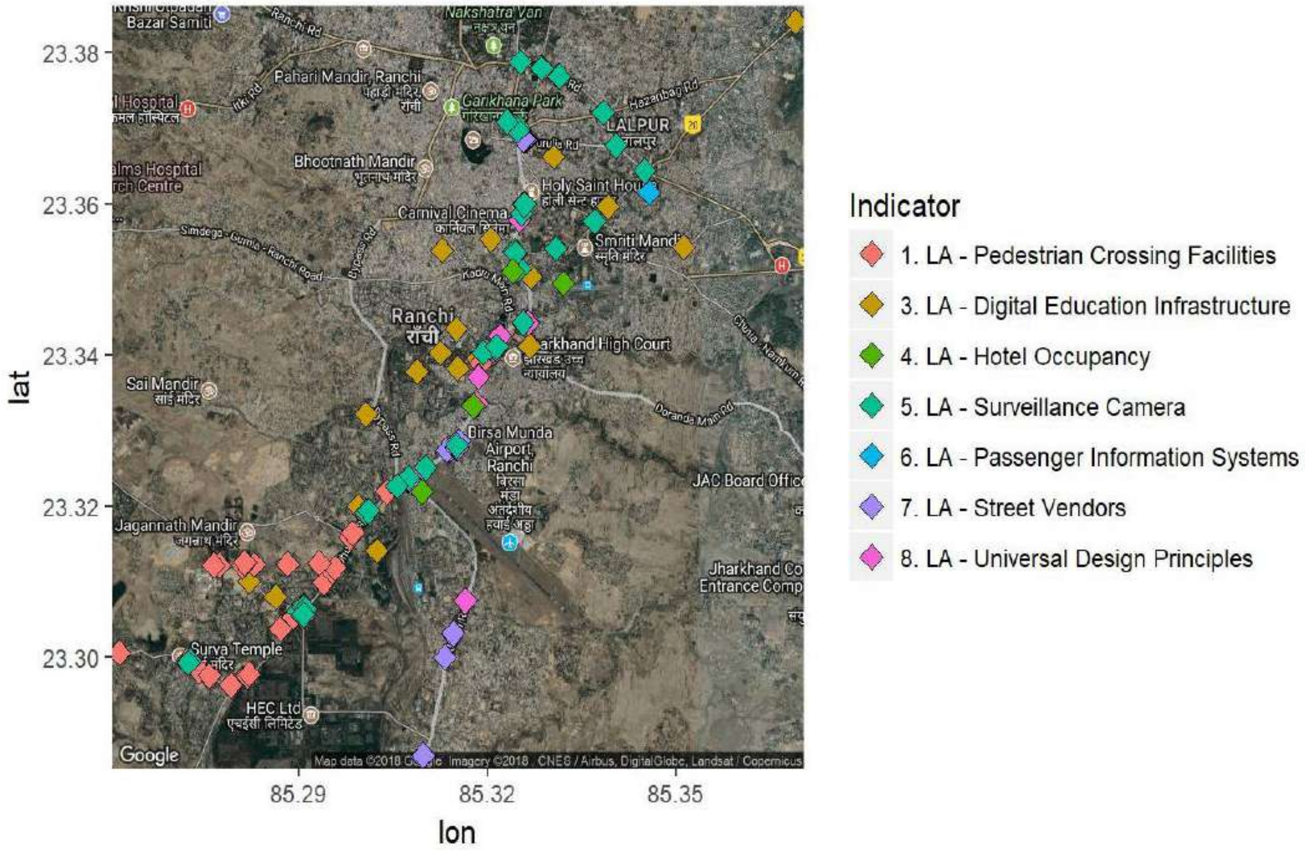
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
23.38
23.36
23.34
23.32
23.30
lon
85.29
85.32
85.35
Ranchi
Birsa Munda Airport, Ranchi
Jharkhand High Court
LALPUR
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**91.12**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846

	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**14.29**
Description	Services integrated through an integrated or a singular operations command centre	3
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**139.57**
Description		
Sub Indicators	1.3a Building plan	0.005288043
	1.3b Birth/Death Certificate	0.002157576
	1.3c water supply	0.001155529
	1.3d solid waste management	0.004090637
	1.3e property tax	0.085594747
	1.3f professional tax (RC)	0.083333333
	1.3g professional tax (EC)	0.083333333
	1.3h complaints/ grievance redressal	0.004192181
	1.3i information	10.23075533
	1.3j electricity	3.456901103
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.14**

Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**80.43**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	12225
Denominator	Total demand raised for the year	15200
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**552.85**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	5921
Denominator	Total O&M cost for providing water supply services during the year	1071
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**140.16**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-15545
Denominator	Total expenditure (revenue and capital accounts) in the same year	-11091

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	53
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**77.14**
Description	Average Occupancy rate of Hotels	77.14285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	18593
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**48**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	48
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**61.86**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	126605
Denominator	Total population in the age group of 6-14 years	204664
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**60.74**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	59695
Denominator	Total female population in the age group of 6-14 years	98277
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**128.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	80333
Denominator	Total number of teachers available for primary grades (public and private schools)	625
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**21**
Formula:	*Numerator / Denominator*	

Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	67
Denominator	Total number of schools	319
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**5000.9**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**5000.9**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**66.23**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**66.23**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	43
Denominator	Total population of the city	1073427
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**41.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4422
Denominator	Total population of the city	1073427
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30

Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3425
Denominator	Total population of the city	1073427
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	347
Denominator	Total population of the city	1073427
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**125.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	180
Denominator	Total length of road network in the city	143
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**30.74**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	330
Denominator	Total population of the city	1073427
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**80.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	265
Denominator	Total crimes recorded in the same year	330
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**10.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	112
Denominator	Total population of the city	1073427
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**20.37**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	86850
Denominator	Total VAT/GST collection during preceding year	4263.09
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**36.88**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	2742
Denominator	Total Professional Tax collection during preceding year	7434
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**533.85**

Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	347
Denominator	Number of construction permits during preceding year	0.65
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	9224
Denominator	Total labour force in the city	204664
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	5901
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**50.98**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	31072
Denominator	Total number of slum and EWS households in the city	609.53

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**185.49**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**185.49**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**942.76**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1011980000
Denominator	Total population of the city	1073427
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**11.15**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	11964000
Denominator	Total population of the city	1073427
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**19.94**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	34890000
Denominator	Total area of the city (total area of all land uses)	175000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1073427
Denominator	Area allocated for residential land use (in hectares)	158300000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**106.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	253678
Denominator	Total number of households in the city	239239
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	297409

Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**839**
Description	Total number of sustained electrical interruptions in a year	839
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	45
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	8000
Denominator	Total energy consumption from all sources	1084552698
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	53459.08333
Denominator	Total quantum of water and waste water handled during the period	6510
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	14688036
Denominator	Total number of street light installations	43320
Unit	kWh per light installation	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	118681
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	118681
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1084552698
Denominator	Total population of the city	1073427
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.41**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	113
Denominator	Total area of the city (sq.km)	175
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	91
Denominator	Total population of the city	1073427
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**

Description	Mode share of public transport	5
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	143
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	37
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	20
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	39
Denominator	Total available on-street parking spaces in the city	19491
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**59.79**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	171
Denominator	Total length of road network in the city	286
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**166.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	25
Denominator	Total number of junctions/ intersections on major roads in the city	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**4.98**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	10
Denominator	Total number of public right-of-way areas in the city	201
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**44.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	105668
Denominator	Total number of households in the city	239239
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**202.16**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	217
Denominator	Total population of the city	1073427
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	300
Denominator	Total number of samples tested for water quality	300
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	217
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**36.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	15695
Denominator	Total number of water connections in the city	43098
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**12382.84**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	25261
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	204
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**98.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	191517
Denominator	Total number of properties in the city	194716
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**119.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	232000
Denominator	Total number of properties in the city	194716
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-**
Formula:	*Numerator / Denominator*	

		Computable
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**338.46**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	484
Denominator	Total length of road network in the city	143
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**50.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	134390
Denominator	Total number of households and establishments in the city	265239
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**31.07**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	160
Denominator	Total quantum of MSW generated in the city	515
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	Data Unavailable
Denominator	Average MSW generated in the city (tons per month)	4800

Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**19.14**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	19.14
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**36.97**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	36.97
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**142**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	142
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	34
Denominator	Total number of noise samples	38
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	180
Denominator	Total number of samples tested	180

Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

ROURKELA

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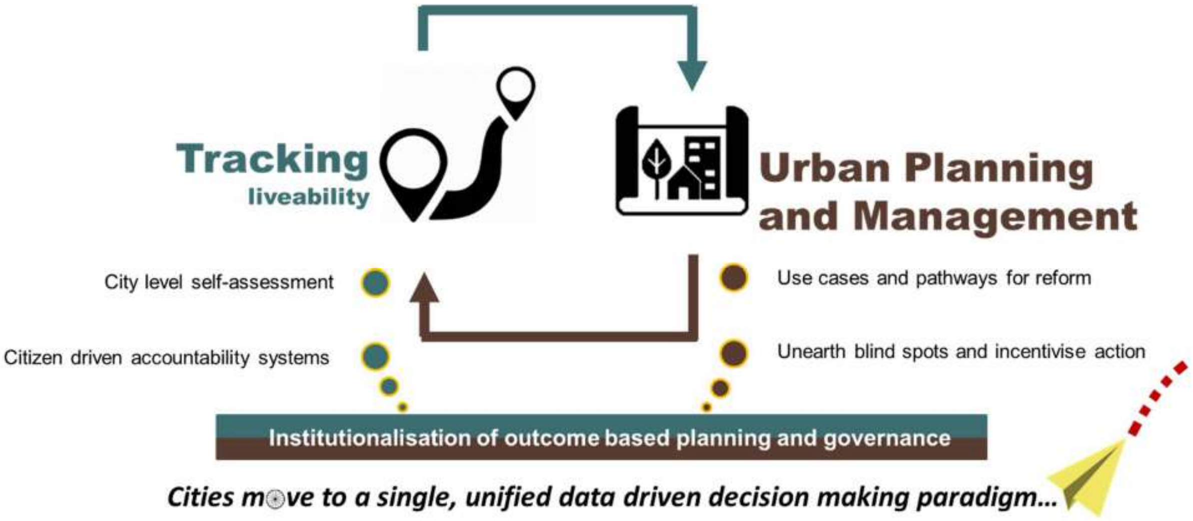
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

ROURKELA

GEOGRAPHICAL PROFILE

State/Union Territory	Odisha	Total Geographical Area (Km²)	53.29	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	320040
Total Number of Households	70810

SOCIAL PROFILE

Education	Total Number of Schools	249
	Total Enrolment (Class 1 to 5)	37707
Health	Total Number of In-patient Beds	1781
	Total Health Workforce	1059
Safety and Security	Total Strength of Police Force	1687
	Total Number of CCTV Cameras	38
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	238733
Total Number of Industries	1183
Total Number of Commercial Enterprises	1687
Total Number of Hotels	70
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	1570619000
Total VAT Collection in FY 2016-17 (INR Lakhs)	5425559000

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	52.6
		Total Number of Water Connection	23895
	Sanitation Facilities	Total number of households with access to individual toilets in the city	57534
		Total number of households in the city with access to community toilets in the city	2800
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/ day)	10200
		Total number of households covered through door-to-door collection of solid waste	61413
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	48
		Daily average quantum of waste water treated by STPs in the city (MLD)	0
	Electricity	Total number of authorized electrical connections in the city	79629
		Total electricity supplied to the city (kWh)	288780000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	787540.7
	Roads and Transport	Total Length of Road Network in the City (Km)	524.47
		Total length of arterial and sub-arterial road network in the city (Km)	78.268
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	30

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart

Pillars of Comprehensive Development	Category	Indicators
		meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections

Pillars of Comprehensive Development	Category	Indicators
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

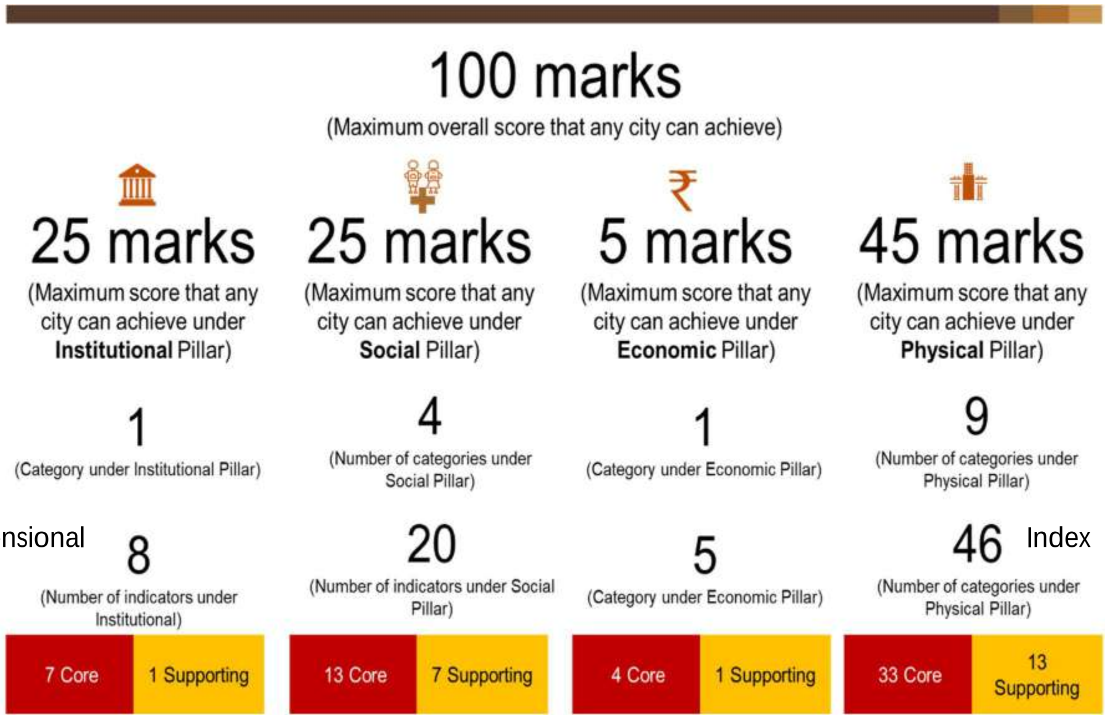
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Rourkela Municipal Corporation Revenue Deptt., Sub-Collector Office
Urban Local Body	For Park and Recreation Related Questions	Rourkela Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Rourkela Municipal Corporation
Urban Local Body	For Heritage sites related data	District Tourist Office, Dept. of Tourism Rourkela Municipal Corporation
Urban Local Body	For Ecological sites related data	Rourkela Municipal Corporation
Urban Local Body	For Housing related data	Rourkela Municipal Corporation Rourkela Development Authority
Urban Local Body	For Building plan related data	Rourkela Municipal Corporation Rourkela Development Authority
Urban Local Body	For Roads related data	Rourkela Municipal Corporation Road & Building Superintendent Engineer
Urban Local Body	For Solid waste management related data	Rourkela Municipal Corporation
Urban Local Body	For IT services related data	Rourkela Municipal Corporation
Urban Local Body	For Vendor committee related data	Rourkela Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Public Health Officer, Odisha State Pollution Control Board
Development Authority	Building Infrastructure	Rourkela Municipal Corporation RDA/Smart City
	Construction planning	Rourkela Municipal Corporation RDA/Smart City
	Green Building	Rourkela Municipal Corporation RDA/Smart City
	Rain water harvesting	Department of Water Resources RDA/Smart City

Designated data owners	Subcategories	Data owners at city level
	Universal Design Principle	Rourkela Municipal Corporation RDA/Smart City
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	WESCO, Rourkela
State Disaster management authority		Odisha State Disaster Management Authority
State Education Department		BEO Office, Rourkela
State Health Department	Health care professionals	IGH, SAIL, Rourkela Steel Plant RGH, Rourkela
	Citizen Services	IGH, SAIL, Rourkela Steel Plant NUHM RGH, Rourkela
	Disease Prevalence	IGH, SAIL, Rourkela Steel Plant NUHM RGH, Rourkela
	Health Infrastructure	IGH, SAIL, Rourkela Steel Plant RGH, Rourkela
State Renewable Energy Development Agency		Odisha Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department, Rourkela
Town and Country Planning Department	Land Use	SAIL, Rourkela Steel PlantRDA/Smart City
Traffic and Police Department		Office of the Superintendent of Police, Rourkela
Transport Authorities	Buses	Road Transport Office
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 06 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping

of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

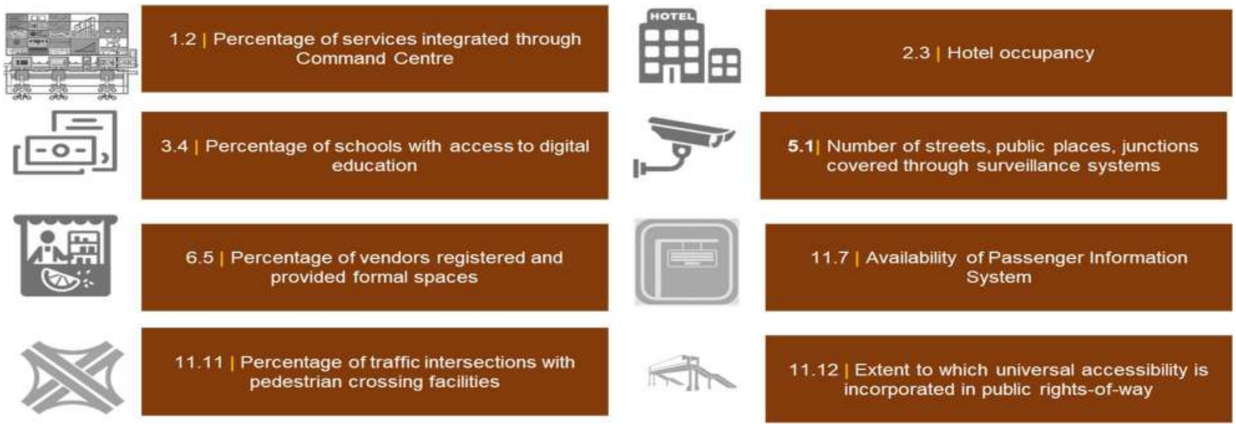
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	1
Disaster Management	0
Urban Local Body	1
Total	6*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:


1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

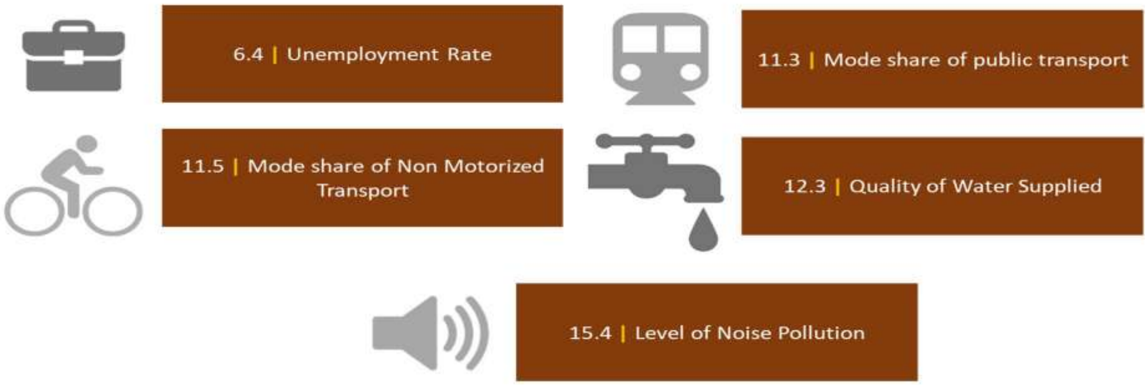
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate

11.3 | Mode share of public transport

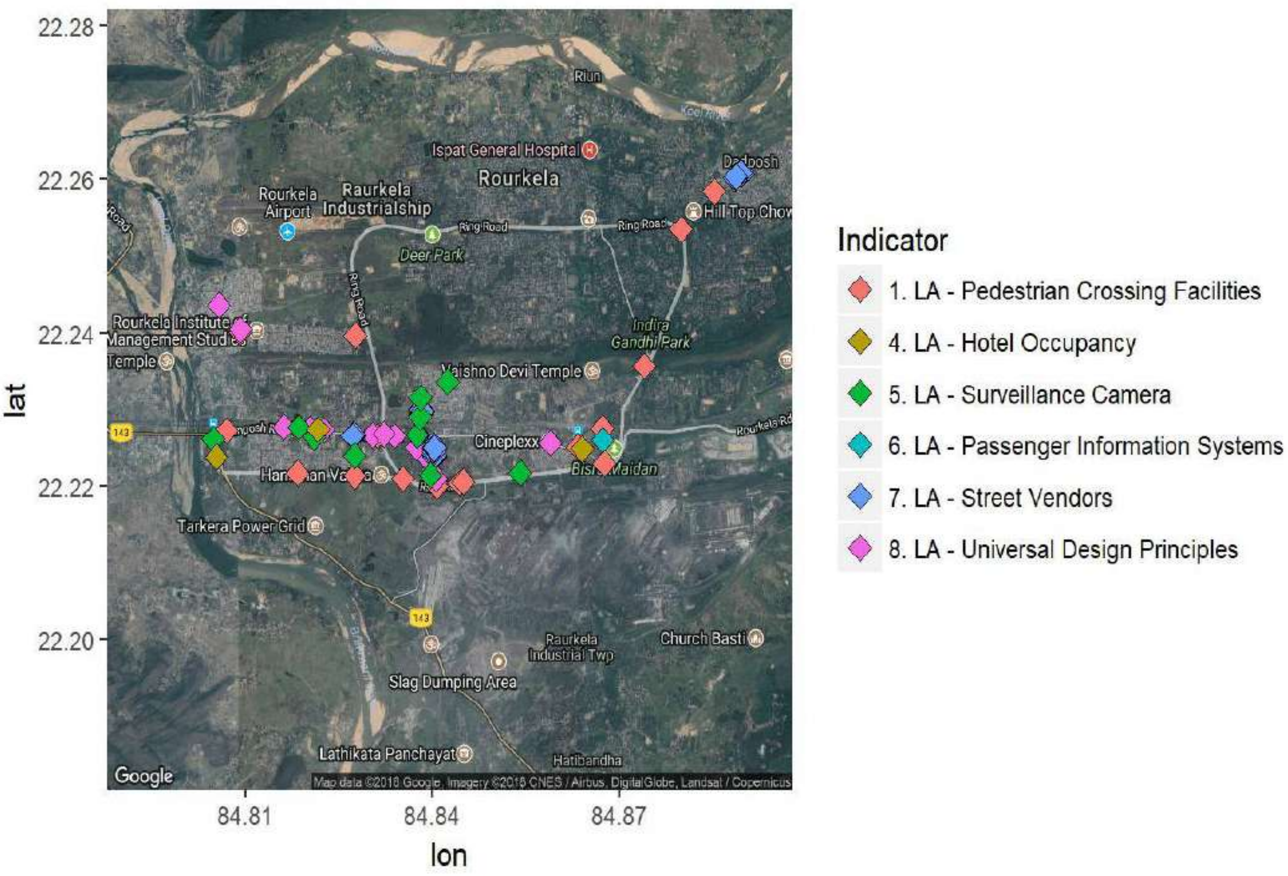
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.28
22.26
22.24
22.22
22.20
lat
84.81
84.84
84.87
lon
Riun
Ispat General Hospital
Rourkela
Dadbosh
Hill Top Chow
Rourkela Airport
Raurkela Industrialship
Ring Road
Deer Park
Ring Road
Indira Gandhi Park
Rourkela Institute of Management Studies
Temple
Vaishno Devi Temple
Cineplexx
Bisra Maidan
Hanuman Vatika
Tarkera Power Grid
Raurkela Industrial Twp
Church Basti
Slag Dumping Area
Lathikata Panchayat
Hatibandha
Google
Map data ©2018 Google, Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**60.78**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**10.8**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0
	1.3c water supply	NA
	1.3d solid waste management	0.00064367
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.32337465
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0

Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**139.7**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	85932438
Denominator	Total demand raised for the year	61511781
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**29.27**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	33384000
Denominator	Total O&M cost for providing water supply services during the year	114056000
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**42.75**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1053152869
Denominator	Total expenditure (revenue and capital accounts) in the same year	2463589217
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	40
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**23.57**
Description	Average Occupancy rate of Hotels	23.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	1326309
Denominator	Total budget of the ULB (capital and revenue)	1570619000
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**575**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	575
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**105.68**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	59749
Denominator	Total population in the age group of 6-14 years	56535
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**105.84**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	28281
Denominator	Total female population in the age group of 6-14 years	26720
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**65.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	37707
Denominator	Total number of teachers available for primary grades (public and private schools)	579
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**18.07**

Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	45
Denominator	Total number of schools	249
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**99.17**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**99.17**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**104.49**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**104.49**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**55.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1781
Denominator	Total population of the city	320040
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**33.09**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	1059
Denominator	Total population of the city	320040
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**33.59**
Description	Total response time for health-related distress calls received in the city	33.59
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.45**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	4648
Denominator	Total population of the city	320040
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	317
Denominator	Total population of the city	320040
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**7.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	38

Denominator	Total length of road network in the city	524.47
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1058.31**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3387
Denominator	Total population of the city	320040
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**17.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	576
Denominator	Total crimes recorded in the same year	3387
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**74.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	237
Denominator	Total population of the city	320040
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**0.38**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	20617000
Denominator	Total VAT/GST collection during preceding year	54049420
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-20.94**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-17603100
Denominator	Total Professional Tax collection during preceding year	84055325
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-17.91**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-53
Denominator	Number of construction permits during preceding year	2.96
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**

Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2189
Denominator	Total labour force in the city	56535
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	2673
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	587
Denominator	Total number of slum and EWS households in the city	698.37
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**15.24**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**11161221120000**
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**2.46**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	787540.7
Denominator	Total population of the city	320040
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**6.42**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2054780.11
Denominator	Total population of the city	320040
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	14140
Denominator	Total area of the city (total area of all land uses)	53290000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**8.18**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	320040
Denominator	Area allocated for residential land use (in hectares)	39110
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**95.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	67320
Denominator	Total number of households in the city	70810
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	79629
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2340**
Description	Total number of sustained electrical interruptions in a year	2340
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2422
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	10
Denominator	Total energy consumption from all sources	288780000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.3**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1225242.583
Denominator	Total quantum of water and waste water handled during the period	1578
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	3575880
Denominator	Total number of street light installations	9081
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.78**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	288780000
Denominator	Total population of the city	320040
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.69**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	59
Denominator	Total area of the city (sq.km)	53.29
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	43
Denominator	Total population of the city	320040
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**5.72**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	30
Denominator	Total length of road network in the city	524.47
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total available on-street parking spaces in the city	4
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**2.86**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	30
Denominator	Total length of road network in the city	1048.94
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	14
Denominator	Total number of junctions/ intersections on major roads in the city	14
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**31.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	49
Denominator	Total number of public right-of-way areas in the city	158
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**31.05**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	21983
Denominator	Total number of households in the city	70810
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**164.35**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	52.6
Denominator	Total population of the city	320040
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	1876
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**62.98**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	33.13
Denominator	Quantum of water put into the distribution system (mld)	52.6

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	23895
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	252
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**377.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	63276
Denominator	Total number of properties in the city	16748

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**693.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	116218
Denominator	Total number of properties in the city	16748
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**7.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	39.73
Denominator	Total length of road network in the city	524.47
Unit	Percentage	

Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**87.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	63100
Denominator	Total number of households and establishments in the city	72497
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**85**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	10200
Denominator	Total quantum of MSW generated in the city	12000
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.39**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1200
Denominator	Average MSW generated in the city (tons per month)	306000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**13.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	13.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**97.3**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	97.3
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	50
Denominator	Total number of noise samples	96
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	60
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SAGAR

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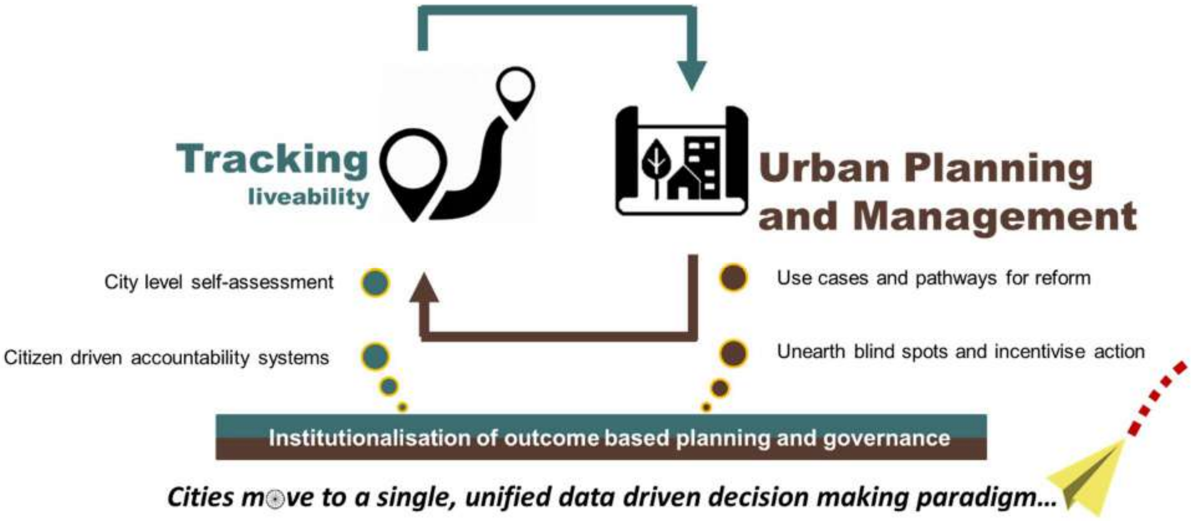
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

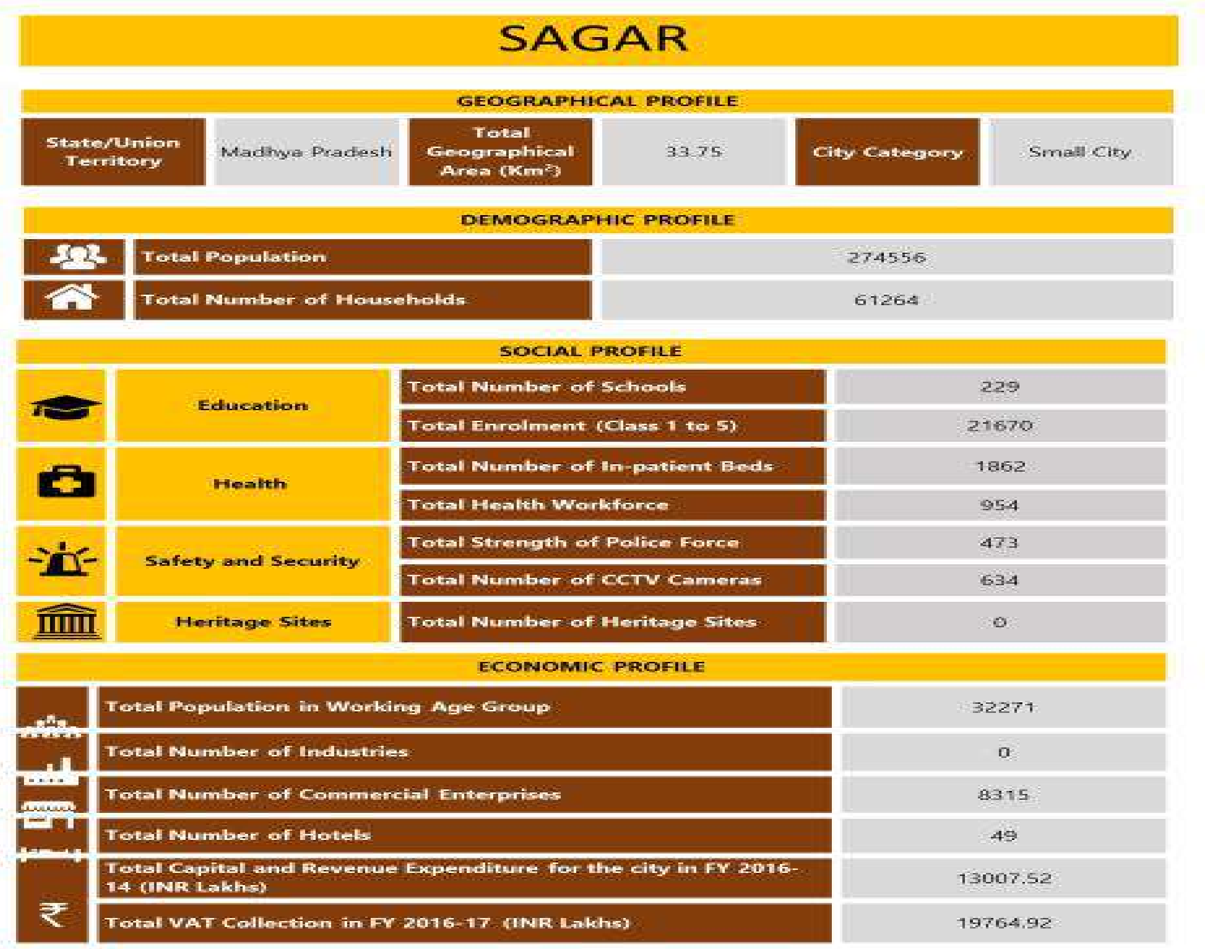
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	33.75	City Category	Small City

DEMOGRAPHIC PROFILE

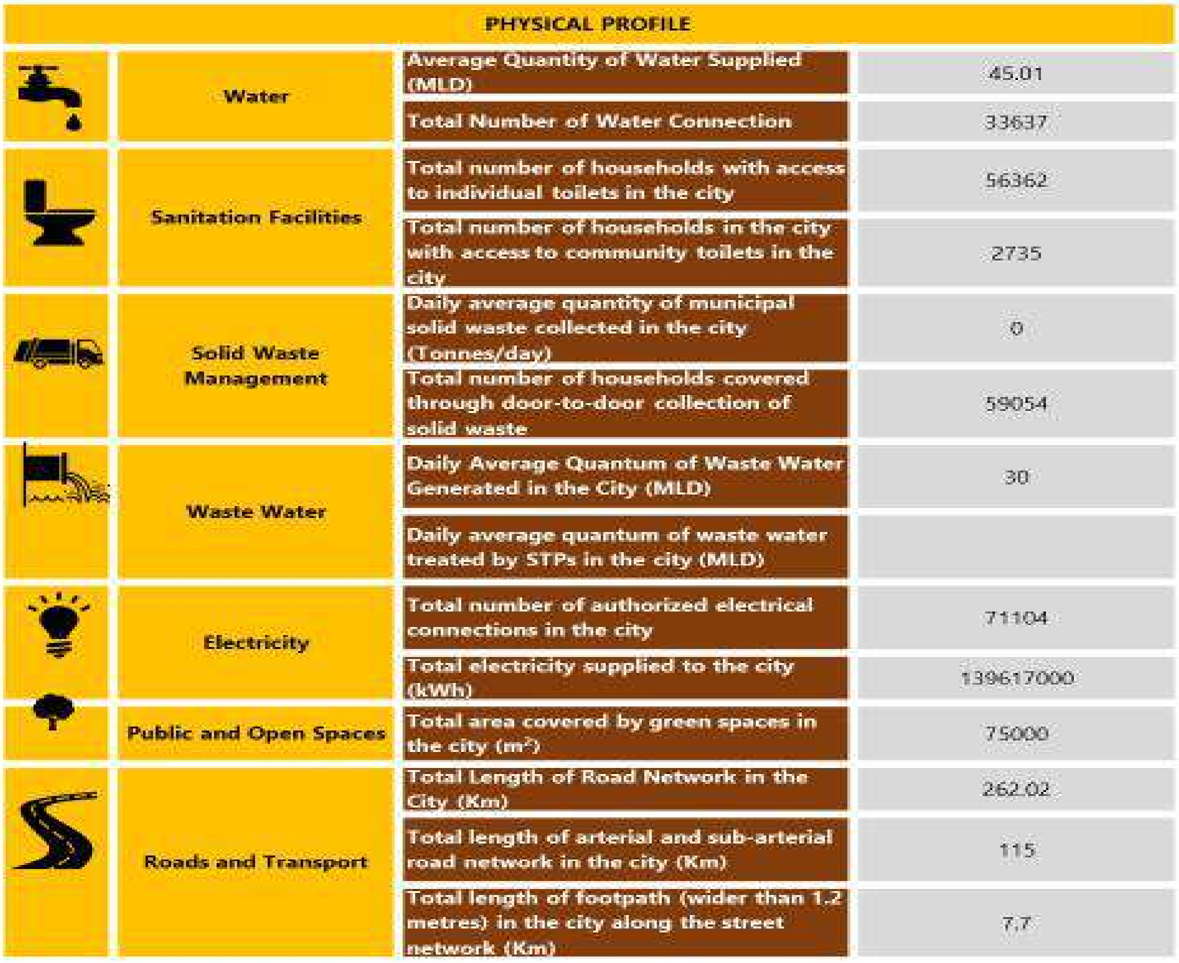
Total Population	274556
Total Number of Households	61264

SOCIAL PROFILE

Education	Total Number of Schools	229
	Total Enrolment (Class 1 to 5)	21670
Health	Total Number of In-patient Beds	1862
	Total Health Workforce	954
Safety and Security	Total Strength of Police Force	473
	Total Number of CCTV Cameras	634
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

Total Population in Working Age Group	32271
Total Number of Industries	0
Total Number of Commercial Enterprises	8315
Total Number of Hotels	49
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	13007.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	19764.92



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	45.01
		Total Number of Water Connection	33637
	Sanitation Facilities	Total number of households with access to individual toilets in the city	56362
		Total number of households in the city with access to community toilets in the city	2735
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0
		Total number of households covered through door-to-door collection of solid waste	59054
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	30
		Daily average quantum of waste water treated by STPs in the city (MLD)	
	Electricity	Total number of authorized electrical connections in the city	71104
		Total electricity supplied to the city (kWh)	139617000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	75000
	Roads and Transport	Total Length of Road Network in the City (Km)	262.02
		Total length of arterial and sub-arterial road network in the city (Km)	115
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

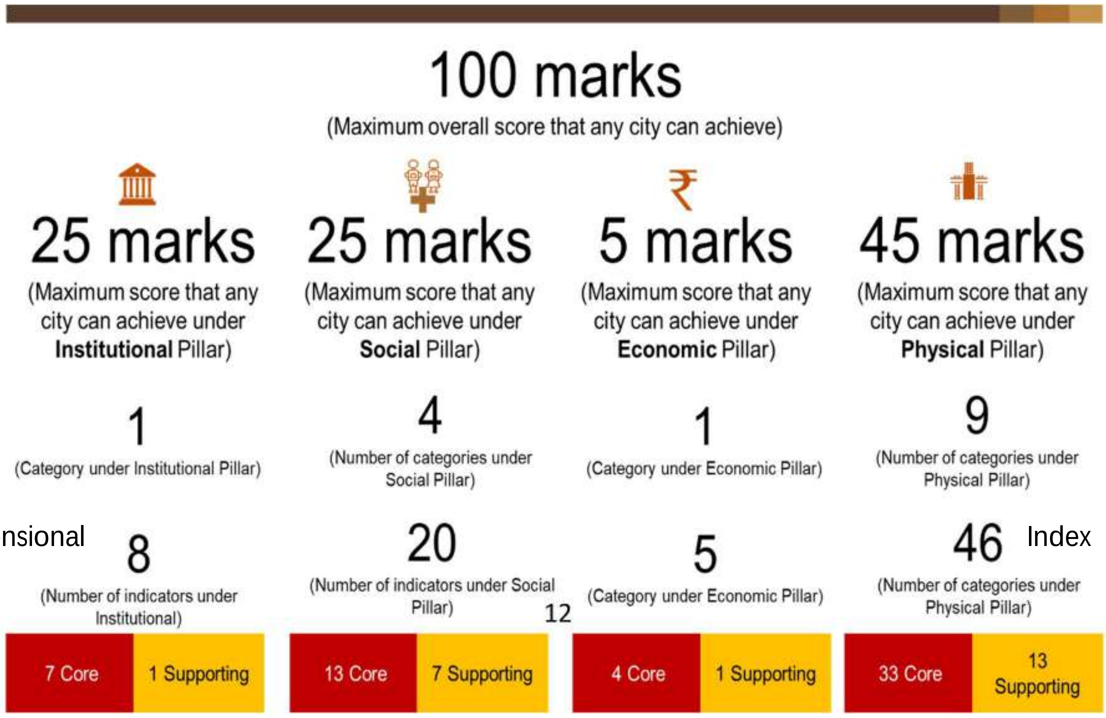
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	**Population range**
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index

Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Sagar Municipal Corporation
	Park and Recreation	Sagar Municipal Corporation
	Water Supply and Drainage	Water Supply department, Sagar Municipal Corporation
	Heritage sites	Sagar Municipal Corporation
	Ecological sites	Sagar Municipal Corporation
	Housing	Housing section, Sagar Municipal Corporation
	Building plan	Sagar Municipal Corporation
	Roads	Lokakram Sakha, Sagar Municipal Corporation
	Solid waste management	Sagar Municipal Corporation
	IT services	IT Section, Sagar Municipal Corporation
	Vendor committee	Bazar Sakha, Sagar Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board

Designated data owners	Sub categories	Data owners at city level
Development Authority	Building Infrastructure	MP Housing and Infrastructure development board
	Construction planning	MP Housing and Infrastructure development board
	Green Building	MP Housing and Infrastructure development board
	Rain water harvesting	MP Housing and Infrastructure development board
	Universal Design Principle	MP Housing and Infrastructure development board
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Sagar
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 92 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	3
Traffic and Police Department	5
Development Authority	1
Pollution Control Board	3
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	72
Total	92

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

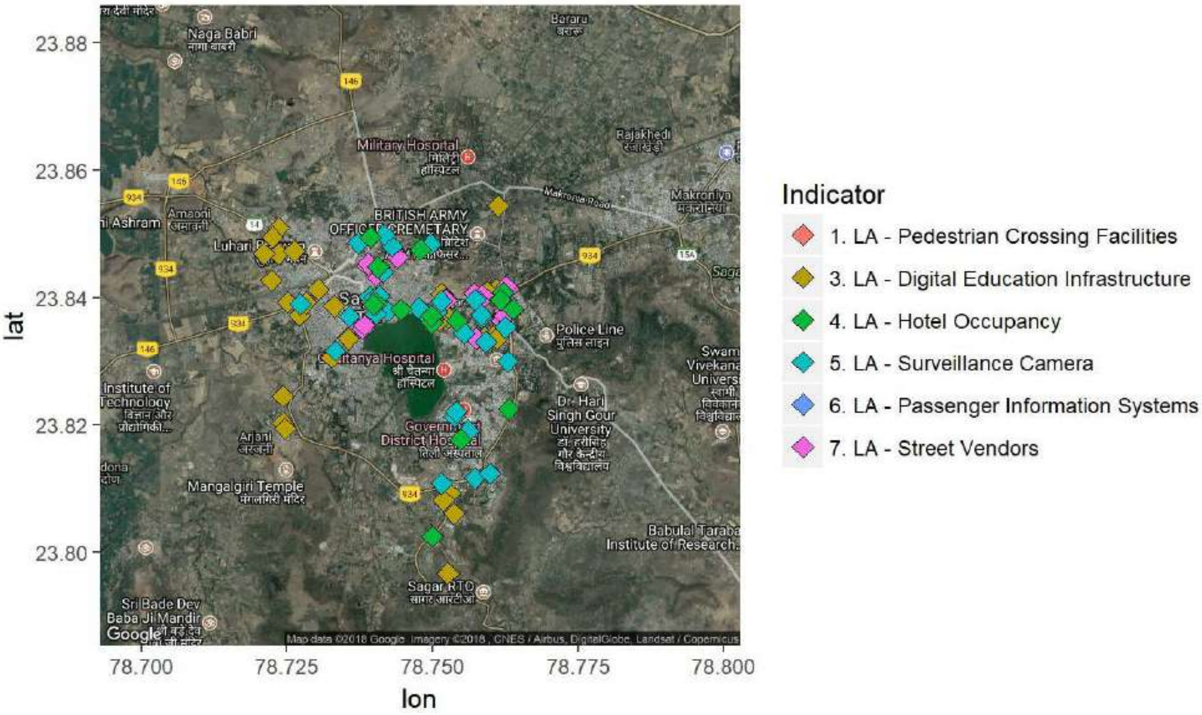
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.88
23.86
23.84
23.82
23.80
lat
78.700
78.725
78.750
78.775
78.800
lon
Naga Babri
Military Hospital
BRITISH ARMY OFFICERS CREMETARY
Rajakhedi
Makroniya
Amaoni
Luhari
Police Line
Chaitanya Hospital
Institute of Technology
Arjani
Government District Hospital
Dr. Hari Singh Gour University
Mangalgiri Temple
Babulal Tarabai Institute of Research
Sagar RTO
Sri Bade Dev Baba Ji Mandir
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**75.15**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.23**
Description		
Sub Indicators	1.3a Building plan	0.001060747
	1.3b Birth/Death Certificate	0.005952338
	1.3c water supply	0.000201727
	1.3d solid waste management	NA
	1.3e property tax	0.004841443
	1.3f professional tax (RC)	0.002696078
	1.3g professional tax (EC)	0.001141171
	1.3h complaints/ grievance redressal	0.001571628
	1.3i information	7.28449E-05
	1.3j electricity	0.003157347
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**164.61**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	662.55
Denominator	Total demand raised for the year	402.5
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**89.83**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	443.25
Denominator	Total O&M cost for providing water supply services during the year	493.41
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**149.39**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-49160.145
Denominator	Total expenditure (revenue and capital accounts) in the same year	-32907.125
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	48
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	2.10062
Denominator	Total budget of the ULB (capital and revenue)	13007.52
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**109**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	109
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**64.99**
Formula:	*Numerator / Denominator*	

Numerator	Total enrolment in primary and secondary schools (public and private)	34039
Denominator	Total population in the age group of 6-14 years	52376
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**65.28**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	16230
Denominator	Total female population in the age group of 6-14 years	24863
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**15.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	21670
Denominator	Total number of teachers available for primary grades (public and private schools)	1417
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**5.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	12
Denominator	Total number of schools	229
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**68.1**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	68.09954206

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**74.05**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	16731134
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**67.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1862
Denominator	Total population of the city	274556
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**34.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	954
Denominator	Total population of the city	274556
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**2**
Description	Total response time for health-related distress calls received in the city	2
Unit	Minutes and seconds	
Benchmark	8 minutes	

Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1711
Denominator	Total population of the city	274556
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	143
Denominator	Total population of the city	274556
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**241.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	634
Denominator	Total length of road network in the city	262.02
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**761.59**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2091
Denominator	Total population of the city	274556
Unit	Crimes per lakh	

Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**21.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	459
Denominator	Total crimes recorded in the same year	2091
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**305.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	840
Denominator	Total population of the city	274556
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**1.11**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	217.79
Denominator	Total VAT/GST collection during preceding year	195.4713
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-7.97**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year –	-37.5

	Total collection during preceding year)	
Denominator	Total Professional Tax collection during preceding year	470.76
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-5.02**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-32
Denominator	Number of construction permits during preceding year	6.38
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	33735
Denominator	Total labour force in the city	52376
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	4592
Denominator	Total number of vendors in the city	2296
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**26.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	7924
Denominator	Total number of slum and EWS households in the city	303.12
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**12.39** 62675172480
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	75000
Denominator	Total population of the city	274556
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**0.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	244458.26
Denominator	Total population of the city	274556

Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	33750000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	274556
Denominator	Area allocated for residential land use (in hectares)	4090000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**96.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	59037
Denominator	Total number of households in the city	61264
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	4
Denominator	Total number of electricity connections in the city	71104
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**135**
Description	Total number of sustained electrical interruptions in a year	135
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	0
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	145
Denominator	Total energy consumption from all sources	139617000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on water supply and sewerage services	1238854.833
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2223370
Denominator	Total number of street light installations	7523
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	139617000
Denominator	Total population of the city	274556
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	NA
Denominator	Total area of the city (sq.km)	33.75
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	NA
Denominator	Total population of the city	274556
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	40
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	262.02
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Description	Mode share of non-motorised transport	0.5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	1
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.47**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	7.7
Denominator	Total length of road network in the city	524.04
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	8
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	

Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	135
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**54.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	33088
Denominator	Total number of households in the city	61264
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**163.94**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	45.01
Denominator	Total population of the city	274556
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	627
Denominator	Total number of samples tested for water quality	627
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**20.02**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	9.01
Denominator	Quantum of water put into the distribution system (mld)	45.01
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	33637
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**22.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	84
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	366
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**137.63**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	68227
Denominator	Total number of properties in the city	49572
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**113.7**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with connection to waste water management systems	56362
Denominator	Total number of properties in the city	49572
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**30.53**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	80
Denominator	Total length of road network in the city	262.02
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**96.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	67369
Denominator	Total number of households and establishments in the city	69579
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private	0

	operator	
Denominator	Total quantum of MSW generated in the city	84.99
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	0
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**3.58**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	3.582
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**15.68**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	15.684
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**82.59**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	82.588
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1869
Denominator	Total number of noise samples	1869

Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	63
Denominator	Total number of samples tested	63
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SAHARANPUR

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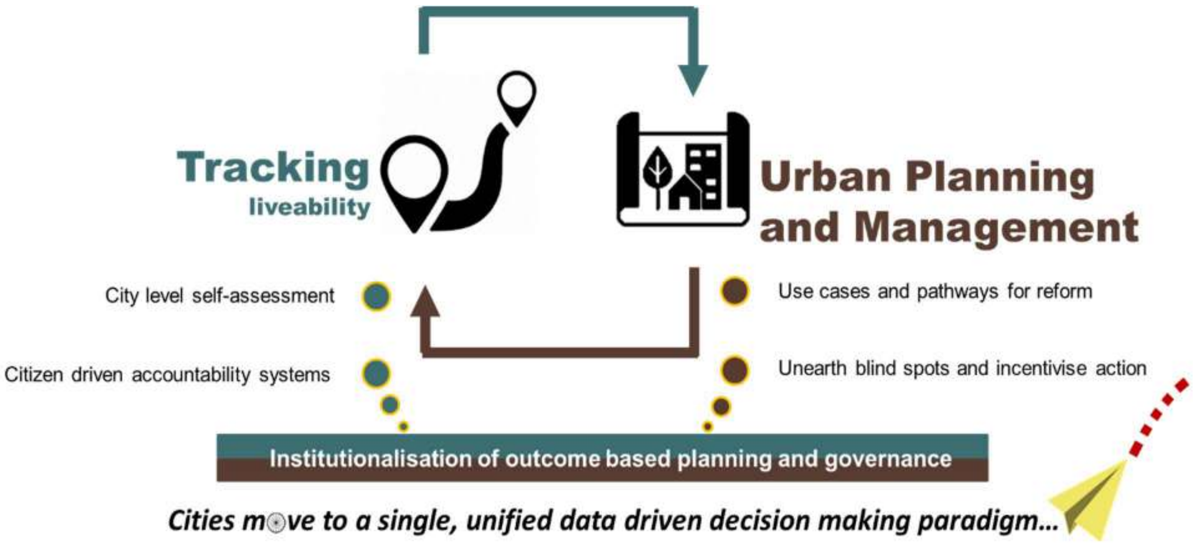
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

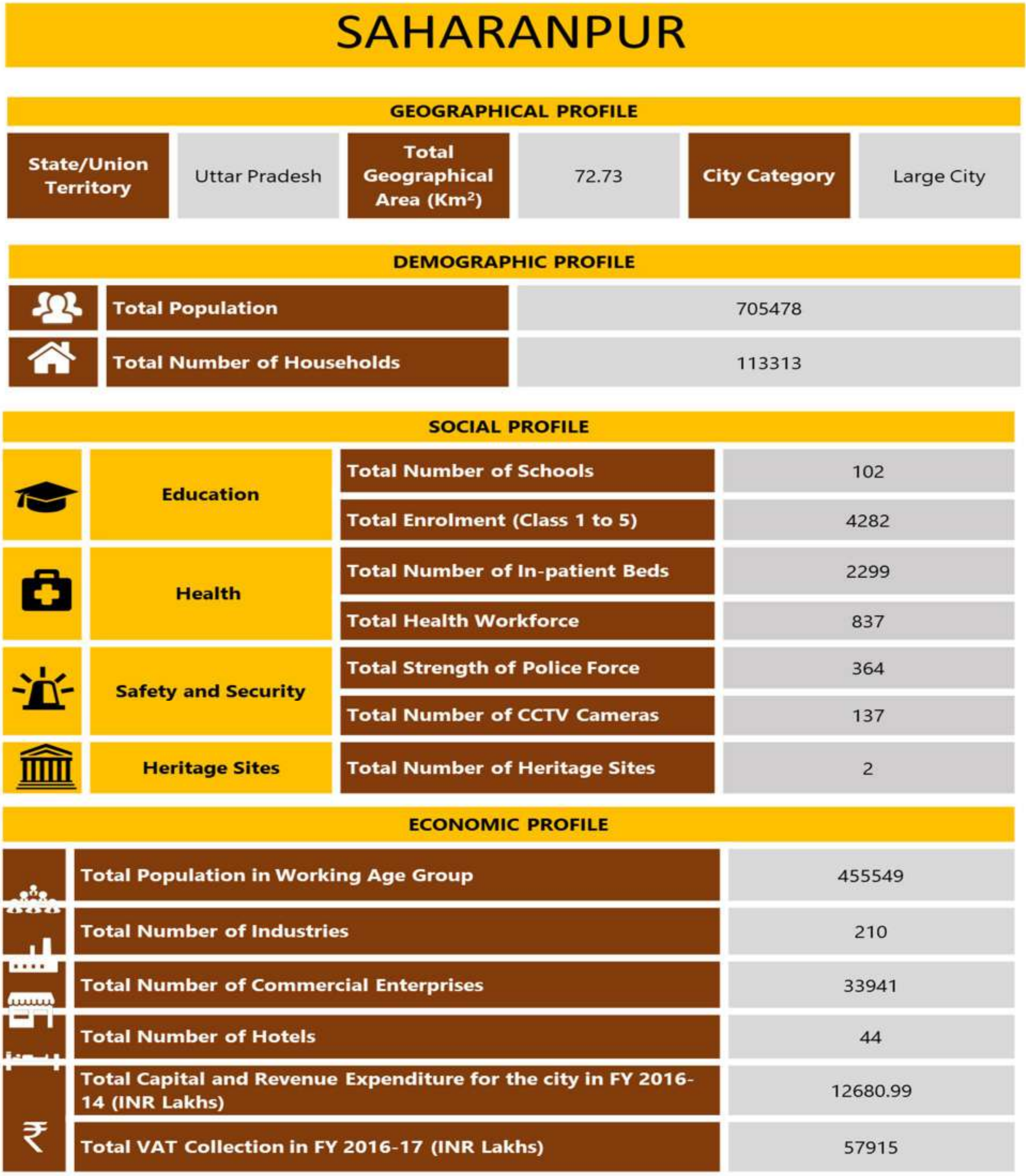
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SAHARANPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	72.73	**City Category**	Large City

DEMOGRAPHIC PROFILE

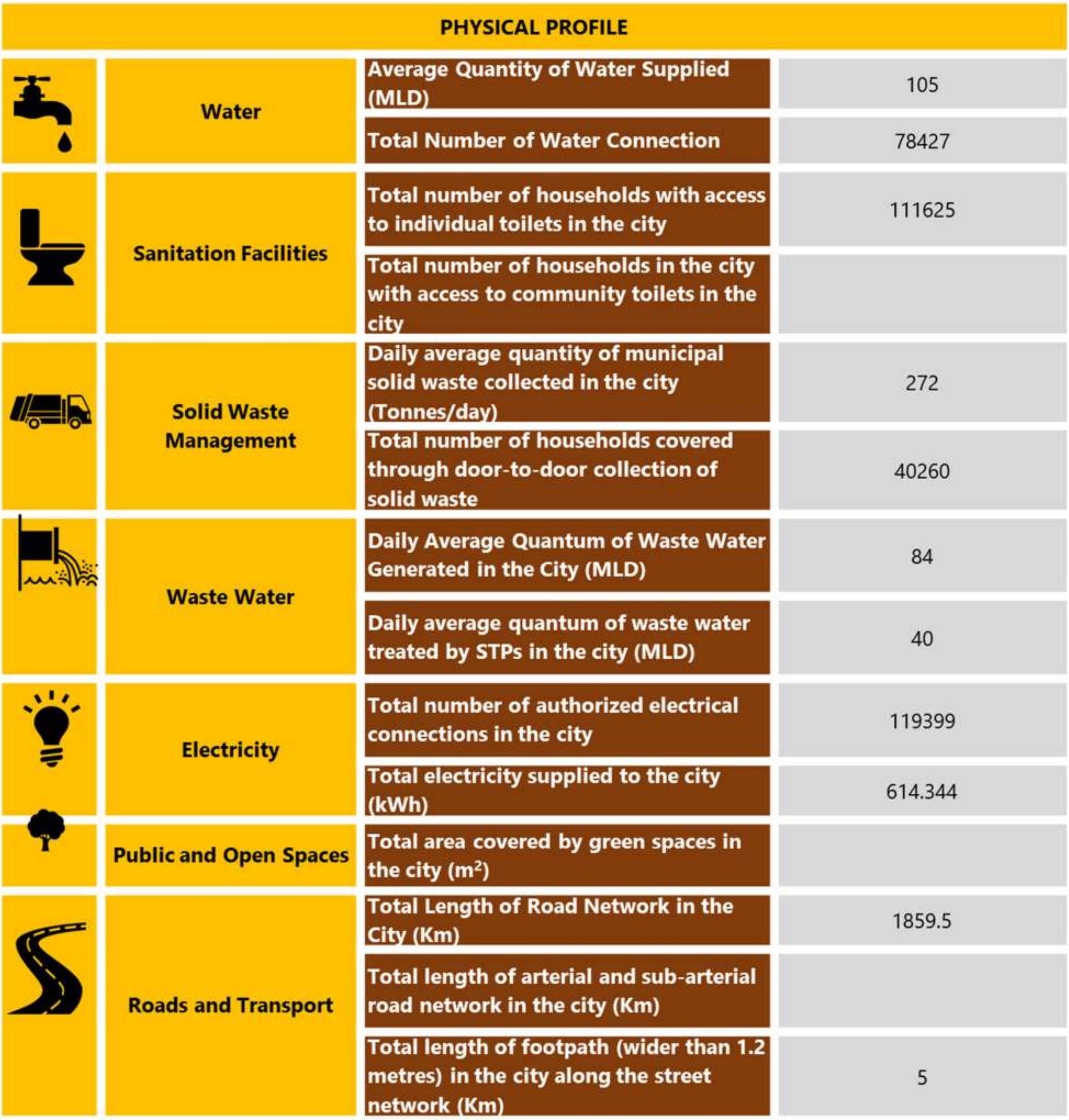
Total Population	705478
Total Number of Households	113313

SOCIAL PROFILE

Education	**Total Number of Schools**	102
	Total Enrolment (Class 1 to 5)	4282
Health	**Total Number of In-patient Beds**	2299
	Total Health Workforce	837
Safety and Security	**Total Strength of Police Force**	364
	Total Number of CCTV Cameras	137
Heritage Sites	**Total Number of Heritage Sites**	2

ECONOMIC PROFILE

Total Population in Working Age Group	455549
Total Number of Industries	210
Total Number of Commercial Enterprises	33941
Total Number of Hotels	44
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	12680.99
Total VAT Collection in FY 2016-17 (INR Lakhs)	57915



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	105
	Total Number of Water Connection	78427
Sanitation Facilities	Total number of households with access to individual toilets in the city	111625
	Total number of households in the city with access to community toilets in the city	
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	272
	Total number of households covered through door-to-door collection of solid waste	40260
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	84
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	Total number of authorized electrical connections in the city	119399
	Total electricity supplied to the city (kWh)	614.344
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
Roads and Transport	Total Length of Road Network in the City (Km)	1859.5
	Total length of arterial and sub-arterial road network in the city (Km)	
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage

Pillars of Comprehensive Development	Category	Indicators
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

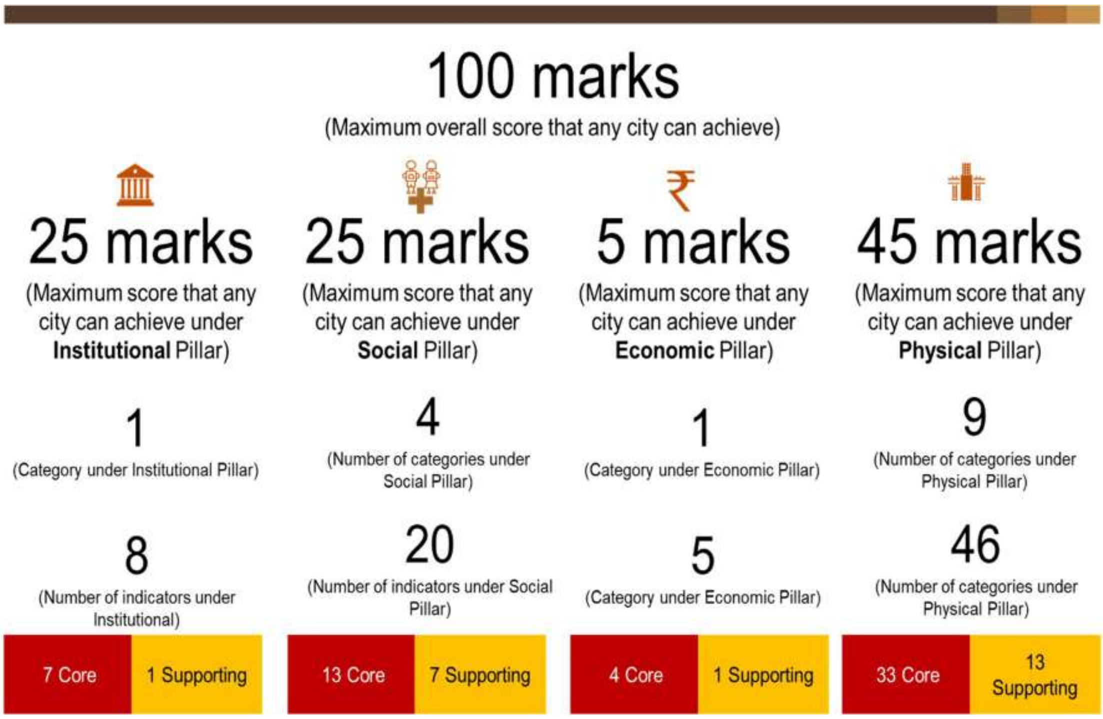
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\text{indicator value for the city} - \text{indicator value for the worst performing city}}{\text{benchmark} - \text{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar nigam Shaharanpur
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Shaharanpur
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar nigam Shaharanpur
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Shaharanpur
Urban Local Body	For Housing related data	Development Authority / Nirmaan Vibhag Nagar Nigam Shaharanpur
Urban Local Body	For Building plan related data	Development Authority Shaharanpur
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Shaharanpur
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Shaharanpur
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Shaharanpur
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Shaharanpur
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Shaharanpur
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Shaharanpur
Development Authority	Building Infrastructure	Moradabad development Authority Shaharanpur
	Construction planning	Moradabad development Authority Shaharanpur

Designated data owners	Subcategories	Data owners at city level
	Green Building	Moradabad development Authority Shaharanpur
	Rain water harvesting	Moradabad development Authority Shaharanpur
	Universal Design Principle	Moradabad development Authority Shaharanpur
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Shaharanpur
State Disaster management authority		Shaharanpur Disaster Management in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Shaharanpur (DIOS)
State Health Department	Health care professionals	UP State Health Department Shaharanpur (CMO)
	Citizen Services	UP State Health Department Shaharanpur (CMO)
	Disease Prevalence	UP State Health Department Shaharanpur (CMO)
	Health Infrastructure	UP State Health Department Shaharanpur (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Shaharanpur Zone
Town and Country Planning Department	Land Use	Town and Country Planning Department Shaharanpur
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Shaharanpur
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Shaharanpur
	Registered Vehicles	Regional Transport Office Shaharanpur
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

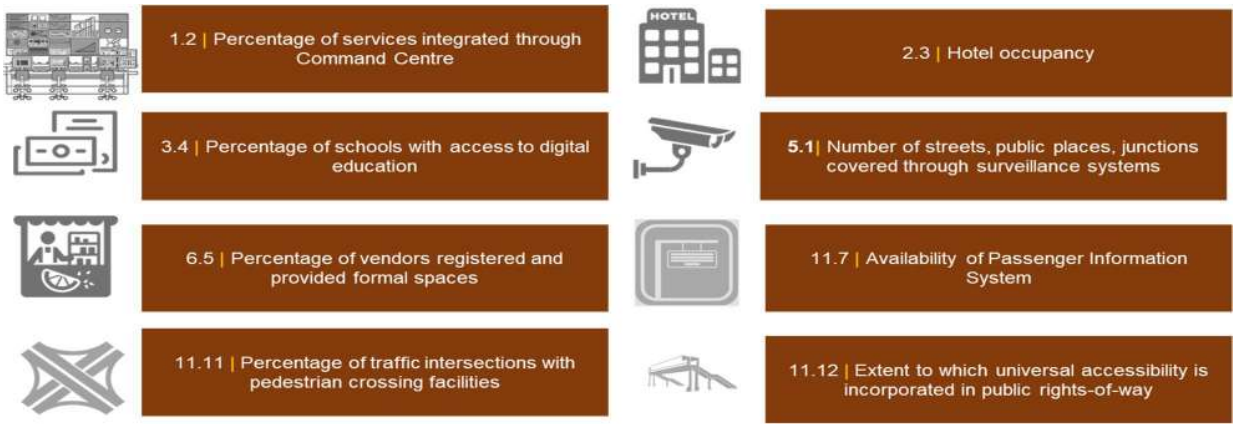
Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**12***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

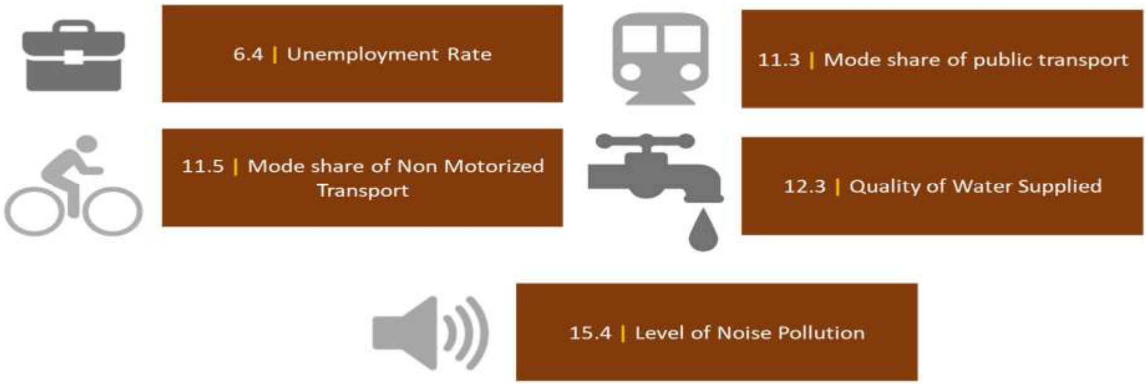
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

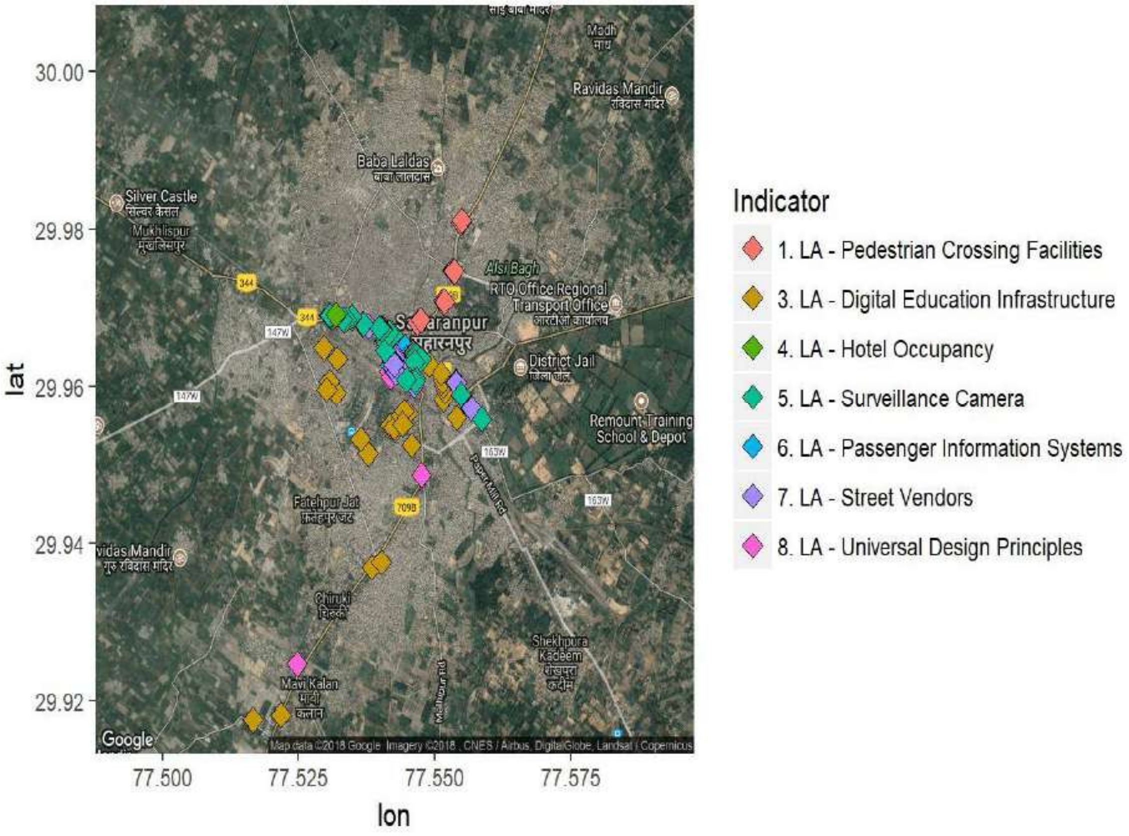
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**57.79**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	0.666666667
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.77**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0.061290296
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.64**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	3
	1.4c street lights	8
	1.4d sewerage	7.5
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**98**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1114.88
Denominator	Total demand raised for the year	1137.63
Unit	Percentage	

Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	0
Denominator	Total O&M cost for providing water supply services during the year	442.6
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**27.39**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	8047.79
Denominator	Total expenditure (revenue and capital accounts) in the same year	29386.27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	70
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	30.48
Denominator	Total budget of the ULB (capital and revenue)	12680.99
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**1**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	1
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**3.06**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	4603

Denominator	Total population in the age group of 6-14 years	150469
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**3.41**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	2378
Denominator	Total female population in the age group of 6-14 years	69682
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	4282
Denominator	Total number of teachers available for primary grades (public and private schools)	0
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	102
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**92.91**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	92.90805809
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**61.73**

Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	8352
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**32.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2299
Denominator	Total population of the city	705478
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**11.86**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	837
Denominator	Total population of the city	705478
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	11095
Denominator	Total population of the city	705478
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	162
Denominator	Total population of the city	705478

Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**7.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	137
Denominator	Total length of road network in the city	1859.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**192.49**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1358
Denominator	Total population of the city	705478
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**14.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	194
Denominator	Total crimes recorded in the same year	1358
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**5.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	38
Denominator	Total population of the city	705478
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-10.92**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-7101
Denominator	Total VAT/GST collection during preceding year	650.16
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	0
Denominator	Number of construction permits during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	44645
Denominator	Total labour force in the city	150469
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in	

	this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**24.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2000
Denominator	Total number of vendors in the city	8124
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**8.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	2082
Denominator	Total number of slum and EWS households in the city	244.63
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	705478
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	705478
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**28.16**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	20480000
Denominator	Total area of the city (total area of all land uses)	72730000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	705478
Denominator	Area allocated for residential land use (in hectares)	34349100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**82.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	93395
Denominator	Total number of households in the city	113313
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	23
Denominator	Total number of electricity connections in the city	119399
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**368**
Description	Total number of sustained electrical interruptions in a year	368
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	4104
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	135.8
Denominator	Total energy consumption from all sources	614.344
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3823.478333
Denominator	Total quantum of water and waste water handled during the period	4350
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be	

	treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	1620
Denominator	Total number of street light installations	23514
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	614.344
Denominator	Total population of the city	705478
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	795
Denominator	Total area of the city (sq.km)	72.73
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.95**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	673
Denominator	Total population of the city	705478

Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1859.5
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.67**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	7
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	5
Denominator	Total length of road network in the city	3719
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	89
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**37.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	42807
Denominator	Total number of households in the city	113313
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**148.84**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	105
Denominator	Total population of the city	705478
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	2681
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**38.1**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	40
Denominator	Quantum of water put into the distribution system (mld)	105
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of water connections in the city	78427
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**22.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	22
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	96
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**98.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	111625
Denominator	Total number of properties in the city	113314
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**17.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	20365
Denominator	Total number of properties in the city	113314
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	84
Denominator	Total waste water generated in the city per day	84
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	84
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0
Denominator	Total length of road network in the city	1859.5
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**30.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	44286
Denominator	Total number of households and establishments in the city	147254
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	272
Denominator	Total quantum of MSW generated in the city	272
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.72**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	59.15
Denominator	Average MSW generated in the city (tons per month)	8160
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**15.04**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	15.04
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.63**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.63
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**173.22**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	173.22
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	5
Denominator	Total number of noise samples	40
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	144
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

Ministry of Urban Development
Government of India

SALEM

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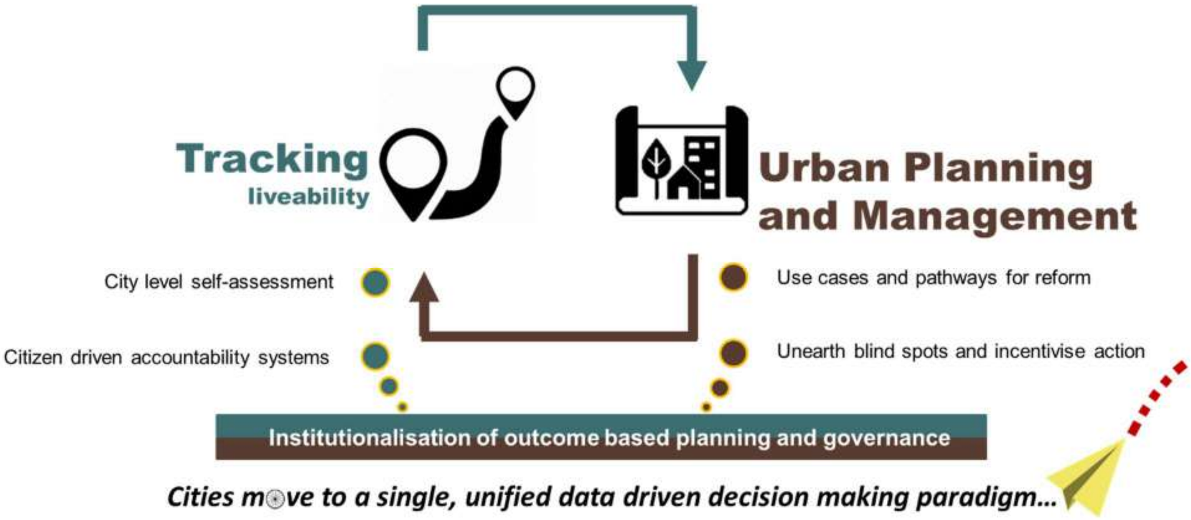
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

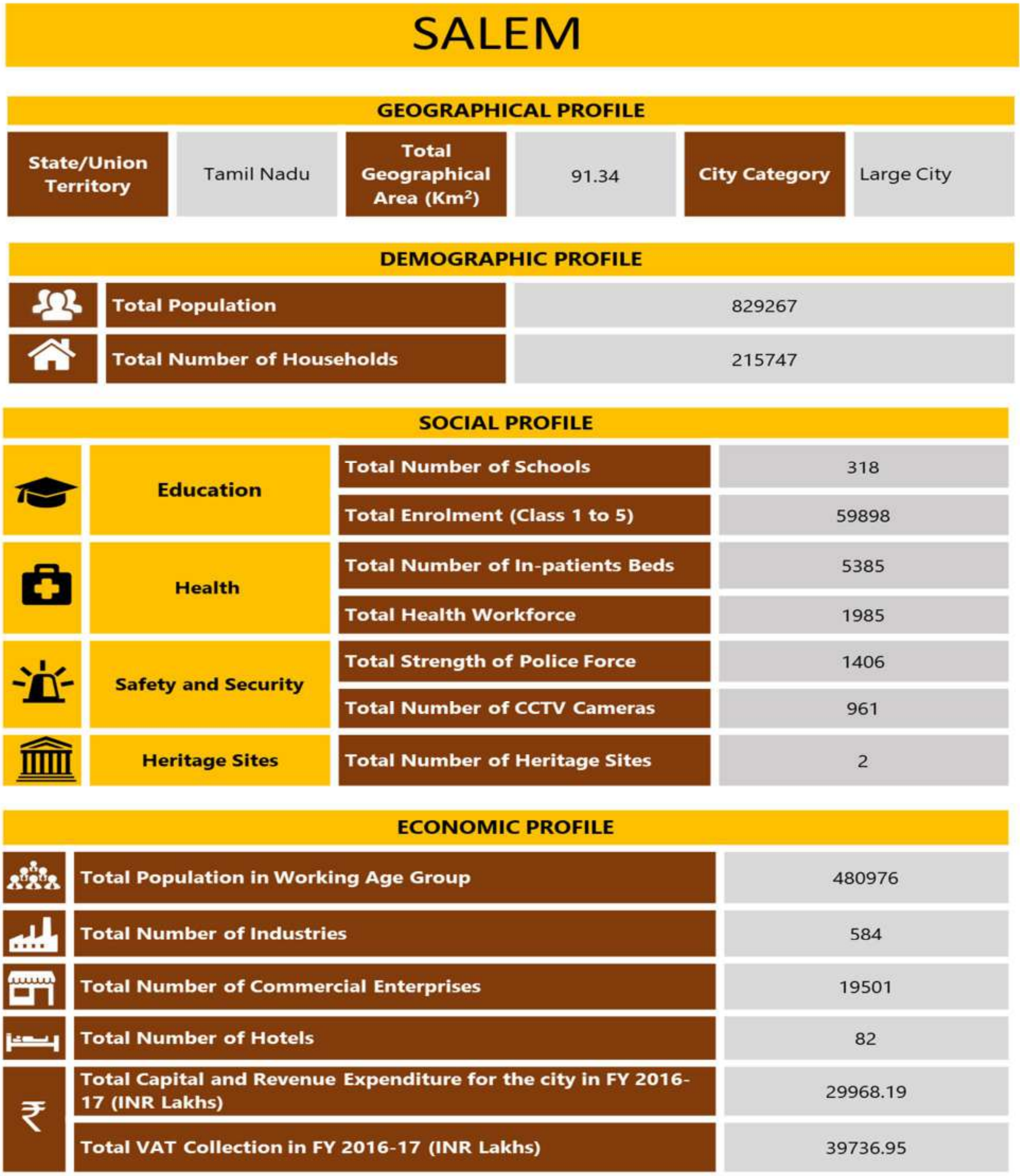
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SALEM

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	91.34	**City Category**	Large City

DEMOGRAPHIC PROFILE

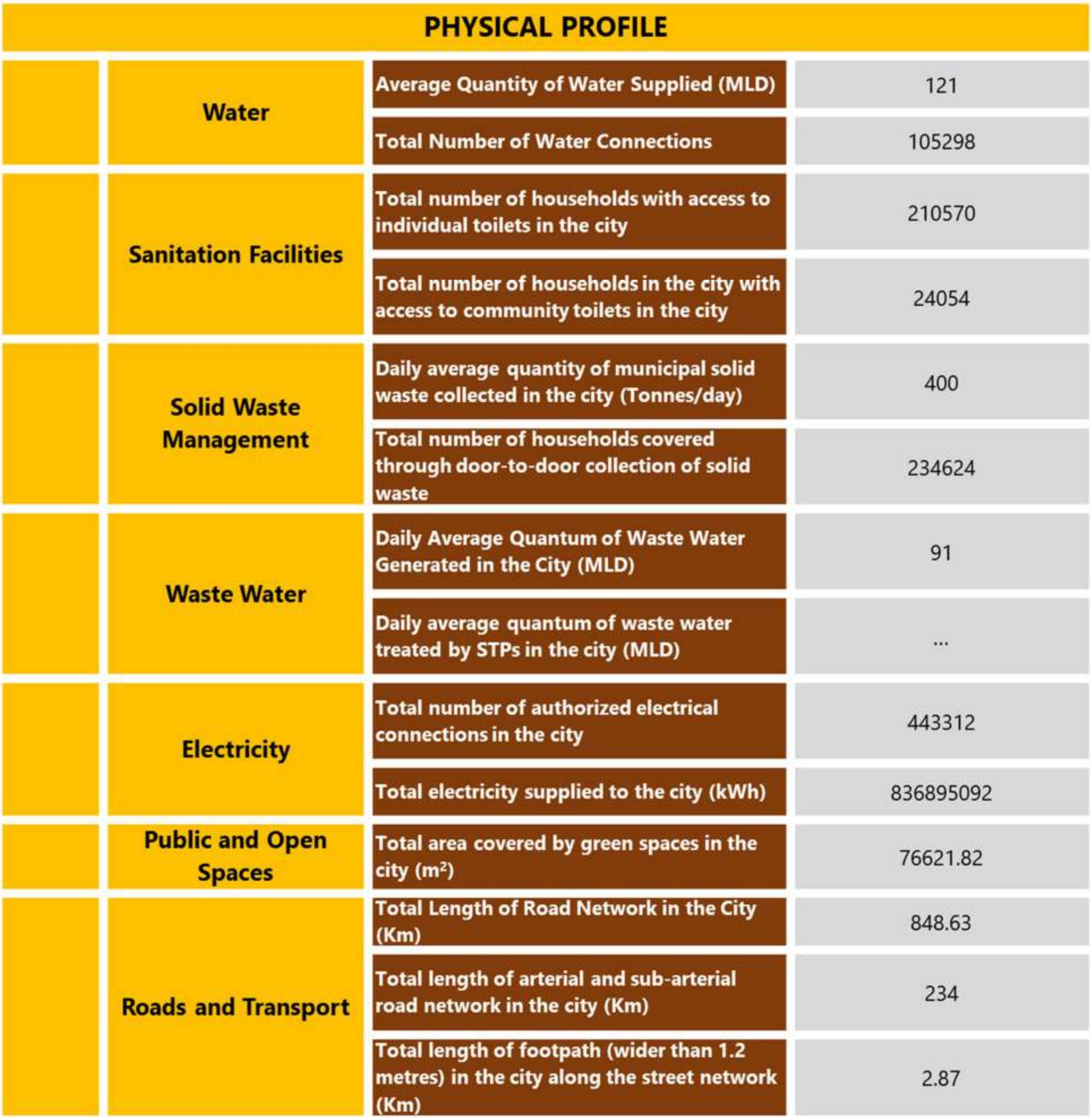
Total Population	829267
Total Number of Households	215747

SOCIAL PROFILE

Education	**Total Number of Schools**	318
	Total Enrolment (Class 1 to 5)	59898
Health	**Total Number of In-patients Beds**	5385
	Total Health Workforce	1985
Safety and Security	**Total Strength of Police Force**	1406
	Total Number of CCTV Cameras	961
Heritage Sites	**Total Number of Heritage Sites**	2

ECONOMIC PROFILE

Total Population in Working Age Group	480976
Total Number of Industries	584
Total Number of Commercial Enterprises	19501
Total Number of Hotels	82
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29968.19
Total VAT Collection in FY 2016-17 (INR Lakhs)	39736.95



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	121
		Total Number of Water Connections	105298
	Sanitation Facilities	Total number of households with access to individual toilets in the city	210570
		Total number of households in the city with access to community toilets in the city	24054
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	400
		Total number of households covered through door-to-door collection of solid waste	234624
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	91
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	Total number of authorized electrical connections in the city	443312
		Total electricity supplied to the city (kWh)	836895092
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	76621.82
	Roads and Transport	Total Length of Road Network in the City (Km)	848.63
		Total length of arterial and sub-arterial road network in the city (Km)	234
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.87

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

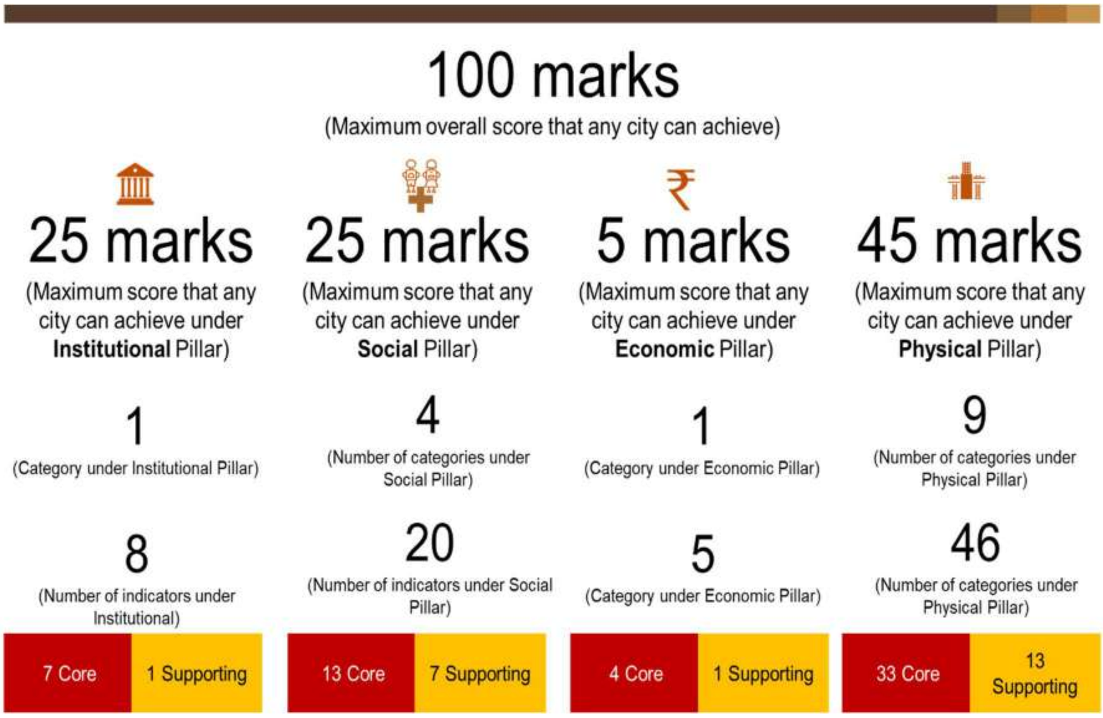
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Urban Local Body accounts department
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body Town planning
Urban Local Body	For Water Supply and Drainage related questions	Urban Local Body Engineering section
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related data	Urban Local Body
Urban Local Body	For Housing related data	Slum Control Board and Health section
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Urban Local Body Engineering section
Urban Local Body	For Solid waste management related data	Public Health section
Urban Local Body	For IT services related data	IT Section
Urban Local Body	For Vendor committee related data	Public Health section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	No
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	Pollution control Board

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Development Authority
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM/Electricity Board
State Disaster management authority		State Disaster management authority
State Education Department		State Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		DISCOM/Electricity Board
State Sales / Commercial Taxes Department		State Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	Transport Authorities
	Sub urban rail transport	Nil
	Mono Rail Authority	Nil
	Tramways	Nil
	Marine Transport Authority	Nil

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 117 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	5
DISCOM/Electricity Department	12
Traffic and Police Department	8
Development Authority	1
Pollution Control Board	7
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	12
Transport Authority	3
Disaster Management	1
Urban Local Body	64
Total	117*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

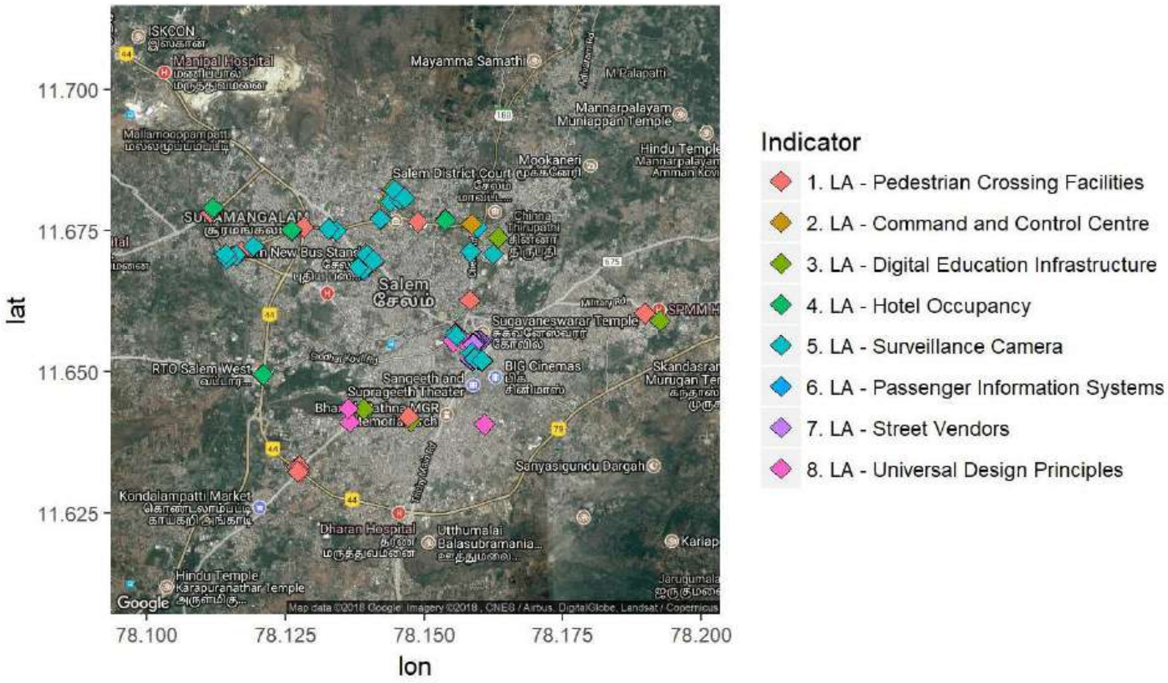
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
11.700
11.675
11.650
11.625
78.100
78.125
78.150
78.175
78.200
lon
ISKCON
Manipal Hospital
Mayamma Samathi
M Palapatti
Mannarpalayam Muniappan Temple
Mallamooppampatti
Salem District Court
Mookaneri
Hindu Temple Mannarpalayam Amman Kovil
SURAMANGALAM
New Bus Stand
Salem
Chinna Thirupathi
Sugavaneswarar Temple
SPMM H
RTO Salem West
Sangeeth and Suprageeth Theater
BIG Cinemas
Skandasram Murugan Temple
Sanyasigundu Dargah
Kondalampatti Market
Dharan Hospital
Utthumalai Balasubramania
Kariap
Hindu Temple Karapuranathar Temple
Jarugumalai
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**77.66**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.25
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	

Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.29**
Description		
Sub Indicators	1.3a Building plan	0.000371185
	1.3b Birth/Death Certificate	0.000226706
	1.3c water supply	0.015869101
	1.3d solid waste management	0.000255647
	1.3e property tax	0.004711323
	1.3f professional tax (RC)	0.005914792
	1.3g professional tax (EC)	0.000188092
	1.3h complaints/ grievance redressal	7.53678E-06
	1.3i information	0.001108208
	1.3j electricity	1.57902E-05
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**3.67**
Description		
Sub Indicators	1.4a water supply	17
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	NA
	1.4e professional tax	0
	1.4f parks and recreational spaces	5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**87.94**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2877.49

Denominator	Total demand raised for the year	3272.12
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**835.58**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2408.06
Denominator	Total O&M cost for providing water supply services during the year	288.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**31.49**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	21898.07
Denominator	Total expenditure (revenue and capital accounts) in the same year	69548.76
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**6.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	4
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	2
Unit	Percentage	

Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**51.75**
Description	Average Occupancy rate of Hotels	51.75
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	29968.19
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**102**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	102
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**75.2**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	96393

Denominator	Total population in the age group of 6-14 years	128185
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**76.71**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	47653
Denominator	Total female population in the age group of 6-14 years	62118
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**23.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	59898
Denominator	Total number of teachers available for primary grades (public and private schools)	2584
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**47.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	150
Denominator	Total number of schools	318
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**99.78**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	99.77589584
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**102.88**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	148984035

Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**64.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5385
Denominator	Total population of the city	829267
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**23.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1985
Denominator	Total population of the city	829267
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1281
Denominator	Total population of the city	829267
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.04**
Formula:	*Numerator / Denominator*	

Numerator	Number of cases of persons affected by vector borne diseases in a year	338
Denominator	Total population of the city	829267
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**113.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	961
Denominator	Total length of road network in the city	848.63
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1227.95**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	10183
Denominator	Total population of the city	829267
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	62
Denominator	Total crimes recorded in the same year	10183
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**29.3**
Formula:	*Numerator / Denominator*	

Numerator	Total number of fatalities recorded in road accidents in a year	243
Denominator	Total population of the city	829267
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**14.14**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4922.58
Denominator	Total VAT/GST collection during preceding year	348.1437
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-8.8**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-56.42
Denominator	Total Professional Tax collection during preceding year	641.16
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**0.96**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	9
Denominator	Number of construction permits during preceding year	9.36
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of unemployed persons (seeking or available for work)	347385
Denominator	Total labour force in the city	128185
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**38.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1248
Denominator	Total number of vendors in the city	3204.625
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**71.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	31383
Denominator	Total number of slum and EWS households in the city	437.09
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.11**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	37609641300
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.09**

Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	76621.82
Denominator	Total population of the city	829267
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	163419
Denominator	Total population of the city	829267
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	91340000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**180.47**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	829267
Denominator	Area allocated for residential land use (in hectares)	4595
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**154.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	333851
Denominator	Total number of households in the city	215747
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	Data Unavailable
Denominator	Total number of electricity connections in the city	443312
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**10621**
Description	Total number of sustained electrical interruptions in a year	10621
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	77700
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	305.21
Denominator	Total energy consumption from all sources	837046848
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	8440.5
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	9962
Denominator	Total number of street light installations	28064
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	189706
Unit	Percentage	
Benchmark	80%	

Indicator No: 10.9	**Total energy consumption per capita**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	837046848
Denominator	Total population of the city	829267
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	15
Denominator	Total area of the city (sq.km)	91.34
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.38**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	317
Denominator	Total population of the city	829267
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	52
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	2.6
Denominator	Total length of road network in the city	848.63
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**

Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	6
Denominator	Total number of major transport interchanges in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	30
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**16**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	96
Denominator	Total number of major interchanges in the city	6
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	48
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	Data Unavailable
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than**	**0.17**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

	1.2m	
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	2.87
Denominator	Total length of road network in the city	1697.26
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**5.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	22
Denominator	Total number of junctions/ intersections on major roads in the city	372
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**3.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	33
Denominator	Total number of public right-of-way areas in the city	982
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	101286
Denominator	Total number of households in the city	215747
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**145.91**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	121
Denominator	Total population of the city	829267
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	11
Denominator	Total number of samples tested for water quality	25
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**34.88**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	42.2
Denominator	Quantum of water put into the distribution system (mld)	121
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	330
Denominator	Total number of water connections in the city	105298
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**6.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	67

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	962
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**118.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	235529
Denominator	Total number of properties in the city	198688
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**106.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	211154
Denominator	Total number of properties in the city	198688
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	Data Unavailable
Denominator	Total waste water generated in the city per day	91
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable

Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**64.25**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	545.25
Denominator	Total length of road network in the city	848.63
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**110.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	260125
Denominator	Total number of households and establishments in the city	235248
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	400
Denominator	Total quantum of MSW generated in the city	400
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**5.13**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	615
Denominator	Average MSW generated in the city (tons per month)	12000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**26**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	26
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**52**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	52
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	1
Denominator	Total number of noise samples	3
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**83.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	10
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SATNA

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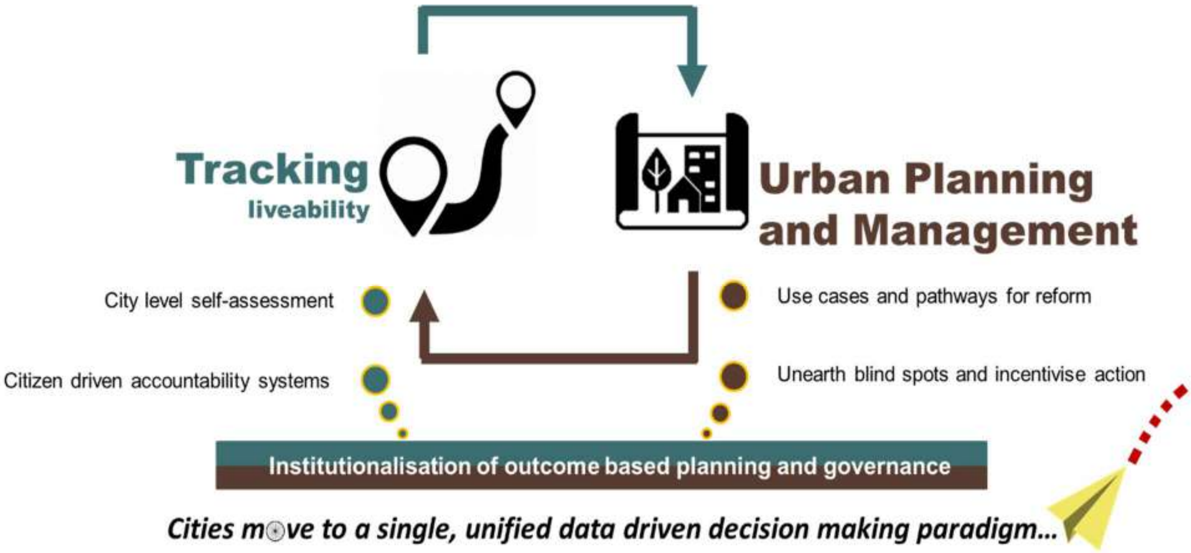
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

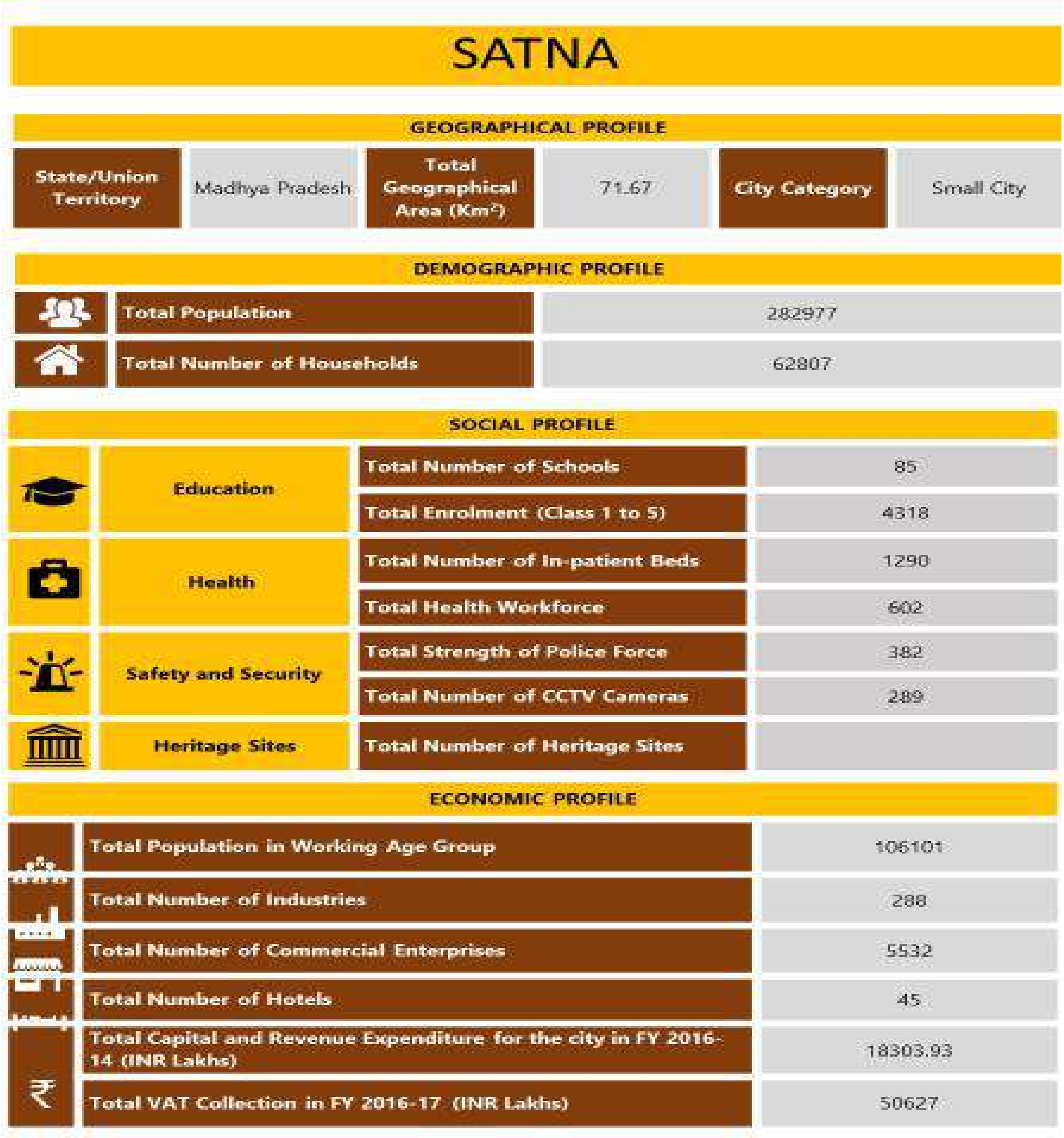
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SATNA

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	71.67	City Category	Small City

DEMOGRAPHIC PROFILE

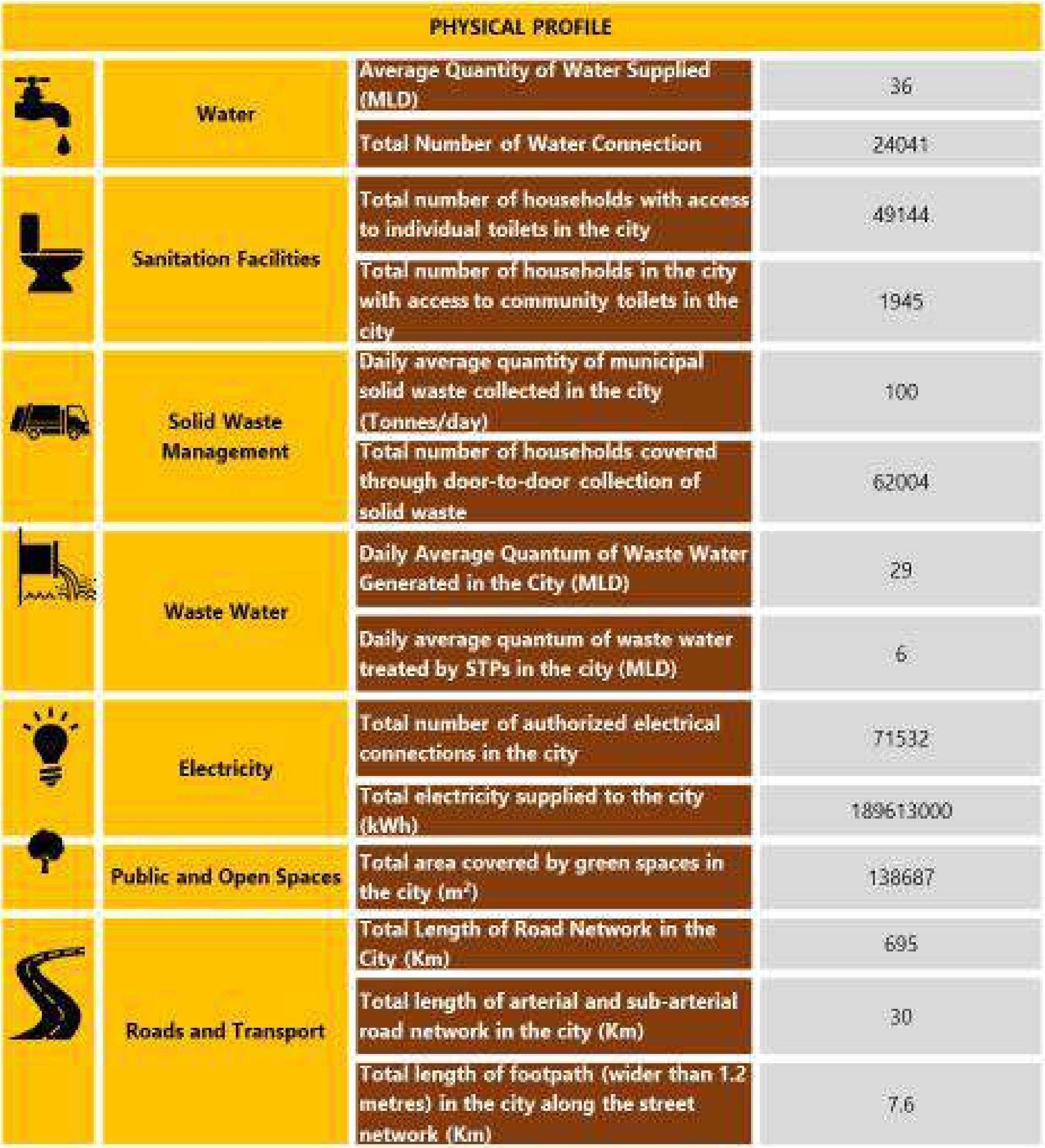
Total Population	282977
Total Number of Households	62807

SOCIAL PROFILE

Education	Total Number of Schools	85
	Total Enrolment (Class 1 to 5)	4318
Health	Total Number of In-patient Beds	1290
	Total Health Workforce	602
Safety and Security	Total Strength of Police Force	382
	Total Number of CCTV Cameras	289
Heritage Sites	Total Number of Heritage Sites	

ECONOMIC PROFILE

Total Population in Working Age Group	106101
Total Number of Industries	288
Total Number of Commercial Enterprises	5532
Total Number of Hotels	45
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	18303.93
Total VAT Collection in FY 2016-17 (INR Lakhs)	50627



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	36
	Total Number of Water Connection	24041
Sanitation Facilities	Total number of households with access to individual toilets in the city	49144
	Total number of households in the city with access to community toilets in the city	1945
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	100
	Total number of households covered through door-to-door collection of solid waste	62004
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	29
	Daily average quantum of waste water treated by STPs in the city (MLD)	6
Electricity	Total number of authorized electrical connections in the city	71532
	Total electricity supplied to the city (kWh)	189613000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	138687
Roads and Transport	Total Length of Road Network in the City (Km)	695
	Total length of arterial and sub-arterial road network in the city (Km)	30
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online 1.2 Percentage of services integrated through Command Centre 1.3 Percentage of citizens using online services 1.4 Average delay in grievance redressal 1.5 Tax collected as percentage of tax billed 1.6 Extent of cost recovery (O&M) in water supply services 1.7 Capital spending as percentage of total expenditure 1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings 2.2 Percentage of ecologically important areas covered through projects for restoration 2.3 Hotel occupancy 2.4 Percentage of budget allocated towards cultural/sports activities 2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools 3.2 Percentage of female school-aged population enrolled in schools 3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education 3.5 Percentage of students completing primary education 3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population 4.2 Healthcare professionals per 10,000 population 4.3 Average response time in case of health emergencies 4.4 Period prevalence of water borne diseases 4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras 5.2 Number of recorded crimes per lakh population 5.3 Extent of crimes recorded against women, children and elderly per year 5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection 6.2 Increase in collection of Professional Tax 6.3 Increase in issuance of Construction permits 6.4 Unemployment rate 6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing 7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces 8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use 9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services 10.2 Percentage of electrical connections covered through smart meters

Pillars of Comprehensive Development	Category	Indicators
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
		13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.2 Coverage of sewerage network and/or septage 13.3 Collection efficiency of sewerage network 13.4 Extent of reuse and recycling of waste water 13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection 14.2 Efficiency of collection of municipal solid waste 14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO_2- air pollution 15.2 Concentration of NO_2- air pollution 15.3 Concentration of PM_{10} - air pollution 15.4 Level of noise pollution 15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

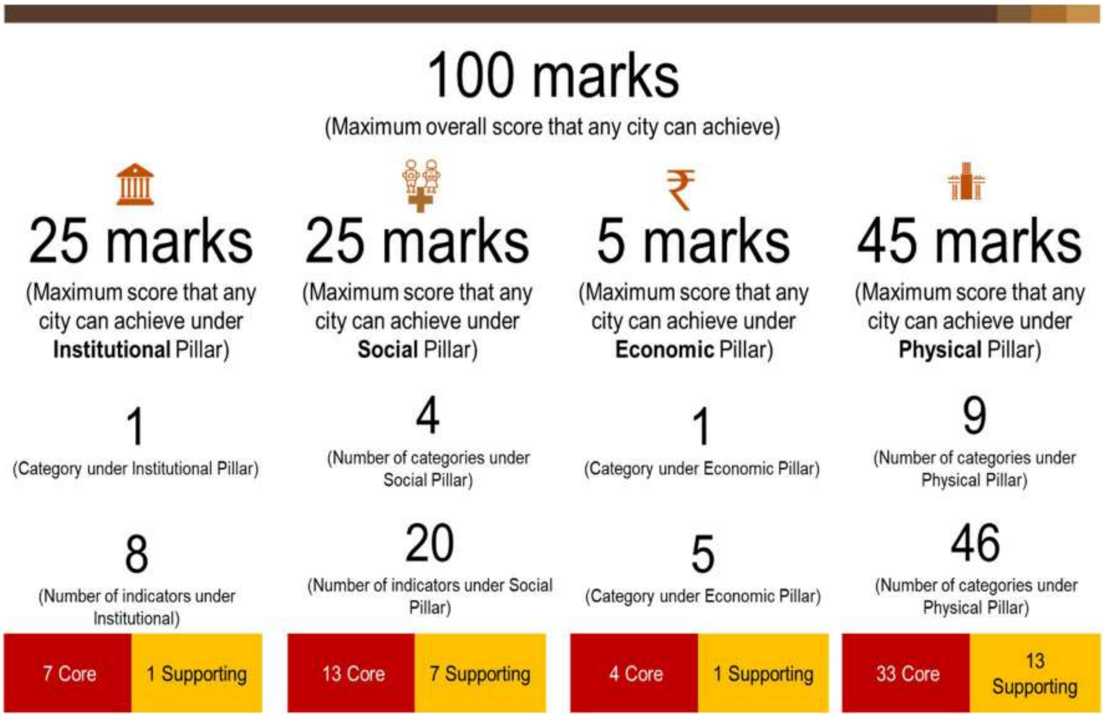
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounting Department, Satna Municipal Corporation
	Park and Recreation	Satna Municipal Corporation
	Water Supply and Drainage	Engineering Department, Satna Municipal Corporation
	Heritage sites	Satna Municipal Corporation
	Ecological sites	Satna Municipal Corporation
	Housing	Housing section, Satna Municipal Corporation
	Building plan	Satna Municipal Corporation
	Roads	Roads section, Satna Municipal Corporation
	Solid waste management	Satna Municipal Corporation
	IT services	IT Section, Satna Municipal Corporation
	Vendor committee	Satna Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	MP Housing and Infrastructure development board
	Construction planning	MP Housing and Infrastructure development board
	Green Building	MP Housing and Infrastructure development board
	Rain water harvesting	MP Housing and Infrastructure development board
	Universal Design Principle	MP Housing and Infrastructure development board
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited

Designated data owners	Sub categories	Data owners at city level
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Satna
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 118 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	5
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	3
Transport Authority	7
Disaster Management	2
Urban Local Body	88
Total	118

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

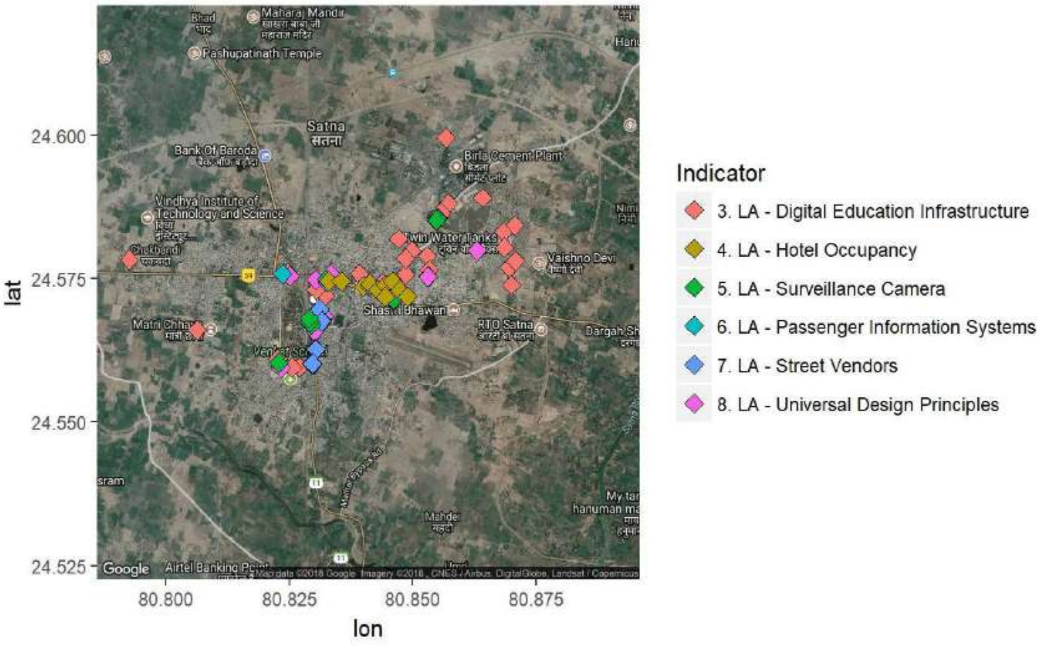
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Satna
Birla Cement Plant
Twin Water Tanks
Shastri Bhawan
RTO Satna
Vaishno Devi
Pashupatinath Temple
Bank Of Baroda
Vindhya Institute of Technology and Science
24.600
24.575
24.550
24.525
lat
80.800
80.825
80.850
80.875
lon
Google
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**89.94**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**4.76**
Description	Services integrated through an integrated or a singular operations command centre	1
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**4.32**
Description		
Sub Indicators	1.3a Building plan	0.000936768
	1.3b Birth/Death Certificate	0.000389608
	1.3c water supply	0.0000887039545835753
	1.3d solid waste management	0.000102482
	1.3e property tax	0.0000134399931187235
	1.3f professional tax (RC)	0.083333333
	1.3g professional tax (EC)	0.083333333
	1.3h complaints/ grievance redressal	0.0000020614160632607
	1.3i information	0.0000954141149280684
	1.3j electricity	0.263588324
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**

Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**55.61**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1547.06
Denominator	Total demand raised for the year	2782.14
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**11.85**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	98.47
Denominator	Total O&M cost for providing water supply services during the year	831.04
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**13.48**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	2726.75
Denominator	Total expenditure (revenue and capital accounts) in the same year	20226.75
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**37.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	17
Denominator	Total number of wards	45
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**32**
Description	Average Occupancy rate of Hotels	32
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	10
Denominator	Total budget of the ULB (capital and revenue)	18303.93
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**47**

Description	Number of cultural/sports events hosted by the city authority in the preceding year	47
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**12.86**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	7639
Denominator	Total population in the age group of 6-14 years	59409
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**13.36**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3671
Denominator	Total female population in the age group of 6-14 years	27476
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**18.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	4318
Denominator	Total number of teachers available for primary grades (public and private schools)	237
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**1.18**
Formula:	*Numerator / Denominator*	

Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1
Denominator	Total number of schools	85
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**91.61** 91.60918135
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**103.58** 1408645
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**45.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1290
Denominator	Total population of the city	282977
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**21.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	602

Denominator	Total population of the city	282977
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**17**
Description	Total response time for health-related distress calls received in the city	17
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7760
Denominator	Total population of the city	282977
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	148
Denominator	Total population of the city	282977
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**41.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	289
Denominator	Total length of road network in the city	695
Unit	Percentage	

Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**3491.1**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	9879
Denominator	Total population of the city	282977
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**27.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2701
Denominator	Total crimes recorded in the same year	9879
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**628.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	1778
Denominator	Total population of the city	282977
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**16.2**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	7057
Denominator	Total VAT/GST collection during preceding year	435.7
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**7.83**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	49.58
Denominator	Total Professional Tax collection during preceding year	632.84
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**51.85**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	238
Denominator	Number of construction permits during preceding year	4.59
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	5457
Denominator	Total labour force in the city	59409
Unit	Per 1000 persons	

Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**194.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2894
Denominator	Total number of vendors in the city	1485.225
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**17.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	6066
Denominator	Total number of slum and EWS households in the city	354.67
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**7.11** 200535650784
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	138687
Denominator	Total population of the city	282977
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**1**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	282943
Denominator	Total population of the city	282977
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	71670000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	282977
Denominator	Area allocated for residential land use (in hectares)	23613800
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**86.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	54021
Denominator	Total number of households in the city	62807
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**75.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	54021
Denominator	Total number of electricity connections in the city	71532
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1325**
Description	Total number of sustained electrical interruptions in a year	1325
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.57**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	134007
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Total installed capacity for generation of renewable energy in the city	1527.2
Denominator	Total energy consumption from all sources	189675906
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	670947.6667
Denominator	Total quantum of water and waste water handled during the period	1260
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	3702604
Denominator	Total number of street light installations	10462
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	39077.45
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	189675906

Denominator	Total population of the city	282977
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	60
Denominator	Total area of the city (sq.km)	71.67
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	165
Denominator	Total population of the city	282977
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	25
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	695
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1.42
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**7**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	7
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	1
Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	7

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total available on-street parking spaces in the city	7
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.55**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	7.6
Denominator	Total length of road network in the city	1390
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**120**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	6
Denominator	Total number of junctions/ intersections on major roads in the city	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**17.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	35
Denominator	Total number of public right-of-way areas in the city	197
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**38.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	24041
Denominator	Total number of households in the city	62807
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**127.22**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	36
Denominator	Total population of the city	282977
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	278
Denominator	Total number of samples tested for water quality	310
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**25.56**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	9.2
Denominator	Quantum of water put into the distribution system (mld)	36
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**2.71**
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of metered water connections	651
Denominator	Total number of water connections in the city	24041
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**92.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	362
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	393
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**93.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	57729
Denominator	Total number of properties in the city	62004
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**89.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	55199
Denominator	Total number of properties in the city	62004
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	29
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**92.31**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	6
Denominator	Total waste water received at treatment plants per day	6.5
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**2.16**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	15
Denominator	Total length of road network in the city	695
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**98.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	67536
Denominator	Total number of households and establishments in the city	68339
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	100

Denominator	Total quantum of MSW generated in the city	100
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**77.5**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2325
Denominator	Average MSW generated in the city (tons per month)	3000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**3.35**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	3.345
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**8.68**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	8.678
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**81.02**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	81.015
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	

Numerator	Number of noise samples meeting acceptable noise levels	1318
Denominator	Total number of noise samples	1728
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**61.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	34
Denominator	Total number of samples tested	55
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SHILLONG

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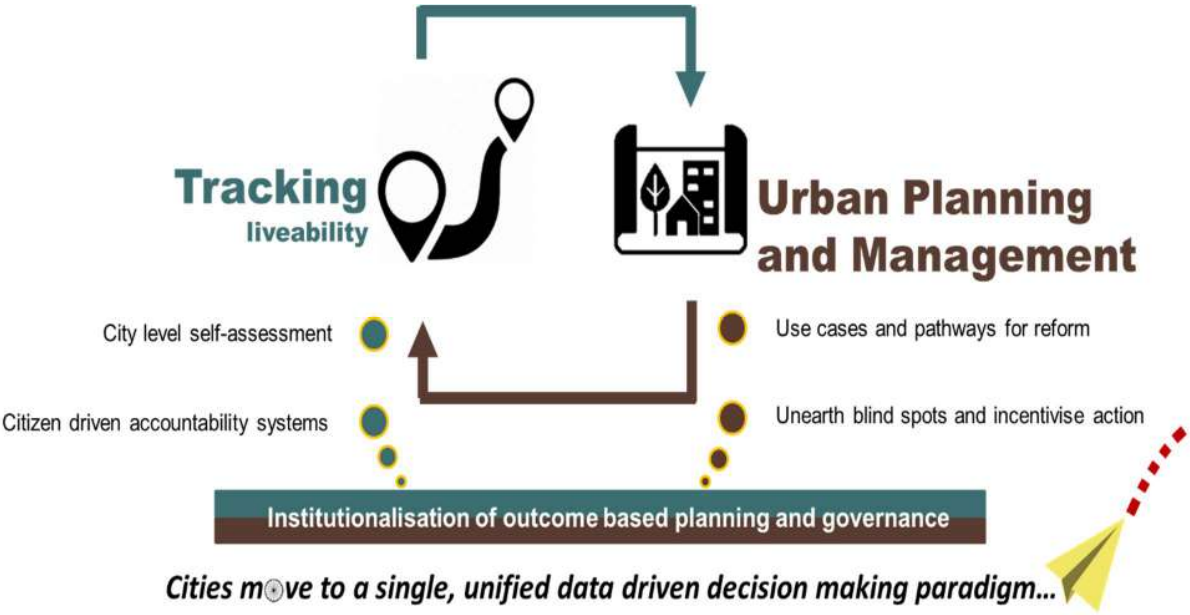
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

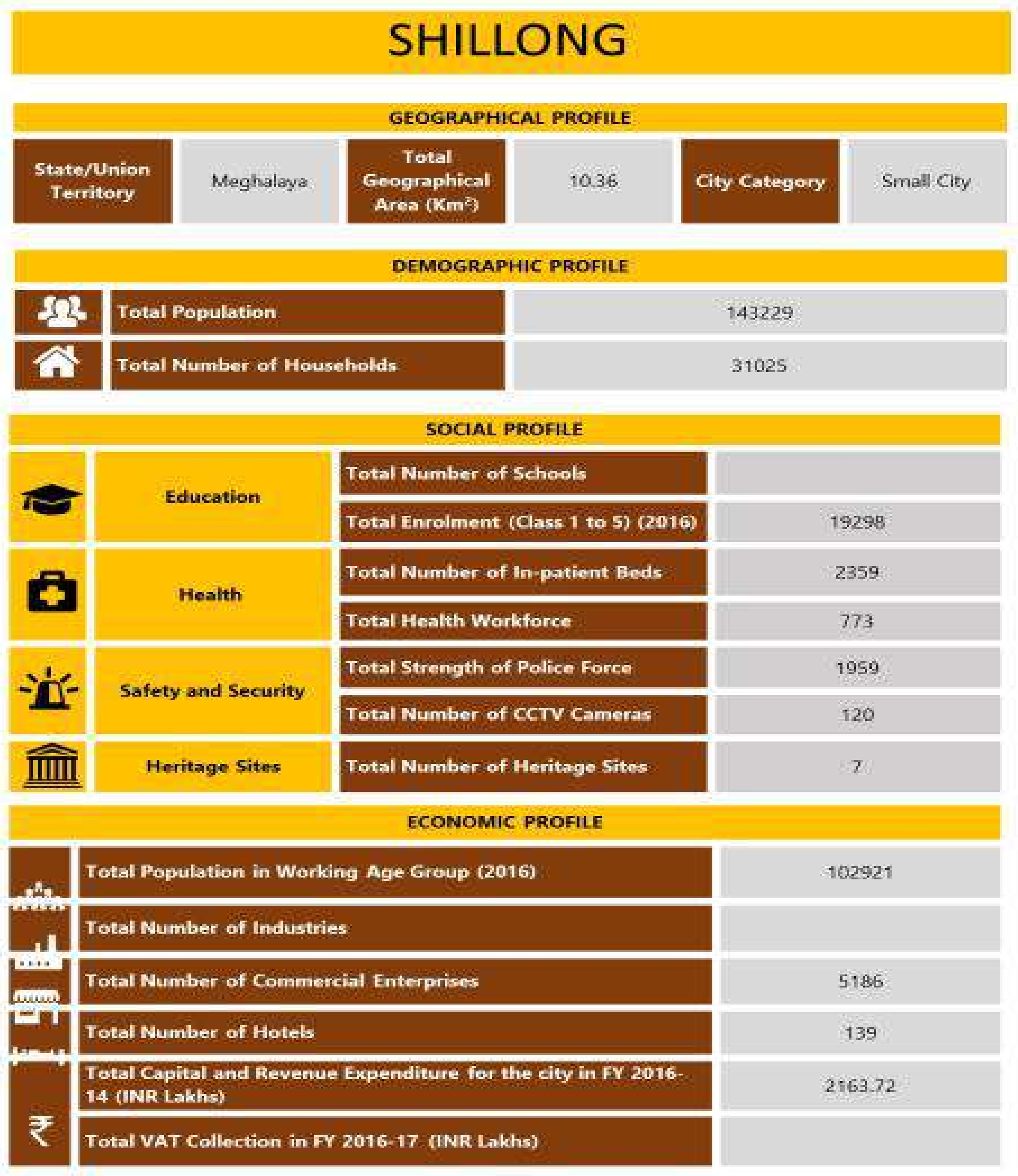
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SHILLONG

GEOGRAPHICAL PROFILE

State/Union Territory	Meghalaya	Total Geographical Area (Km²)	10.36	City Category	Small City

DEMOGRAPHIC PROFILE

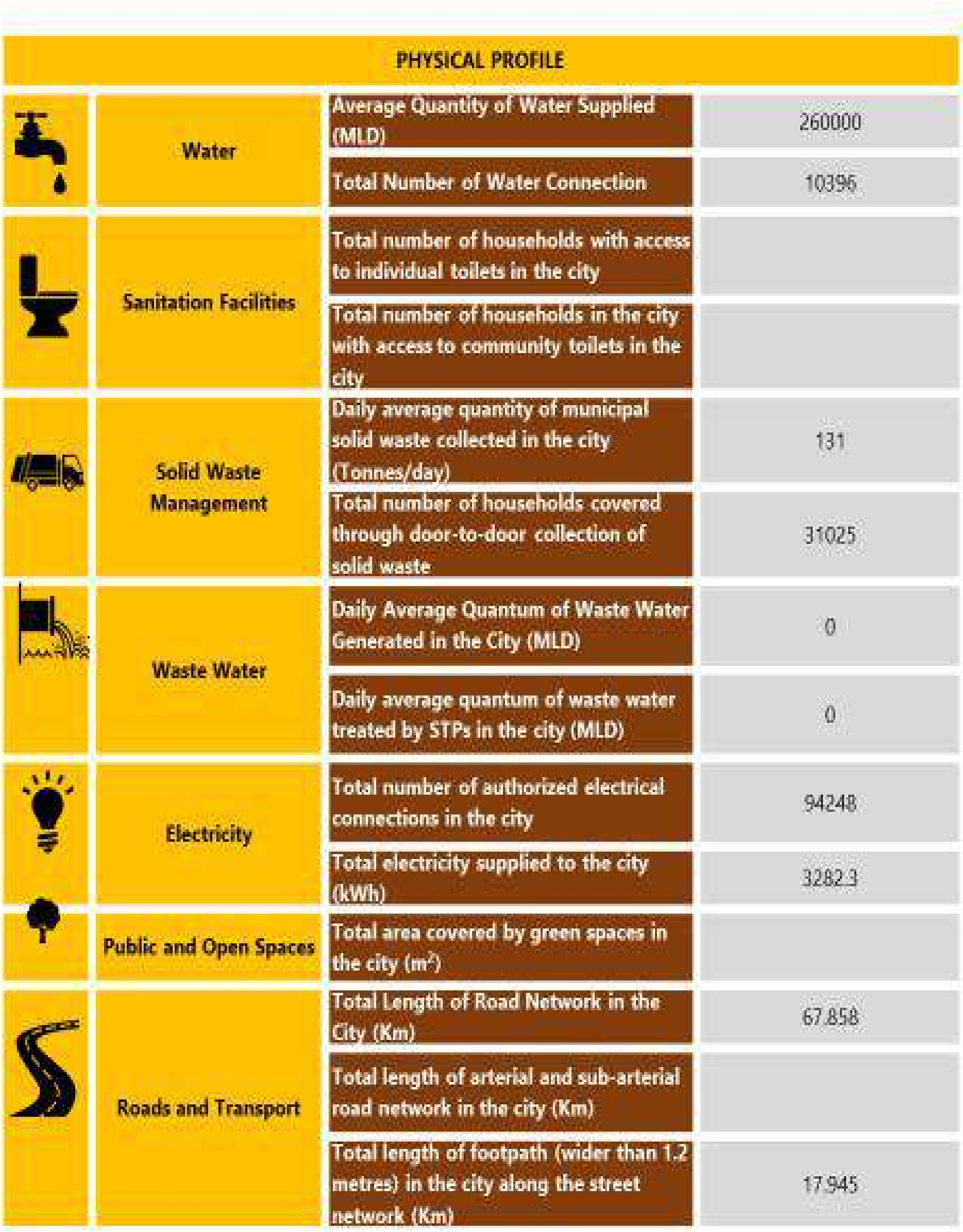
Total Population	143229
Total Number of Households	31025

SOCIAL PROFILE

Education	Total Number of Schools	
	Total Enrolment (Class 1 to 5) (2016)	19298
Health	Total Number of In-patient Beds	2359
	Total Health Workforce	773
Safety and Security	Total Strength of Police Force	1959
	Total Number of CCTV Cameras	120
Heritage Sites	Total Number of Heritage Sites	7

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	102921
Total Number of Industries	
Total Number of Commercial Enterprises	5186
Total Number of Hotels	139
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	2163.72
Total VAT Collection in FY 2016-17 (INR Lakhs)	



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	260000
		Total Number of Water Connection	10396
	Sanitation Facilities	Total number of households with access to individual toilets in the city	
		Total number of households in the city with access to community toilets in the city	
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	131
		Total number of households covered through door-to-door collection of solid waste	31025
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	0
		Daily average quantum of waste water treated by STPs in the city (MLD)	0
	Electricity	Total number of authorized electrical connections in the city	94248
		Total electricity supplied to the city (kWh)	3282.3
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
	Roads and Transport	Total Length of Road Network in the City (Km)	67.858
		Total length of arterial and sub-arterial road network in the city (Km)	
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	17.945

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11.	11.1 Geographical coverage of public transport

Pillars of Comprehensive Development	Category	Indicators
	Transportation and Mobility	11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage

Pillars of Comprehensive Development	Category	Indicators
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

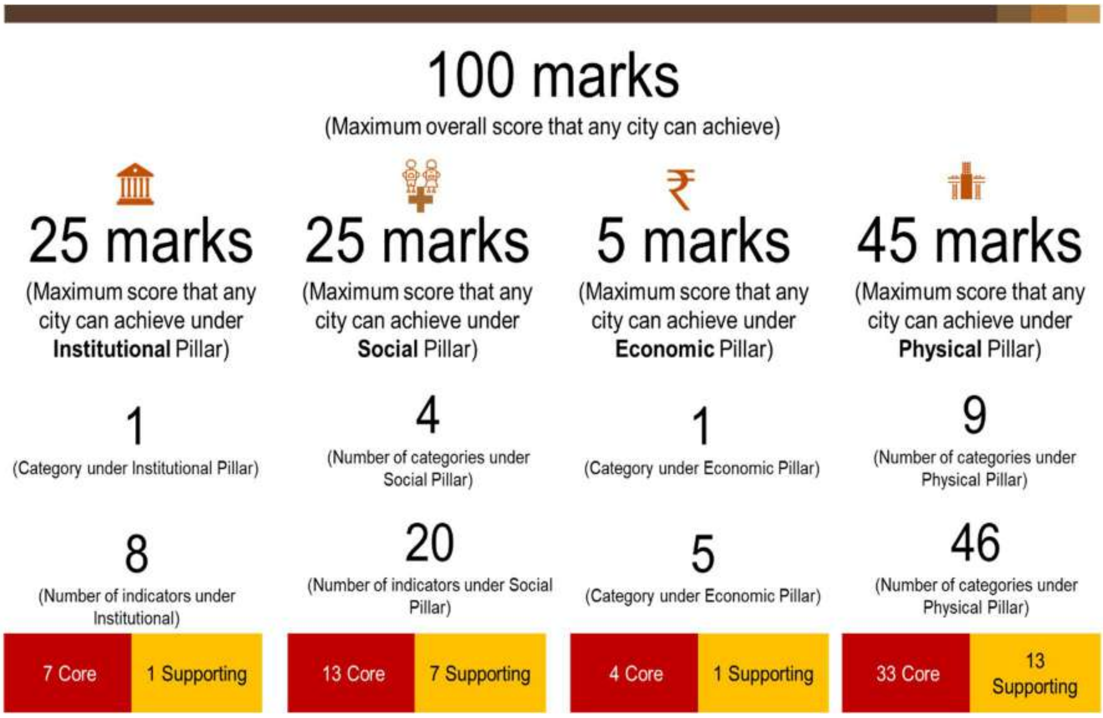
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB
Urban Local Body	For Park and Recreation Related Questions	ULB
Urban Local Body	For Water Supply and Drainage related questions	ULB & PHE
Urban Local Body	For Heritage sites related data	NIL
Urban Local Body	For Ecological sites related data	NIL
Urban Local Body	For Housing related data	ULB & Meghalaya Urban Development Authority
Urban Local Body	For Building plan related data	ULB & Directorate of Urban Affair, Meghalaya Urban Development Authority
Urban Local Body	For Roads related data	ULB &PWD
Urban Local Body	For Solid waste management related data	ULB
Urban Local Body	For IT services related data	ULB
Urban Local Body	For Vendor committee related data	ULB and Directorate of Urban Affair
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	PWD, PHE, Directorate of Urban Affair, Meghalaya Urban Development Authority
For questions under Central / state Pollution control	Water Quality, Air Quality, Noise Quality	MEGHALAYA STATE POLLUTION CONTROL BOARD

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	MUDA
	Construction planning	MUDA
	Green Building	MUDA
	Rain water harvesting	MUDA
	Universal Design Principle	MUDA
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Meghalaya Power Distribution Corporation LTD.
State Disaster management authority		State disaster management authority
State Education Department		Directorate of school education and literacy
State Health Department	Health care professionals	Directorate of health complex and services, Shillong
State Health Department	Citizen Services	DO
State Health Department	Disease Prevalence	DO
State Health Department	Health Infrastructure	DO
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	Urban Affairs Department
Traffic and Police Department		Shillong Police (traffic)
Transport Authorities	Buses	District Transport Office
Transport Authorities	Registered Vehicles	District Transport Office
Transport Authorities	Sub urban rail transport	NIL
Transport Authorities	Mono Rail Authority	NIL
Transport Authorities	Tramways	NIL
Transport Authorities	Marine Transport Authority	NIL

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 24 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	3
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	5
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	7
Total	24

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

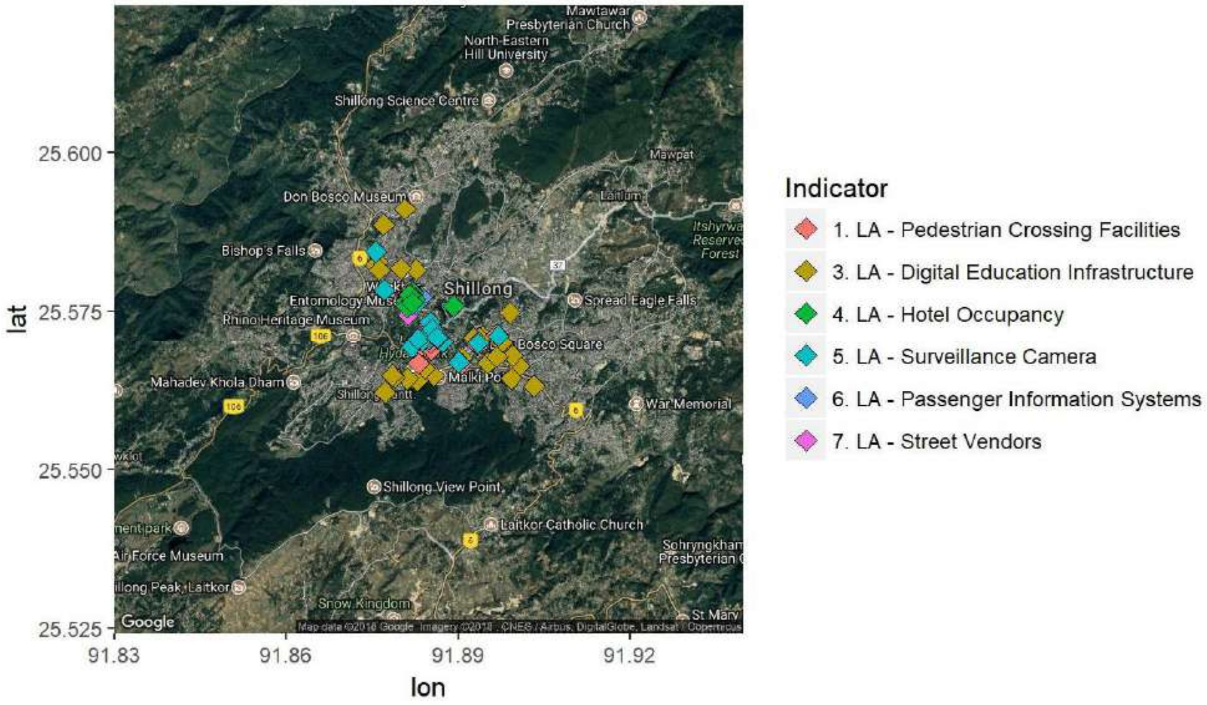
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
lat
25.600
25.575
25.550
25.525
lon
91.83
91.86
91.89
91.92
Shillong
Don Bosco Museum
Bishop's Falls
Entomology Museum
Rhino Heritage Museum
Mahadev Khola Dham
Shillong Science Centre
North-Eastern Hill University
Mawtawar Presbyterian Church
Spread Eagle Falls
Bosco Square
Malki Po
War Memorial
Shillong View Point
Laitkor Catholic Church
Snow Kingdom
Air Force Museum
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**7.69**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0
	1.1k Grievance redressal	0.5
	1.1l electricity	0.5
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA

	1.3h complaints/ grievance redressal	4.65455E-06
	1.3i information	NA
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**18.55**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	17.81
Denominator	Total O&M cost for providing water supply services during the year	96.02
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**33.55**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1861.02
Denominator	Total expenditure (revenue and capital accounts) in the same year	5546.98

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	27
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	2163.72
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	Data Unavailable
Denominator	Total population in the age group of 6-14 years	24389
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	Data Unavailable

Denominator	Total female population in the age group of 6-14 years	12215
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	Data Unavailable
Denominator	Total number of teachers available for primary grades (public and private schools)	Data Unavailable
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	Data Unavailable
Denominator	Total number of schools	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**#VALUE!** #VALUE!
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**Non-Computable** Data Unavailable
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	

Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**164.7**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2359
Denominator	Total population of the city	143229
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**53.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	773
Denominator	Total population of the city	143229
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**1732**
Description	Total response time for health-related distress calls received in the city	1732
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1619
Denominator	Total population of the city	143229
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	0
Denominator	Total population of the city	143229
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**176.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	120
Denominator	Total length of road network in the city	67.858
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1048.67**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1502
Denominator	Total population of the city	143229
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**14.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	223
Denominator	Total crimes recorded in the same year	1502
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-	

	size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**34.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	50
Denominator	Total population of the city	143229
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**21.78**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	211
Denominator	Number of construction permits during preceding year	9.69
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	24389
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**6.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	254
Denominator	Total number of vendors in the city	4041
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	46
Denominator	Total number of slum and EWS households in the city	130.25

Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	143229
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	143229
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	10360000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**2.81**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	143229
Denominator	Area allocated for residential land use (in hectares)	50952.7
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**255.97**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	79414
Denominator	Total number of households in the city	31025
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	Data Unavailable
Denominator	Total number of electricity connections in the city	94248
Unit	Percentage	

Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1200**
Description	Total number of sustained electrical interruptions in a year	1200
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	7324
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	516
Denominator	Total energy consumption from all sources	3282.3
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	576171.25
Denominator	Total quantum of water and waste water handled during the period	7800000
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	2640
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	Data Unavailable
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	51054
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3282.3
Denominator	Total population of the city	143229
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	10.36
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.3**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	186
Denominator	Total population of the city	143229
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	67.858
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA

Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorized transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronization**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronized	NA
Denominator	Total number of signalised intersections in the city	NA
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	3
Denominator	Total available on-street parking spaces in the city	6

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**13.22**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	17.945
Denominator	Total length of road network in the city	135.716
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	Data Unavailable
Denominator	Total number of public right-of-way areas in the city	31
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**34.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	10746
Denominator	Total number of households in the city	31025
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**1815274.84**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	260000
Denominator	Total population of the city	143229
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	104
Denominator	Total number of samples tested for water quality	134
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	260000
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	10396
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**12.73**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	141
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1108
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	54
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with connection to waste water management systems	31025
Denominator	Total number of properties in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	Data Unavailable
Denominator	Total waste water received at treatment plants per day	Data Unavailable
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	Data Unavailable
Denominator	Total length of road network in the city	67.858
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**

Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	36211
Denominator	Total number of households and establishments in the city	36211
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**87.92**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	131
Denominator	Total quantum of MSW generated in the city	149
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.76**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	30
Denominator	Average MSW generated in the city (tons per month)	3930
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**11.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	11.1

Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**40.82**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	40.82
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	16
Denominator	Total number of noise samples	19
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**14.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	84
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

SHIMLA

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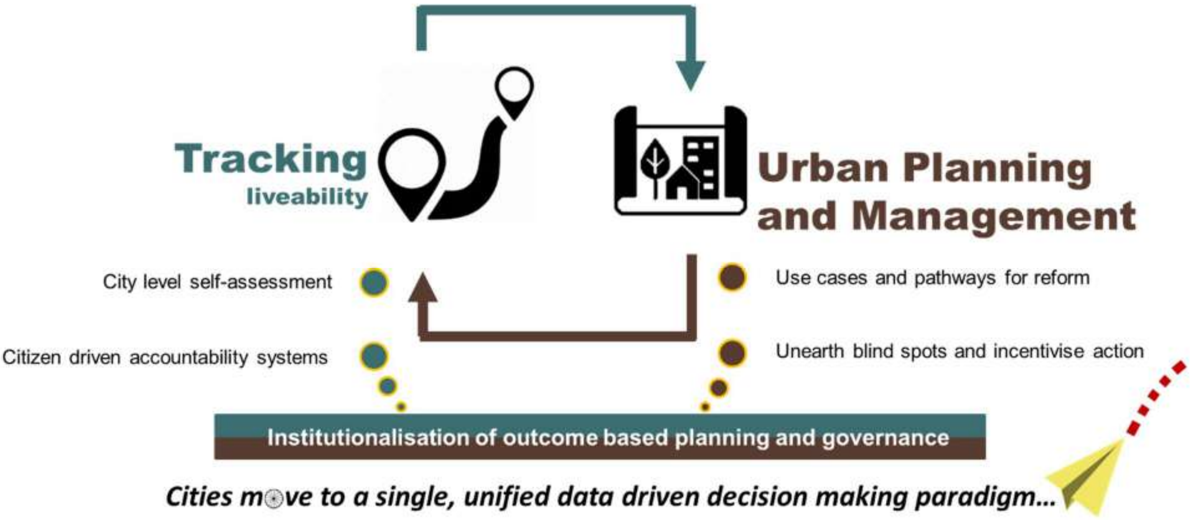
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

SHIMLA

GEOGRAPHICAL PROFILE

State/Union Territory	Himachal Pradesh	**Total Geographical Area (Km^2)**	35.34	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	169578
Total Number of Households	25952

SOCIAL PROFILE

Education	**Total Number of Schools**	146
	Total Enrolment (Class 1 to 5)	13917
Health	**Total Number of In-patient Beds**	259
	Total Health Workforce	328
Safety and Security	**Total Strength of Police Force**	203
	Total Number of CCTV Cameras	111
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	128294
Total Number of Industries	0
Total Number of Commercial Enterprises	
Total Number of Hotels	253
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	13388.5
Total VAT Collection in FY 2016-17 (INR Lakhs)	2028836539

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	33
	Total Number of Water Connection	30995
Sanitation Facilities	Total number of households with access to individual toilets in the city	30995
	Total number of households in the city with access to community toilets in the city	1499
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	70
	Total number of households covered through door-to-door collection of solid waste	34992
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	24
	Daily average quantum of waste water treated by STPs in the city (MLD)	7.358
Electricity	Total number of authorized electrical connections in the city	39360
	Total electricity supplied to the city (kWh)	1333867563
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
Roads and Transport	Total Length of Road Network in the City (Km)	142.636
	Total length of arterial and sub-arterial road network in the city (Km)	0
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	73.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

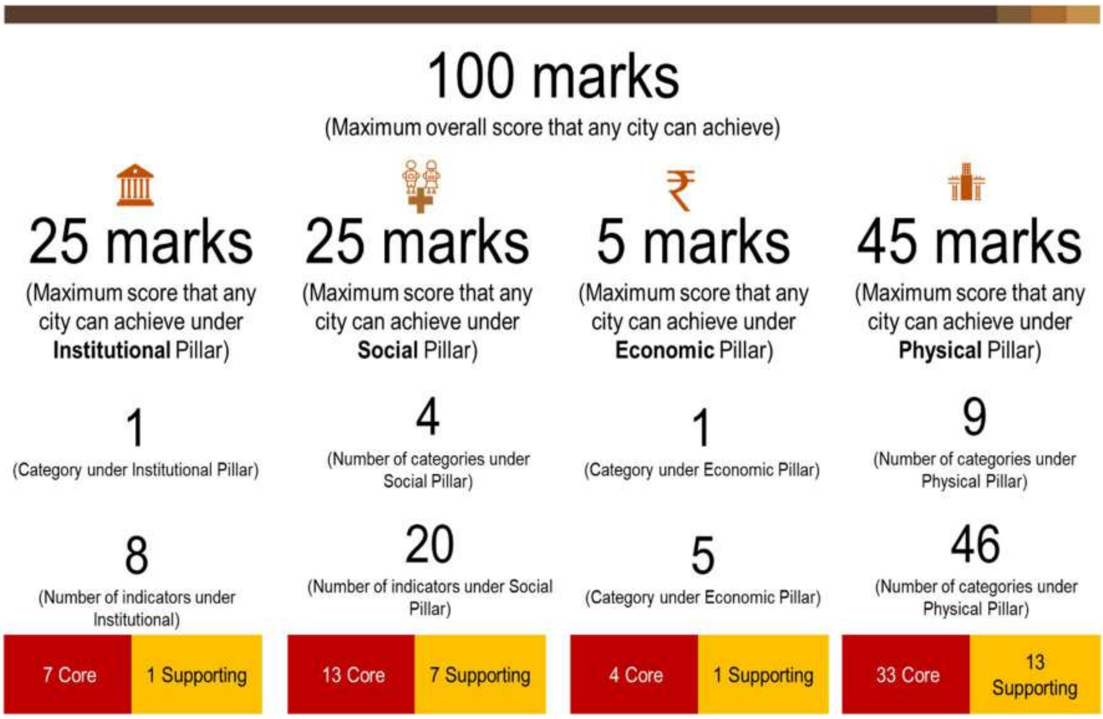
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MC Shimla
Urban Local Body	For Park and Recreation Related Questions	MC Shimla
Urban Local Body	For Water Supply and Drainage related questions	MC Shimla
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	MC Shimla
Urban Local Body	For Housing related data	MC Shimla
Urban Local Body	For Building plan related data	MC Shimla
Urban Local Body	For Roads related data	Public Work Department
Urban Local Body	For Solid waste management related data	MC Shimla
Urban Local Body	For IT services related data	IT Shimla
Urban Local Body	For Vendor committee related data	MC Shimla
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, PWD, Education, RTO and electricity board.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board Department
Development Authority	Building Infrastructure	MC Shimla
	Construction planning	MC Shimla
	Green Building	MC Shimla

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	MC Shimla
	Universal Design Principle	MC Shimla
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board Department
State Disaster management authority		State disaster management department
State Education Department		Directory of state elementary
State Health Department	Health care professionals	Chief Medical Officer
	Citizen Services	CMO
	Disease Prevalence	CMO
	Health Infrastructure	CMO
State Renewable Energy Development Agency		Renewable Energy Development department
State Sales / Commercial Taxes Department		Taxation Department
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		Police Department
Transport Authorities	Buses	Regional transportation Office
	Registered Vehicles	RTO
	Sub urban rail transport	RTO
	Mono Rail Authority	RTO
	Tramways	RTO
	Marine Transport Authority	RTO

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	3
Transport Authority	1
Disaster Management	0
Urban Local Body	18
Total	31*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

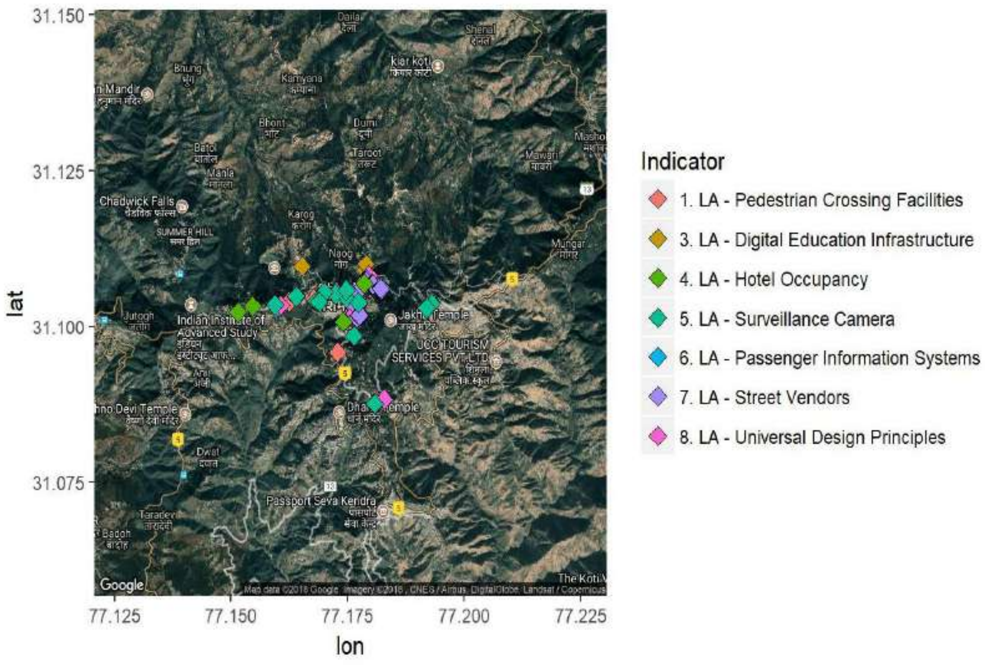
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


31.150
31.125
31.100
31.075
lat
77.125
77.150
77.175
77.200
77.225
lon
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**60.55**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	0
	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.52**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0.028899507
	1.3d solid waste management	0
	1.3e property tax	0.012702939
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	NA
	1.4b solid waste	0
	1.4c street lights	NA
	1.4d sewerage	NA
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	

Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1352.58
Denominator	Total demand raised for the year	172650827
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**91.41**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2501.77
Denominator	Total O&M cost for providing water supply services during the year	2736.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-64.19**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-9447.75
Denominator	Total expenditure (revenue and capital accounts) in the same year	14719.31
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**73.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	25
Denominator	Total number of wards	34
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	7
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**21.71**
Description	Average Occupancy rate of Hotels	21.71428571
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	13388.5
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**89.29**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	23078
Denominator	Total population in the age group of 6-14 years	25847
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**93.28**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	10784
Denominator	Total female population in the age group of 6-14 years	11561
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	13917
Denominator	Total number of teachers available for primary grades (public and private schools)	635
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	146
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**91.33**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**91.33**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**103.8**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**103.8**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**15.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	259
Denominator	Total population of the city	169578
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**19.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	328
Denominator	Total population of the city	169578

Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**20.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	35311
Denominator	Total population of the city	169578
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	2
Denominator	Total population of the city	169578
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**77.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	111
Denominator	Total length of road network in the city	142.636
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**587.93**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	997
Denominator	Total population of the city	169578
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	101
Denominator	Total crimes recorded in the same year	997
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**15.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	26
Denominator	Total population of the city	169578
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**14.95**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	263808207
Denominator	Total VAT/GST collection during preceding year	17650283.32

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	0
Denominator	Total Professional Tax collection during preceding year	0
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-48.58**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-103
Denominator	Number of construction permits during preceding year	2.12
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	78157
Denominator	Total labour force in the city	25847
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1035
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**5.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	350
Denominator	Total number of slum and EWS households in the city	58.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**Data Unavailable**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable

Denominator	Total population of the city	169578
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.12**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	19995.661
Denominator	Total population of the city	169578
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	35340000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	**Net Density**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	169578
Denominator	Area allocated for residential land use (in hectares)	Data Unavailable
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**125.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	32696
Denominator	Total number of households in the city	25952
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	39360
Unit	Percentage	

Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**73**
Description	Total number of sustained electrical interruptions in a year	73
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1273
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	413.5
Denominator	Total energy consumption from all sources	1333867563
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	1210.74
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2418953
Denominator	Total number of street light installations	10120
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0

Denominator	Total built up area of all new/redeveloped buildings completed during the same year	109
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.53**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1333867563
Denominator	Total population of the city	169578
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	35.34
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**1.47**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	250
Denominator	Total population of the city	169578
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	33
Unit	Percentage	

Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	142.636
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	0
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**50**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	2
Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**25.83**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	73.7
Denominator	Total length of road network in the city	285.272
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	117

Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**90.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	23374
Denominator	Total number of households in the city	25952
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**194.6**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	33
Denominator	Total population of the city	169578
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	64
Denominator	Total number of samples tested for water quality	2314
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	33
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	30995
Denominator	Total number of water connections in the city	30995
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	4
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	5
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**125.21**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual	32494

	and/or community toilets	
Denominator	Total number of properties in the city	25952
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**61.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	15878
Denominator	Total number of properties in the city	25952
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**41.13**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	9.87
Denominator	Total waste water generated in the city per day	24
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	9.87
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.46**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	0.65

Denominator	Total length of road network in the city	142.636
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**153.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	39771
Denominator	Total number of households and establishments in the city	25952
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**80**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	70
Denominator	Total quantum of MSW generated in the city	87.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**71.43**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1500
Denominator	Average MSW generated in the city (tons per month)	2100
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**4**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	4
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**37.7**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	37.7
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**100.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	100.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	151
Denominator	Total number of noise samples	216
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	4
Denominator	Total number of samples tested	4
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

SHIVAMOGGA

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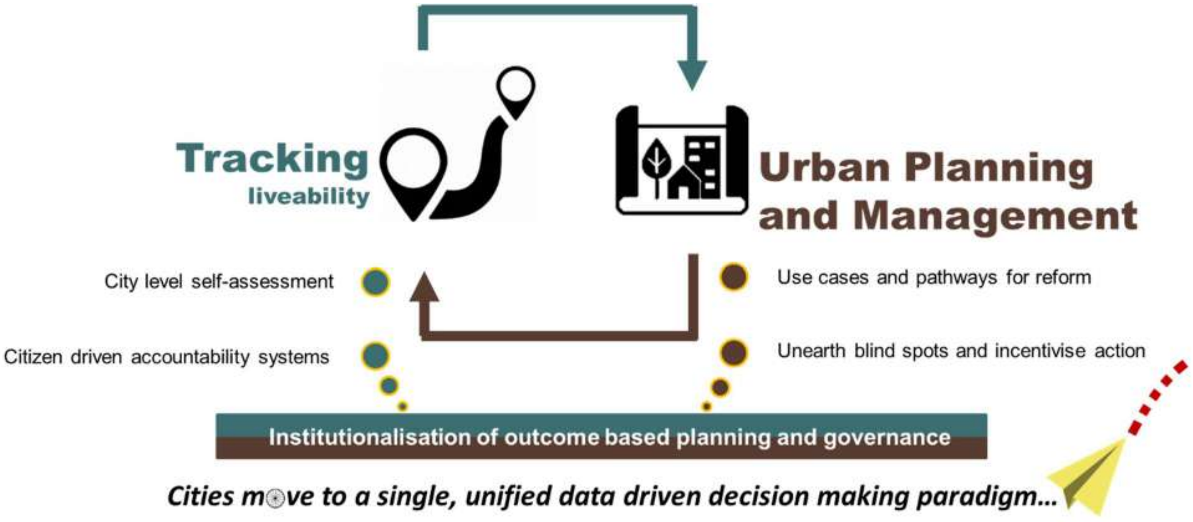
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

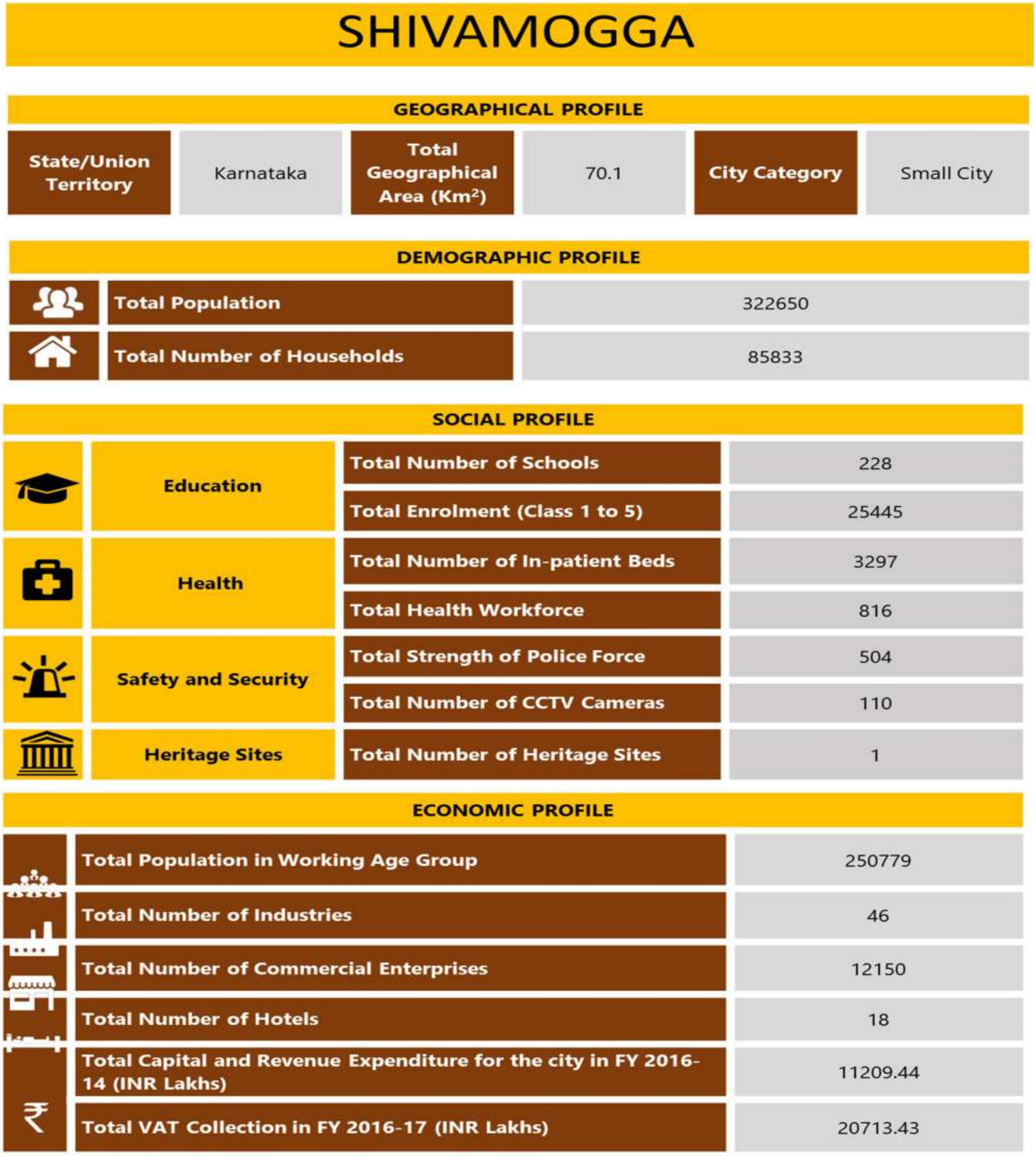
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SHIVAMOGGA

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km^2)	70.1	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	322650
Total Number of Households	85833

SOCIAL PROFILE

Education	Total Number of Schools	228
	Total Enrolment (Class 1 to 5)	25445
Health	Total Number of In-patient Beds	3297
	Total Health Workforce	816
Safety and Security	Total Strength of Police Force	504
	Total Number of CCTV Cameras	110
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	250779
Total Number of Industries	46
Total Number of Commercial Enterprises	12150
Total Number of Hotels	18
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	11209.44
Total VAT Collection in FY 2016-17 (INR Lakhs)	20713.43

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	84
	Total Number of Water Connection	42346
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	67694
	Total number of households in the city with access to community toilets in the city	1147
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	112
	Total number of households covered through door-to-door collection of solid waste	62700
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	12.32
	Daily average quantum of waste water treated by STPs in the city (MLD)	12.32
Electricity	**Total number of authorized electrical connections in the city**	130059
	Total electricity supplied to the city (kWh)	221458095
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	1202000
Roads and Transport	**Total Length of Road Network in the City (Km)**	917
	Total length of arterial and sub-arterial road network in the city (Km)	35.75
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9.3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from

Pillars of Comprehensive Development	Category	Indicators
		renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or

Pillars of Comprehensive Development	Category	Indicators
		septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

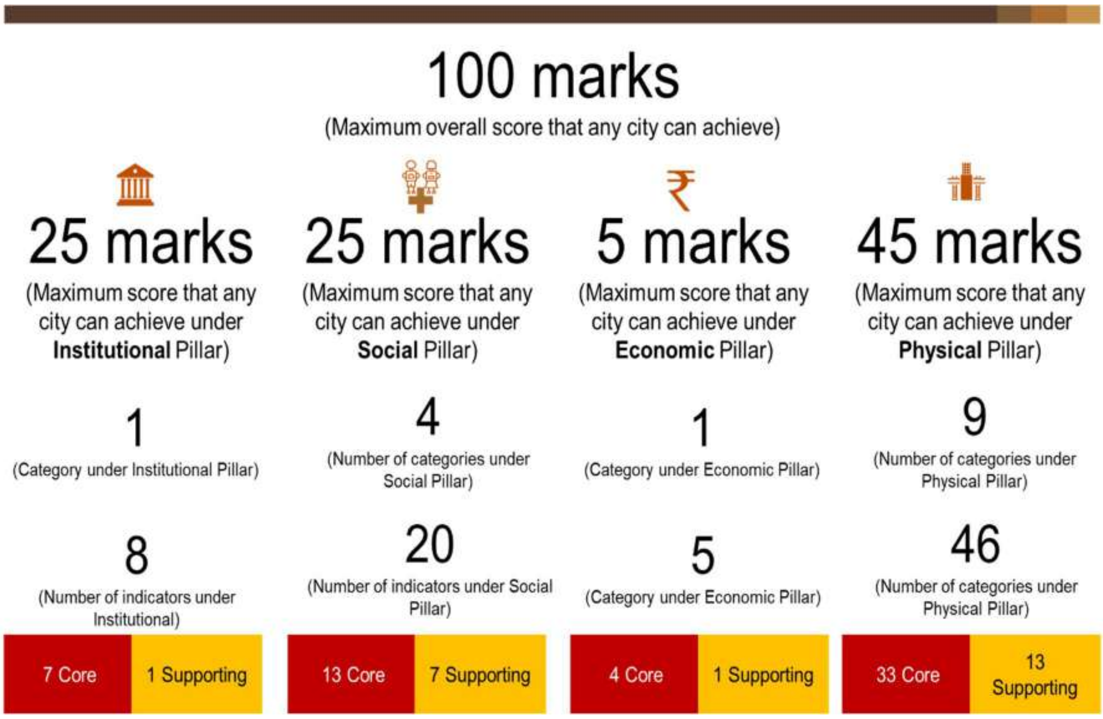
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Shivamogga Smart City Limited (SSCL)
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department SSCL
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department SSCL
Urban Local Body	For Heritage sites related data	Town Planning Department SSCL
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. SSCL
Urban Local Body	For Building plan related data	Town Planning Department SSCL
Urban Local Body	For Roads related data	Engineering Department SSCL
Urban Local Body	For Solid waste management related data	Environment Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, Pollution Department
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	State Pollution department

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, SSCL
	Green Building	Town Planning Department, SSCL
	Rain water harvesting	Town Planning Department, SSCL
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Mangalore Electricity Supply Company Limited
State Disaster management authority		Deputy Commissioner Office
State Education Department		Coordinator – SSA
State Health Department	Health care professionals	District Health Office / Taluk Health Office
	Citizen Services	District Health Office / Taluk Health Office
	Disease Prevalence	District Health Office / Taluk Health Office
	Health Infrastructure	District Health Office / Taluk Health Office
State Renewable Energy Development Agency	Renewable Energy	Mangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Assistant Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Deputy Police Commissioner's Office
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 131 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

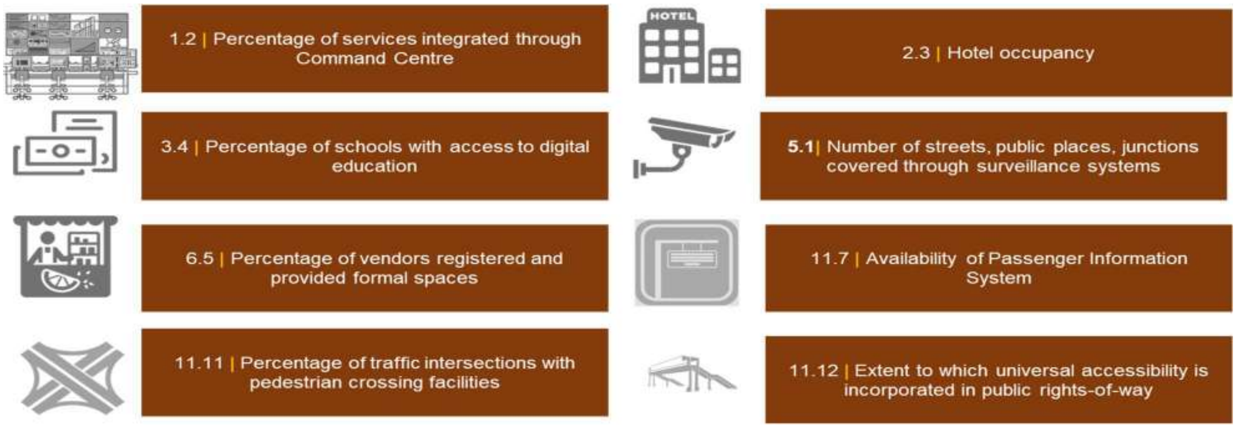
Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**5**
Traffic and Police Department	**2**
Development Authority	**8**
Pollution Control Board	**2**
State Renewable Energy Department	**3**
Town and Country Planning	**1**
State Health Department	**6**
Transport Authority	**4**
Disaster Management	**1**
Urban Local Body	**93**
Total	**131***

* The count of documents is based on first round of submission.

4.4 Data Verification

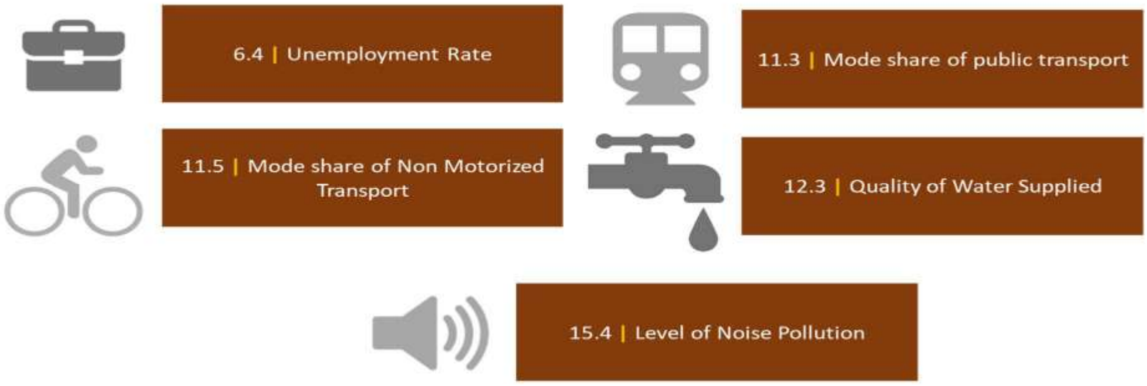
A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

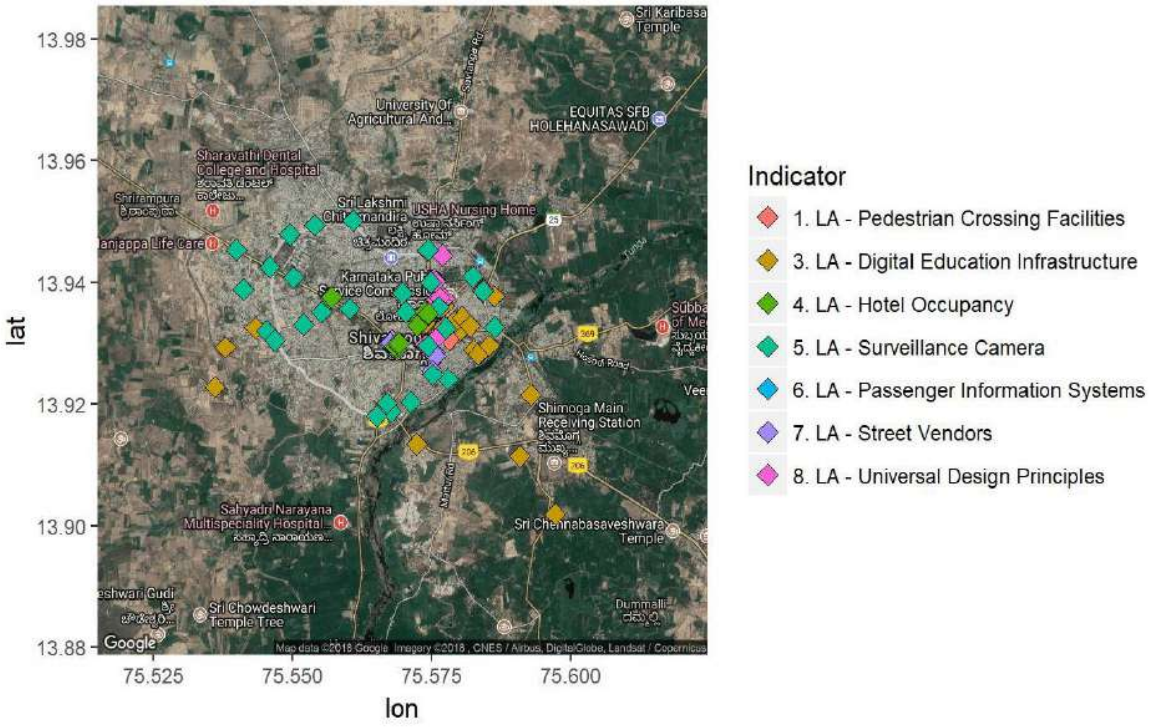
For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend

etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**47.8**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.5
	1.1b death certificate	0.5
	1.1c trade license	0.75
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0.75
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.444444444
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	0

	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.5**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	10
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**115.67**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1743.18
Denominator	Total demand raised for the year	1507
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**524.96**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	245.21

Denominator	Total O&M cost for providing water supply services during the year	46.71
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**12.21**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	2219.05
Denominator	Total expenditure (revenue and capital accounts) in the same year	18172.65
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-**

		Computable
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.89**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	100
Denominator	Total budget of the ULB (capital and revenue)	11209.44
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**11**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	11
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**75.82**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	40708
Denominator	Total population in the age group of 6-14 years	53688
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**75.32**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	19820
Denominator	Total female population in the age group of 6-14 years	26315
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.3	**Primary education student-teacher ratio**	**55.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	25445
Denominator	Total number of teachers available for primary grades (public and private schools)	456
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	228
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**93.15**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	93.15028 949
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**97.96**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	26357860
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**102.19**
Formula:	*Numerator / Denominator*	

Numerator	Number of in-patient hospital beds in public and private hospitals	3297
Denominator	Total population of the city	322650
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**25.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	816
Denominator	Total population of the city	322650
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**35**
Description	Total response time for health-related distress calls received in the city	35
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	2013
Denominator	Total population of the city	322650
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	212
Denominator	Total population of the city	322650
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**12**
Formula:	*Numerator / Denominator*	

Numerator	Total number of CCTV cameras installed	110
Denominator	Total length of road network in the city	917
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**934.45**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3015
Denominator	Total population of the city	322650
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	318
Denominator	Total crimes recorded in the same year	3015
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**25.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	82
Denominator	Total population of the city	322650
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**14.91**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2687.85
Denominator	Total VAT/GST collection during preceding year	180.2558
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**1.07**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	2.3
Denominator	Total Professional Tax collection during preceding year	214.28
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-4.21**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-57
Denominator	Number of construction permits during preceding year	13.54
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	6805
Denominator	Total labour force in the city	53688
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1555
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**6.77**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	817
Denominator	Total number of slum and EWS households in the city	120.66
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**2.18**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	8827704810
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**3.73**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1202000
Denominator	Total population of the city	322650
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**24.69**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	7965710.9
Denominator	Total population of the city	322650

Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**23.22**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	16280000
Denominator	Total area of the city (total area of all land uses)	70100000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	322650
Denominator	Area allocated for residential land use (in hectares)	51478000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**118.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	101891
Denominator	Total number of households in the city	85833
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0

Denominator	Total number of electricity connections in the city	130059
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**730**
Description	Total number of sustained electrical interruptions in a year	730
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.68**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	75948
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	411.31
Denominator	Total energy consumption from all sources	221458095
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	886482.7483
Denominator	Total quantum of water and waste water handled during the period	2889.6
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	8697253

Denominator	Total number of street light installations	17506
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	221458095
Denominator	Total population of the city	322650
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	10
Denominator	Total area of the city (sq.km)	70.1
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**2.71**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	873
Denominator	Total population of the city	322650
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be**

		computed
Description	Mode share of public transport	35.49
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	917
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.33**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of signalised intersections in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	13
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.51**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	9.3
Denominator	Total length of road network in the city	1834
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**76.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	13
Denominator	Total number of junctions/ intersections on major roads in the city	17
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**85.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	245
Denominator	Total number of public right-of-way areas in the city	285
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**45.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	38950

Denominator	Total number of households in the city	85833
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**260.34**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	84
Denominator	Total population of the city	322650
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	30
Denominator	Total number of samples tested for water quality	30
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**8.15**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	6.85
Denominator	Quantum of water put into the distribution system (mld)	84
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**1.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	466
Denominator	Total number of water connections in the city	42346
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1333
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**85.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	80153
Denominator	Total number of properties in the city	93463
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**58.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	54662
Denominator	Total number of properties in the city	93463
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	12.32
Denominator	Total waste water generated in the city per day	12.32
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	12.32
Denominator	Total waste water received at treatment plants per day	12.32
Unit	Percentage	
Benchmark	20% or more	

Indicator No: 13.5	**Coverage of storm water drains**	**17.01**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	156
Denominator	Total length of road network in the city	917
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**74.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	72700
Denominator	Total number of households and establishments in the city	97983
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**71.79**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	112
Denominator	Total quantum of MSW generated in the city	156
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**10.71**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	360
Denominator	Average MSW generated in the city (tons per month)	3360
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**

Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SILVASSA

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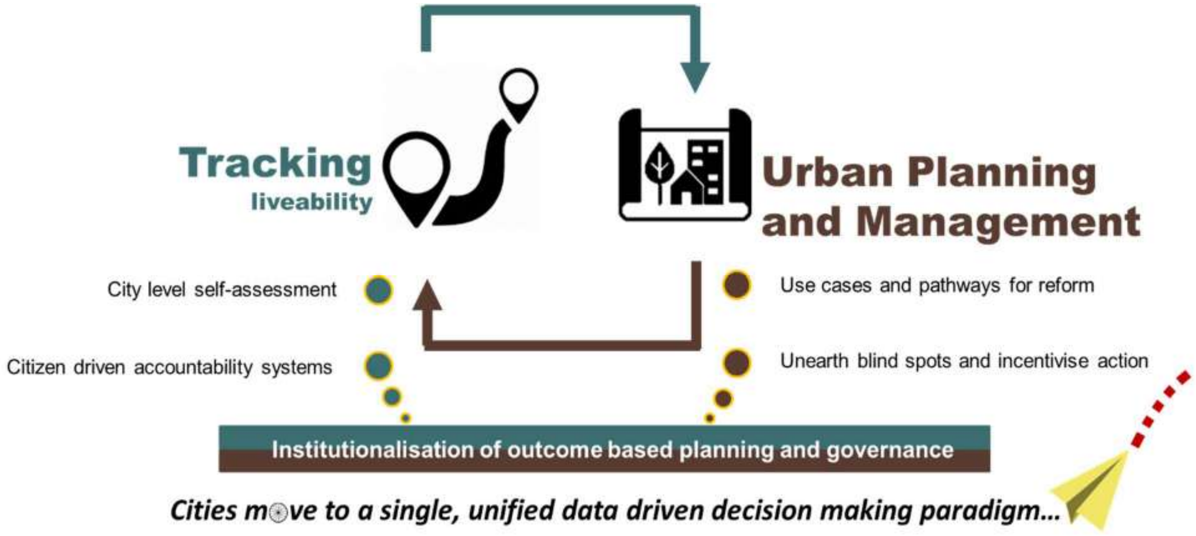
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

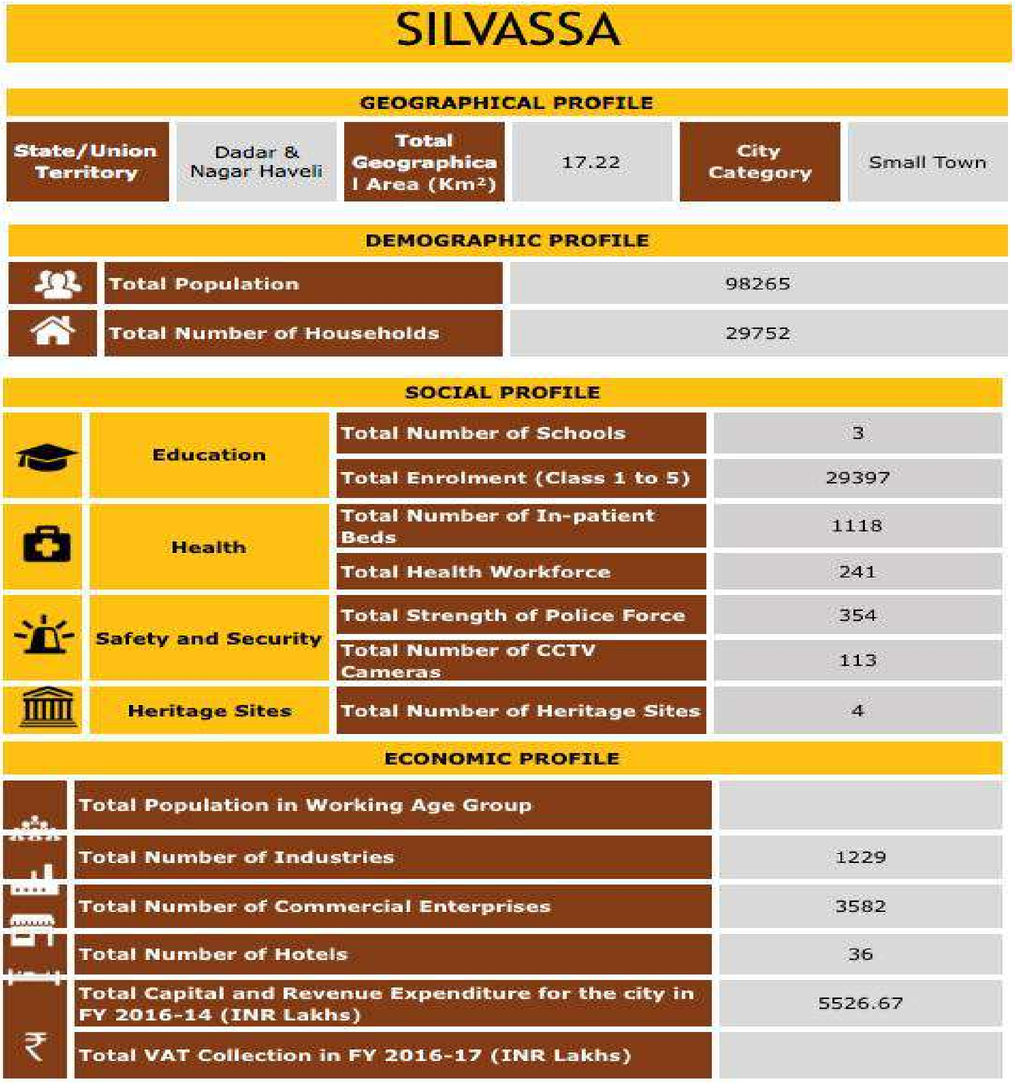
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SILVASSA

GEOGRAPHICAL PROFILE

State/Union Territory	Dadar & Nagar Haveli	**Total Geographical Area (Km^2)**	17.22	**City Category**	Small Town

DEMOGRAPHIC PROFILE

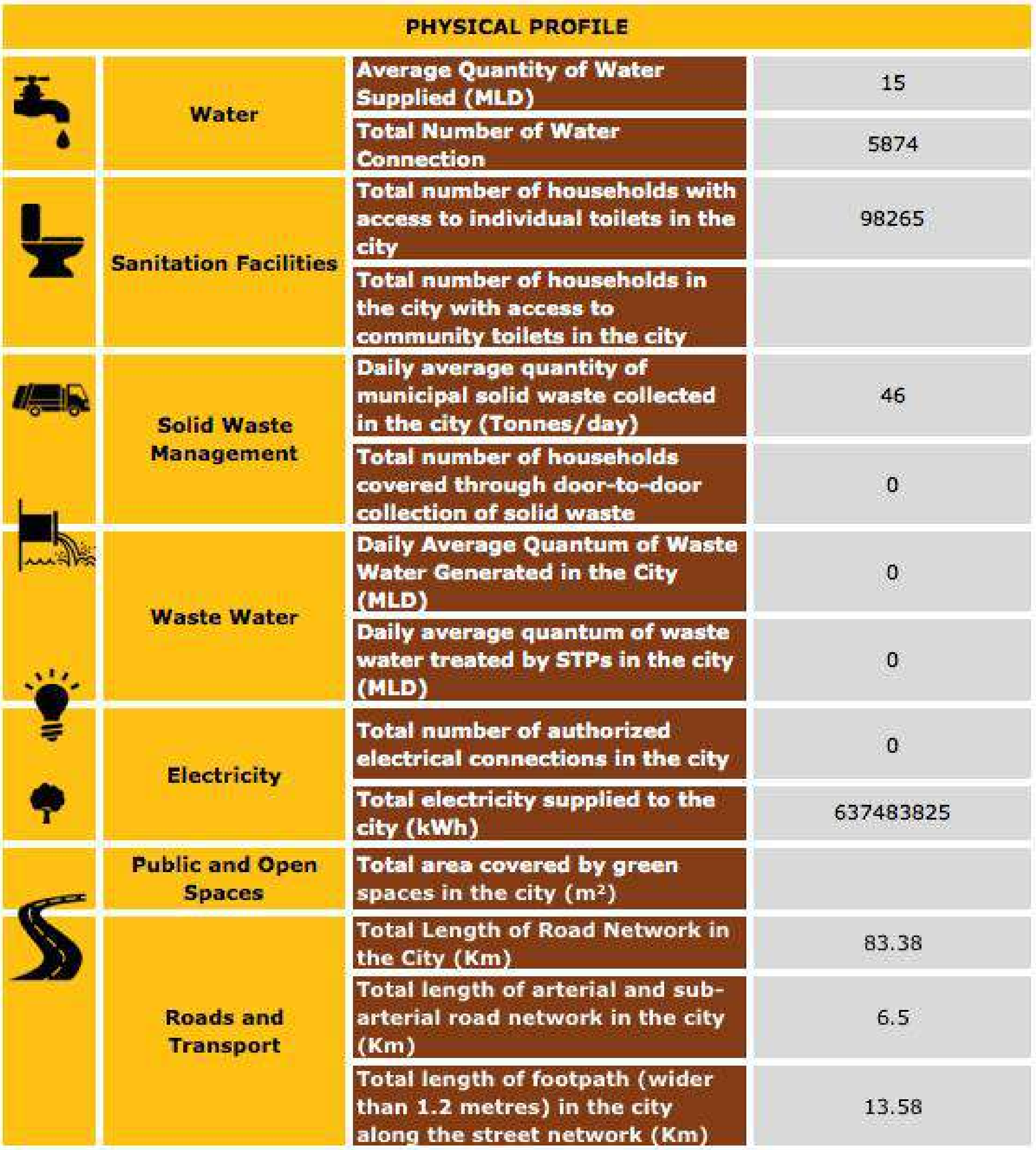
Total Population	98265
Total Number of Households	29752

SOCIAL PROFILE

Education	**Total Number of Schools**	3
	Total Enrolment (Class 1 to 5)	29397
Health	**Total Number of In-patient Beds**	1118
	Total Health Workforce	241
Safety and Security	**Total Strength of Police Force**	354
	Total Number of CCTV Cameras	113
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	1229
Total Number of Commercial Enterprises	3582
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	5526.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	15
	Total Number of Water Connection	5874
Sanitation Facilities	Total number of households with access to individual toilets in the city	98265
	Total number of households in the city with access to community toilets in the city	
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	46
	Total number of households covered through door-to-door collection of solid waste	0
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	0
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	0
	Total electricity supplied to the city (kWh)	637483825
Public and Open Spaces	Total area covered by green spaces in the city (m²)	
Roads and Transport	Total Length of Road Network in the City (Km)	83.38
	Total length of arterial and sub-arterial road network in the city (Km)	6.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	13.58

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indica tors). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive

development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and In-**	7.1 Percentage of Slum/EWS households covered through

Pillars of Comprehensive Development	Category	Indicators
	clusiveness	formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks

Pillars of Comprehensive Development	Category	Indicators
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through re-use
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

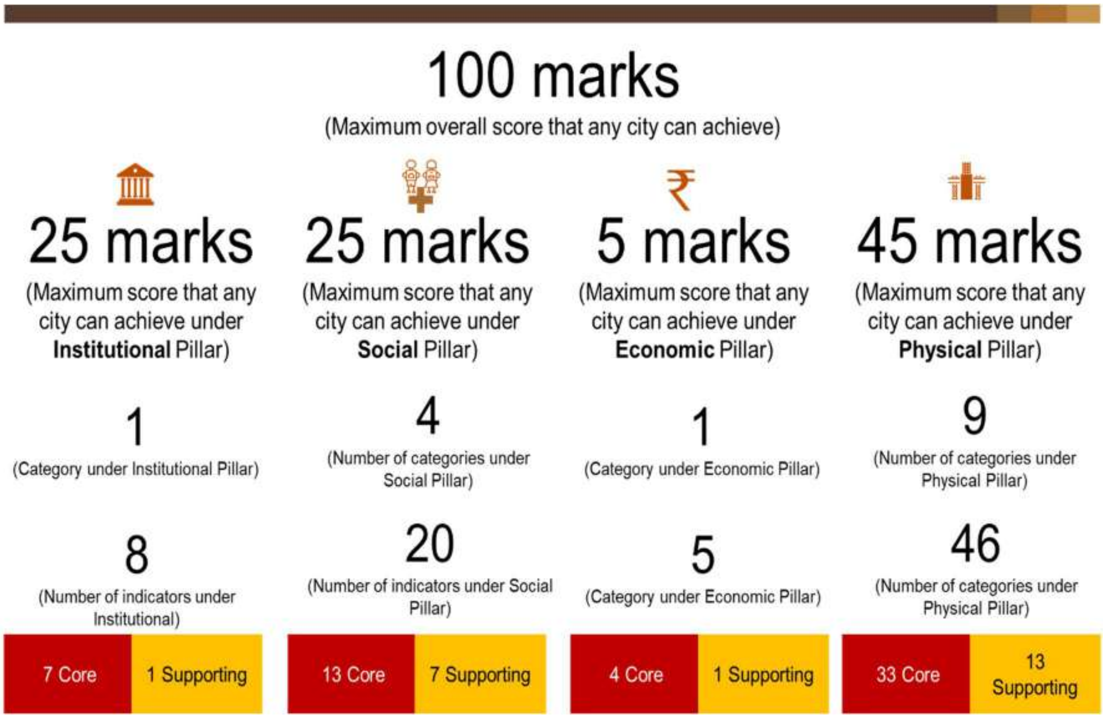
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions

on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department (Silvassa Municipal Council)
Urban Local Body	For Park and Recreation Related Questions	Forest Department-Silvassa
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage Department Silvassa Municipal Council-Silvassa
Urban Local Body	For Heritage sites related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For Ecological sites related data	Tourism Department-Silvassa
Urban Local Body	For Housing related data	Housing Department –SMC-Silvassa
Urban Local Body	For Building plan related data	Housing Department –SMC-Silvassa
Urban Local Body	For Roads related data	PWD and Silvassa Municipal Council-Silvassa
Urban Local Body	For Solid waste management related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For IT services related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For Vendor committee related data	Silvassa Municipal Council-Silvassa
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	ULB/SMC-Silvassa

Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board-Silvassa
Development Authority	Building Infrastructure	Silvassa Municipal Council- Silvassa
	Construction planning	Silvassa Municipal Council- Silvassa
	Green Building	Silvassa Municipal Council- Silvassa
	Rain water harvesting	Silvassa Municipal Council- Silvassa
	Universal Design Principle	Silvassa Municipal Council- Silvassa
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board, 66 KV Road-Silvassa
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Citizen Services	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Disease Prevalence	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Health Infrastructure	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
State Renewable Energy Development Agency		State Renewable Energy Development Agency 66 KV Road, Silvassa
State Sales / Commercial Taxes Department		Commercial Tax Department- Silvassa
Town and Country Planning Department	Land Use	Town and Country Planning Department, Silvassa
Traffic and Police Department		
Transport Authorities	Buses	Transport /RTO- Silvassa, D & NH
	Registered Vehicles	Transport /RTO- Silvassa, D & NH

	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Transport /RTO- Silvassa, D & NH

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 17 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	3
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	3
Transport Authority	1
Disaster Management	1
Urban Local Body	3
Total	17

* The count of documents is based on first round of submission.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

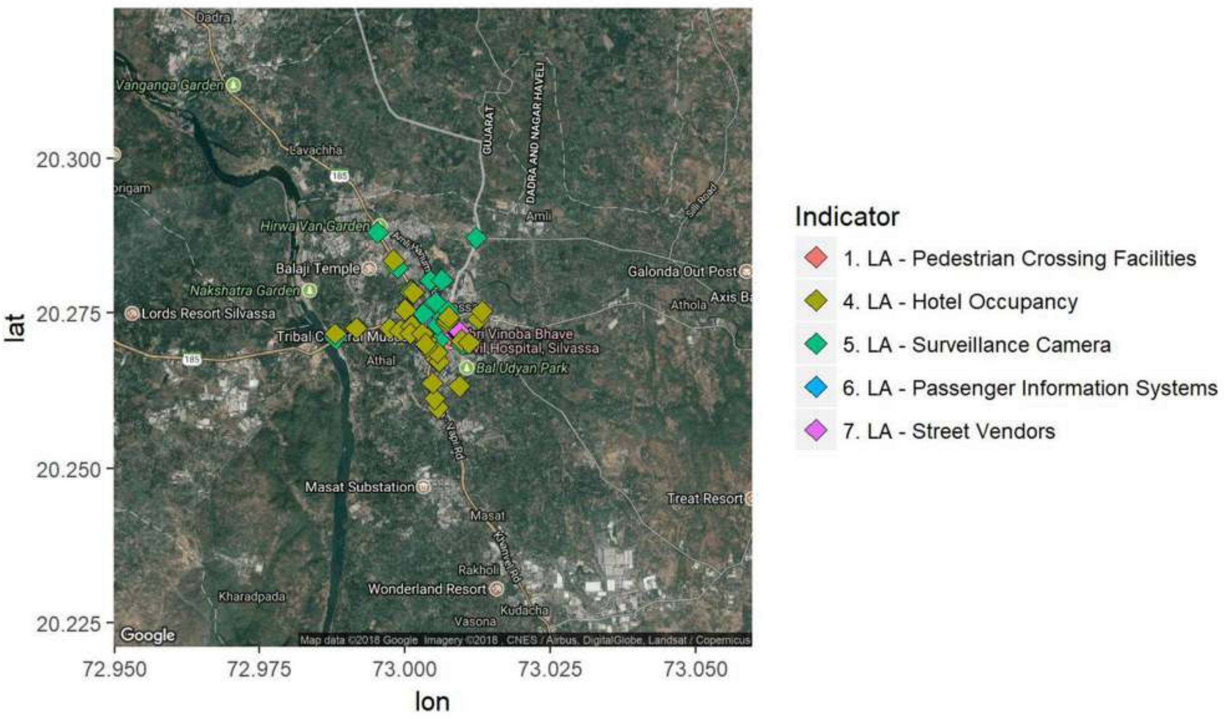
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Dadra
Vanganga Garden
Lavachha
GUJARAT
DADRA AND NAGAR HAVELI
Amli
Hirwa Van Garden
Balaji Temple
Nakshatra Garden
Lords Resort Silvassa
Tribal C
ral Mus
Athal
Galonda Out Post
Athola
Axis B
Vinoba Bhave
Civil Hospital, Silvassa
Bal Udyan Park
Masat Substation
Masat
Treat Resort
Rakholi
Wonderland Resort
Kudacha
Vasona
Kharadpada
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
20.300
20.275
20.250
20.225
lon
72.950
72.975
73.000
73.025
73.050
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**22.9**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.615384615384615
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.111111111111111
Unit	Percentage	

Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.14**
Description		

Sub Indicators	1.4a water supply	0
	1.4b solid waste	0.5
	1.4c street lights	0
	1.4d sewerage	0.5
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	463.38
Denominator	Total demand raised for the year	742429.5
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**1894.98**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	41.5
Denominator	Total O&M cost for providing water supply services during the year	2.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**1298.27**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-1570.65
Denominator	Total expenditure (revenue and capital accounts) in	-

	the same year	120.980000000001
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	15
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	2

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**19.2**
Description	Average Occupancy rate of Hotels	19.2
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	5526.67
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**60**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	60
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**161.63**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	45031
Denominator	Total population in the age group of 6-14 years	27860

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**134.52**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	17183
Denominator	Total female population in the age group of 6-14 years	12774
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**20.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	29397
Denominator	Total number of teachers available for primary grades (public and private schools)	1423
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**2433.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	73
Denominator	Total number of schools	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**10.1**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	

Numerator	Percentage	10.1006318870756
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**9.39**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	53774
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**113.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1118
Denominator	Total population of the city	98265
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**24.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	241
Denominator	Total population of the city	98265
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in	Data

	the city	Unavailable
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**66.37**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	65217
Denominator	Total population of the city	98265
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**4.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	4275
Denominator	Total population of the city	98265
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**135.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	113
Denominator	Total length of road network in the city	83.38
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**109.91**
Formula:	Numerator / Denominator	108
Numerator	Total number of crimes recorded in a year	98265
Denominator	Total population of the city	
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**22.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	24
Denominator	Total crimes recorded in the same year	108
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**7.12**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	7
Denominator	Total population of the city	98265
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	NC
Denominator	Total VAT/GST collection during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-100**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-565311.58
Denominator	Total Professional Tax collection during preceding year	565319
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-22.41**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-13
Denominator	Number of construction permits during preceding year	0.58
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	NA

Denominator	Total labour force in the city	113484
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**41.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1190
Denominator	Total number of vendors in the city	2837.1
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	NA
Denominator	Total number of slum and EWS households in the city	9.47
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	

Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	98265
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	Data Unavailable
Denominator	Total population of the city	98265
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	9.24
Denominator	Total area of the city (total area of all land uses)	17220000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**13424.18**

Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	98265
Denominator	Area allocated for residential land use (in hectares)	7.32
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at house-hold level	0
Denominator	Total number of households in the city	29752
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable** NA
Description	Total number of sustained electrical interruptions in a year	
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	NA
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	10
Denominator	Total energy consumption from all sources	637483825
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	545030
Denominator	Total quantum of water and waste water handled during the period	450
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2055519.4

Denominator	Total number of street light installations	3054
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	Data Unavailable
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	637483825
Denominator	Total population of the city	98265
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	12.5
Denominator	Total area of the city (sq.km)	17.22
Unit	Transport length (kms) per square km	
Benchmark	>=1	

Indicator No: 11.2	**Availability of public transport**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	6
Denominator	Total population of the city	98265
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	83.38
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	Data Unavailable
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport**	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**8.14**

Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	13.58
Denominator	Total length of road network in the city	166.76
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**45.45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	5
Denominator	Total number of junctions/ intersections on major roads in the city	11
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	98
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**11.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	3480
Denominator	Total number of households in the city	29752

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**152.65**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	15
Denominator	Total population of the city	98265
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	150
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	15
Denominator	Quantum of water put into the distribution system (mld)	15
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	5874

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**85.37**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	35
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	41
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**330.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	98303
Denominator	Total number of properties in the city	29752
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**3.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	1177
Denominator	Total number of properties in the city	29752
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**49.71**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	41.45
Denominator	Total length of road network in the city	83.38
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	0
Denominator	Total number of households and establishments in the city	33334
Unit	Percentage	

Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	46
Denominator	Total quantum of MSW generated in the city	46
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through re-use**	**44902.17**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	619650
Denominator	Average MSW generated in the city (tons per month)	1380
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**28.2**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	28.2
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**45.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	45.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	**Concentration of PM10 - air pollution**	
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	**217.3**
Unit	µg/m3	217.3
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	2
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SOLAPUR

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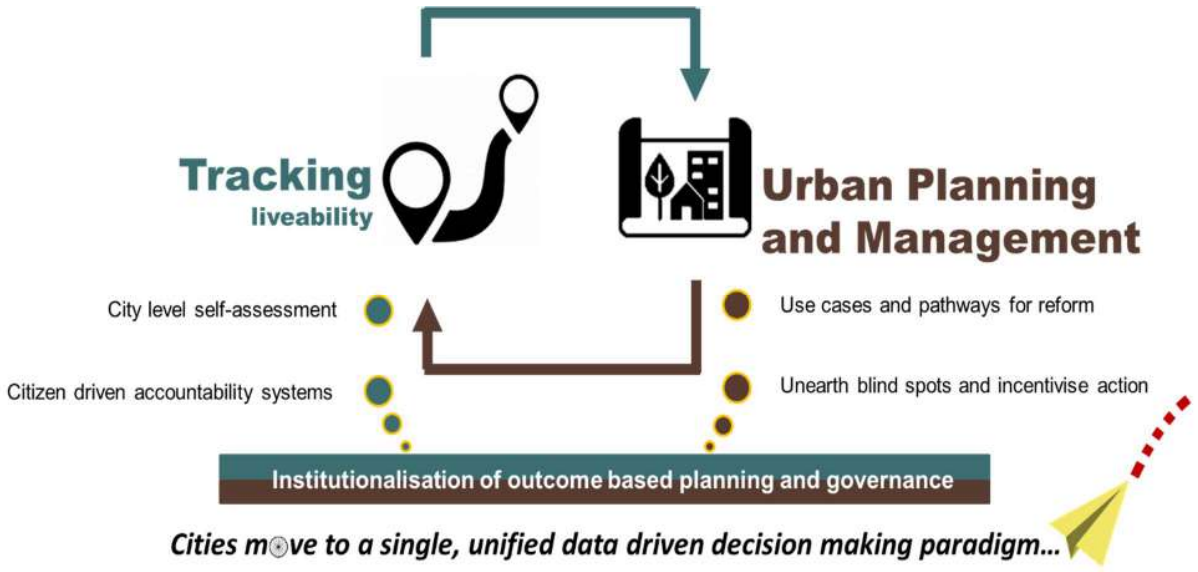
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

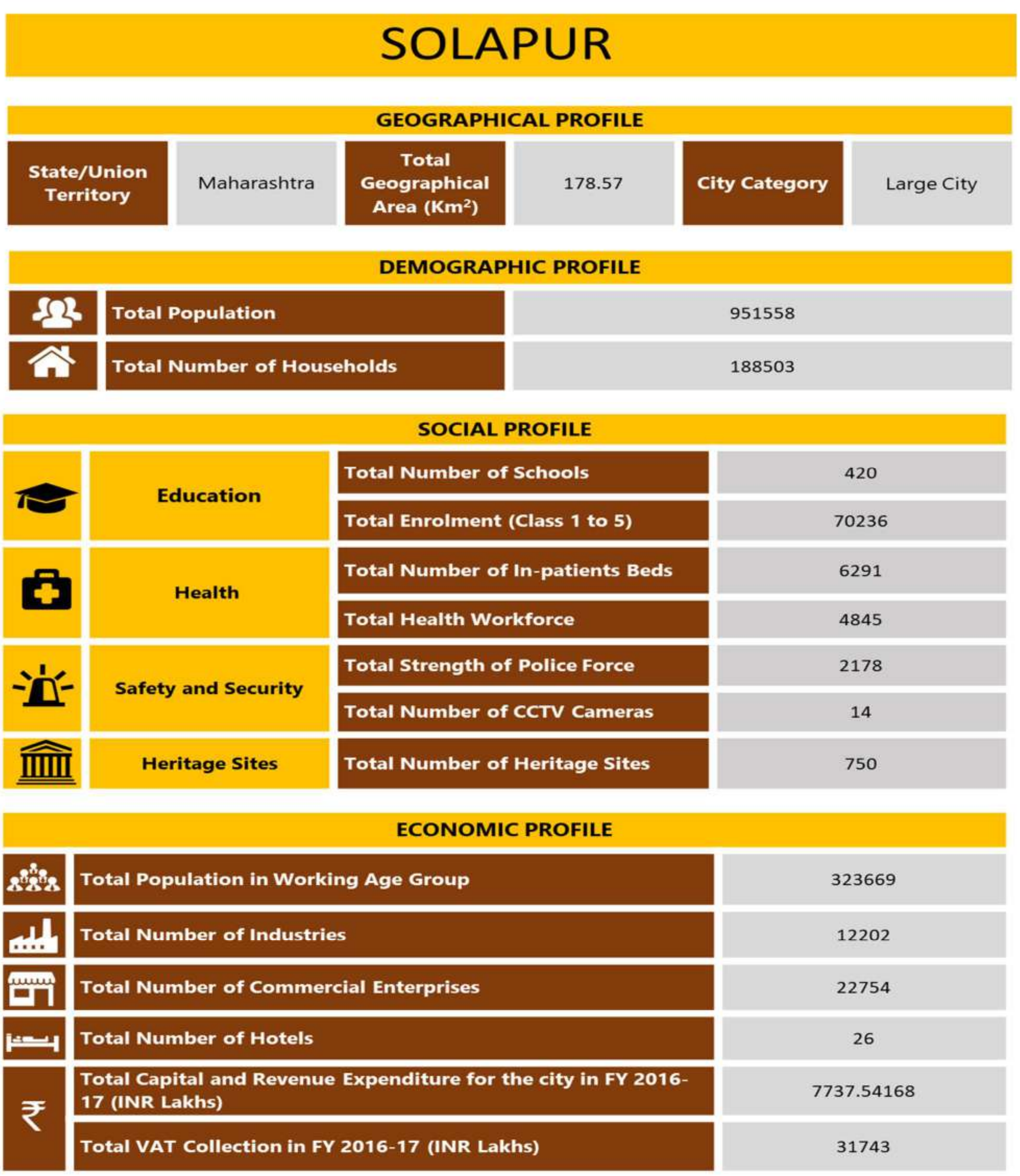
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SOLAPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	178.57	**City Category**	Large City

DEMOGRAPHIC PROFILE

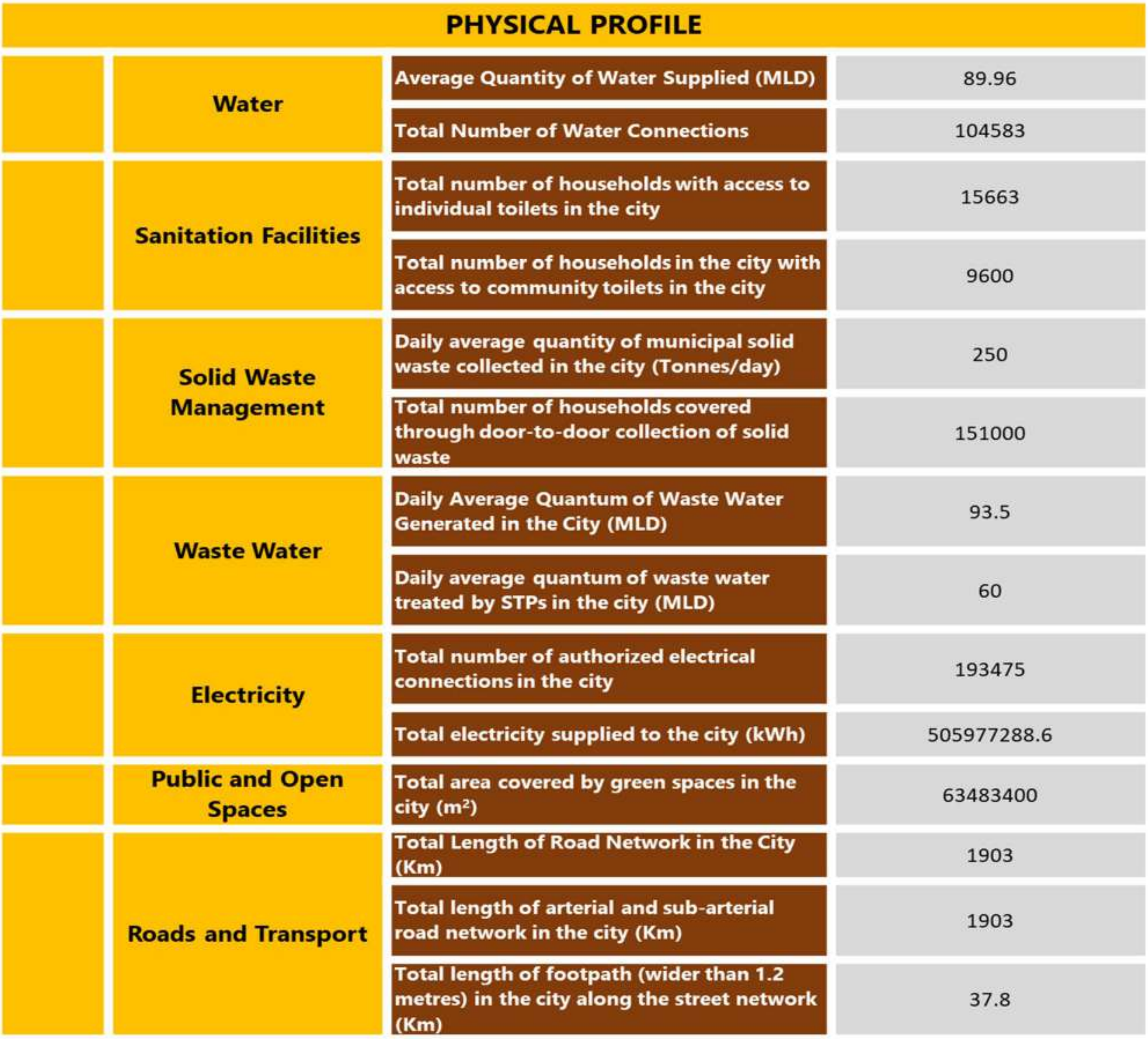
Total Population	951558
Total Number of Households	188503

SOCIAL PROFILE

Education	**Total Number of Schools**	420
	Total Enrolment (Class 1 to 5)	70236
Health	**Total Number of In-patients Beds**	6291
	Total Health Workforce	4845
Safety and Security	**Total Strength of Police Force**	2178
	Total Number of CCTV Cameras	14
Heritage Sites	**Total Number of Heritage Sites**	750

ECONOMIC PROFILE

Total Population in Working Age Group	323669
Total Number of Industries	12202
Total Number of Commercial Enterprises	22754
Total Number of Hotels	26
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7737.54168
Total VAT Collection in FY 2016-17 (INR Lakhs)	31743



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	89.96
		Total Number of Water Connections	104583
	Sanitation Facilities	Total number of households with access to individual toilets in the city	15663
		Total number of households in the city with access to community toilets in the city	9600
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	250
		Total number of households covered through door-to-door collection of solid waste	151000
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	93.5
		Daily average quantum of waste water treated by STPs in the city (MLD)	60
	Electricity	Total number of authorized electrical connections in the city	193475
		Total electricity supplied to the city (kWh)	505977288.6
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	63483400
	Roads and Transport	Total Length of Road Network in the City (Km)	1903
		Total length of arterial and sub-arterial road network in the city (Km)	1903
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	37.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

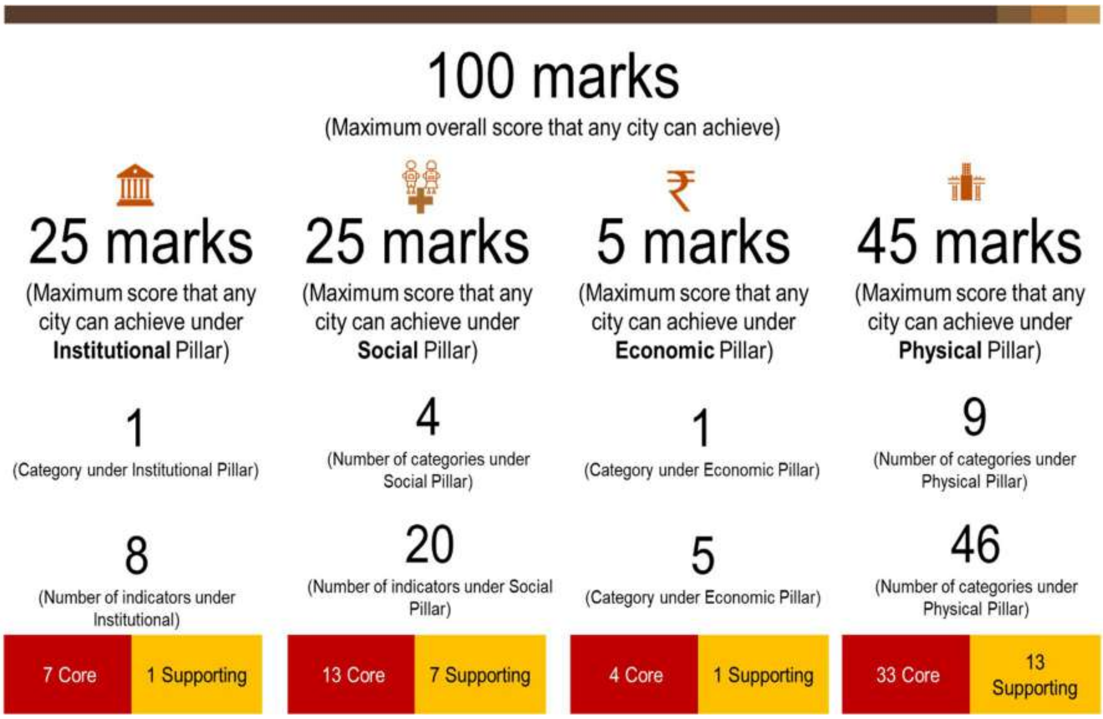
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Dept
Urban Local Body	For Park and Recreation Related Questions	Garden Dept
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage Dept
Urban Local Body	For Heritage sites related data	Smart City Office
Urban Local Body	For Ecological sites related data	Smart City Office
Urban Local Body	For Housing related data	City Engineer Dept
Urban Local Body	For Building plan related data	City Engineer Dept
Urban Local Body	For Roads related data	City Engineer Dept
Urban Local Body	For Solid waste management related data	Solid Waste Management, SMC
Urban Local Body	For IT services related data	Computer Dept., SMC
Urban Local Body	For Vendor committee related data	Market Dept., SMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Light Dept., Health Dept., Property Tax Dept., Town Planning Dept., Swachh Maharashtra Mission Office, Land & Real Estate Dept., Sports Officer, Transport Dept., SMC School Board, etc.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board, Solapur.
Development Authority	Building Infrastructure	Building Permission Dept.
	Construction planning	Building Permission Dept.

Designated data owners	Subcategories	Data owners at city level
	Green Building	Building Permission Dept.
	Rain water harvesting	Building Permission Dept.
	Universal Design Principle	Building Permission Dept.
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Distribution Corporation Limited, Solapur.
State Disaster management authority		Collector Office, Solapur.
State Education Department		SMC School Board
State Health Department	Health care professionals	Health Dept., SMC.
	Citizen Services	Health Dept., SMC.
	Disease Prevalence	Health Dept., SMC.
	Health Infrastructure	Health Dept., SMC.
State Renewable Energy Development Agency		Maharashtra State Electricity Distribution Corporation Limited, Solapur.
State Sales / Commercial Taxes Department		GST Office, Solapur.
Town and Country Planning Department	Land Use	Town Planning Dept., SMC
Traffic and Police Department		Commissioner of Police Office, Solapur.
Transport Authorities	Buses	Transport Dept., SMC
	Registered Vehicles	RTO
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 74 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**7**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**2**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**4**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**54**
Total	**74***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

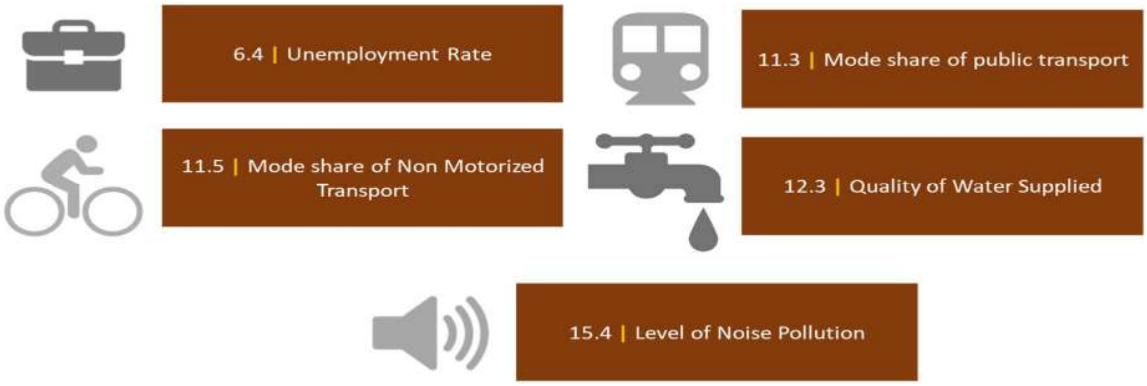
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

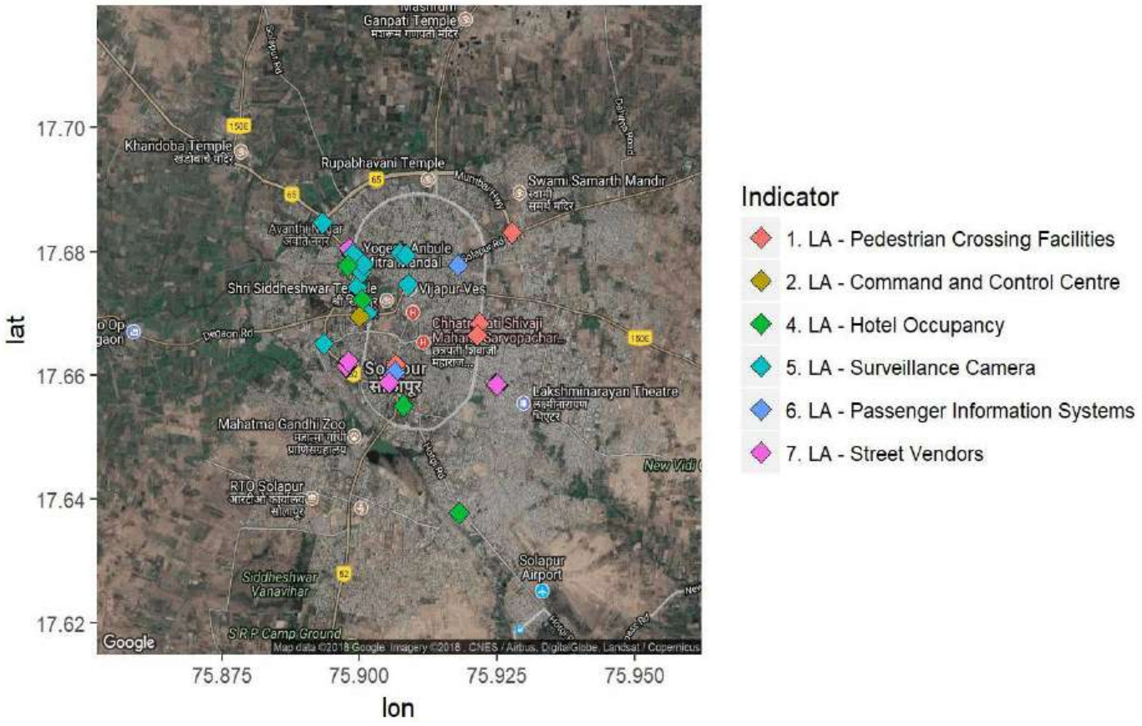
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
lat
17.70
17.68
17.66
17.64
17.62
lon
75.875
75.900
75.925
75.950
Ganpati Temple
Khandoba Temple
Rupabhavani Temple
Swami Samarth Mandir
Avanthi Nagar
Shri Siddheshwar Temple
Vijapur Ves
Chhatrapati Shivaji Maharaj Sarvopachar
Solapur
Lakshminarayan Theatre
Mahatma Gandhi Zoo
RTO Solapur
Siddheshwar Vanavihar
Solapur Airport
S R P Camp Ground
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend

etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**75.21**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.444444444
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**19.05**
Description	Services integrated through an integrated or a singular operations command centre	4
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**6.3**
Description		
Sub Indicators	1.3a Building plan	0.000370468
	1.3b Birth/Death Certificate	2.10182E-06

	1.3c water supply	6.06772E-06
	1.3d solid waste management	0.006228732
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	7.00605E-06
	1.3i information	0.084072647
	1.3j electricity	0.350122755
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.29**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**84.79**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	10710.77
Denominator	Total demand raised for the year	12631.84
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**79.84**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2282.40546

Denominator	Total O&M cost for providing water supply services during the year	2858.88
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**133.81**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-44782.10283
Denominator	Total expenditure (revenue and capital accounts) in the same year	-33468.02762
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**30.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	8
Denominator	Total number of wards	26
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.3	**Hotel Occupancy**	**17.14**
Description	Average Occupancy rate of Hotels	17.14285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	33.51979
Denominator	Total budget of the ULB (capital and revenue)	7737.54168
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**153**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	153
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**64.77**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	113343
Denominator	Total population in the age group of 6-14 years	174987
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**64.1**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	53745
Denominator	Total female population in the age group of 6-14 years	83840
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.3	**Primary education student-teacher ratio**	**51.45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	70236
Denominator	Total number of teachers available for primary grades (public and private schools)	1365
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**7.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	30
Denominator	Total number of schools	420
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**95.49**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	95.48554406
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**99.91**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	210728352
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**66.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6291
Denominator	Total population of the city	951558
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**50.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4845
Denominator	Total population of the city	951558
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**17**
Description	Total response time for health-related distress calls received in the city	17
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.41**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3934
Denominator	Total population of the city	951558
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	430
Denominator	Total population of the city	951558
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	14
Denominator	Total length of road network in the city	1903
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**455.46**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4334
Denominator	Total population of the city	951558
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**9.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	424
Denominator	Total crimes recorded in the same year	4334
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**8.51**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	81
Denominator	Total population of the city	951558
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**6.61**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1969
Denominator	Total VAT/GST collection during preceding year	297.74
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**57.23**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	859
Denominator	Total Professional Tax collection during preceding year	1501
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-8.97**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-240
Denominator	Number of construction permits during preceding year	26.77
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	139431
Denominator	Total labour force in the city	174987
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	4374.675
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	442
Denominator	Total number of slum and EWS households in the city	625.58
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	4295033600
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**66.72**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	63483400
Denominator	Total population of the city	951558
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.85**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	3659381.18
Denominator	Total population of the city	951558
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.68**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1212000
Denominator	Total area of the city (total area of all land uses)	178570000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	951558
Denominator	Area allocated for residential land use (in hectares)	11600000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**85.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	161794
Denominator	Total number of households in the city	188503
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.43**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	826
Denominator	Total number of electricity connections in the city	193475
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2213**
Description	Total number of sustained electrical interruptions in a year	2213
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.62**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	566766
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1182.38
Denominator	Total energy consumption from all sources	505977808.6
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.14**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3111969.5
Denominator	Total quantum of water and waste water handled during the period	4498.8
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	17133386
Denominator	Total number of street light installations	40048
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	120106
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.72**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	505977808.6
Denominator	Total population of the city	951558
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	95
Denominator	Total area of the city (sq.km)	178.57
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	78
Denominator	Total population of the city	951558
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	20
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.26**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	24
Denominator	Total length of road network in the city	1903
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**28.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	17

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	10
Denominator	Total available on-street parking spaces in the city	10
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.99**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	37.8
Denominator	Total length of road network in the city	3806
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**193.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	31
Denominator	Total number of junctions/ intersections on major roads in the city	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	6
Denominator	Total number of public right-of-way areas in the city	1061
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	74
Denominator	Total number of households in the city	188503
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**94.54**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	89.96
Denominator	Total population of the city	951558
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	954
Denominator	Total number of samples tested for water quality	8130
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**50.02**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	45
Denominator	Quantum of water put into the distribution system (mld)	89.96
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	343
Denominator	Total number of water connections in the city	104583
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	2510
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2510
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**11.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	28592
Denominator	Total number of properties in the city	247210
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**78.41**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	193827
Denominator	Total number of properties in the city	247210
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	93.5
Denominator	Total waste water generated in the city per day	93.5
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**80**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	48
Denominator	Total waste water received at treatment plants per day	60
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.95**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	18
Denominator	Total length of road network in the city	1903
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**80.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	169200
Denominator	Total number of households and establishments in the city	211257
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**83.33**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	250
Denominator	Total quantum of MSW generated in the city	300
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.6**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	45
Denominator	Average MSW generated in the city (tons per month)	7500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**18**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	18
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**52**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	52
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**101**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	101
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	12
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	14
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

SRINAGAR

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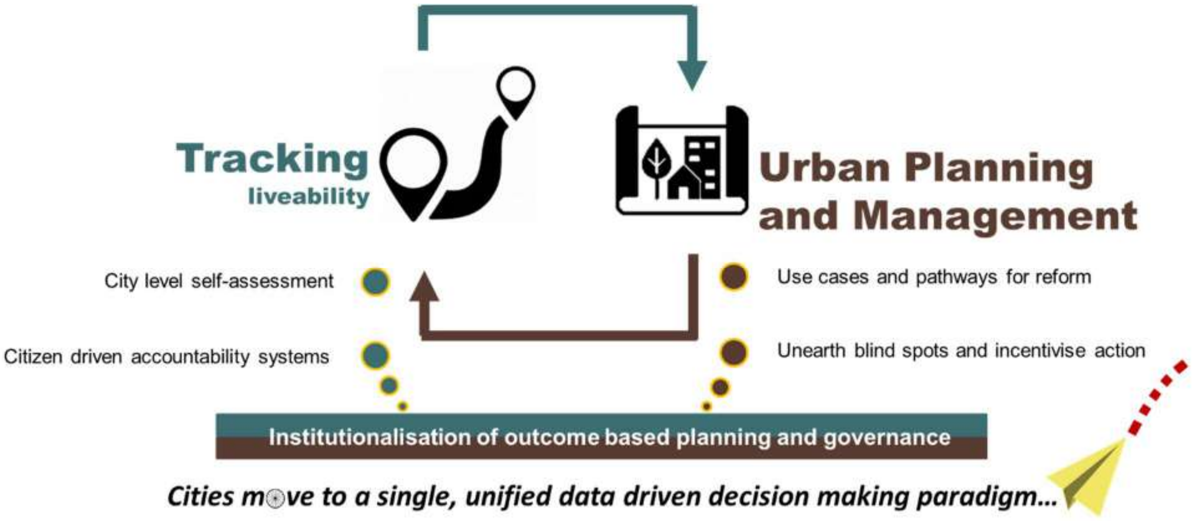
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

SRINAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Jammu and Kashmir	Total Geographical Area (Km^2)	276	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1206419
Total Number of Households	206080

SOCIAL PROFILE

Education	Total Number of Schools	67
	Total Enrolment (Class 1 to 5)	10419
Health	Total Number of In-patient Beds	3886
	Total Health Workforce	9986
Safety and Security	Total Strength of Police Force	4670
	Total Number of CCTV Cameras	323
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	411091
Total Number of Industries	5829
Total Number of Commercial Enterprises	77056
Total Number of Hotels	419
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	15595.04
Total VAT Collection in FY 2016-17 (INR Lakhs)	98411.01

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	113.21
	Total Number of Water Connection	129551
Sanitation Facilities	Total number of households with access to individual toilets in the city	1175918
	Total number of households in the city with access to community toilets in the city	30
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0
	Total number of households covered through door-to-door collection of solid waste	142400
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	53.7
	Daily average quantum of waste water treated by STPs in the city (MLD)	53.7
Electricity	Total number of authorized electrical connections in the city	199993
	Total electricity supplied to the city (kWh)	1048025481
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	132480
Roads and Transport	Total Length of Road Network in the City (Km)	1908
	Total length of arterial and sub-arterial road network in the city (Km)	560
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

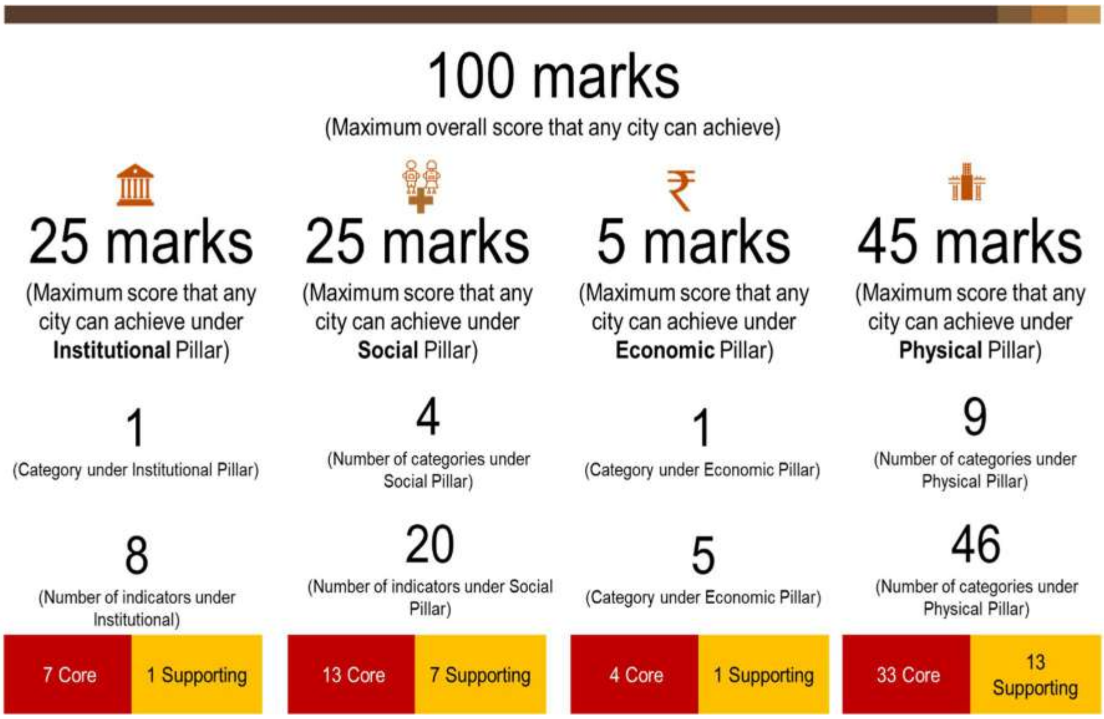
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section, Srinagar Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Srinagar Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Srinagar Municipal corporation
Urban Local Body	For Heritage sites related data	Srinagar Municipal Corporation
Urban Local Body	For Ecological sites related data	Srinagar Municipal Corporation
Urban Local Body	For Housing related data	Srinagar Municipal Corporation
Urban Local Body	For Building plan related data	Building Plan Section, Srinagar Municipal Corporation
Urban Local Body	For Roads related data	Public Work section, Srinagar Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management Section, Srinagar Municipal Corporation
Urban Local Body	For IT services related data	IT Section, Srinagar Municipal Corporation
Urban Local Body	For Vendor committee related data	Srinagar Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	J & KState Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Srinagar development authority
	Construction planning	Srinagar development authority
	Green Building	Srinagar development authority
	Rain water harvesting	Srinagar development authority
	Universal Design Principle	Srinagar development authority
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	J & K State Power Development Corporation
State Disaster management authority		J & K State Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Health Section, Srinagar Municipal Corporation State Health Department
	Citizen Services	Health Section, Srinagar Municipal Corporation
	Disease Prevalence	Health Section, Srinagar Municipal Corporation State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		J & K Energy Development Agency
State Sales / Commercial Taxes Department		Commercial taxes, Kashmir Division
Town and Country Planning Department	Land Use	Town Planning, SMC
Traffic and Police Department		J & K Police department, Srinagar
Transport Authorities	Buses	Transport Department, J & K
	Registered Vehicles	Transport Department, J & K
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	2
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	18
Total	32*

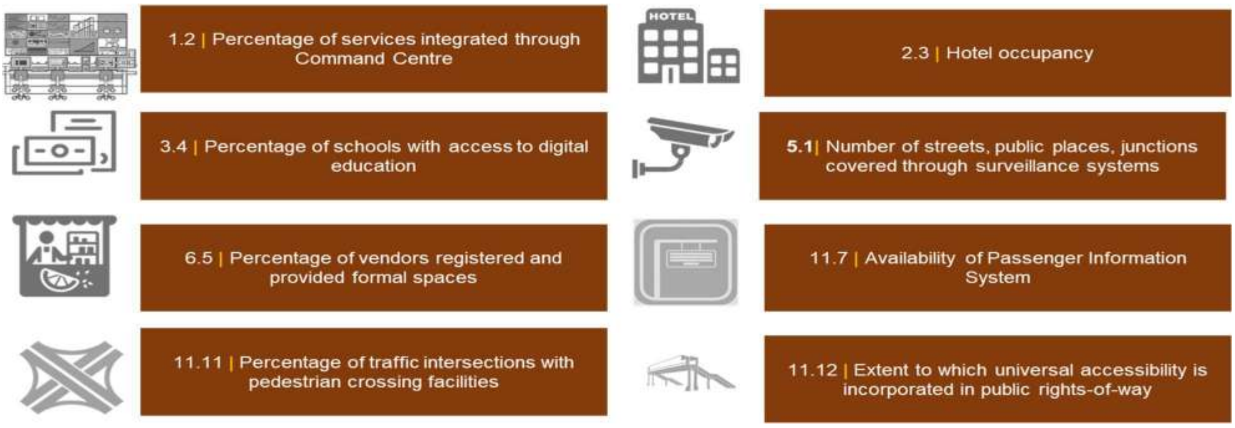
* The count of documents is based on first round of submission.

4.4 Data Verification

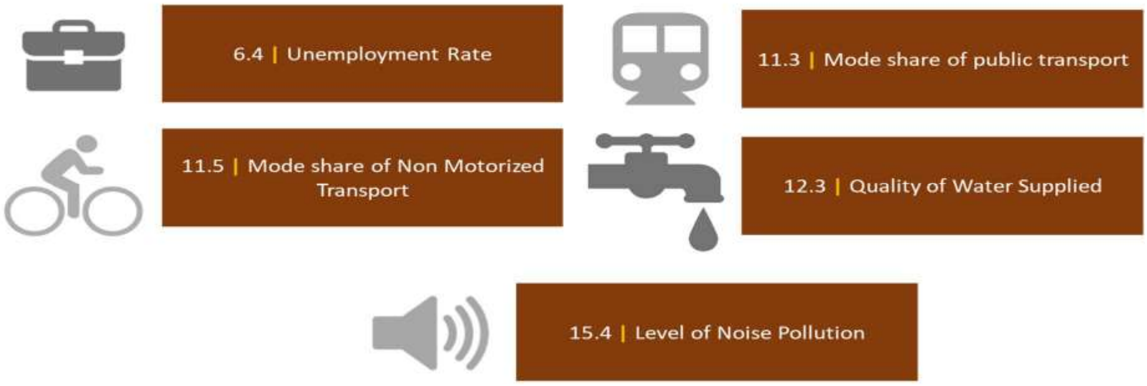
A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

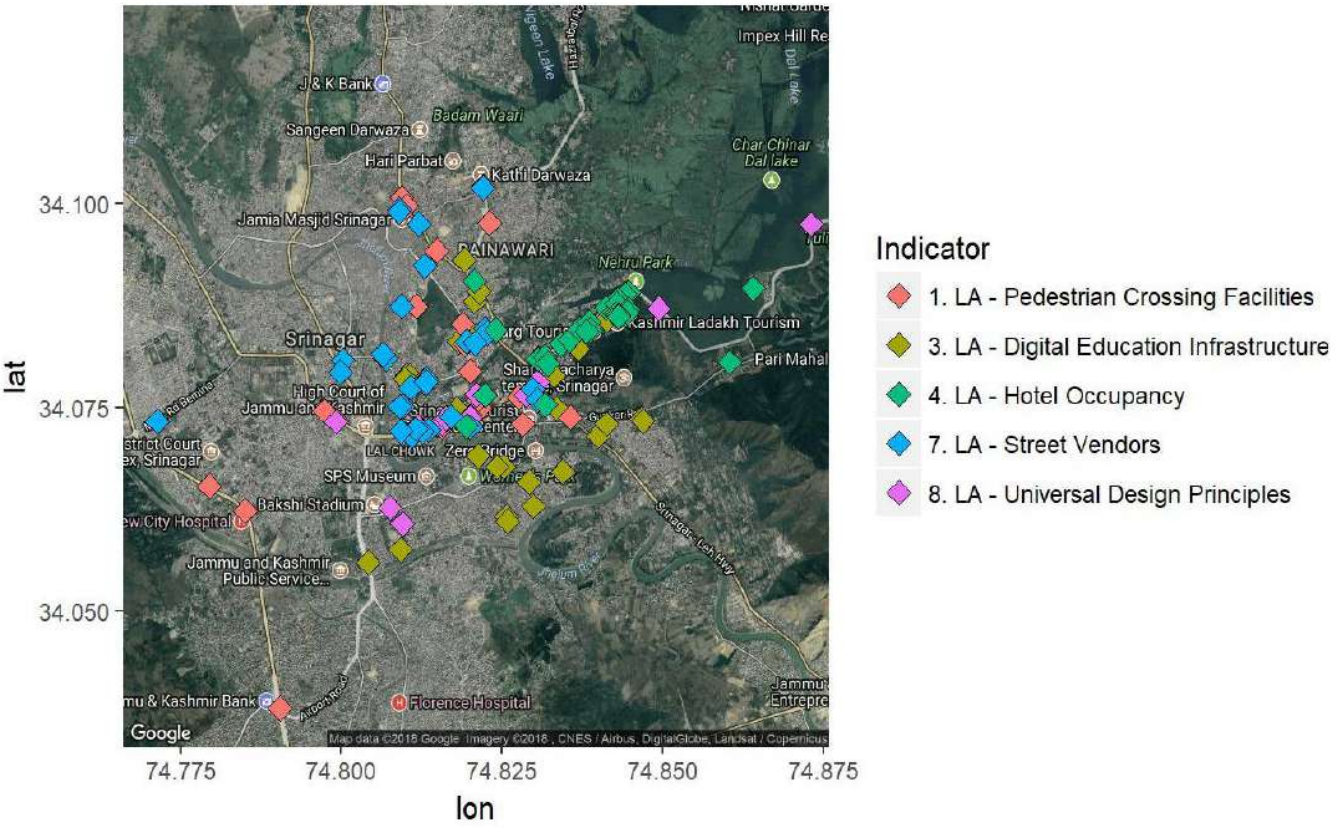

1.2 | Percentage of services integrated through Command Centre
HOTEL
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


34.100
34.075
34.050
lat
74.775
74.800
74.825
74.850
74.875
lon
J & K Bank
Badam Waari
Sangeen Darwaza
Hari Parbat
Kathi Darwaza
Jamia Masjid Srinagar
RAINAWARI
Nehru Park
Char Chinar Dal lake
Impex Hill Re
Srinagar
Kashmir Ladakh Tourism
Pari Mahal
High Court of Jammu and Kashmir
LAL CHOWK
Zero Bridge
SPS Museum
Bakshi Stadium
Jammu and Kashmir Public Service...
Florence Hospital
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**37.54**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.111111111
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**1.68**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.01684559
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.33**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	2
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	

Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	NA
Denominator	Total demand raised for the year	NA
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**12.67**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	543.84
Denominator	Total O&M cost for providing water supply services during the year	4291.88
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**25.7**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	11345.74
Denominator	Total expenditure (revenue and capital accounts) in the same year	44147.66
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	74
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	750
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	9
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	15595.04
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	Data Unavailable
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**7.45**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	16124
Denominator	Total population in the age group of 6-14 years	216520
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**8.06**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	8314
Denominator	Total female population in the age group of 6-14 years	103183
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**7.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	10419
Denominator	Total number of teachers available for primary grades (public and private schools)	1315
Unit	Ratio	
Benchmark	1 teacher for every 30 students	

Indicator No: 3.4	**Percentage of schools with access to digital education**	**22.39**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	15
Denominator	Total number of schools	67
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**52.68**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	**52.68**
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**83.79**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	**83.79**
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**32.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3886
Denominator	Total population of the city	1206419
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**82.77**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	9986
Denominator	Total population of the city	1206419
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	NA
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.45**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5411
Denominator	Total population of the city	1206419
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	24
Denominator	Total population of the city	1206419
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**16.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	323
Denominator	Total length of road network in the city	1908
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**232.84**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2809
Denominator	Total population of the city	1206419
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**17.48**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	491
Denominator	Total crimes recorded in the same year	2809
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**4.89**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	59
Denominator	Total population of the city	1206419
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**5.84**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	5426.18
Denominator	Total VAT/GST collection during preceding year	929.8483
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-44.59**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-33
Denominator	Number of construction permits during preceding year	0.74
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	5851
Denominator	Total labour force in the city	216520
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	5413
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**11.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	14036
Denominator	Total number of slum and EWS households in the city	1216.71
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	

Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**Data Unavailable**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	132480
Denominator	Total population of the city	1206419
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**15.54**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	18743909
Denominator	Total population of the city	1206419
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	276000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1206419
Denominator	Area allocated for residential land use (in hectares)	144870000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**73.6**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	151668
Denominator	Total number of households in the city	206080

Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	199993
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**165060**
Description	Total number of sustained electrical interruptions in a year	165060
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1341.6
Denominator	Total energy consumption from all sources	1048025481
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	5007.3
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	

Numerator	Energy consumption on street lighting	4401360
Denominator	Total number of street light installations	47260
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1048025481
Denominator	Total population of the city	1206419
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	35
Denominator	Total area of the city (sq.km)	276
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**5.76**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	6951
Denominator	Total population of the city	1206419
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	46
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**1.42**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	27
Denominator	Total length of road network in the city	1908
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1.5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	33
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	28
Denominator	Total available on-street parking spaces in the city	28
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	Data Unavailable

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total length of road network in the city	3816
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**126.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	113
Denominator	Total number of junctions/ intersections on major roads in the city	89
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	305
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	Data Unavailable
Denominator	Total number of households in the city	206080
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**93.84**

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	113.21
Denominator	Total population of the city	1206419
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	28
Denominator	Total number of samples tested for water quality	28
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	113.21
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	129551
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**0**
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	0
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	827
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**604.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1245029
Denominator	Total number of properties in the city	205878
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**12.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	26419
Denominator	Total number of properties in the city	205878
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	53.7
Denominator	Total waste water generated in the city per day	53.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	53.7
Denominator	Total waste water received at treatment plants per day	53.7
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**28.72**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	548
Denominator	Total length of road network in the city	1908
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**74.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	211200
Denominator	Total number of households and establishments in	283136

	the city	
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	0
Denominator	Total quantum of MSW generated in the city	400
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	0
Denominator	Average MSW generated in the city (tons per month)	0
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	**Concentration of PM10 - air pollution**	**88.99**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	88.99
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	120
Denominator	Total number of noise samples	120
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

SURAT

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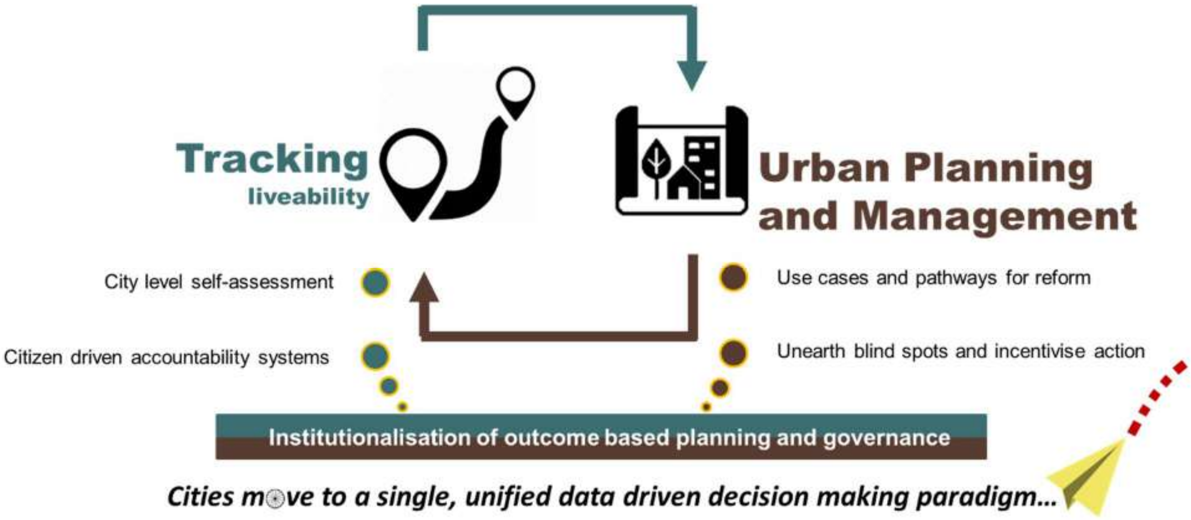
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

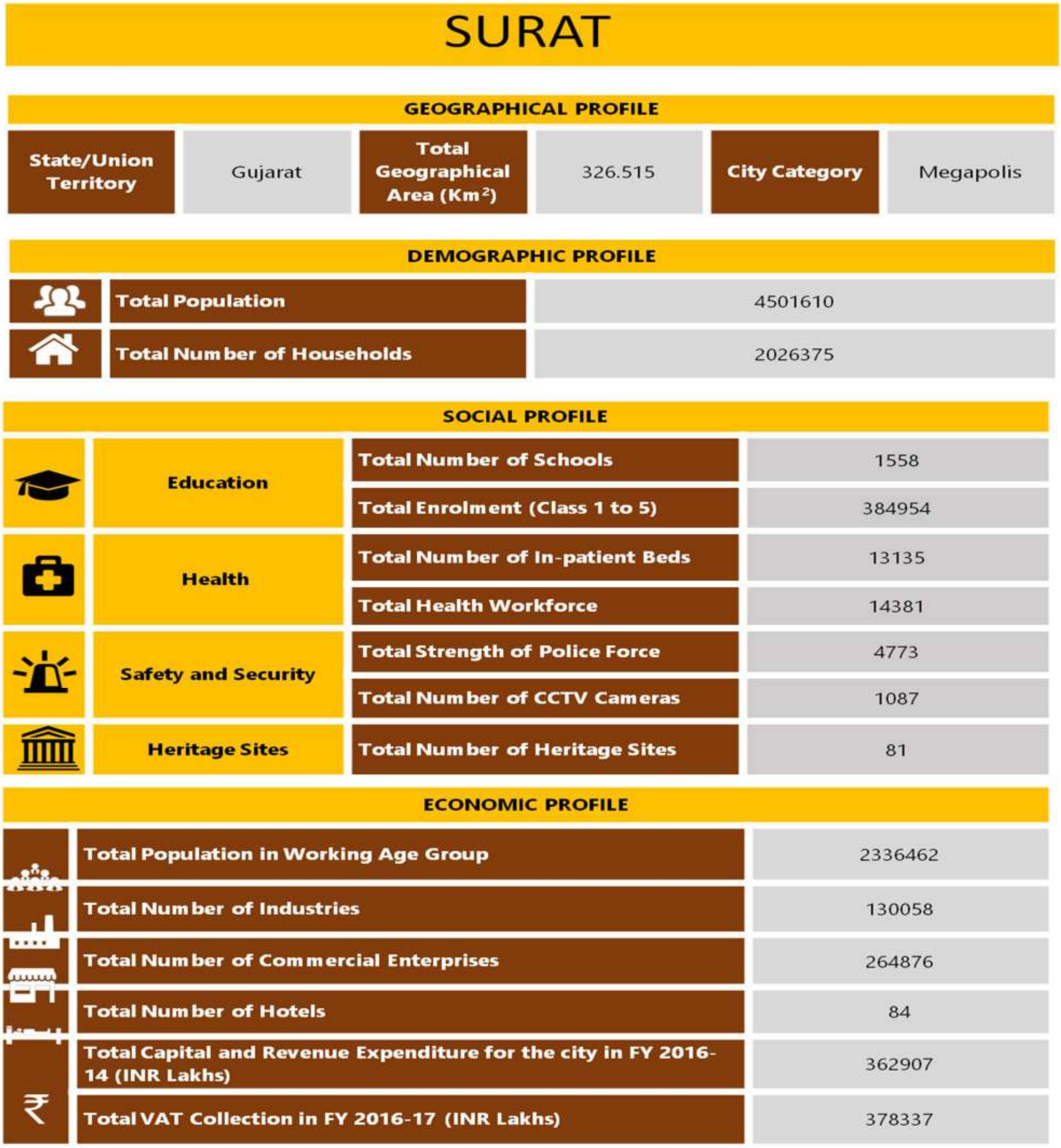
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SURAT

GEOGRAPHICAL PROFILE

State/Union Territory	Gujarat	**Total Geographical Area (Km^2)**	326.515	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

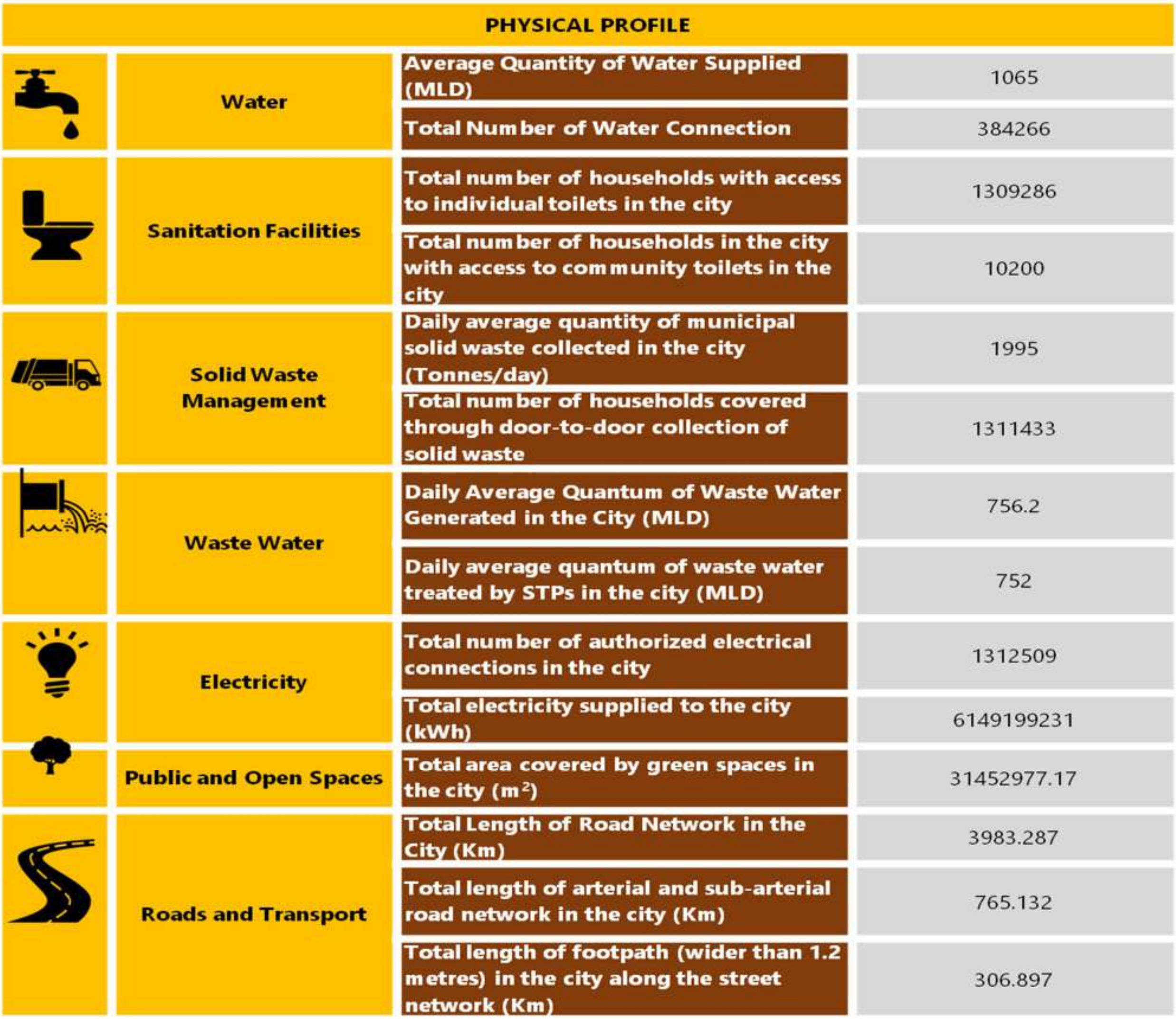
Total Population	4501610
Total Number of Households	2026375

SOCIAL PROFILE

Education	**Total Number of Schools**	1558
	Total Enrolment (Class 1 to 5)	384954
Health	**Total Number of In-patient Beds**	13135
	Total Health Workforce	14381
Safety and Security	**Total Strength of Police Force**	4773
	Total Number of CCTV Cameras	1087
Heritage Sites	**Total Number of Heritage Sites**	81

ECONOMIC PROFILE

Total Population in Working Age Group	2336462
Total Number of Industries	130058
Total Number of Commercial Enterprises	264876
Total Number of Hotels	84
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	362907
Total VAT Collection in FY 2016-17 (INR Lakhs)	378337



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	1065
	Total Number of Water Connection	384266
Sanitation Facilities	Total number of households with access to individual toilets in the city	1309286
	Total number of households in the city with access to community toilets in the city	10200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1995
	Total number of households covered through door-to-door collection of solid waste	1311433
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	756.2
	Daily average quantum of waste water treated by STPs in the city (MLD)	752
Electricity	Total number of authorized electrical connections in the city	1312509
	Total electricity supplied to the city (kWh)	6149199231
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	31452977.17
Roads and Transport	Total Length of Road Network in the City (Km)	3983.287
	Total length of arterial and sub-arterial road network in the city (Km)	765.132
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	306.897

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

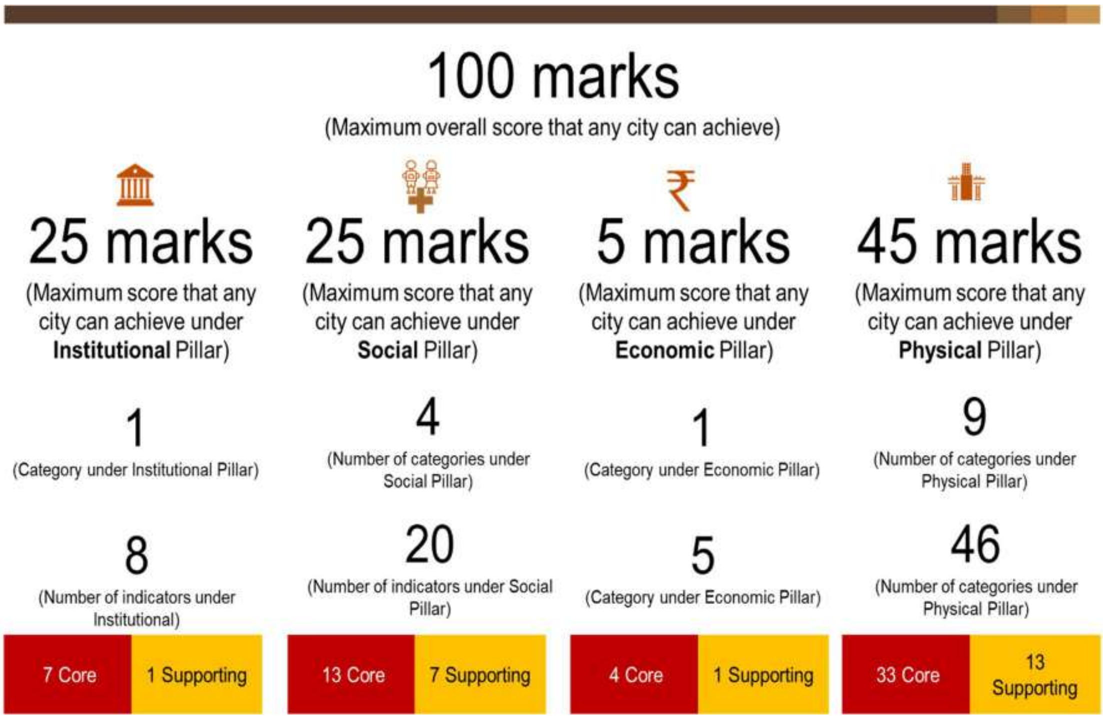
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Garden
Urban Local Body	For Water Supply and Drainage related questions	Drainage department/ hydraulic
Urban Local Body	For Heritage sites related data	Heritage/chief curator
Urban Local Body	For Ecological sites related data	Drainage department
Urban Local Body	For Housing related data	Slum upgradation cell
Urban Local Body	For Building plan related data	TDO
Urban Local Body	For Roads related data	Road development department
Urban Local Body	For Solid waste management related data	Health department
Urban Local Body	For IT services related data	ISD
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Gujarat pollution control Board
Development Authority	Building Infrastructure	TDO
	Construction planning	TDO

Designated data owners	Subcategories	Data owners at city level
	Green Building	TDO
	Rain water harvesting	TDO
	Universal Design Principle	TDO
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Torrent power and Dakshin Gujarat Vij Company Limited
State Disaster management authority		CFO
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		EEC
State Sales / Commercial Taxes Department		state tax joint commissioner office
Town and Country Planning Department	Land Use	Town planning
Traffic and Police Department		Traffic cell
Transport Authorities	Buses	BRTS, sitelink
	Registered Vehicles	Traffic
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 95 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register,

signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM /Electricity Department	3
Traffic and Police Department	3
Development Authority	13
Pollution Control Board	3
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	9
Transport Authority	1
Disaster Management	1
Urban Local Body	58
Total	95*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

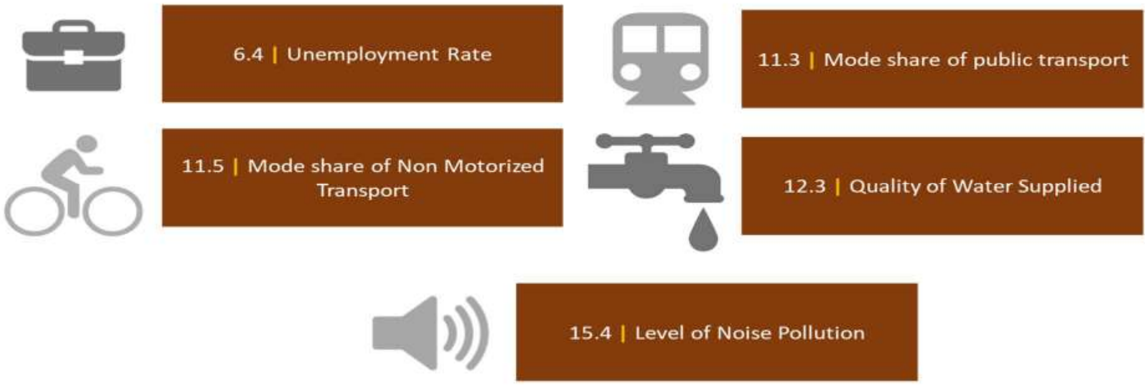
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

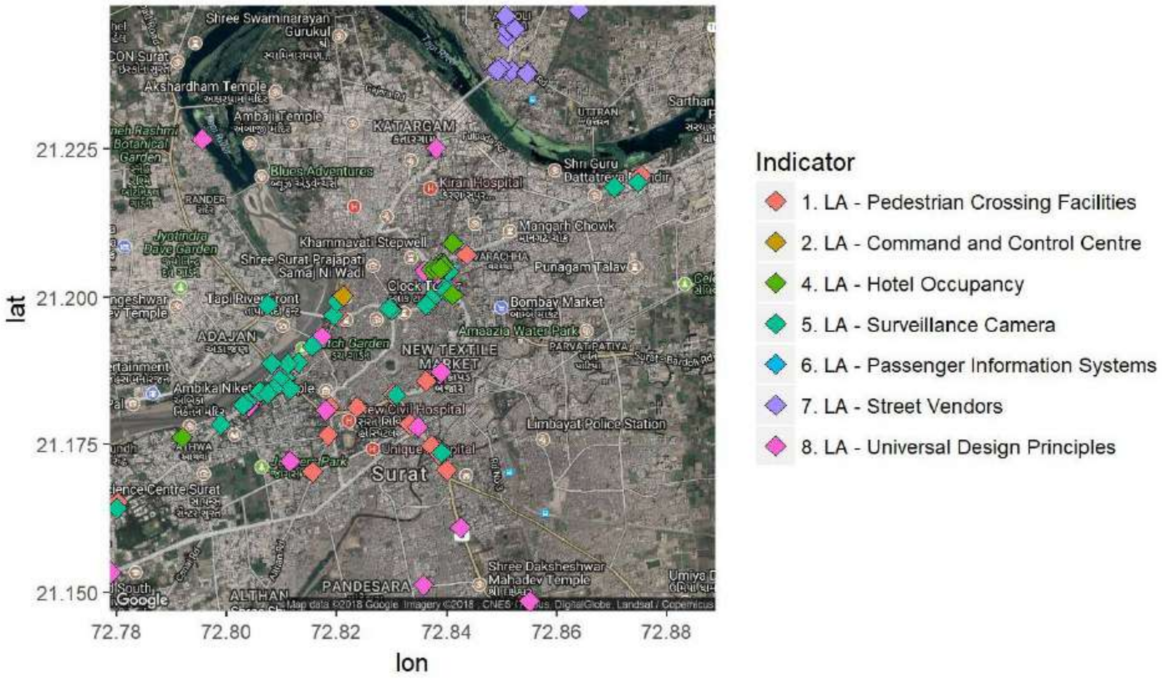
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Shree Swaminarayan Gurukul
Akshardham Temple
Ambaji Temple
KATARGAM
Botanical Garden
RANDER
Blues Adventures
Kiran Hospital
Shri Guru Dattatreya
UTTRAN
Sarthan
Jyotindra Dave Garden
Khammavati Stepwell
Shree Surat Prajapati Samaj Ni Wadi
Mangarh Chowk
VARACHHA
Punagam Talav
Tapi Riverfront
Clock To
Bombay Market
ADAJAN
Amaazia Water Park
NEW TEXTILE MARKET
PARVAT PATIYA
Ambika Niket
New Civil Hospital
Limbayat Police Station
Surat
Shree Daksheshwar Mahadev Temple
PANDESARA
ALTHAN
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
21.225
21.200
21.175
21.150
lon
72.78
72.80
72.82
72.84
72.86
72.88
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**77.61**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**16.67**
Description	Services integrated through an integrated or a singular operations command centre	3.5

Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.03**
Description		
Sub Indicators	1.3a Building plan	0.000126058
	1.3b Birth/Death Certificate	0.001517568
	1.3c water supply	0.001801032
	1.3d solid waste management	7.68614E-05
	1.3e property tax	0.017396957
	1.3f professional tax (RC)	0.047110598
	1.3g professional tax (EC)	0.018926796
	1.3h complaints/ grievance redressal	0.000276568
	1.3i information	0.077374317
	1.3j electricity	0.03866564
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.79**
Description		
Sub Indicators	1.4a water supply	2
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	1.5
	1.4e professional tax	2
	1.4f parks and recreational spaces	0
	1.4g building plan	0

Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**80.27**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	84317
Denominator	Total demand raised for the year	105048
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**107.25**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	18646
Denominator	Total O&M cost for providing water supply services during the year	17386
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**34.97**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	287857
Denominator	Total expenditure (revenue and capital accounts) in the same year	823197
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	29
Denominator	Total number of wards	29
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**72.5**
Description	Average Occupancy rate of Hotels	72.5
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	67
Denominator	Total budget of the ULB (capital and revenue)	362907
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**905**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	905
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**76.83**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	601103
Denominator	Total population in the age group of 6-14 years	782379
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**78.15**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	268557
Denominator	Total female population in the age group of 6-14 years	343649
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**38.37**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	384954
Denominator	Total number of teachers available for primary grades (public and private schools)	10033

Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**17.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	275
Denominator	Total number of schools	1558
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**99.04** 99.04453904
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92.94** 4975935105
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**29.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	13135
Denominator	Total population of the city	4501610

Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**31.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	14381
Denominator	Total population of the city	4501610
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**11.03**
Description	Total response time for health-related distress calls received in the city	11.03
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.52**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	23203
Denominator	Total population of the city	4501610
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	7438
Denominator	Total population of the city	4501610
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**27.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1087
Denominator	Total length of road network in the city	3983.287
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**872.8**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	39290
Denominator	Total population of the city	4501610
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**15.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	6094
Denominator	Total crimes recorded in the same year	39290
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**6.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	273
Denominator	Total population of the city	4501610
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-7.56**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-30921
Denominator	Total VAT/GST collection during preceding year	4092.58
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**9.42**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	1032
Denominator	Total Professional Tax collection during preceding year	10953
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-8.18**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-110
Denominator	Number of construction permits during preceding year	13.44
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	4448
Denominator	Total labour force in the city	782379
Unit	Per 1000 persons	

Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	19559.475
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**18.01**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	24426
Denominator	Total number of slum and EWS households in the city	1355.93
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**100** 1.06121E+12
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**6.99**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	31452977.17

Denominator	Total population of the city	4501610
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2196467
Denominator	Total population of the city	4501610
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	326515000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	4501610
Denominator	Area allocated for residential land use (in hectares)	140840000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**47.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	955032
Denominator	Total number of households in the city	2026375
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	1312509
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**9439**
Description	Total number of sustained electrical interruptions in a year	9439
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.74**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	373729
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	100237.93
Denominator	Total energy consumption from all sources	6149199231
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	14861083.33
Denominator	Total quantum of water and waste water handled during the period	54510
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	40488000
Denominator	Total number of street light installations	136279
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	

Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	729
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1075309.79
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.44**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	6149199231
Denominator	Total population of the city	4501610
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.54**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	276.13
Denominator	Total area of the city (sq.km)	326.515
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	356
Denominator	Total population of the city	4501610
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	1

Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	23
Denominator	Total length of road network in the city	3983.287
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**11.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	9
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.68
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**17**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	153
Denominator	Total number of major interchanges in the city	9
Unit	Percentage	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**6.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	6
Denominator	Total number of signalised intersections in the city	88
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**61.39**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	6087
Denominator	Total available on-street parking spaces in the city	9916
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**3.85**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	306.897
Denominator	Total length of road network in the city	7966.574
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**112.55**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	269
Denominator	Total number of junctions/ intersections on major roads in the city	239
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is**	**21.18**

	incorporated in public rights-of-way	
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	481
Denominator	Total number of public right-of-way areas in the city	2271
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**57.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	1173452
Denominator	Total number of households in the city	2026375
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**236.58**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	1065
Denominator	Total population of the city	4501610
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	72824
Denominator	Total number of samples tested for water quality	74475

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**18.97**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	202
Denominator	Quantum of water put into the distribution system (mld)	1065
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**9.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	37896
Denominator	Total number of water connections in the city	384266
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**69.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	249
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	358
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**96.64**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with access to individual and/or community toilets	1756237
Denominator	Total number of properties in the city	1817291
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**100.92**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	1833930
Denominator	Total number of properties in the city	1817291
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**99.44**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	752
Denominator	Total waste water generated in the city per day	756.2
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**90.03**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	677
Denominator	Total waste water received at treatment plants per day	752
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**21.89**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	872.07
Denominator	Total length of road network in the city	3983.287
Unit	Percentage	

Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**68.8**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	1576309
Denominator	Total number of households and establishments in the city	2291251
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1995
Denominator	Total quantum of MSW generated in the city	1995
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**35.17**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	21050.11
Denominator	Average MSW generated in the city (tons per month)	59850
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**17**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	17
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean	

	concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**26**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	26
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**110**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	110
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	72
Denominator	Total number of noise samples	72
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	96
Denominator	Total number of samples tested	96
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

THANE

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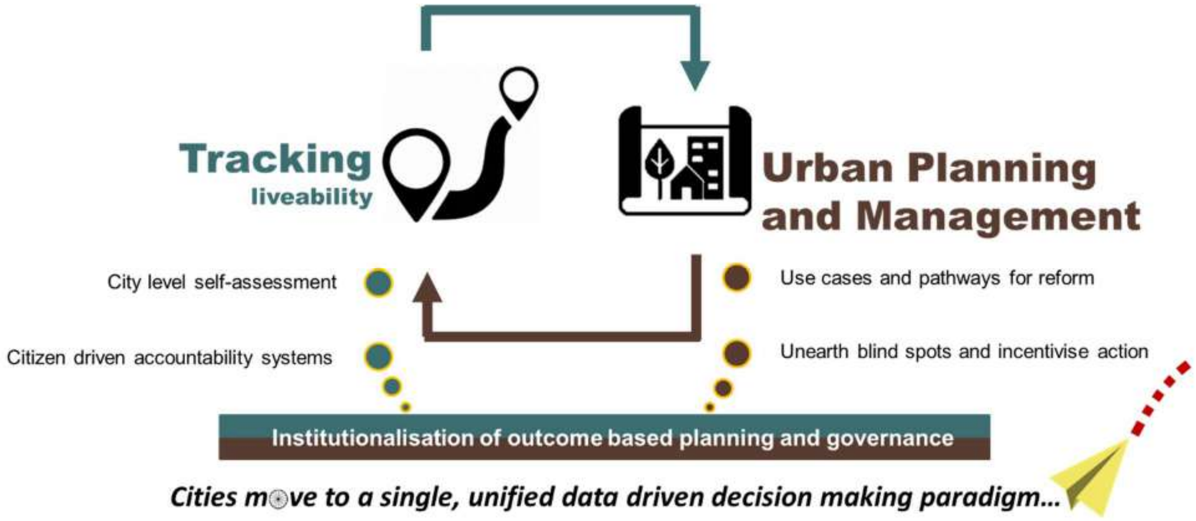
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

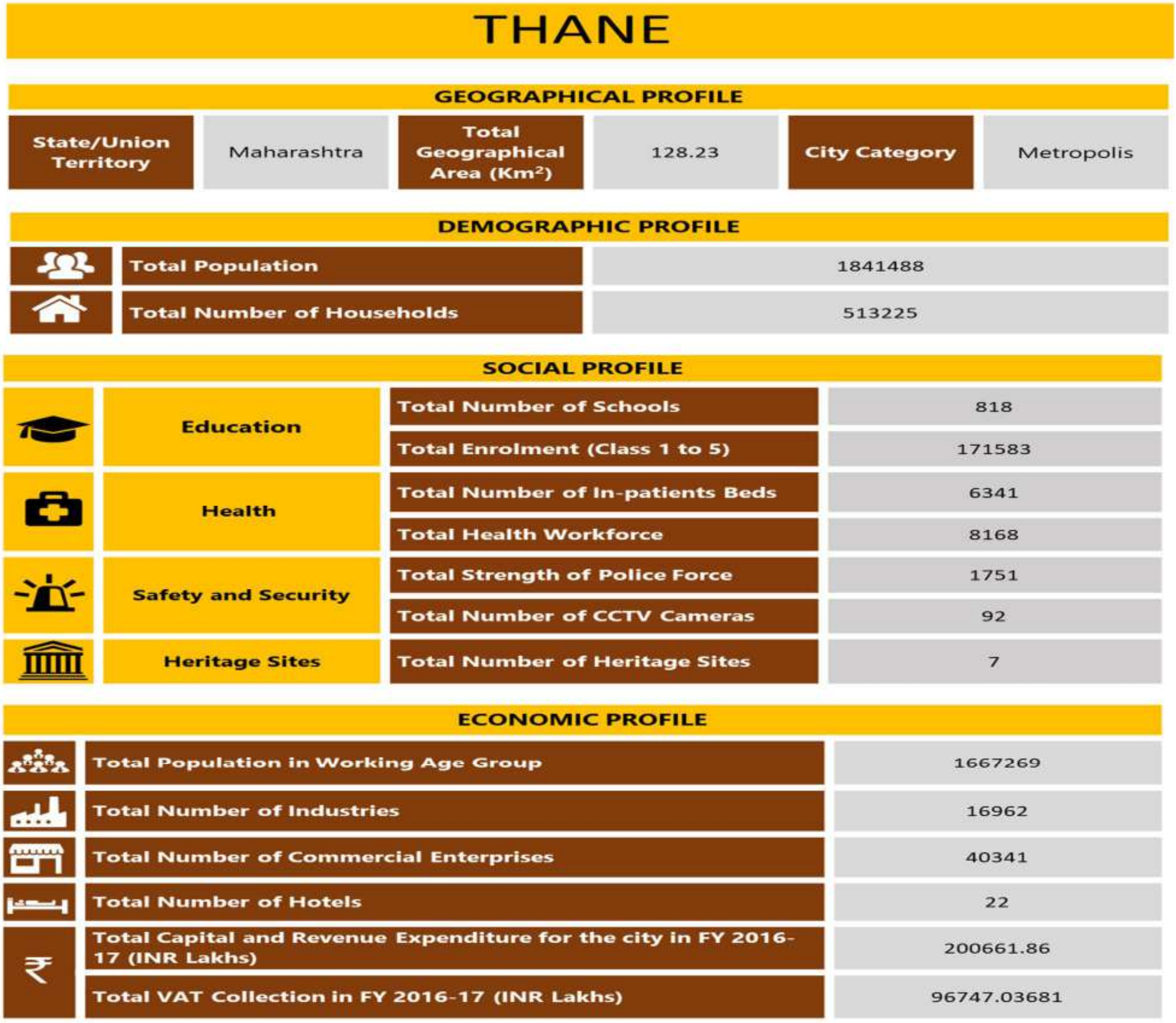
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



THANE

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	128.23	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

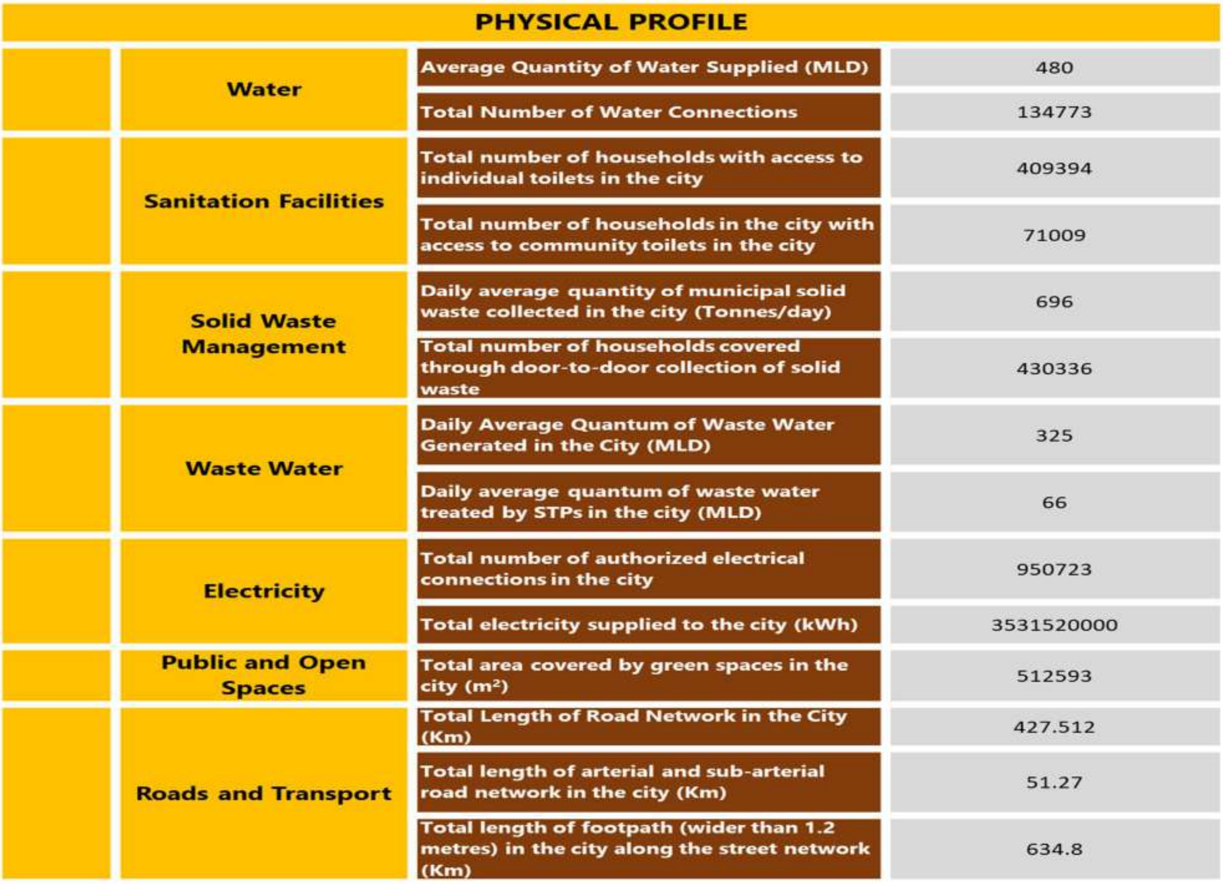
Total Population	1841488
Total Number of Households	513225

SOCIAL PROFILE

Education	**Total Number of Schools**	818
	Total Enrolment (Class 1 to 5)	171583
Health	**Total Number of In-patients Beds**	6341
	Total Health Workforce	8168
Safety and Security	**Total Strength of Police Force**	1751
	Total Number of CCTV Cameras	92
Heritage Sites	**Total Number of Heritage Sites**	7

ECONOMIC PROFILE

Total Population in Working Age Group	1667269
Total Number of Industries	16962
Total Number of Commercial Enterprises	40341
Total Number of Hotels	22
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	200661.86
Total VAT Collection in FY 2016-17 (INR Lakhs)	96747.03681



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	480
		Total Number of Water Connections	134773
	Sanitation Facilities	Total number of households with access to individual toilets in the city	409394
		Total number of households in the city with access to community toilets in the city	71009
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	696
		Total number of households covered through door-to-door collection of solid waste	430336
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	325
		Daily average quantum of waste water treated by STPs in the city (MLD)	66
	Electricity	Total number of authorized electrical connections in the city	950723
		Total electricity supplied to the city (kWh)	3531520000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	512593
	Roads and Transport	Total Length of Road Network in the City (Km)	427.512
		Total length of arterial and sub-arterial road network in the city (Km)	51.27
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	634.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

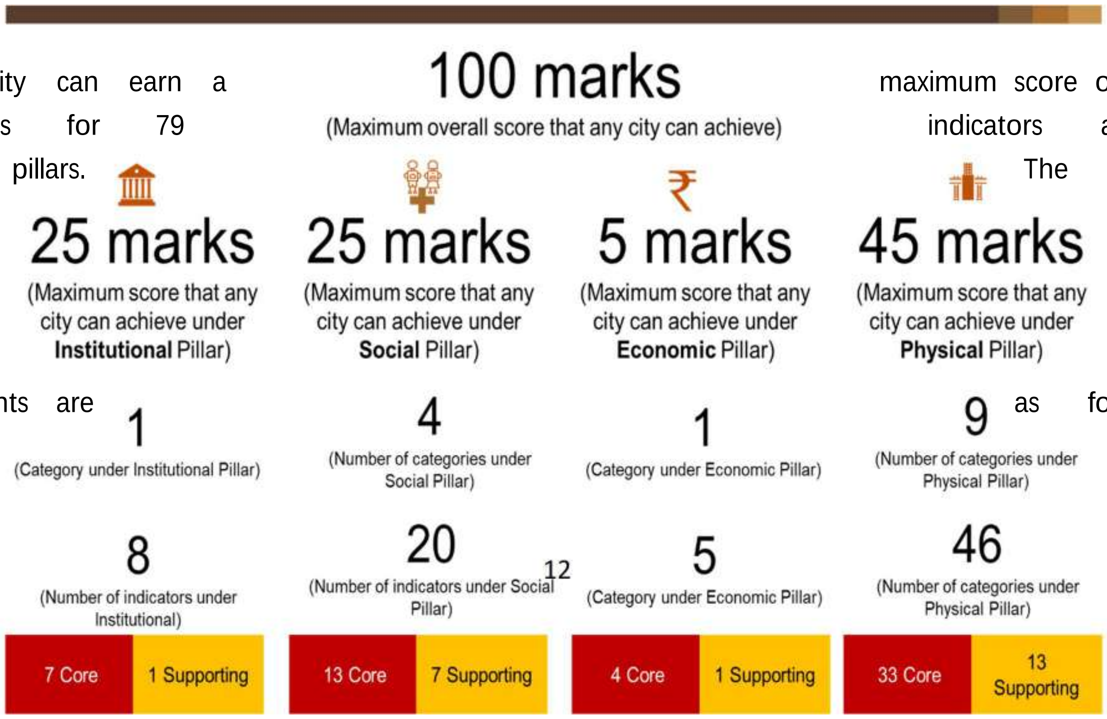
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows:


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Garden department
Urban Local Body	For Water Supply and	Water supply department

Designated data owners	Subcategories	Data owners at city level
	Drainage related questions	
Urban Local Body	For Heritage sites related data	Town planning department
Urban Local Body	For Ecological sites related data	Garden department
Urban Local Body	For Housing related data	Housing department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department/ pwd dept
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	Encroachment department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment exchange department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department, mpcb
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	Pwd department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Electricity department

Designated data owners	Subcategories	Data owners at city level
State Sales / Commercial Taxes Department		Sales tax department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department
	Registered Vehicles	Transport department (rto)
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 200 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**7**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**14**
Development Authority	**2**
Pollution Control Board	**11**
State Renewable Energy Department	**2**
Town and Country Planning	**1**
State Health Department	**14**
Transport Authority	**28**
Disaster Management	**0**
Urban Local Body	**119**
Total	**200***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

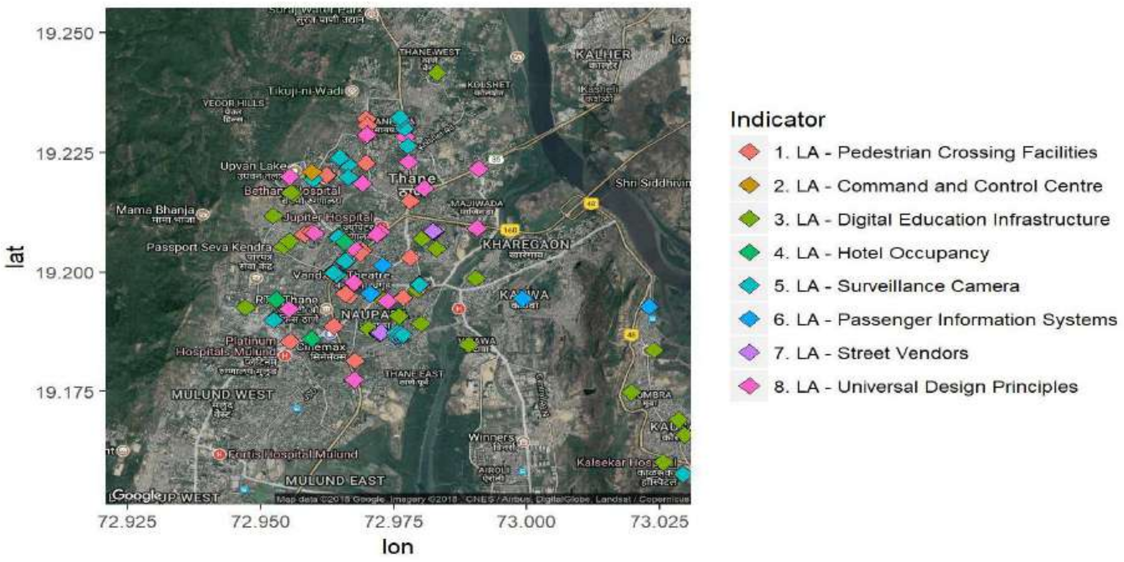
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1** | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.250
19.225
19.200
19.175
lat
72.925
72.950
72.975
73.000
73.025
lon
THANE WEST
KALHER
Tikuji-ni-Wadi
YEOOR HILLS
Upvan Lake
Thane
Mama Bhanja
Jupiter Hospital
MAJIWADA
Passport Seva Kendra
KHAREGAON
KALWA
NAUPADA
Platinum Hospitals Mulund
Cinemax
THANE EAST
MULUND WEST
MUMBRA
Fortis Hospital Mulund
MULUND EAST
Kalsekar Hospital
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**71.25**
Description	Average citizen services available online	

Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0.5
	1.1h property tax	0.666666667
	1.1i professional tax	0.75
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**16.67**
Description	Services integrated through an integrated or a singular operations command centre	3.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.85**
Description		
Sub Indicators	1.3a Building plan	0.000209
	1.3b Birth/Death Certificate	9.05065E-08
	1.3c water supply	0.00691862
	1.3d solid waste management	0.019143758
	1.3e property tax	0.012422286
	1.3f professional tax (RC)	0.005210646

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000521227
	1.3i information	0.000521318
	1.3j electricity	0.031554932
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.33**
Description		
Sub Indicators	1.4a water supply	0.5
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	7.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**133.84**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	52410.09895
Denominator	Total demand raised for the year	39159.81
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**54.53**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	9644.76
Denominator	Total O&M cost for providing water supply services during the year	17687.2
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**40.27**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	197852.02
Denominator	Total expenditure (revenue and capital accounts) in the same year	491337.82
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**27.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	9
Denominator	Total number of wards	33
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**39.51**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	32
Denominator	Total number of historic buildings/sites identified	81
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**85.71**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	6
Denominator	Total number of ecologically important sites identified in the city	7
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**77.5**
Description	Average Occupancy rate of Hotels	77.5

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**1.64**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	3298.76
Denominator	Total budget of the ULB (capital and revenue)	200661.86
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**972**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	972
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**88.51**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	268341
Denominator	Total population in the age group of 6-14 years	303170
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**88.14**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	126317
Denominator	Total female population in the age group of 6-14 years	143309
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**41.42**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	171583
Denominator	Total number of teachers available for primary grades (public and private schools)	4143
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**41.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	340
Denominator	Total number of schools	818
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**100.78**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	100.7750885
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.67**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1007692233
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**34.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6341
Denominator	Total population of the city	1841488
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	

Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**44.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	8168
Denominator	Total population of the city	1841488
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	1172
Denominator	Total population of the city	1841488
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1474
Denominator	Total population of the city	1841488
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**21.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	92
Denominator	Total length of road network in the city	427.512

Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**407.71**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7508
Denominator	Total population of the city	1841488
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**22.31**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1675
Denominator	Total crimes recorded in the same year	7508
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**27.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	502
Denominator	Total population of the city	1841488
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**15.81**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	13206.18028
Denominator	Total VAT/GST collection during preceding year	835.4085653
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**4365.73**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	14037.55895
Denominator	Total Professional Tax collection during preceding year	321.54
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-2.54**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-5
Denominator	Number of construction permits during preceding year	1.97
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	36205
Denominator	Total labour force in the city	303170
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**5.34**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	961
Denominator	Total number of vendors in the city	18000
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**3.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	8721
Denominator	Total number of slum and EWS households in the city	2467.37
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**64.48**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	9564820183138150
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	512593
Denominator	Total population of the city	1841488
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.73**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	3182071.68
Denominator	Total population of the city	1841488
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	128230000
Denominator	Total area of the city (total area of all land uses)	128230000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1841488
Denominator	Area allocated for residential land use (in hectares)	26656100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**163.37**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	838438
Denominator	Total number of households in the city	513225
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**2.42**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	23000
Denominator	Total number of electricity connections in the city	950723

Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**6907**
Description	Total number of sustained electrical interruptions in a year	6907
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.74**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	351578
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	2924.235
Denominator	Total energy consumption from all sources	3531545130
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3058333.333
Denominator	Total quantum of water and waste water handled during the period	16380
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	23887000
Denominator	Total number of street light installations	361125
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	1583284.87
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1583284.87
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3531545130
Denominator	Total population of the city	1841488
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	146.44
Denominator	Total area of the city (sq.km)	128.23
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**10.25**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	18882

Denominator	Total population of the city	1841488
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	74
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**2.34**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	10
Denominator	Total length of road network in the city	427.512
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**92.31**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	12
Denominator	Total number of major transport interchanges in the city	13
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.84
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.69**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	9
Denominator	Total number of major interchanges in the city	13
Unit	Percentage	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	19
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	968
Denominator	Total available on-street parking spaces in the city	968
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**74.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	634.8
Denominator	Total length of road network in the city	855.024
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**102.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	475
Denominator	Total number of junctions/ intersections on major roads in the city	465
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**82.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1435
Denominator	Total number of public right-of-way areas in the city	1731

Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**91.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	469265
Denominator	Total number of households in the city	513225
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**260.66**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	480
Denominator	Total population of the city	1841488
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	10024
Denominator	Total number of samples tested for water quality	10795
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**37**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	177.6
Denominator	Quantum of water put into the distribution system (mld)	480
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**4.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	5593
Denominator	Total number of water connections in the city	134773
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	237
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	237
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**277.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	480916
Denominator	Total number of properties in the city	173445
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**142.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	246811
Denominator	Total number of properties in the city	173445
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**18.46**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	60
Denominator	Total waste water generated in the city per day	325
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	58
Denominator	Total waste water received at treatment plants per day	58
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**176.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	754
Denominator	Total length of road network in the city	427.512
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**81.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	452770
Denominator	Total number of households and establishments in the city	553566
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**86.35**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	696
Denominator	Total quantum of MSW generated in the city	806

Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**47.76**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	9972.5
Denominator	Average MSW generated in the city (tons per month)	20880
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**17**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	17
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**60**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	60
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**116**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	116
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	40
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**90.36**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	300
Denominator	Total number of samples tested	332
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

THANJAVUR

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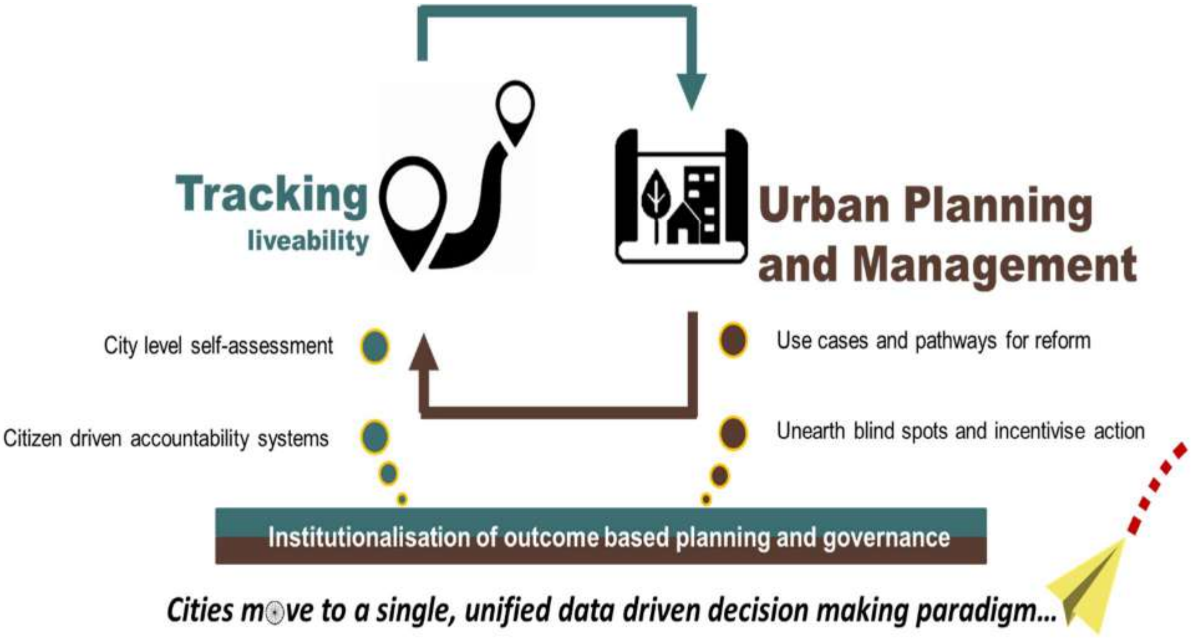
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

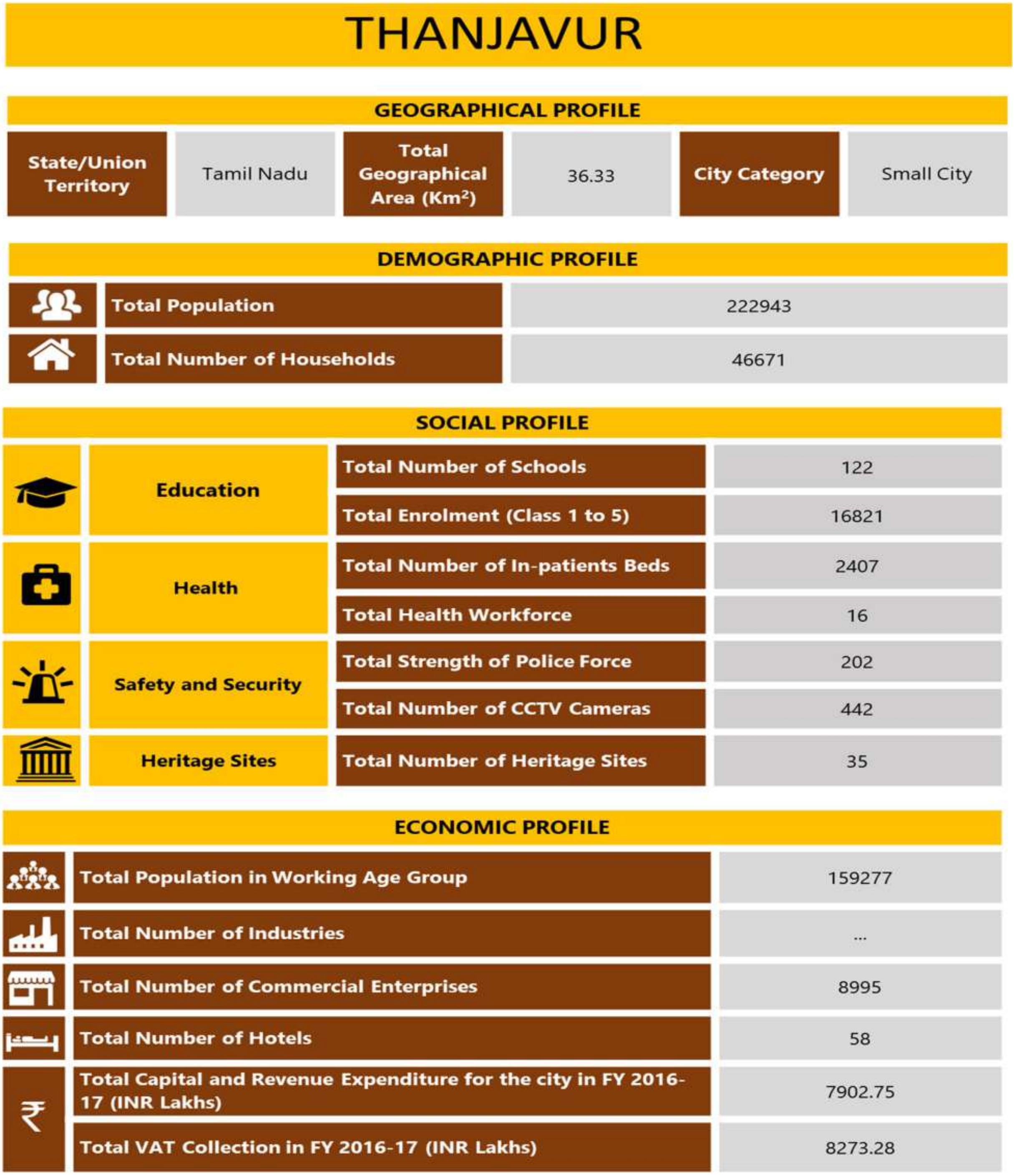
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



THANJAVUR

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	36.33	**City Category**	Small City

DEMOGRAPHIC PROFILE

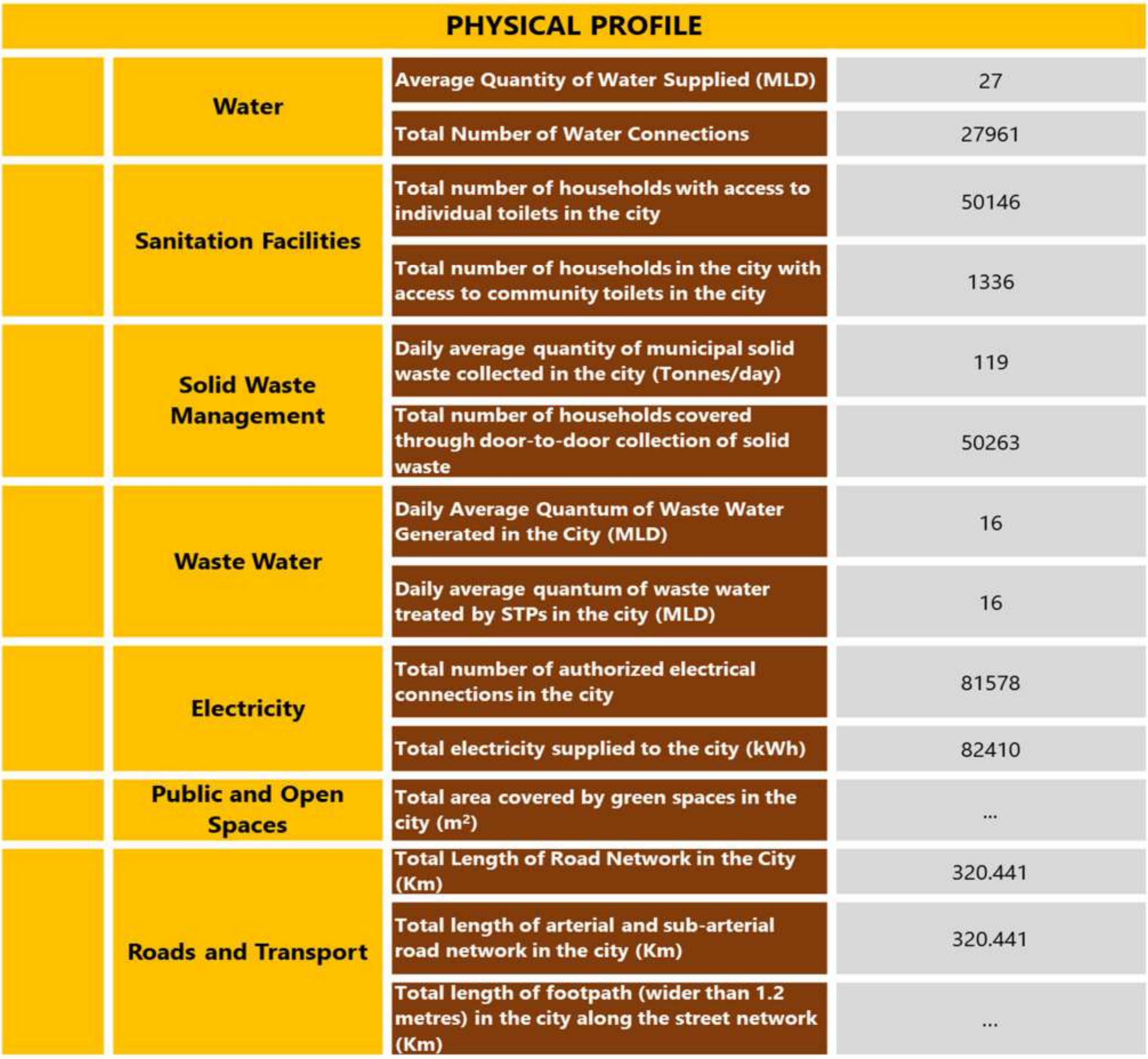
Total Population	222943
Total Number of Households	46671

SOCIAL PROFILE

Education	**Total Number of Schools**	122
	Total Enrolment (Class 1 to 5)	16821
Health	**Total Number of In-patients Beds**	2407
	Total Health Workforce	16
Safety and Security	**Total Strength of Police Force**	202
	Total Number of CCTV Cameras	442
Heritage Sites	**Total Number of Heritage Sites**	35

ECONOMIC PROFILE

Total Population in Working Age Group	159277
Total Number of Industries	...
Total Number of Commercial Enterprises	8995
Total Number of Hotels	58
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7902.75
Total VAT Collection in FY 2016-17 (INR Lakhs)	8273.28



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	27
		Total Number of Water Connections	27961
	Sanitation Facilities	Total number of households with access to individual toilets in the city	50146
		Total number of households in the city with access to community toilets in the city	1336
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	119
		Total number of households covered through door-to-door collection of solid waste	50263
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	16
		Daily average quantum of waste water treated by STPs in the city (MLD)	16
	Electricity	Total number of authorized electrical connections in the city	81578
		Total electricity supplied to the city (kWh)	82410
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
	Roads and Transport	Total Length of Road Network in the City (Km)	320.441
		Total length of arterial and sub-arterial road network in the city (Km)	320.441
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle

Pillars of Comprehensive Development	Category	Indicators
		tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

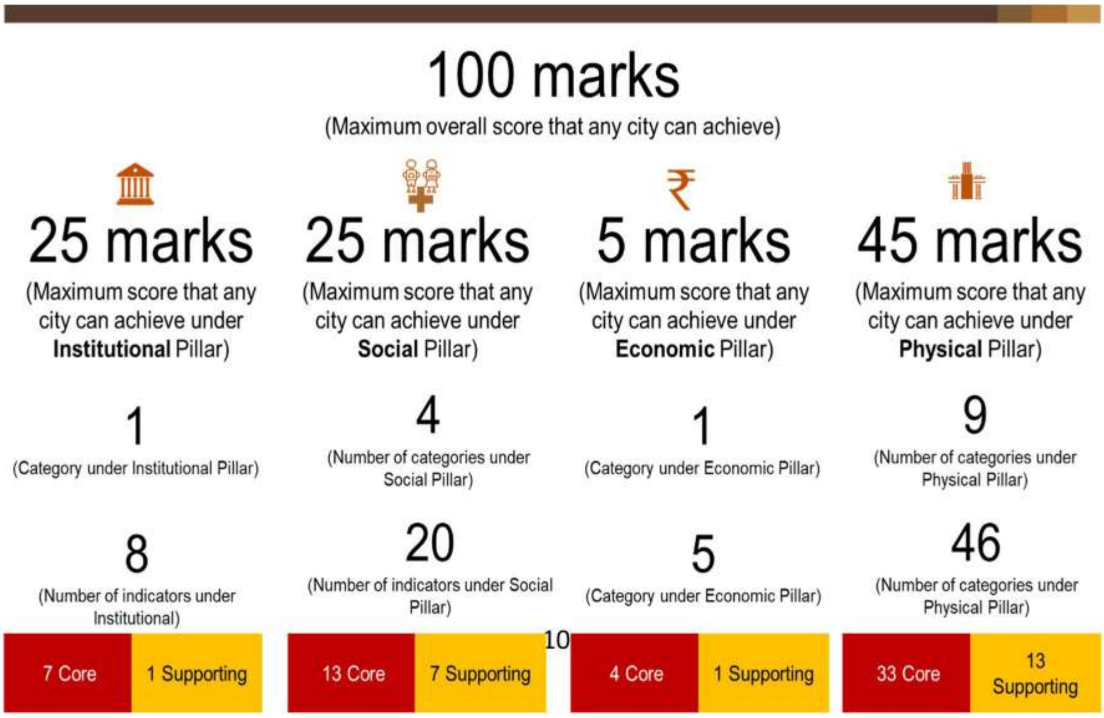
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Thanjavur Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Section Thanjavur Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Thanjavur Corporation
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	District Forest Department
Urban Local Body	For Housing related data	Town planning, Thanjavur Corporation
Urban Local Body	For Building plan related data	Town planning, Thanjavur Corporation
Urban Local Body	For Roads related data	Engineering Section, Public Work Department
Urban Local Body	For Solid waste management related data	Health Department , ULB , Thanjavur corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For IT services related data	IT department, Thanjavur Corporation
Urban Local Body	For Vendor committee related data	Town planning, Thanjavur Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section Thanjavur Corporation
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Local Planning Authority
	Construction planning	Local Planning Authority
	Green Building	Local Planning Authority
	Rain water harvesting	Local Planning Authority
	Universal Design Principle	Local Planning Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board , Thanjavur
State Disaster management authority		District Disaster Management Department
State Education Department		District Education Department , Thanjavur
State Health Department	Health care professionals	Joint Director, Health Services, Thanjavur
	Citizen Services	Joint Director, Health Services, Thanjavur
	Disease Prevalence	Joint Director, Health Services, Thanjavur
	Health Infrastructure	Joint Director, Health Services, Thanjavur
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department, Thanjavur
Town and Country Planning Department	Land Use	Town planning, Thanjavur Corporation
Traffic and Police Department		Police Department, Thanjavur
Transport Authorities	Buses	Tamilnadu State Transport Corporation, Thanjavur
	Registered Vehicles	Regional Transport Office, Thanjavur
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 114 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

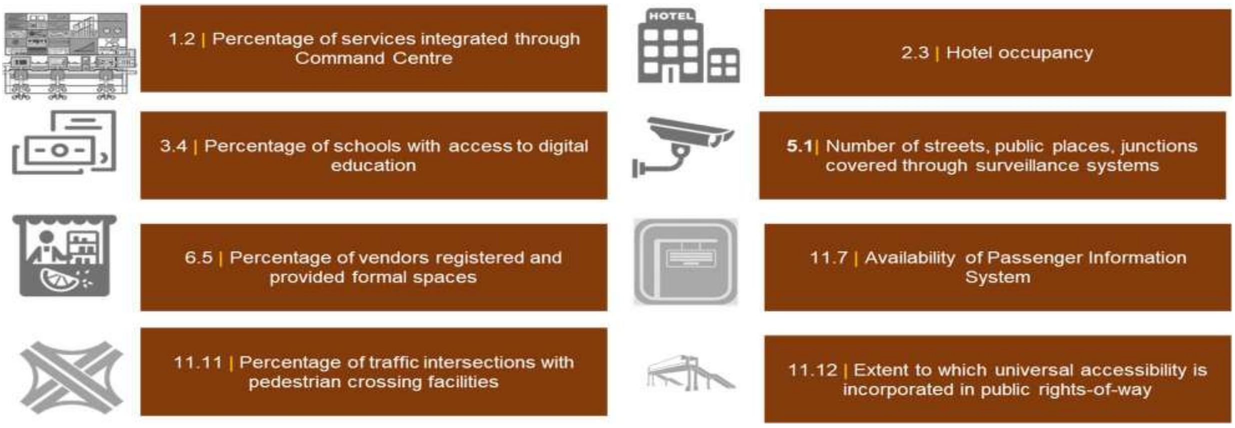
Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**3**
DISCOM/Electricity Department	**6**
Traffic and Police Department	**3**
Development Authority	**5**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**4**
State Health Department	**0**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**89**
Total	**114***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

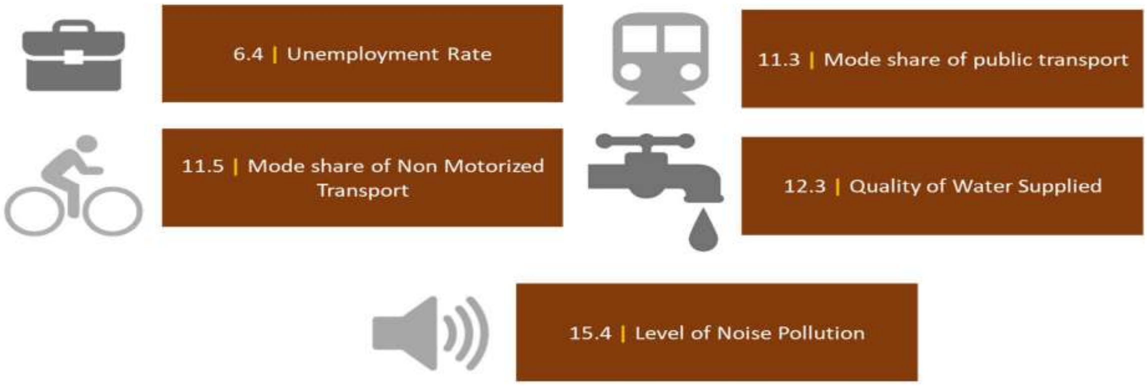
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

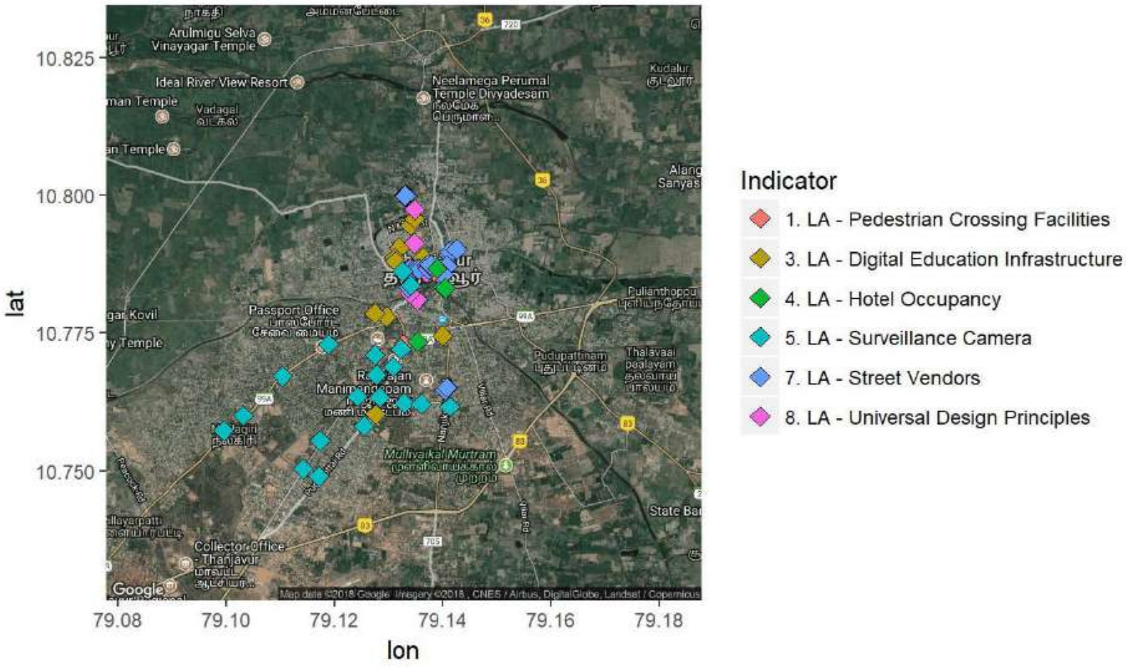
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
10.825
10.800
10.775
10.750
lon
79.08
79.10
79.12
79.14
79.16
79.18
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles
Arulmigu Selva Vinayagar Temple
Ideal River View Resort
Neelamega Perumal Temple Divyadesam
Vadagal
Kudalur
Passport Office
Rajarajan Manimandapam
Nanjikottai
Mullivaikal Murram
Pudupattinam
Pulianthopu
Thalavaai paalayam
Collector Office - Thanjavur
State Bank
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**78.99**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0.333333333
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	0.5
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA

	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**2.67**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	NA
	1.4c street lights	NA
	1.4d sewerage	0
	1.4e professional tax	8
	1.4f parks and recreational spaces	NA
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**100.45**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1259.37
Denominator	Total demand raised for the year	1253.69
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**39.21**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	213.59

Denominator	Total O&M cost for providing water supply services during the year	544.77
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**12.46**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	1797.975
Denominator	Total expenditure (revenue and capital accounts) in the same year	14428.235
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable
Denominator	Total number of wards	51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	7
Denominator	Total number of historic buildings/sites identified	7
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	

Indicator No: 2.3	**Hotel Occupancy**	**32.5**
Description	Average Occupancy rate of Hotels	32.5
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	NA
Denominator	Total budget of the ULB (capital and revenue)	7902.75
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**Non-Computable**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	NA
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**88.06**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	29556
Denominator	Total population in the age group of 6-14 years	33564
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**72.12**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	11839
Denominator	Total female population in the age group of 6-14 years	16415
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**33.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	16821
Denominator	Total number of teachers available for primary grades (public and private schools)	507
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**31.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	38
Denominator	Total number of schools	122
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**86.55**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	86.54648314
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**101.01**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	18694176
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**107.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2407

Denominator	Total population of the city	222943
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**0.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	16
Denominator	Total population of the city	222943
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**Non-Computable**
Description	Total response time for health-related distress calls received in the city	NA
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	502
Denominator	Total population of the city	222943
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	60
Denominator	Total population of the city	222943
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**137.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	442
Denominator	Total length of road network in the city	320.441
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**924**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	2060
Denominator	Total population of the city	222943
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.49**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	10
Denominator	Total crimes recorded in the same year	2060
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**188.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	420
Denominator	Total population of the city	222943
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**9.02**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	684.53
Denominator	Total VAT/GST collection during preceding year	75.8875
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**95.85**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	206.26
Denominator	Total Professional Tax collection during preceding year	215.18
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	NC
Denominator	Number of construction permits during preceding year	NC
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	247241
Denominator	Total labour force in the city	33564
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	Data Unavailable
Denominator	Total number of vendors in the city	1032
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**4.45**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1255
Denominator	Total number of slum and EWS households in the city	281.76
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	27838720
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	222943
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.01**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	2470.221
Denominator	Total population of the city	222943
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	NA
Denominator	Total area of the city (total area of all land uses)	36330000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	222943
Denominator	Area allocated for residential land use (in hectares)	19967300
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**141.4**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	65991
Denominator	Total number of households in the city	46671
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	81578
Denominator	Total number of electricity connections in the city	81578
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**81**
Description	Total number of sustained electrical interruptions in a year	81
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	56
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	NA
Denominator	Total energy consumption from all sources	103031
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	656101.75
Denominator	Total quantum of water and waste water handled during the period	1290
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	3742259.68
Denominator	Total number of street light installations	10349
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	103031
Denominator	Total population of the city	222943
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	Data Unavailable
Denominator	Total area of the city (sq.km)	36.33
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**9.89**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	2205
Denominator	Total population of the city	222943
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	320.441
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	3
Denominator	Total number of major transport interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	3
Denominator	Total available on-street parking spaces in the city	3
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	NA
Denominator	Total length of road network in the city	640.882
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	20
Denominator	Total number of junctions/ intersections on major roads in the city	20
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	NA
Denominator	Total number of public right-of-way areas in the city	813
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**59.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	27961
Denominator	Total number of households in the city	46671
Unit	Percentage	

Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**121.11**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	27
Denominator	Total population of the city	222943
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	NA
Denominator	Total number of samples tested for water quality	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**86.3**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	23.3
Denominator	Quantum of water put into the distribution system (mld)	27
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	27961
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	NA
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	NA

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**21528.57**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	55759
Denominator	Total number of properties in the city	259
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**9150.58**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	23700
Denominator	Total number of properties in the city	259
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	16
Denominator	Total waste water generated in the city per day	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	16
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**23.41**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	75
Denominator	Total length of road network in the city	320.441

Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**105.9**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	58948
Denominator	Total number of households and establishments in the city	55666
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**99.17**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	119
Denominator	Total quantum of MSW generated in the city	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	3570
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	

Benchmark	Annual mean concentration of 40 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	NA
Unit	μg/m3	
Benchmark	Annual mean concentration of 60 μg/m3 OR Mean concentration over 24 hours of 100 μg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	NA
Denominator	Total number of noise samples	NA
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	NA
Denominator	Total number of samples tested	NA
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

TIRUCHIRAPALLI

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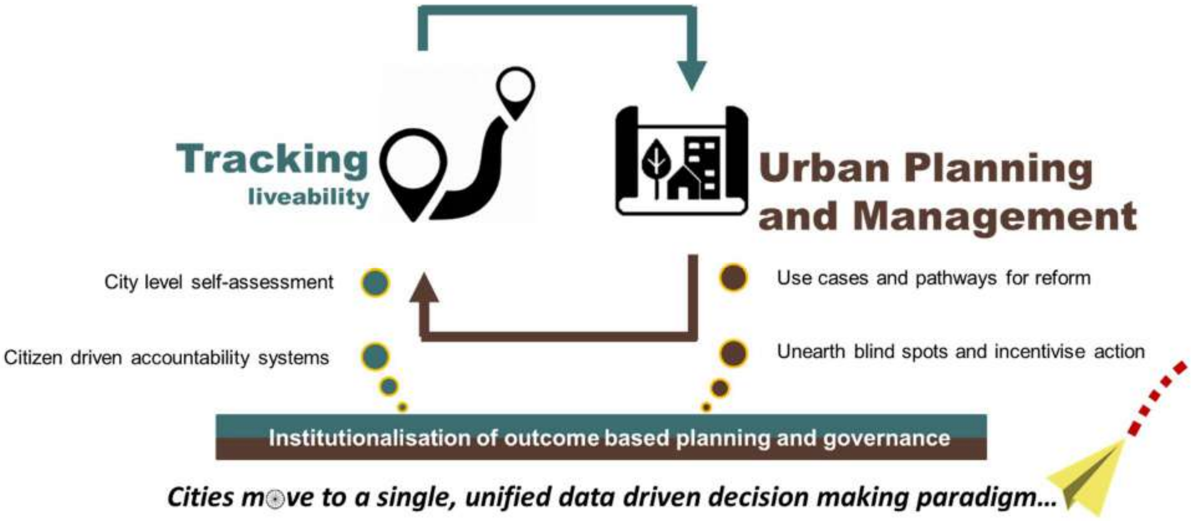
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

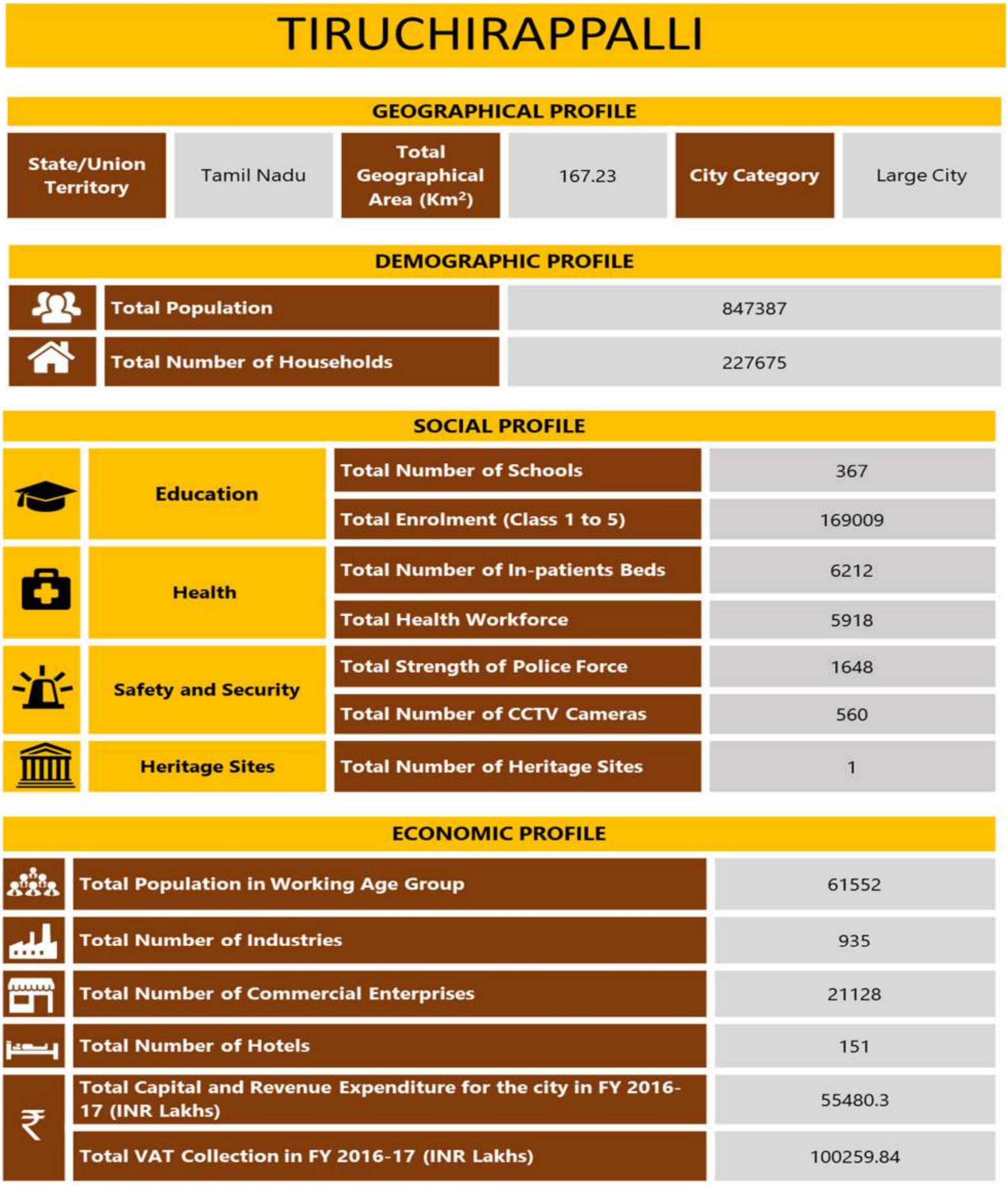

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



TIRUCHIRAPPALLI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	167.23	**City Category**	Large City

DEMOGRAPHIC PROFILE

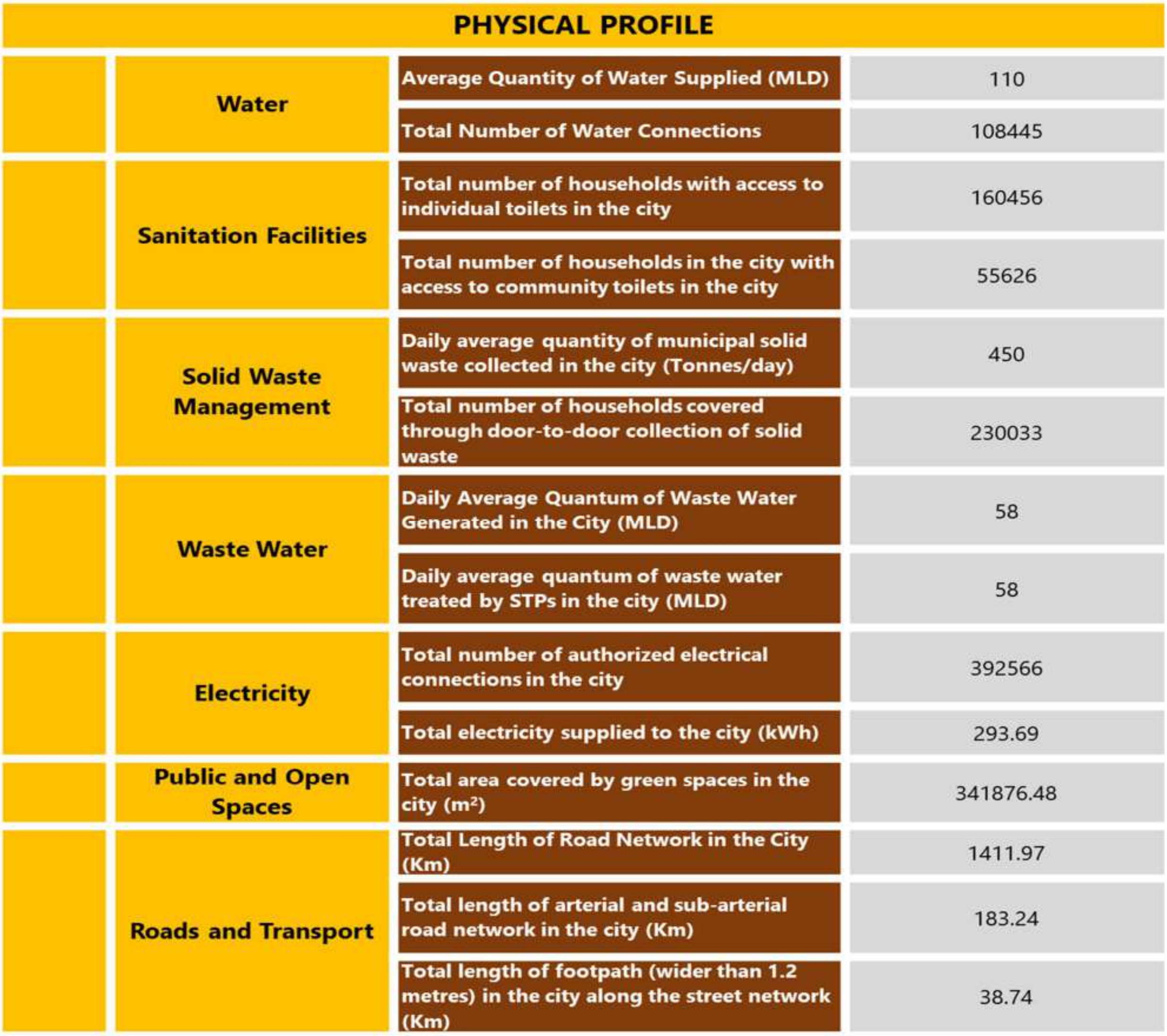
Total Population	847387
Total Number of Households	227675

SOCIAL PROFILE

Education	**Total Number of Schools**	367
	Total Enrolment (Class 1 to 5)	169009
Health	**Total Number of In-patients Beds**	6212
	Total Health Workforce	5918
Safety and Security	**Total Strength of Police Force**	1648
	Total Number of CCTV Cameras	560
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	61552
Total Number of Industries	935
Total Number of Commercial Enterprises	21128
Total Number of Hotels	151
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	55480.3
Total VAT Collection in FY 2016-17 (INR Lakhs)	100259.84



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	110
		Total Number of Water Connections	108445
	Sanitation Facilities	Total number of households with access to individual toilets in the city	160456
		Total number of households in the city with access to community toilets in the city	55626
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	450
		Total number of households covered through door-to-door collection of solid waste	230033
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	58
		Daily average quantum of waste water treated by STPs in the city (MLD)	58
	Electricity	Total number of authorized electrical connections in the city	392566
		Total electricity supplied to the city (kWh)	293.69
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	341876.48
	Roads and Transport	Total Length of Road Network in the City (Km)	1411.97
		Total length of arterial and sub-arterial road network in the city (Km)	183.24
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	38.74

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical

Pillars of Comprehensive Development	Category	Indicators
		services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	Category	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections 12.2 Per capita supply of water 12.3 Quality of water supplied 12.4 Level of non-revenue water – NRW 12.5 Percentage of water connections covered through meters 12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets 13.2 Coverage of sewerage network and/or septage 13.3 Collection efficiency of sewerage network 13.4 Extent of reuse and recycling of waste water 13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection 14.2 Efficiency of collection of municipal solid waste 14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution 15.2 Concentration of NO2- air pollution 15.3 Concentration of PM10 - air pollution 15.4 Level of noise pollution 15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

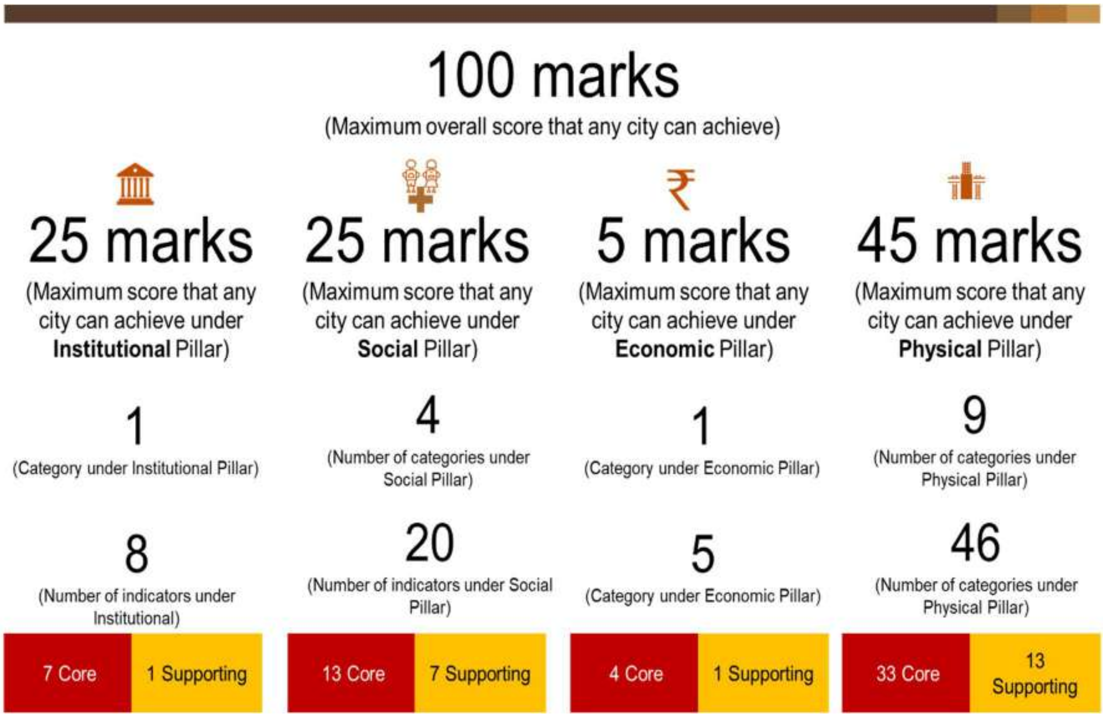
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board, Collectorate, Tiruchirappalli.
Development Authority	Building Infrastructure	Town planning
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 170 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**8**
Traffic and Police Department	**1**
Development Authority	**12**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**3**
State Health Department	**8**
Transport Authority	**9**
Disaster Management	**1**
Urban Local Body	**63**
Total	**113***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

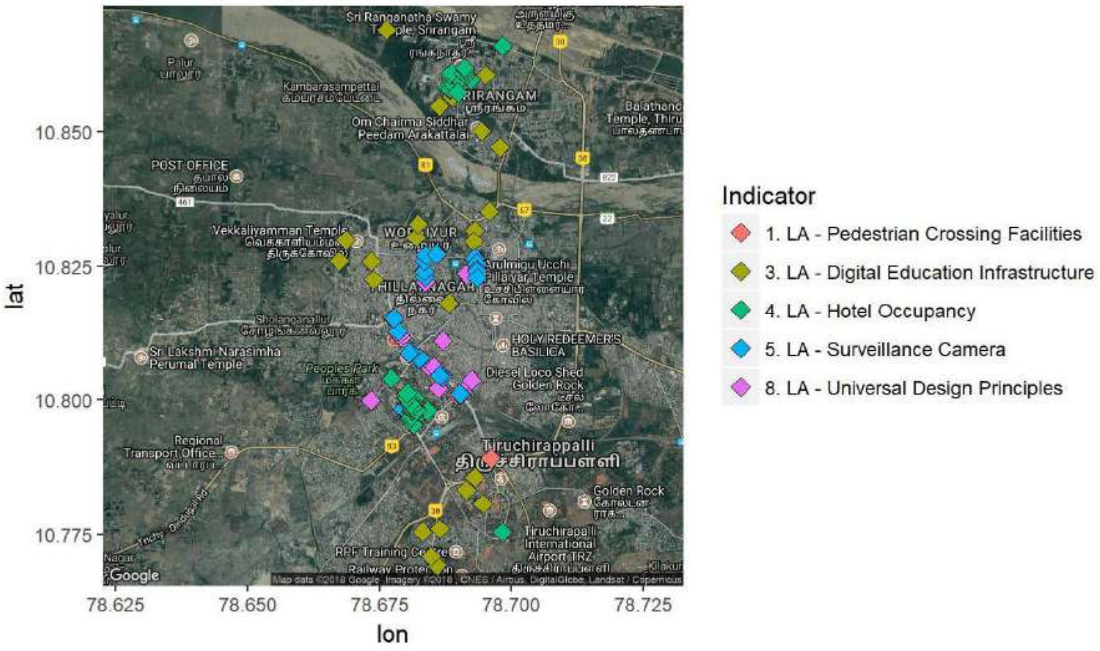
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


lat
10.850
10.825
10.800
10.775
lon
78.625
78.650
78.675
78.700
78.725
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
8. LA - Universal Design Principles
SRIRANGAM
Tiruchirappalli
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**20.86**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.25
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.461538462
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.23**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.00159805

	1.3c water supply	0.001146651
	1.3d solid waste management	0.021153263
	1.3e property tax	0.004623593
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	0.000162854
	1.3i information	0.000289124
	1.3j electricity	0.094251667
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.29**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	9
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**70.82**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	6597.08032
Denominator	Total demand raised for the year	9315.34683
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**44.83**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	2144.73
Denominator	Total O&M cost for providing water supply services during the year	4784.1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**57.46**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	71217.33
Denominator	Total expenditure (revenue and capital accounts) in the same year	123949.33
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**6.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	4
Denominator	Total number of wards	65
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	7
Denominator	Total number of historic buildings/sites identified	7
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**55**
Description	Average Occupancy rate of Hotels	55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	8.5
Denominator	Total budget of the ULB (capital and revenue)	55480.3
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**62**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	62
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**163.11**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	207653
Denominator	Total population in the age group of 6-14 years	127306
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**77.92**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	48650
Denominator	Total female population in the age group of 6-14 years	62437
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**63.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	169009
Denominator	Total number of teachers available for primary grades (public and private schools)	2658
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**17.98**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	66
Denominator	Total number of schools	367
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.44**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.43893166
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**93.39**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	170142428
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**73.31**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6212
Denominator	Total population of the city	847387
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**69.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	5918
Denominator	Total population of the city	847387
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**14**
Description	Total response time for health-related distress calls received in the city	14
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	578
Denominator	Total population of the city	847387
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	200
Denominator	Total population of the city	847387
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**39.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	560
Denominator	Total length of road network in the city	1411.97
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1056.31**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	8951
Denominator	Total population of the city	847387
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**2.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	198
Denominator	Total crimes recorded in the same year	8951
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**16.4**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	139
Denominator	Total population of the city	847387
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**41.6**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	29455.62
Denominator	Total VAT/GST collection during preceding year	708.0422
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-80.1**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-8812.66028
Denominator	Total Professional Tax collection during preceding year	11002.2653
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-21.98**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-247
Denominator	Number of construction permits during preceding year	11.24
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	73380
Denominator	Total labour force in the city	127306
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	3182.65
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**38.47**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	14766
Denominator	Total number of slum and EWS households in the city	383.83
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**100**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	11158334677736
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	341876.48
Denominator	Total population of the city	847387
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**1.27**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1077115.056
Denominator	Total population of the city	847387
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**37.13**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	62100000
Denominator	Total area of the city (total area of all land uses)	167230000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	847387
Denominator	Area allocated for residential land use (in hectares)	62100000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**137.96**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	314105
Denominator	Total number of households in the city	227675
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	392566
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**225**
Description	Total number of sustained electrical interruptions in a year	225
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	25920
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1.1
Denominator	Total energy consumption from all sources	3722.69
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2097289.167
Denominator	Total quantum of water and waste water handled during the period	5040
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	11810674
Denominator	Total number of street light installations	36800
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	3722.69
Denominator	Total population of the city	847387
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	239
Denominator	Total area of the city (sq.km)	167.23
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	493
Denominator	Total population of the city	847387
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	40
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1411.97
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	5
Denominator	Total number of major transport interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.4**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**37.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	29
Denominator	Total number of signalised intersections in the city	77
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	38.74
Denominator	Total length of road network in the city	2823.94
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**74.07**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	20
Denominator	Total number of junctions/ intersections on major roads in the city	27
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**70.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	871
Denominator	Total number of public right-of-way areas in the city	1241
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	105828
Denominator	Total number of households in the city	227675
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**129.81**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	110
Denominator	Total population of the city	847387
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	108
Denominator	Total number of samples tested for water quality	394
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**17.45**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	19.2
Denominator	Quantum of water put into the distribution system (mld)	110
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	108445
Denominator	Total number of water connections in the city	108445
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**2.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	155
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	7415

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**101.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	218863
Denominator	Total number of properties in the city	216282
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**75.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	162536
Denominator	Total number of properties in the city	216282
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	58
Denominator	Total waste water generated in the city per day	58
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**103.45**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	60
Denominator	Total waste water received at treatment plants per day	58
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**3.05**
Formula:	*Numerator / Denominator*	

Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	43.12
Denominator	Total length of road network in the city	1411.97
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**93.1**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	231645
Denominator	Total number of households and establishments in the city	248803
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	450
Denominator	Total quantum of MSW generated in the city	450
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**85.16**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	11496.9
Denominator	Average MSW generated in the city (tons per month)	13500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**12.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	12.1
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**19.43**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	19.43
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**87.38**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	87.38
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

TIRUNELVELI

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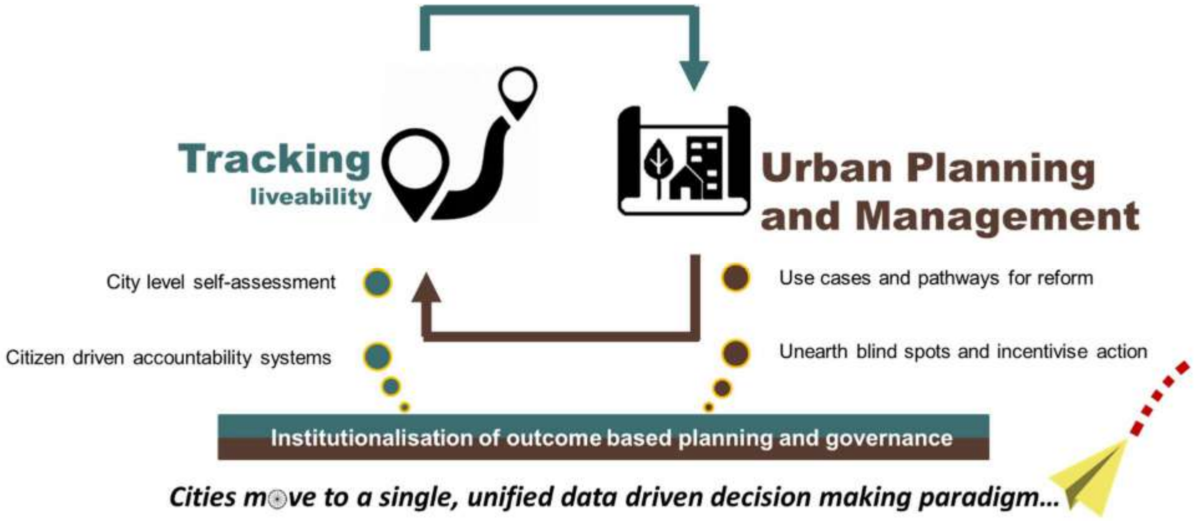
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

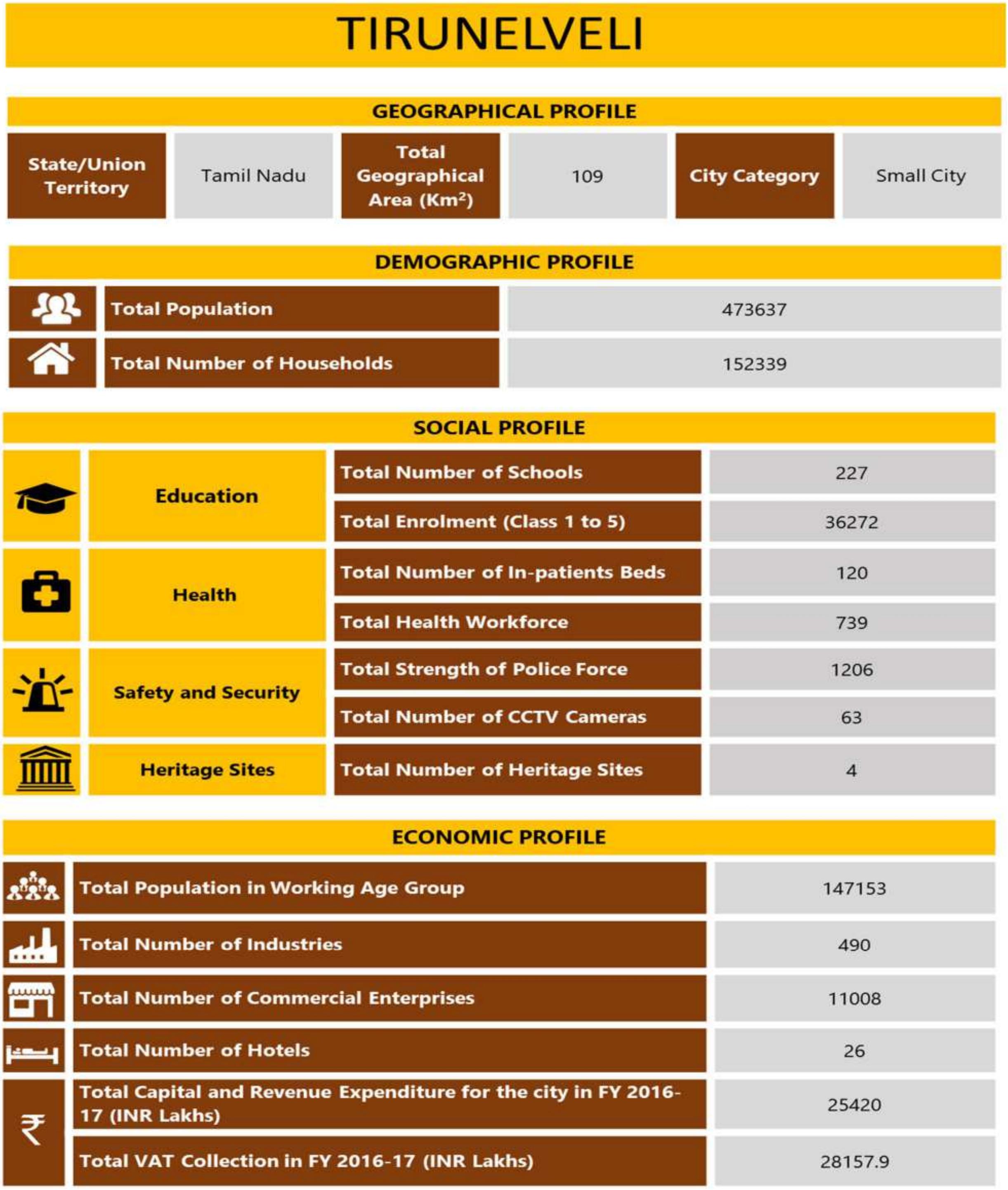
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



TIRUNELVELI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km^2)	109	City Category	Small City

DEMOGRAPHIC PROFILE

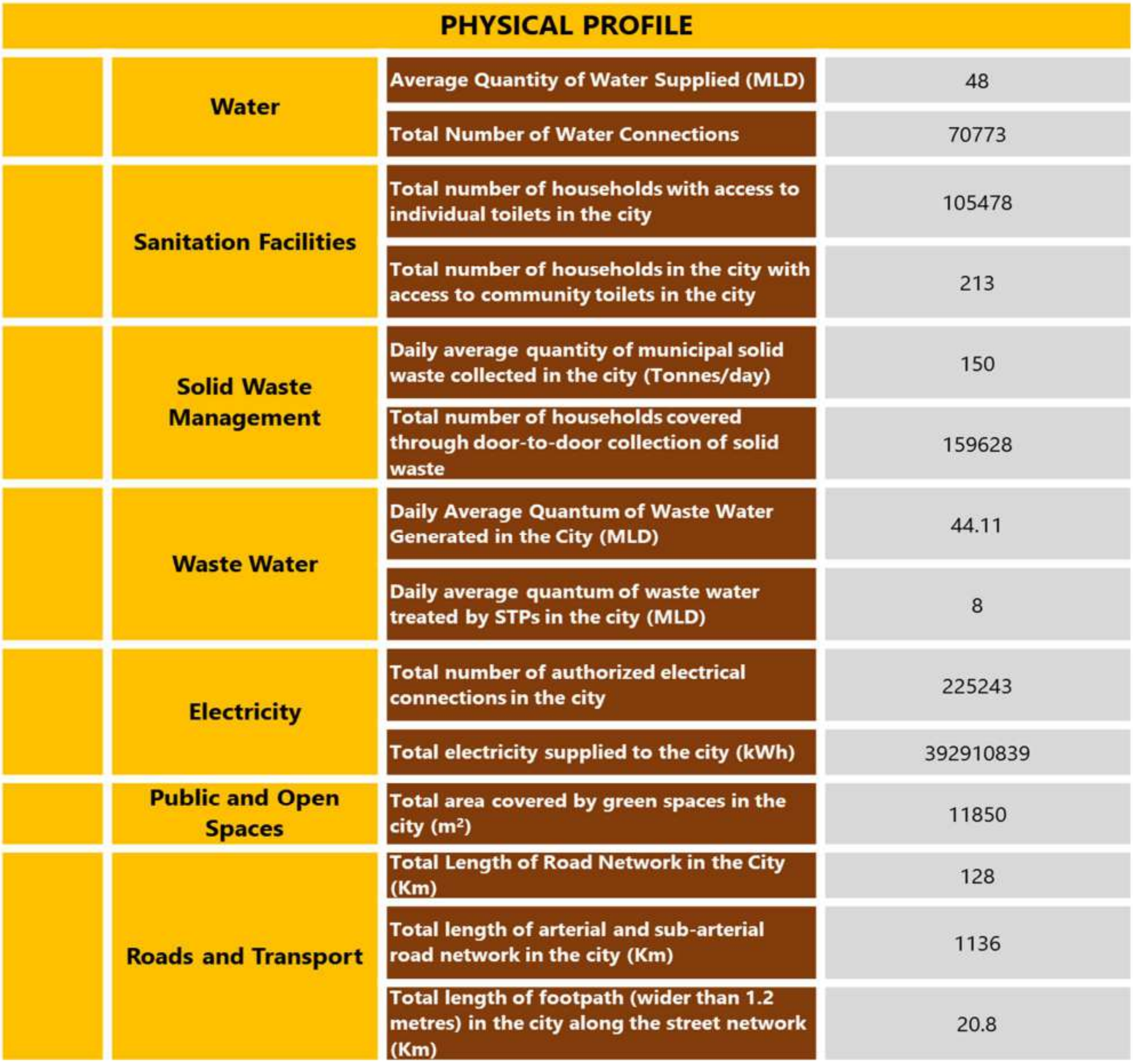
Total Population	473637
Total Number of Households	152339

SOCIAL PROFILE

Education	Total Number of Schools	227
	Total Enrolment (Class 1 to 5)	36272
Health	Total Number of In-patients Beds	120
	Total Health Workforce	739
Safety and Security	Total Strength of Police Force	1206
	Total Number of CCTV Cameras	63
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	147153
Total Number of Industries	490
Total Number of Commercial Enterprises	11008
Total Number of Hotels	26
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25420
Total VAT Collection in FY 2016-17 (INR Lakhs)	28157.9



PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	48
		Total Number of Water Connections	70773
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	105478
		Total number of households in the city with access to community toilets in the city	213
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	150
		Total number of households covered through door-to-door collection of solid waste	159628
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	44.11
		Daily average quantum of waste water treated by STPs in the city (MLD)	8
	Electricity	**Total number of authorized electrical connections in the city**	225243
		Total electricity supplied to the city (kWh)	392910839
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	11850
	Roads and Transport	**Total Length of Road Network in the City (Km)**	128
		Total length of arterial and sub-arterial road network in the city (Km)	1136
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	20.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m

Pillars of Comprehensive Development	Category	Indicators
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections 12.2 Per capita supply of water 12.3 Quality of water supplied 12.4 Level of non-revenue water – NRW 12.5 Percentage of water connections covered through meters 12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets 13.2 Coverage of sewerage network and/or septage 13.3 Collection efficiency of sewerage network 13.4 Extent of reuse and recycling of waste water 13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection 14.2 Efficiency of collection of municipal solid waste 14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution 15.2 Concentration of NO2- air pollution 15.3 Concentration of PM10 - air pollution 15.4 Level of noise pollution

Pillars of Comprehensive Development	Category	Indicators
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

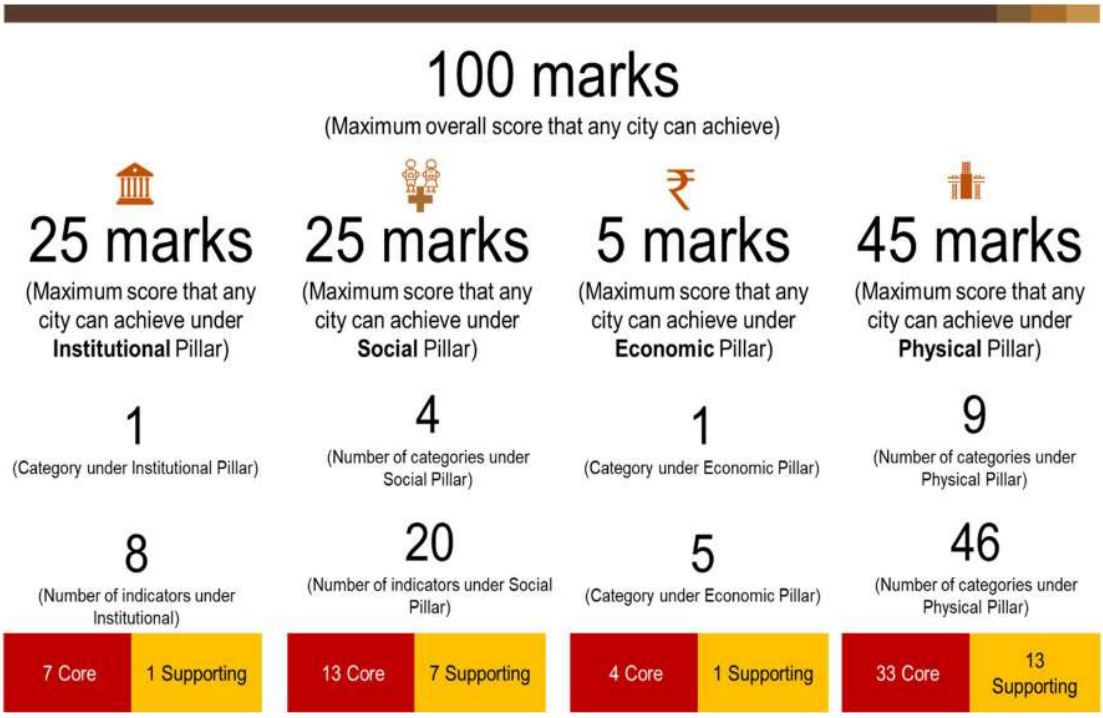
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB – Account section
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning Department
Urban Local Body	For Water Supply and Drainage related questions	ULB – Development Authority – Engineering
Urban Local Body	For Heritage sites related data	ULB – Development Authority - Engineering
Urban Local Body	For Ecological sites related data	ULB – Development Authority - Engineering
Urban Local Body	For Housing related data	Town and Country Planning Department
Urban Local Body	For Building plan related data	Town and Country Planning Department
Urban Local Body	For Roads related data	ULB – Development Authority Department

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	ULB – Health Department
Urban Local Body	For IT services related data	ULB – Information technical section
Urban Local Body	For Vendor committee related data	ULB – Health Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism Department, revenue department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State pollution control Board – Tirunelveli District Sipco - pettai
Development Authority	Building Infrastructure	ULB – Development Authority - Engineering
	Construction planning	Town and country planning Department
	Green Building	Town and country planning department
	Rain water harvesting	Town and country planning Department
	Universal Design Principle	Health Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Central command control center – Disaster Management – Revenue department – Collector office
State Education Department		Chief Educational Officer - Tirunelveli
State Health Department	Health care professionals	ULB – Health Department
	Citizen Services	ULB – Health Department
	Disease Prevalence	Joint Director of Health Services through ULB Health Department
	Health Infrastructure	Joint Director of Health Services through ULB Health Department
State Renewable Energy Development Agency		Tamilnadu Electricity Board - Tirunelveli
State Sales / Commercial Taxes Department		District sales / commercial Tax office – deputy commissioner - Tirunelveli
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		City police commissioner office –Traffic and Crime – police Department

Designated data owners	Subcategories	Data owners at city level
Transport Authorities	Buses	Tamilnadu state transport corporation
	Registered Vehicles	Regional Transporting Office - Tirunelveli
	Sub urban rail transport	Not applicable
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 73 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of secondary documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**1**
DISCOM/Electricity Department	**5**
Traffic and Police Department	**6**
Development Authority	**4**
Pollution Control Board	**4**
State Renewable Energy Department	**1**
Town and Country Planning	**2**
State Health Department	**7**
Transport Authority	**6**
Disaster Management	**1**
Urban Local Body	**34**
Total	**73***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

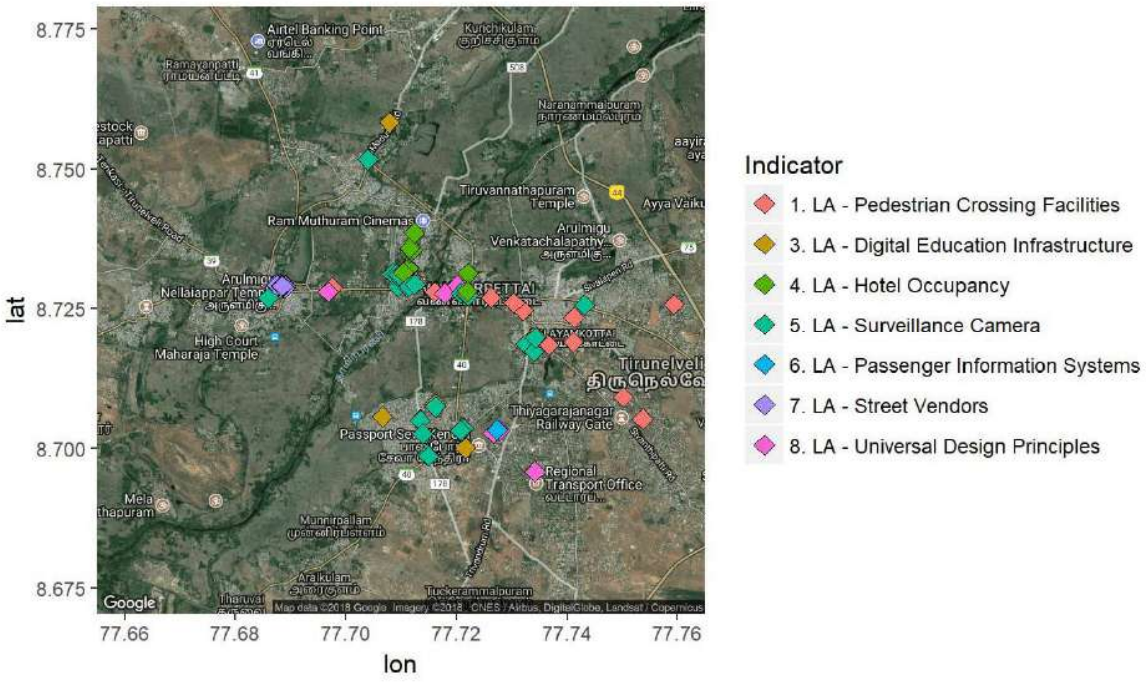
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


lat
8.775
8.750
8.725
8.700
8.675
lon
77.66
77.68
77.70
77.72
77.74
77.76
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**77.01**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0.75
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	0.538461538
	1.1k Grievance redressal	0.5
	1.1l electricity	1
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**2.01**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.000167322

	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0.152153596
	1.3f professional tax (RC)	0.02316108
	1.3g professional tax (EC)	0.024583069
	1.3h complaints/ grievance redressal	0
	1.3i information	2.74472E-05
	1.3j electricity	0.000554956
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**123.64**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	1
	1.4e professional tax	0.5
	1.4f parks and recreational spaces	0
	1.4g building plan	863
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**68.79**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1913
Denominator	Total demand raised for the year	2781
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**462.86**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	1458
Denominator	Total O&M cost for providing water supply services during the year	315
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**15.07**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	8964
Denominator	Total expenditure (revenue and capital accounts) in the same year	59495
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**98.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	54
Denominator	Total number of wards	55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**300**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**158.33**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	19
Denominator	Total number of ecologically important sites identified in the city	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**52.29**
Description	Average Occupancy rate of Hotels	52.28571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	25420
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**0**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	0
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**83.6**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	63515
Denominator	Total population in the age group of 6-14 years	75978
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**83.6**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	31024
Denominator	Total female population in the age group of 6-14 years	37109
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.65**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	36272
Denominator	Total number of teachers available for primary grades (public and private schools)	1675
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**22.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	51
Denominator	Total number of schools	227
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**74.26**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	74.25619334
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**122.1**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	83216047
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**2.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	120
Denominator	Total population of the city	473637
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**15.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	739
Denominator	Total population of the city	473637
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**10**
Description	Total response time for health-related distress calls received in the city	10
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	771
Denominator	Total population of the city	473637
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	386
Denominator	Total population of the city	473637
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**49.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	63
Denominator	Total length of road network in the city	128
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**902.17**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4273
Denominator	Total population of the city	473637
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**6.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	266
Denominator	Total crimes recorded in the same year	4273
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**17.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	85
Denominator	Total population of the city	473637
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-6.31**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-1896.32
Denominator	Total VAT/GST collection during preceding year	300.5422
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**6.05**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	19
Denominator	Total Professional Tax collection during preceding year	314
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-30.63**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-524
Denominator	Number of construction permits during preceding year	17.11
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	340266
Denominator	Total labour force in the city	75978
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**21.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	400
Denominator	Total number of vendors in the city	1899.45
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**74.82**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	5670
Denominator	Total number of slum and EWS households in the city	75.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.03**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	742023660
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	11850
Denominator	Total population of the city	473637
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	26000
Denominator	Total population of the city	473637
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	43460
Denominator	Total area of the city (total area of all land uses)	109000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**7.93**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	473637
Denominator	Area allocated for residential land use (in hectares)	59757
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**147.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	225243
Denominator	Total number of households in the city	152339
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	225243
Denominator	Total number of electricity connections in the city	225243
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**12**
Description	Total number of sustained electrical interruptions in a year	12
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	0
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	247
Denominator	Total energy consumption from all sources	392910839
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1015191.583
Denominator	Total quantum of water and waste water handled during the period	1680
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	10747465
Denominator	Total number of street light installations	25243
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	6692
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	5353
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.78**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	392910839
Denominator	Total population of the city	473637
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	17511
Denominator	Total area of the city (sq.km)	109
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	202
Denominator	Total population of the city	473637
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	128
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	2
Denominator	Total available on-street parking spaces in the city	2

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**8.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	20.8
Denominator	Total length of road network in the city	256
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**39.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	31
Denominator	Total number of junctions/ intersections on major roads in the city	78
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**79.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	475
Denominator	Total number of public right-of-way areas in the city	600
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**46.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	70773
Denominator	Total number of households in the city	152339
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**101.34**

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	48
Denominator	Total population of the city	473637
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	48
Denominator	Total number of samples tested for water quality	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**1.83**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0.88
Denominator	Quantum of water put into the distribution system (mld)	48
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	70773
Denominator	Total number of water connections in the city	70773
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**102.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	1123

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1091
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**74.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	112024
Denominator	Total number of properties in the city	149974
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**185.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	277866
Denominator	Total number of properties in the city	149974
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**24.94**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	11
Denominator	Total waste water generated in the city per day	44.11
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	8
Denominator	Total waste water received at treatment plants per day	8
Unit	Percentage	

Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**211.12**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	270.23
Denominator	Total length of road network in the city	128
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**105.08**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	171643
Denominator	Total number of households and establishments in the city	163347
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	150
Denominator	Total quantum of MSW generated in the city	150
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**51**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2295
Denominator	Average MSW generated in the city (tons per month)	4500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	μg/m3	
Benchmark	Annual mean concentration of 50 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	μg/m3	
Benchmark	Annual mean concentration of 40 μg/m3 OR Mean concentration over 24 hours of 80 μg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**0**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	0
Unit	μg/m3	
Benchmark	Annual mean concentration of 60 μg/m3 OR Mean concentration over 24 hours of 100 μg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

TIRUPATI

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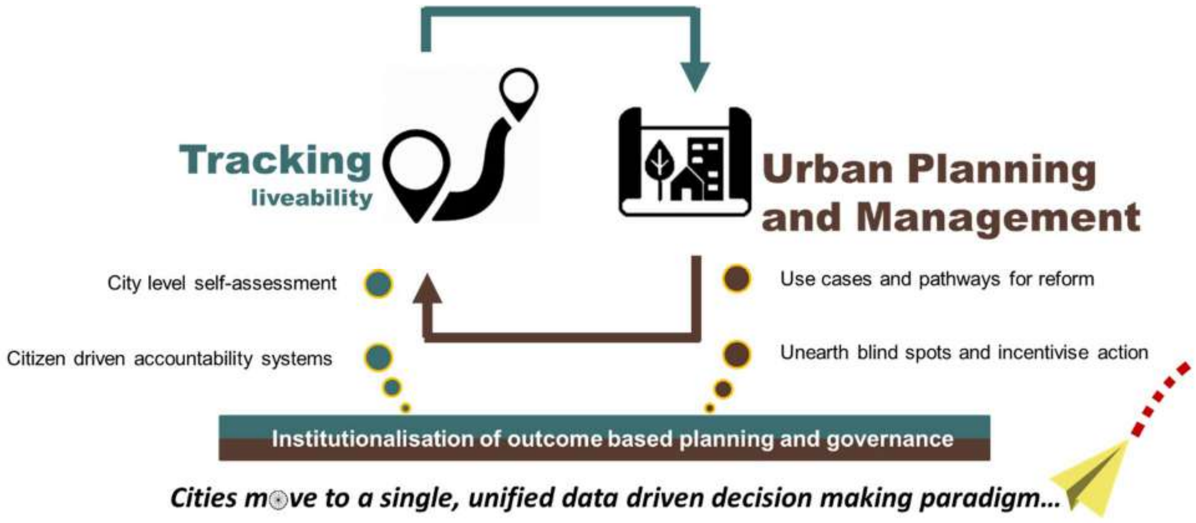
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

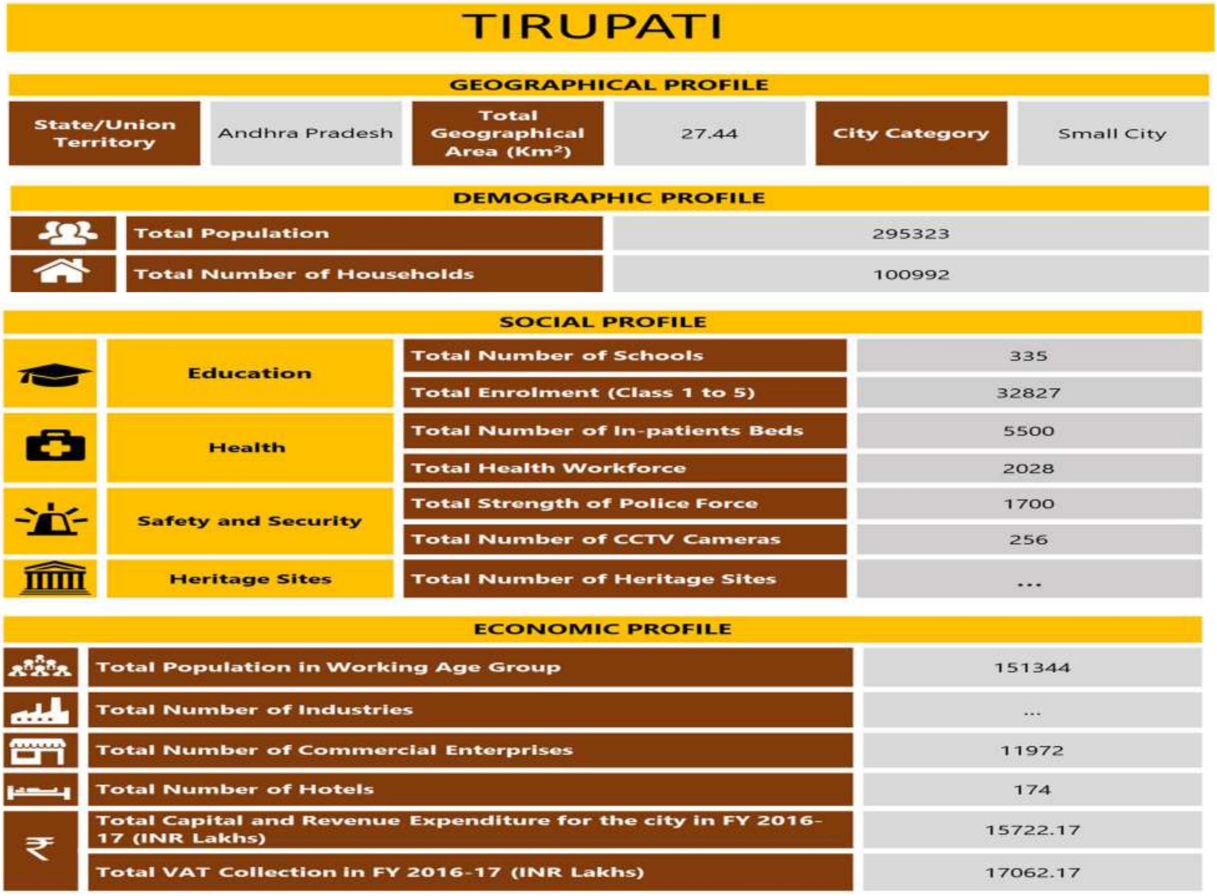
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



TIRUPATI

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	Total Geographical Area (Km²)	27.44	City Category	Small City

DEMOGRAPHIC PROFILE

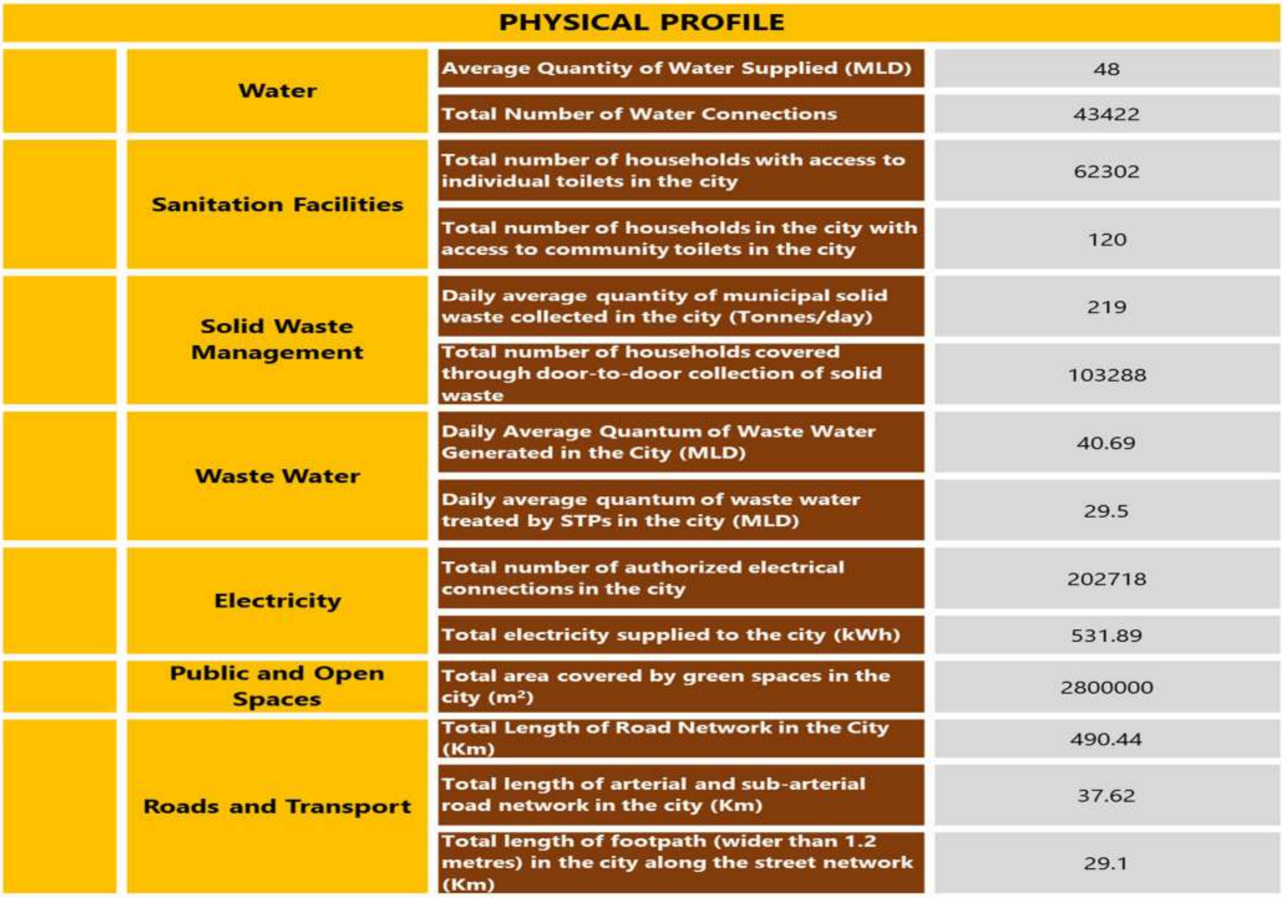
Total Population	295323
Total Number of Households	100992

SOCIAL PROFILE

Education	Total Number of Schools	335
	Total Enrolment (Class 1 to 5)	32827
Health	Total Number of In-patients Beds	5500
	Total Health Workforce	2028
Safety and Security	Total Strength of Police Force	1700
	Total Number of CCTV Cameras	256
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	151344
Total Number of Industries	...
Total Number of Commercial Enterprises	11972
Total Number of Hotels	174
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15722.17
Total VAT Collection in FY 2016-17 (INR Lakhs)	17062.17



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	48
		Total Number of Water Connections	43422
	Sanitation Facilities	Total number of households with access to individual toilets in the city	62302
		Total number of households in the city with access to community toilets in the city	120
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	219
		Total number of households covered through door-to-door collection of solid waste	103288
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	40.69
		Daily average quantum of waste water treated by STPs in the city (MLD)	29.5
	Electricity	Total number of authorized electrical connections in the city	202718
		Total electricity supplied to the city (kWh)	531.89
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	2800000
	Roads and Transport	Total Length of Road Network in the City (Km)	490.44
		Total length of arterial and sub-arterial road network in the city (Km)	37.62
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	29.1

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

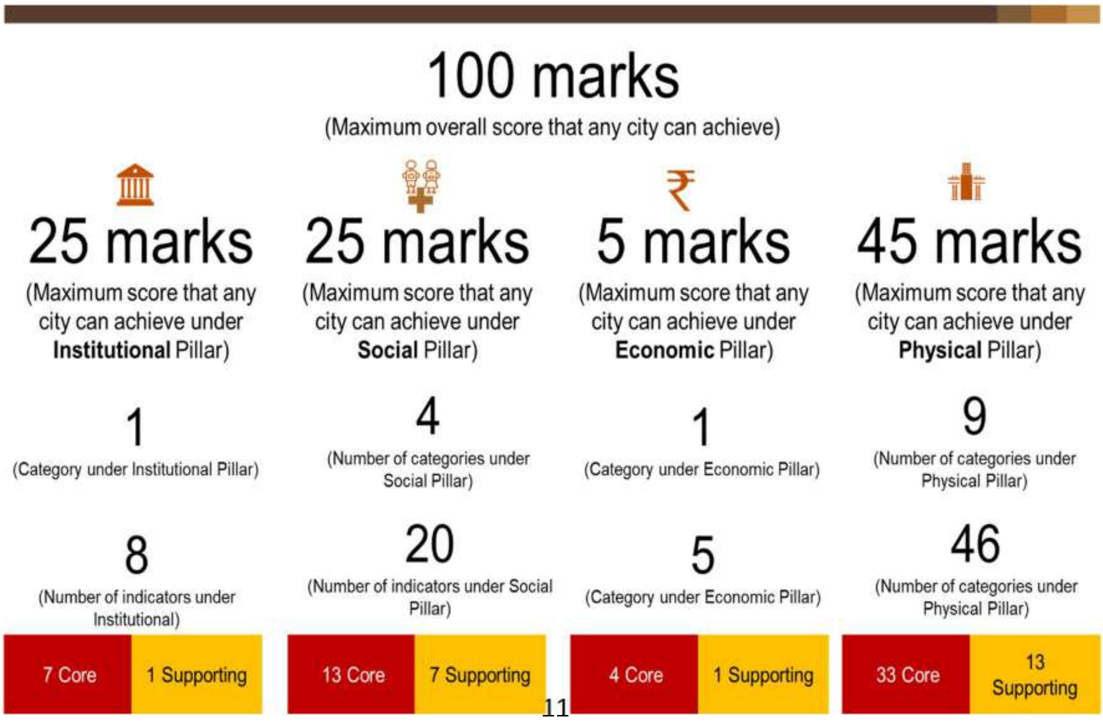
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

Institutional	Social	Economic	Physical
25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Deputy Engineer zone 5 section
Urban Local Body	For Water Supply and Drainage related questions	Deputy Executive Engineer zone 4 section
Urban Local Body	For Heritage sites related data	Assistant City Planner -1
Urban Local Body	For Ecological sites related data	Municipal Engineer zone 4 section
Urban Local Body	For Housing related data	Housing Section
Urban Local Body	For Building plan related data	Town Planning section
Urban Local Body	For Roads related data	Asst Engineer section
Urban Local Body	For Solid waste management related data	Deputy Executive Engineer zone 4 section
Urban Local Body	For IT services related data	VOICE section
Urban Local Body	For Vendor committee related data	UCD Section
Urban Local Body	Any other departments involved in providing data for questions mentioned	Heads of the Departments

Designated data owners	Subcategories	Data owners at city level
	under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Tirupati Urban Development Authority Planning section
	Construction planning	Tirupati Urban Development Authority Planning section
	Green Building	Tirupati Urban Development Authority Planning section
	Rain water harvesting	Tirupati Urban Development Authority Planning section
	Universal Design Principle	Tirupati Urban Development Authority Planning section
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Southern power/DISCOM, Tirupati
State Disaster management authority		District Disaster Management Authority
State Education Department		Mandal Education Officer (Urban)
State Health Department	Health care professionals	Medical Health Officer
	Citizen Services	Medical Health Officer
	Disease Prevalence	Medical Health Officer
	Health Infrastructure	Medical Health Officer
State Renewable Energy Development Agency	Renewable Energy	Non-Conventional Energy Development Corporation of Andhra Pradesh
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Deputy Superintendent of Police
Transport Authorities	Buses	District Transport Dept-APSRTC
	Registered Vehicles	District Transport
	Sub urban rail transport	No
	Mono Rail Authority	No
	Tramways	No
	Marine Transport Authority	No

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 92 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**5**
DISCOM/Electricity Department	**6**
Traffic and Police Department	**20**
Development Authority	**1**
Pollution Control Board	**7**
State Renewable Energy Department	**2**
Town and Country Planning	**1**
State Health Department	**2**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**45**
Total	**92***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

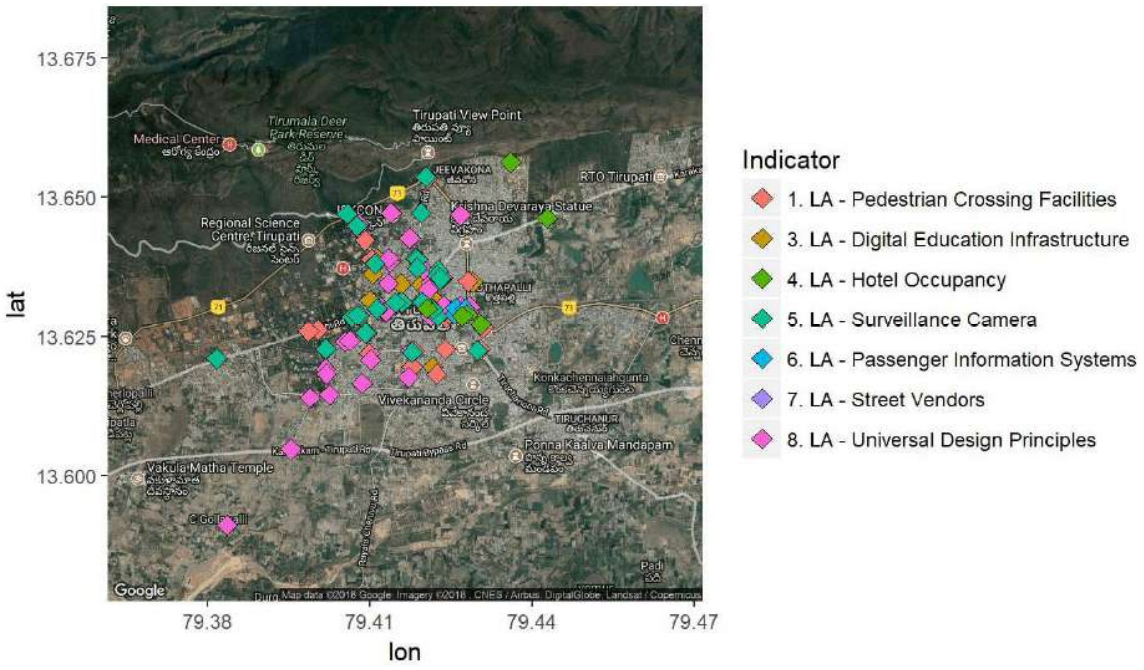
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1** | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.675
13.650
13.625
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lat
79.38
79.41
79.44
79.47
lon
Tirumala Deer Park Reserve
Tirupati View Point
Medical Center
Regional Science Centre, Tirupati
JEEVAKONA
RTO Tirupati
Krishna Devaraya Statue
THAPALLI
Konkachennaiahgunta
Vivekananda Circle
TIRUCHANUR
Ponna Kaalva Mandapam
Vakula Matha Temple
C Gollapalli
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**80.92**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0.5
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0.75
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**4.6**
Description		
Sub Indicators	1.3a Building plan	0.000757914
	1.3b Birth/Death Certificate	0.003061337
	1.3c water supply	0
	1.3d solid waste management	0.23488858
	1.3e property tax	5.1297E-05

	1.3f professional tax (RC)	0.012012858
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.001168495
	1.3i information	0.014021935
	1.3j electricity	0.148048027
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.93**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0.5
	1.4e professional tax	6
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**98.2**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4102.14
Denominator	Total demand raised for the year	4177.39
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**5.7**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	114.35
Denominator	Total O&M cost for providing water supply services during the year	2005.33
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**2575.56**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-17571.23
Denominator	Total expenditure (revenue and capital accounts) in the same year	-682.23
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	50
Denominator	Total number of wards	50
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	4
Denominator	Total number of historic buildings/sites identified	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**60**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	3
Denominator	Total number of ecologically important sites identified in the city	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**25.71**
Description	Average Occupancy rate of Hotels	25.71428571
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	13.64
Denominator	Total budget of the ULB (capital and revenue)	15722.17
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**244**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	244
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**118.19**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	54061
Denominator	Total population in the age group of 6-14 years	45740
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**110.81**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	24200
Denominator	Total female population in the age group of 6-14 years	21839
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**48.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	32827
Denominator	Total number of teachers available for primary grades (public and private schools)	678

Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**67.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	225
Denominator	Total number of schools	335
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**162.1**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	162.1007524
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**121.72**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	51246381
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**186.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5500
Denominator	Total population of the city	295323
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**68.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	2028
Denominator	Total population of the city	295323
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**0**
Description	Total response time for health-related distress calls received in the city	0
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.15**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	430
Denominator	Total population of the city	295323
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	371
Denominator	Total population of the city	295323
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**52.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	256
Denominator	Total length of road network in the city	490.44
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**515.37**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1522
Denominator	Total population of the city	295323
Unit	Crimes per lakh	

Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**16.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	248
Denominator	Total crimes recorded in the same year	1522
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**16.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	50
Denominator	Total population of the city	295323
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**32.42**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4177.55
Denominator	Total VAT/GST collection during preceding year	128.8462
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**5.14**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	28.2
Denominator	Total Professional Tax collection during preceding year	548.94
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	**Increase in issuance of Construction Permits**	**39.45**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	144
Denominator	Number of construction permits during preceding year	3.65
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	45740
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1318
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**2.6**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	1039
Denominator	Total number of slum and EWS households in the city	399.81
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**1.43**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	190600867080
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**9.48**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	2800000
Denominator	Total population of the city	295323
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**2.68**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	791245
Denominator	Total population of the city	295323
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	27440000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	295323

Denominator	Area allocated for residential land use (in hectares)	13276000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**169.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	170740
Denominator	Total number of households in the city	100992
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	202718
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**6713**
Description	Total number of sustained electrical interruptions in a year	6713
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.79**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	15029
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable**	**0.81**

	sources	
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	6346
Denominator	Total energy consumption from all sources	531.89
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.31**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1256252.083
Denominator	Total quantum of water and waste water handled during the period	2325
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	2449865
Denominator	Total number of street light installations	10703
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	398250
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	531.89
Denominator	Total population of the city	295323
Unit	kWh per capita	

Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	25
Denominator	Total area of the city (sq.km)	27.44
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	237
Denominator	Total population of the city	295323
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	27
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	490.44
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	3
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	

Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**18.33**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	55
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	24
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**66.87**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	81.25
Denominator	Total available on-street parking spaces in the city	121.5
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**2.97**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	29.1
Denominator	Total length of road network in the city	980.88
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**112.5**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of intersections with pedestrian crossing facilities on major roads	36
Denominator	Total number of junctions/ intersections on major roads in the city	32
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**4.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	51
Denominator	Total number of public right-of-way areas in the city	1041
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**38.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	39352
Denominator	Total number of households in the city	100992
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**162.53**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	48
Denominator	Total population of the city	295323
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	22307
Denominator	Total number of samples tested for water quality	22418
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**27.54**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	13.22
Denominator	Quantum of water put into the distribution system (mld)	48
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**5.28**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	2291
Denominator	Total number of water connections in the city	43422
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**436.74**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	3031
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	694
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**105.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	68632
Denominator	Total number of properties in the city	64981
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**96.85**
Formula:	*Numerator / Denominator*	

Numerator	Total number of properties with connection to waste water management systems	62934
Denominator	Total number of properties in the city	64981
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**72.5**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	29.5
Denominator	Total waste water generated in the city per day	40.69
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	29.5
Denominator	Total waste water received at treatment plants per day	29.5
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**8.11**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	39.77
Denominator	Total length of road network in the city	490.44
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	113907
Denominator	Total number of households and establishments in the city	112964
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private	219

	operator	
Denominator	Total quantum of MSW generated in the city	219
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**124.2**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	8160
Denominator	Average MSW generated in the city (tons per month)	6570
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**5.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	5.1
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**12**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	12
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**61.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	61.9
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	80
Denominator	Total number of noise samples	80
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**

Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते
Ministry of Urban Development
Government of India

TIRUPPUR

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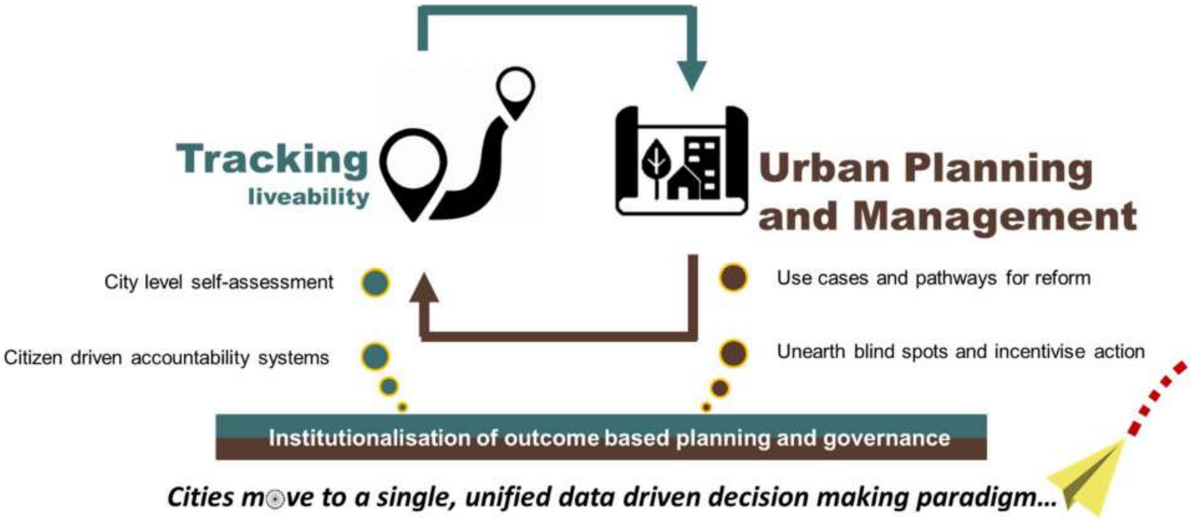
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

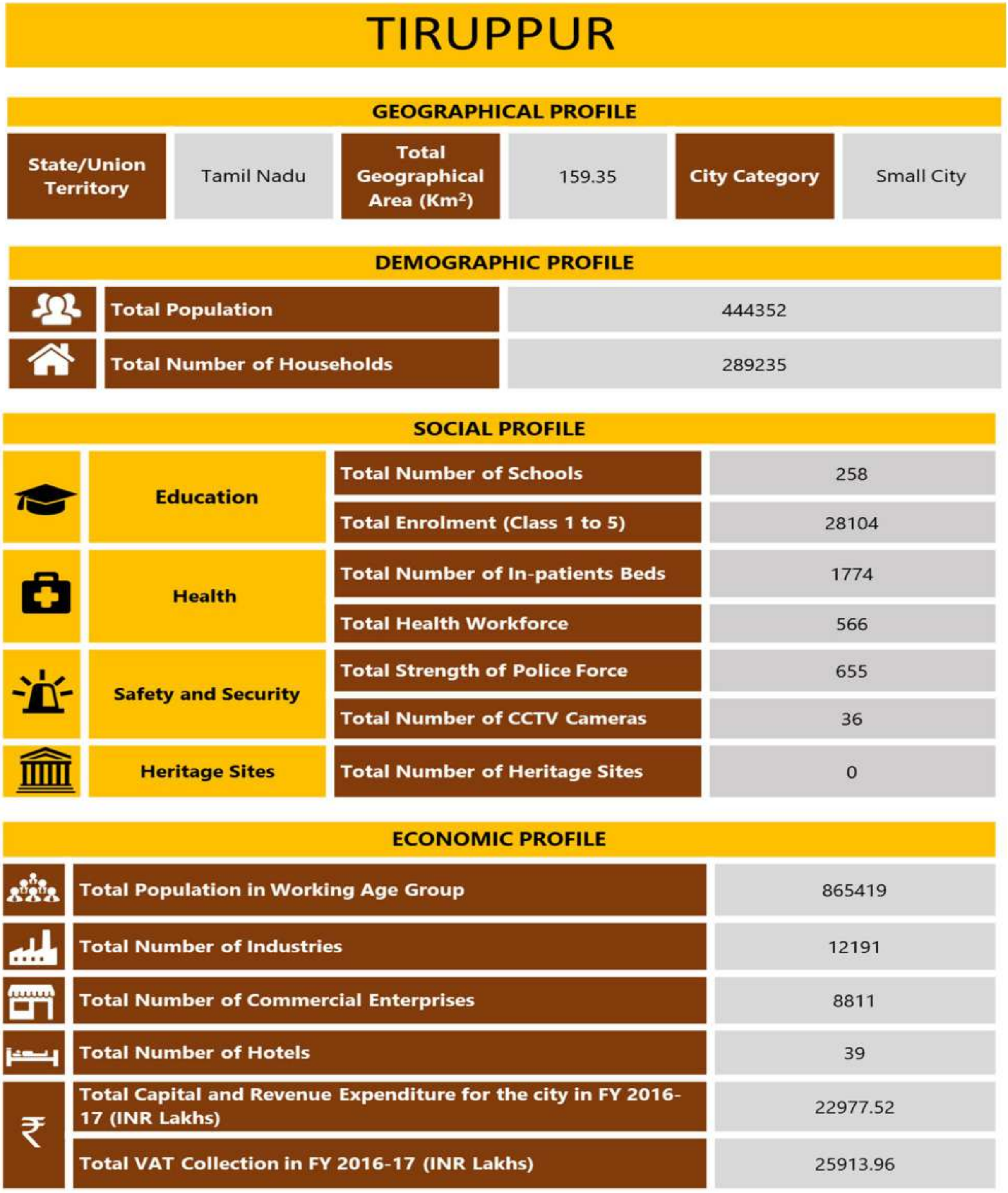

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



TIRUPPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km²)**	159.35	**City Category**	Small City

DEMOGRAPHIC PROFILE

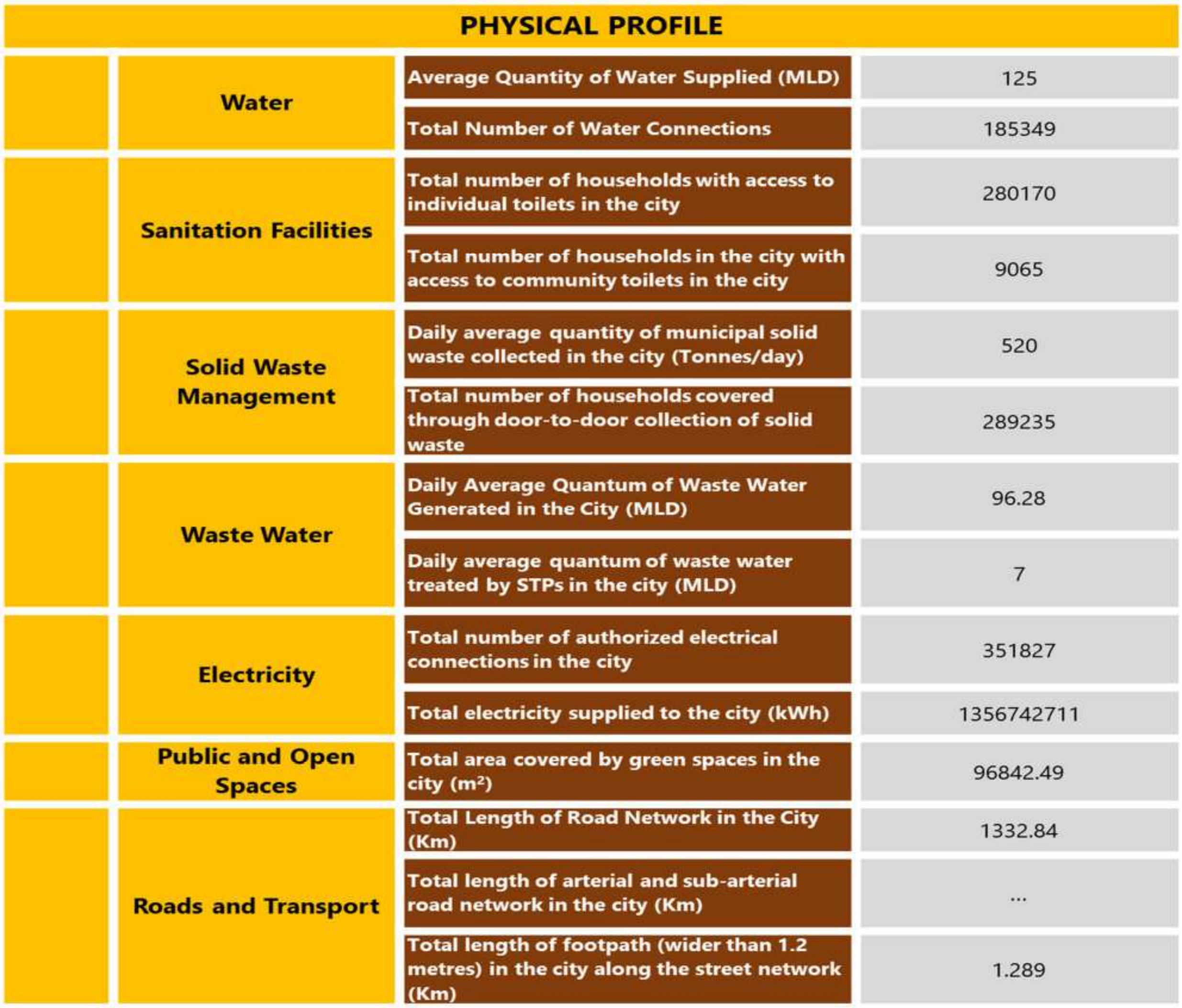
Total Population	444352
Total Number of Households	289235

SOCIAL PROFILE

Education	**Total Number of Schools**	258
	Total Enrolment (Class 1 to 5)	28104
Health	**Total Number of In-patients Beds**	1774
	Total Health Workforce	566
Safety and Security	**Total Strength of Police Force**	655
	Total Number of CCTV Cameras	36
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

Total Population in Working Age Group	865419
Total Number of Industries	12191
Total Number of Commercial Enterprises	8811
Total Number of Hotels	39
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	22977.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	25913.96



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	125
		Total Number of Water Connections	185349
	Sanitation Facilities	Total number of households with access to individual toilets in the city	280170
		Total number of households in the city with access to community toilets in the city	9065
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	520
		Total number of households covered through door-to-door collection of solid waste	289235
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	96.28
		Daily average quantum of waste water treated by STPs in the city (MLD)	7
	Electricity	Total number of authorized electrical connections in the city	351827
		Total electricity supplied to the city (kWh)	1356742711
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	96842.49
	Roads and Transport	Total Length of Road Network in the City (Km)	1332.84
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1.289

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population 4.2 Healthcare professionals per 10,000 population 4.3 Average response time in case of health emergencies 4.4 Period prevalence of water borne diseases 4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras 5.2 Number of recorded crimes per lakh population 5.3 Extent of crimes recorded against women, children and elderly per year 5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection 6.2 Increase in collection of Professional Tax 6.3 Increase in issuance of Construction permits 6.4 Unemployment rate 6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing 7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces 8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use 9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical

Pillars of Comprehensive Development	Category	Indicators
		services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	Category	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

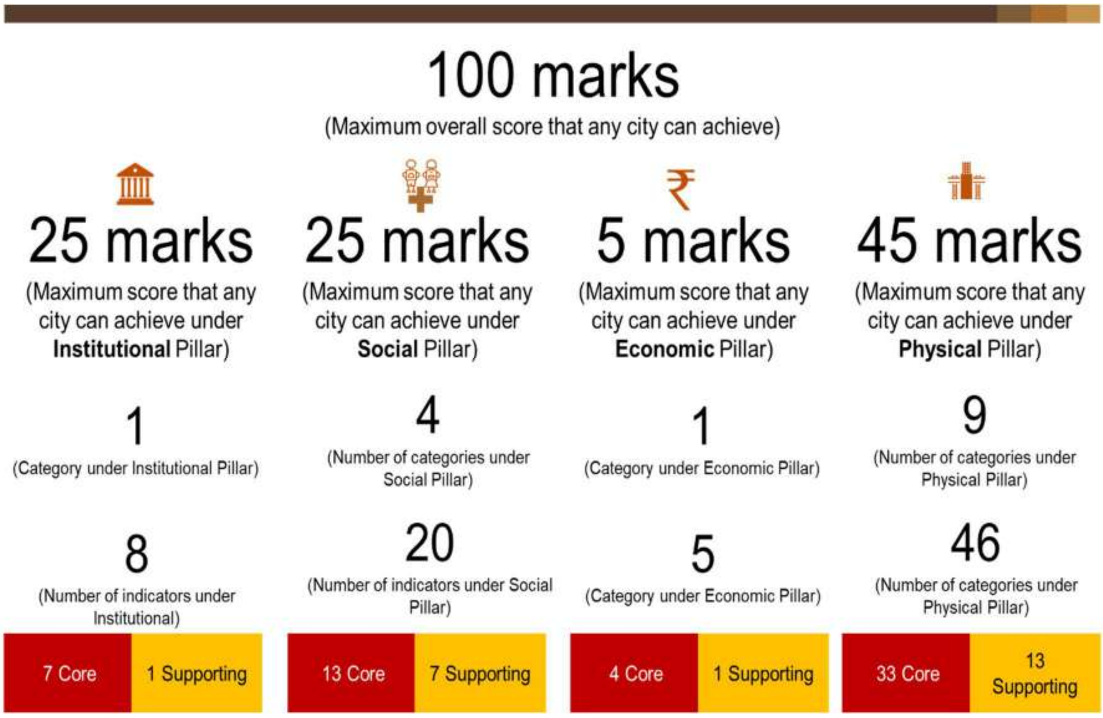
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section, Tirupur Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning Department Planning Department, Tirupur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Heritage sites related data	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Ecological sites related data	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Housing related data	Town and Country Planning Department Planning Department, Tirupur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Building plan related data	Town and Country Planning Department Planning Department, Tirupur Municipal Corporation
Urban Local Body	For Roads related data	Tirupur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Unit , Tirupur Municipal Corporation
Urban Local Body	For IT services related data	IT Department, Tirupur Municipal Corporation
Urban Local Body	For Vendor committee related data	Tirupur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tamil Nadu State pollution control Board
Development Authority	Building Infrastructure	Town and country planning Department Tirupur Municipal Corporation
	Construction planning	Town and country planning Department Tirupur Municipal Corporation
	Green Building	Town and country planning department
	Rain water harvesting	Town and country planning department
	Universal Design Principle	Town and country planning Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Disaster Management – Collector office
State Education Department		District Education Department
State Health Department	Health care professionals	City Health Officer- Tirupur Municipal Corporation
	Citizen Services	City Health Officer- Tirupur Municipal Corporation
	Disease Prevalence	City Health Officer- Tirupur Municipal Corporation
	Health Infrastructure	City Health Officer- Tirupur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District sales / commercial Tax office, Tirupur
Town and Country Planning Department	Land Use	Town and country Planning Department, Tirupur
Traffic and Police Department		City police commissioner office, Tirupur
Transport Authorities	Buses	Tamilnadu state transport corporation
	Registered Vehicles	Regional Transporting Office, Tirupur
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 130 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	10
Traffic and Police Department	4
Development Authority	6
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	20
Transport Authority	8
Disaster Management	1

Urban Local Body	**69**
Total	**130***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

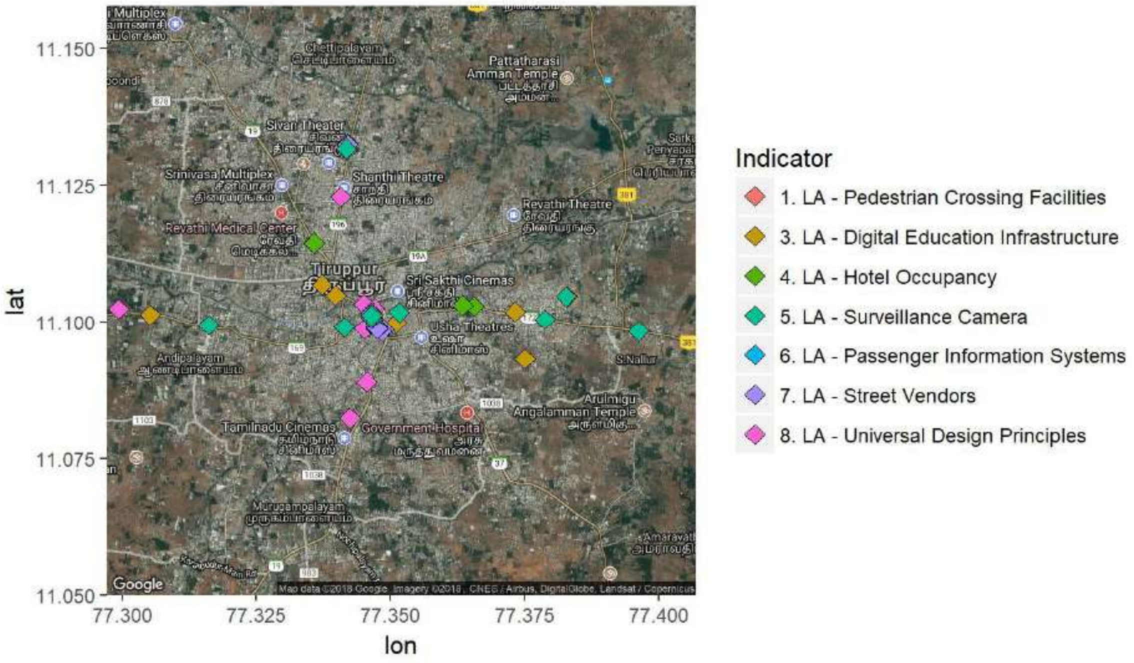
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


lat
lon
11.150
11.125
11.100
11.075
11.050
77.300
77.325
77.350
77.375
77.400
Tiruppur
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**69.71**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0.5
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.222222222
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**6.98**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.00075897

	1.3c water supply	0.35914733
	1.3d solid waste management	0.056407983
	1.3e property tax	0.084746828
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0.035503462
	1.3h complaints/ grievance redressal	0
	1.3i information	0.091420766
	1.3j electricity	0.00060399
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.14**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**91.7**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	4446.83
Denominator	Total demand raised for the year	4849.54
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**28.36**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	1802.78
Denominator	Total O&M cost for providing water supply services during the year	6356.04
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**12.43**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	6645.69
Denominator	Total expenditure (revenue and capital accounts) in the same year	53450.51
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**6.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	4
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**71**
Description	Average Occupancy rate of Hotels	71
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	22977.52
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**4**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	4
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**98.25**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	63941
Denominator	Total population in the age group of 6-14 years	65079
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**102.8**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	32628
Denominator	Total female population in the age group of 6-14 years	31738
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**34.02**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	28104
Denominator	Total number of teachers available for primary grades (public and private schools)	826
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**28.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	73
Denominator	Total number of schools	258
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**88.05**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	88.05403042
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92.09**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	144475426
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**39.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	1774
Denominator	Total population of the city	444352
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**12.74**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	566
Denominator	Total population of the city	444352
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15.3**
Description	Total response time for health-related distress calls received in the city	15.3
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	3859
Denominator	Total population of the city	444352
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	752
Denominator	Total population of the city	444352
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**2.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	36
Denominator	Total length of road network in the city	1332.84
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1673.67**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	7437
Denominator	Total population of the city	444352
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**2**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	149
Denominator	Total crimes recorded in the same year	7437
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**51.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	230
Denominator	Total population of the city	444352
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**22.8**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	4811.37
Denominator	Total VAT/GST collection during preceding year	211.0259
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**5.27**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	10.35
Denominator	Total Professional Tax collection during preceding year	196.24
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-23.18**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-682
Denominator	Number of construction permits during preceding year	29.42
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	13721
Denominator	Total labour force in the city	65079
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**141.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2308
Denominator	Total number of vendors in the city	1626.975
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**13.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	9789
Denominator	Total number of slum and EWS households in the city	742.19
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**11.33**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	9874332630096
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	96842.49
Denominator	Total population of the city	444352
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	153020.85
Denominator	Total population of the city	444352
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**12.95**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	20640000
Denominator	Total area of the city (total area of all land uses)	159350000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	444352
Denominator	Area allocated for residential land use (in hectares)	20640000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**75.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	217406
Denominator	Total number of households in the city	289235
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	351827
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**4747**
Description	Total number of sustained electrical interruptions in a year	4747
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.58**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	131124
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	814
Denominator	Total energy consumption from all sources	1395530543
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1633964.583
Denominator	Total quantum of water and waste water handled during the period	3960
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	7591275
Denominator	Total number of street light installations	28935
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1395530543
Denominator	Total population of the city	444352
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	55
Denominator	Total area of the city (sq.km)	159.35
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	310
Denominator	Total population of the city	444352
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1332.84
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	19
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	1.289
Denominator	Total length of road network in the city	2665.68
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	0
Denominator	Total number of junctions/ intersections on major roads in the city	332
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**11.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	37
Denominator	Total number of public right-of-way areas in the city	335
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**74.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	214596
Denominator	Total number of households in the city	289235
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**281.31**

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	125
Denominator	Total population of the city	444352
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	35
Denominator	Total number of samples tested for water quality	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**30.4**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	38
Denominator	Quantum of water put into the distribution system (mld)	125
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**50.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	92897
Denominator	Total number of water connections in the city	185349
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**10.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	248

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2256
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**121.04**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	301721
Denominator	Total number of properties in the city	249264
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**105.76**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	263619
Denominator	Total number of properties in the city	249264
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**7.27**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	7
Denominator	Total waste water generated in the city per day	96.28
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**195.71**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	13.7
Denominator	Total waste water received at treatment plants per day	7
Unit	Percentage	

Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.36**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	18.062
Denominator	Total length of road network in the city	1332.84
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	298003
Denominator	Total number of households and establishments in the city	298046
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	520
Denominator	Total quantum of MSW generated in the city	520
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.42**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	221.84
Denominator	Average MSW generated in the city (tons per month)	15600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	6
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

THOOTHUKUDI

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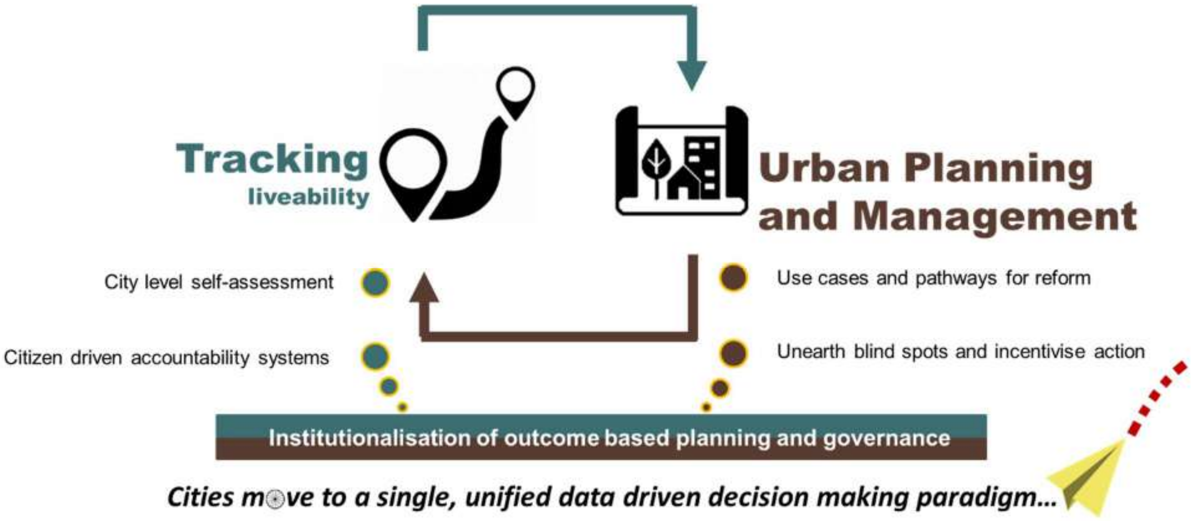
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

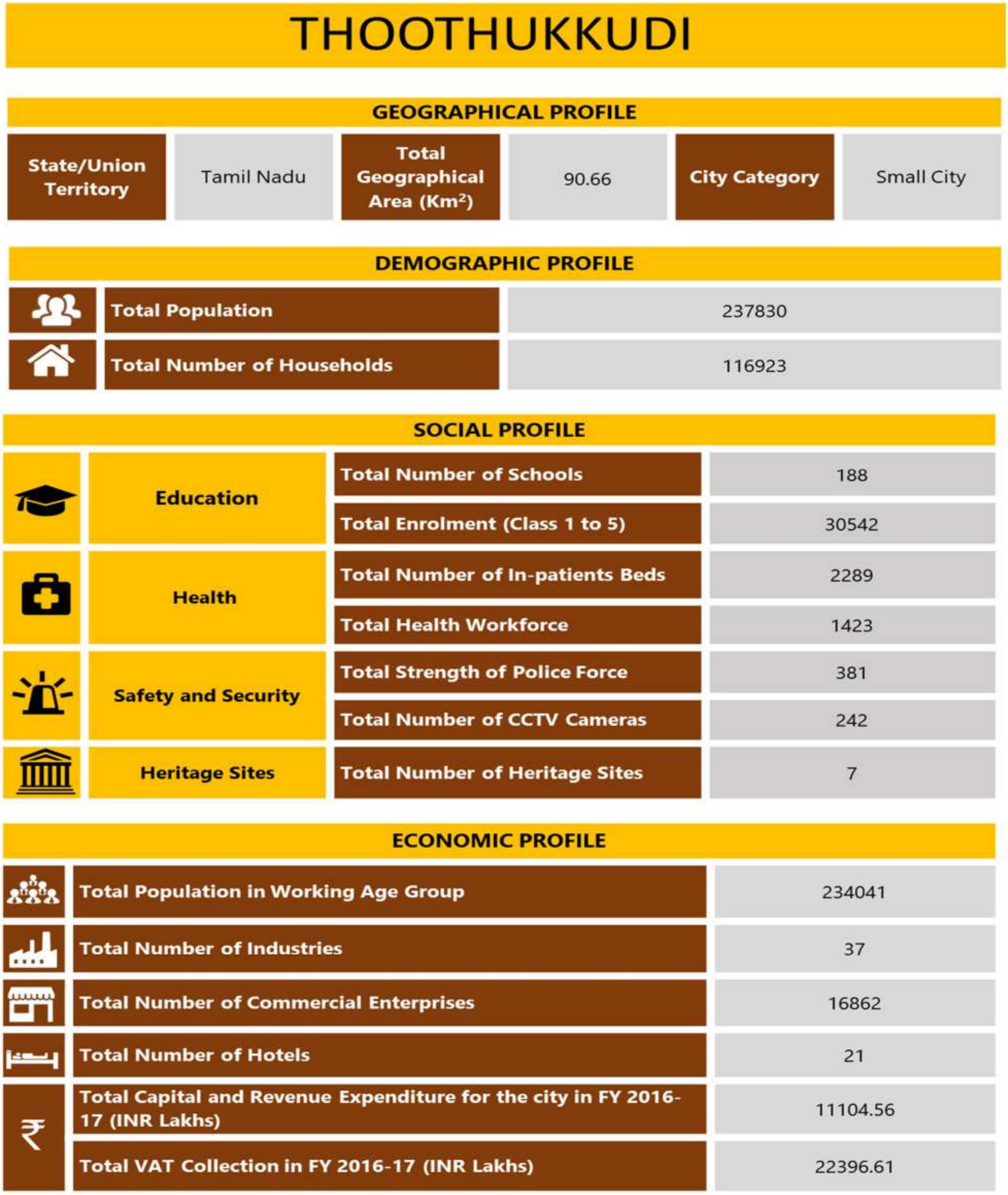
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



THOOTHUKKUDI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km^2)	90.66	City Category	Small City

DEMOGRAPHIC PROFILE

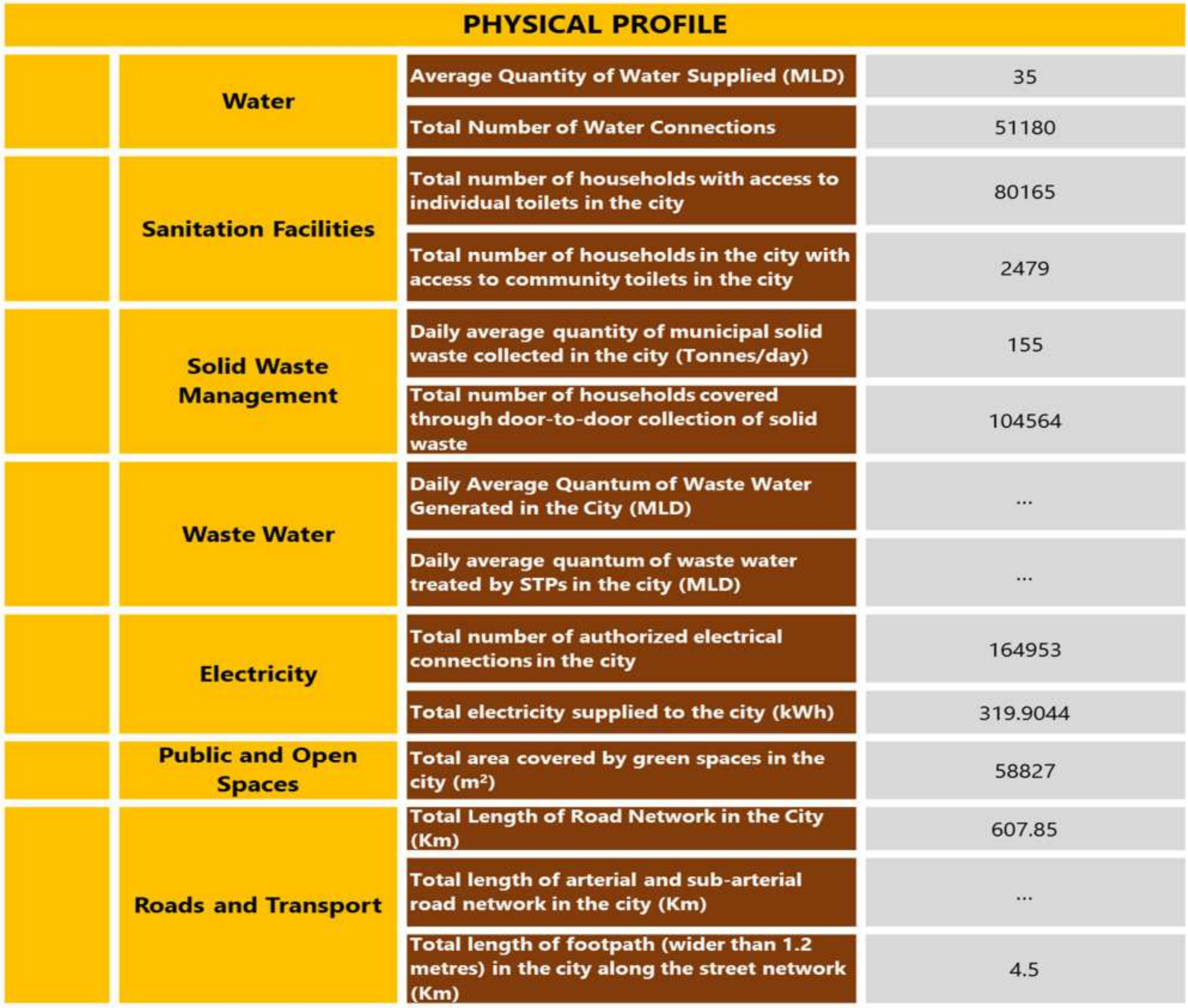
Total Population	237830
Total Number of Households	116923

SOCIAL PROFILE

Education	Total Number of Schools	188
	Total Enrolment (Class 1 to 5)	30542
Health	Total Number of In-patients Beds	2289
	Total Health Workforce	1423
Safety and Security	Total Strength of Police Force	381
	Total Number of CCTV Cameras	242
Heritage Sites	Total Number of Heritage Sites	7

ECONOMIC PROFILE

Total Population in Working Age Group	234041
Total Number of Industries	37
Total Number of Commercial Enterprises	16862
Total Number of Hotels	21
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	11104.56
Total VAT Collection in FY 2016-17 (INR Lakhs)	22396.61



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	35
		Total Number of Water Connections	51180
	Sanitation Facilities	Total number of households with access to individual toilets in the city	80165
		Total number of households in the city with access to community toilets in the city	2479
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	155
		Total number of households covered through door-to-door collection of solid waste	104564
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	…
		Daily average quantum of waste water treated by STPs in the city (MLD)	…
	Electricity	Total number of authorized electrical connections in the city	164953
		Total electricity supplied to the city (kWh)	319.9044
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	58827
	Roads and Transport	Total Length of Road Network in the City (Km)	607.85
		Total length of arterial and sub-arterial road network in the city (Km)	…
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	4.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical

Pillars of Comprehensive Development	Category	Indicators
		services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	Category	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

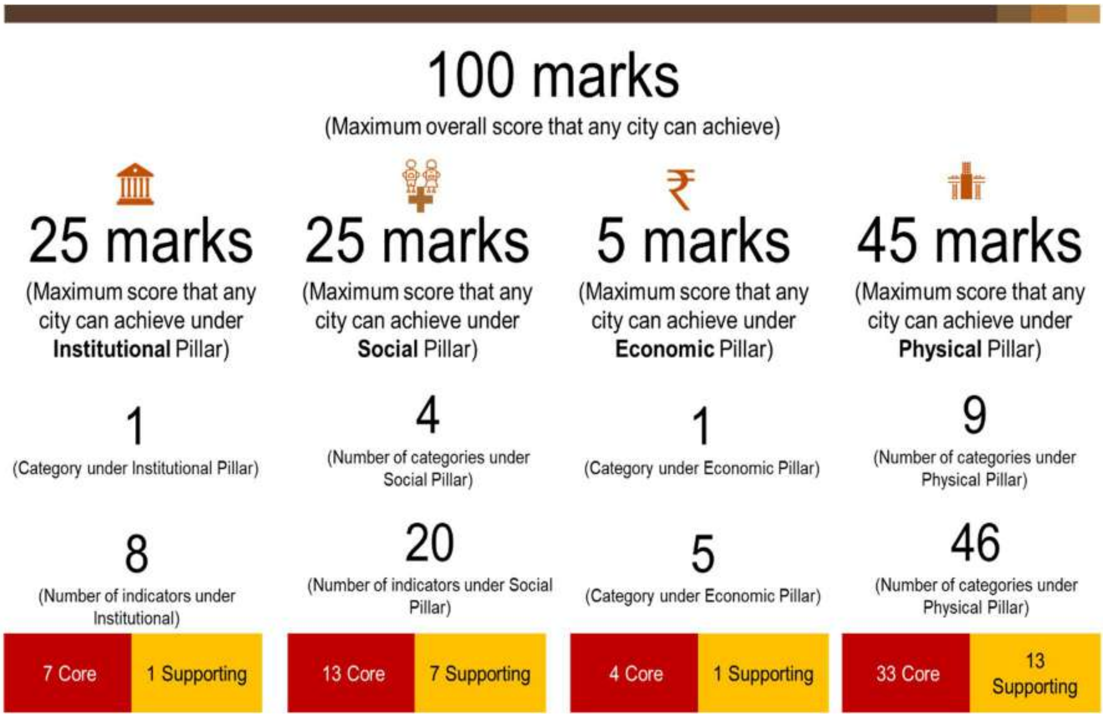
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section-Urban Local Body
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body
Urban Local Body	For Water Supply and Drainage related questions	Water Supply section-Urban Local Body
Urban Local Body	For Heritage sites related data	Not Applicable
Urban Local Body	For Ecological sites related data	Urban Local Body
Urban Local Body	For Housing related data	Slum Clearence Board-Tirunelveli
Urban Local Body	For Building plan related data	Town Planning-Urban
Urban Local Body	For Roads related data	Urban Local Body

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Urban Local Body
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Urban Local Body
	Construction planning	Urban Local Body
	Green Building	Urban Local Body
	Rain water harvesting	Urban Local Body
	Universal Design Principle	Urban Local Body
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		State Disaster Management Authority
State Education Department		Education Department
State Health Department	Health care professionals	Urban Local Body
	Citizen Services	Urban Local Body
	Disease Prevalence	Urban Local Body
	Health Infrastructure	Urban Local Body
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		Tax Department
Town and Country Planning Department	Land Use	Local Planning Authority
Traffic and Police Department		Police Department
Transport Authorities	Buses	TamilNadu State Transport Corporation
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 170 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**8**
Traffic and Police Department	**8**
Development Authority	**2**
Pollution Control Board	**3**
State Renewable Energy Department	**3**
Town and Country Planning	**3**
State Health Department	**8**
Transport Authority	**7**
Disaster Management	**1**
Urban Local Body	**125**
Total	**170***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

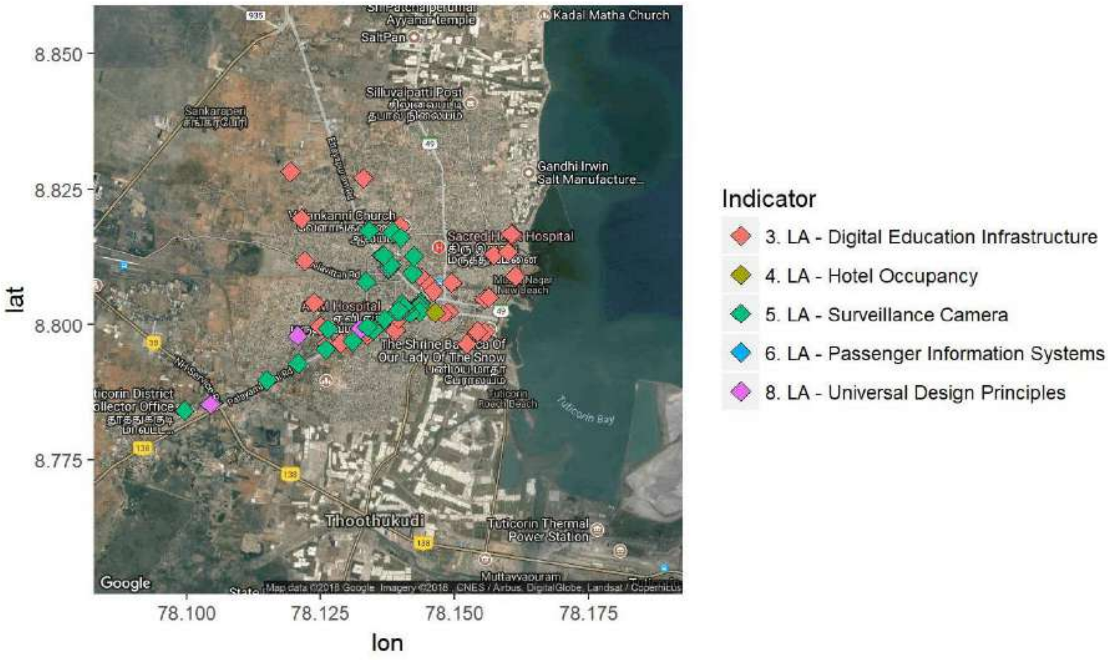
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


lat
8.850
8.825
8.800
8.775
lon
78.100
78.125
78.150
78.175
Kadal Matha Church
Ayyanar temple
SaltPan
Silluvaipatti Post
Sankarapperi
Gandhi Irwin Salt Manufacture
Hospital
Tuticorin District Collector Office
The Shrine Basilica Of Our Lady Of The Snow
Tuticorin Roche Beach
Tuticorin Bay
Thoothukudi
Tuticorin Thermal Power Station
Muttayyapuram
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**62.92**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0.5
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.03**
Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0.000115979

	1.3c water supply	0.000227953
	1.3d solid waste management	4.20468E-06
	1.3e property tax	0.00010404
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	0
	1.3h complaints/ grievance redressal	5.95664E-06
	1.3i information	0.002123365
	1.3j electricity	1.8187E-05
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.58**
Description		
Sub Indicators	1.4a water supply	1.5
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	1
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**53.25**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1804.97451
Denominator	Total demand raised for the year	3389.91378
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**101.64**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	883.25
Denominator	Total O&M cost for providing water supply services during the year	869.01
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**13.48**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	3156.68
Denominator	Total expenditure (revenue and capital accounts) in the same year	23416.25
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	NA
Denominator	Total number of historic buildings/sites identified	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**56**
Description	Average Occupancy rate of Hotels	56
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	11104.56
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**3**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	3
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**128.12**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	49819
Denominator	Total population in the age group of 6-14 years	38884
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**127.65**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	24716
Denominator	Total female population in the age group of 6-14 years	19362
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	30542
Denominator	Total number of teachers available for primary grades (public and private schools)	1418
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**22.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	43
Denominator	Total number of schools	188
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.41**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.41181339
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**96.63**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	41582376
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**96.25**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	2289
Denominator	Total population of the city	237830
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**59.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1423
Denominator	Total population of the city	237830
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**50**
Description	Total response time for health-related distress calls received in the city	50
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	127
Denominator	Total population of the city	237830
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	549
Denominator	Total population of the city	237830
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**39.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	242
Denominator	Total length of road network in the city	607.85
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1409.83**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3353
Denominator	Total population of the city	237830
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**8.62**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	289
Denominator	Total crimes recorded in the same year	3353
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**23.97**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	57
Denominator	Total population of the city	237830
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**9.18**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1883.63
Denominator	Total VAT/GST collection during preceding year	205.1298
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**1.94**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	7.34247
Denominator	Total Professional Tax collection during preceding year	379.1817
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-14.75**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-27
Denominator	Number of construction permits during preceding year	1.83
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	196396
Denominator	Total labour force in the city	38884
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	972.1
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**23.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	8875
Denominator	Total number of slum and EWS households in the city	378.96
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**13.22**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	1324594083544
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	58827
Denominator	Total population of the city	237830
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**6.06**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1440646
Denominator	Total population of the city	237830
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	92200
Denominator	Total area of the city (total area of all land uses)	90660000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**33.5**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	237830
Denominator	Area allocated for residential land use (in hectares)	7100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**24.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	28676
Denominator	Total number of households in the city	116923
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	NA
Denominator	Total number of electricity connections in the city	164953
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**51**
Description	Total number of sustained electrical interruptions in a year	51
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2175
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.6**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	61
Denominator	Total energy consumption from all sources	832.4044
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	520237.25
Denominator	Total quantum of water and waste water handled during the period	NA
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	4165696
Denominator	Total number of street light installations	15258
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	832.4044
Denominator	Total population of the city	237830
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.78**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	7347
Denominator	Total area of the city (sq.km)	90.66
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.42**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	99
Denominator	Total population of the city	237830
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	NA
Denominator	Total length of road network in the city	607.85
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	NA
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	3
Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	3
Denominator	Total available on-street parking spaces in the city	NA

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.37**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	4.5
Denominator	Total length of road network in the city	1215.7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	NA
Denominator	Total number of junctions/ intersections on major roads in the city	5
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	5
Denominator	Total number of public right-of-way areas in the city	700
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**41.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	48347
Denominator	Total number of households in the city	116923
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**147.16**

Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	35
Denominator	Total population of the city	237830
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied[2]**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	25
Denominator	Total number of samples tested for water quality	25
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	35
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	51180
Denominator	Total number of water connections in the city	51180
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**14.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	22

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	155
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**71.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	102444
Denominator	Total number of properties in the city	142573
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**54.32**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	77450
Denominator	Total number of properties in the city	142573
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	

Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.29**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	7.85
Denominator	Total length of road network in the city	607.85
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**93.93**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	125670
Denominator	Total number of households and establishments in the city	133785
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**73.81**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	155
Denominator	Total quantum of MSW generated in the city	210
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**19.4**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	902.287
Denominator	Average MSW generated in the city (tons per month)	4650
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**13.54**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	13.54
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**13.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	13.1
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**184.51**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	184.51
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	0
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	48
Denominator	Total number of samples tested	48
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

TRIVANDRUM

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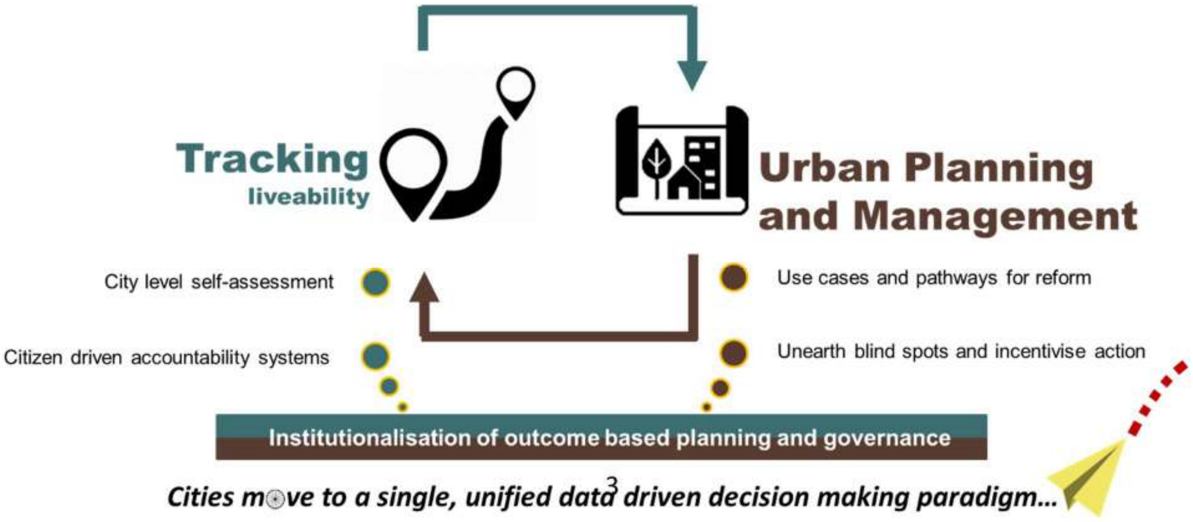
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

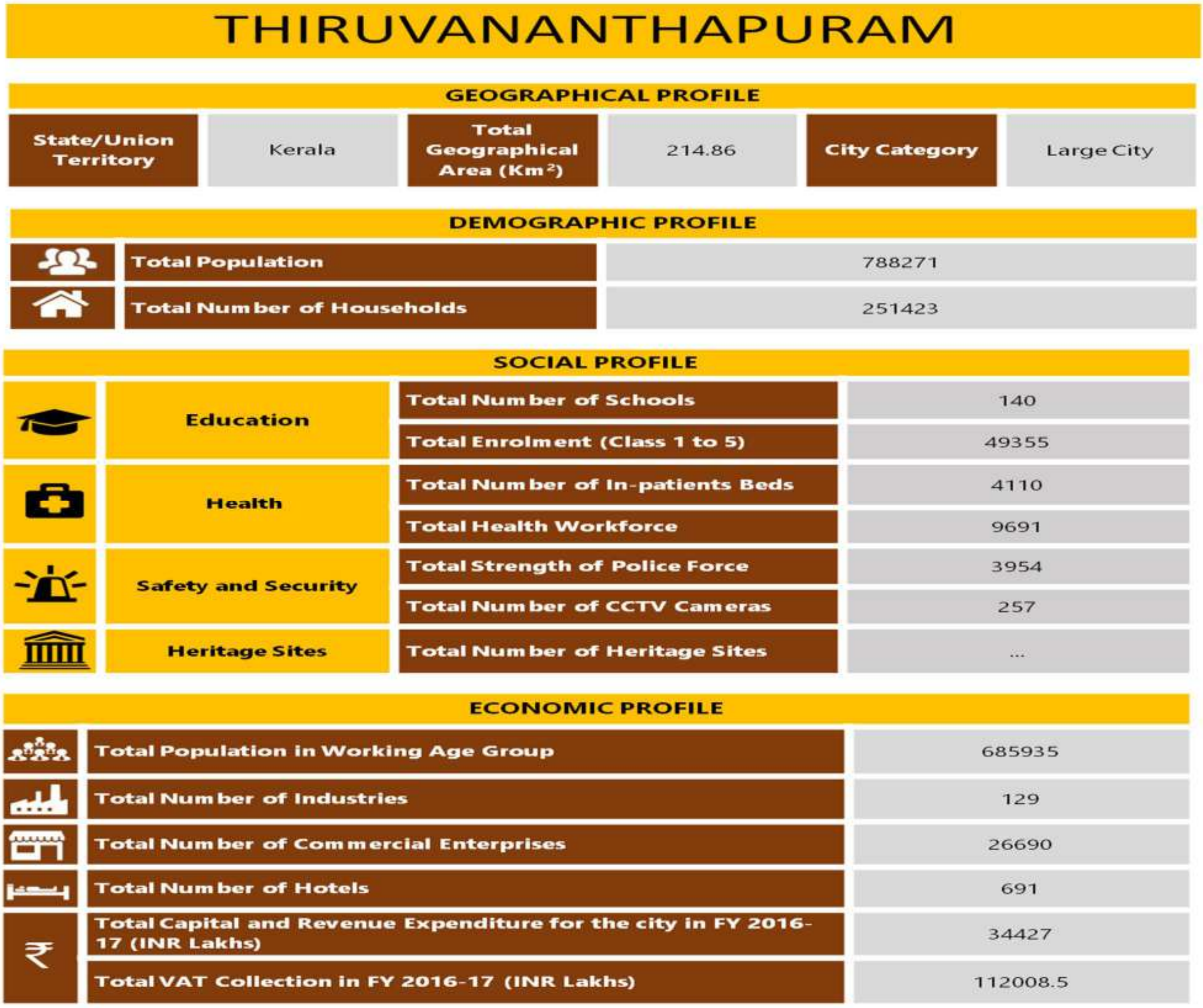

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



THIRUVANANTHAPURAM

GEOGRAPHICAL PROFILE

State/Union Territory	Kerala	Total Geographical Area (Km²)	214.86	City Category	Large City

DEMOGRAPHIC PROFILE

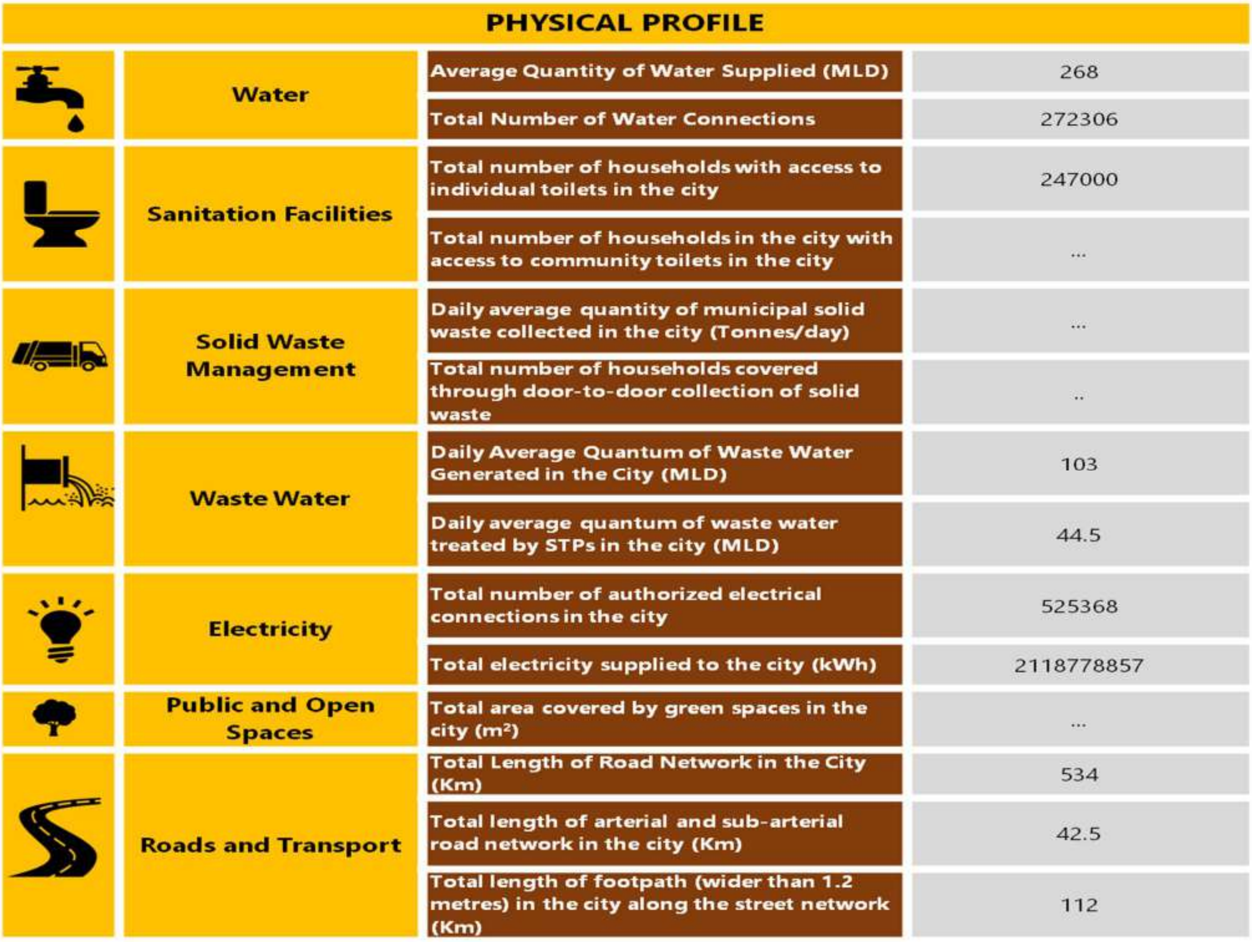
	Total Population	788271
	Total Number of Households	251423

SOCIAL PROFILE

	Education	Total Number of Schools	140
		Total Enrolment (Class 1 to 5)	49355
	Health	Total Number of In-patients Beds	4110
		Total Health Workforce	9691
	Safety and Security	Total Strength of Police Force	3954
		Total Number of CCTV Cameras	257
	Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

	Total Population in Working Age Group	685935
	Total Number of Industries	129
	Total Number of Commercial Enterprises	26690
	Total Number of Hotels	691
₹	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	34427
	Total VAT Collection in FY 2016-17 (INR Lakhs)	112008.5



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	268
	Total Number of Water Connections	272306
Sanitation Facilities	Total number of households with access to individual toilets in the city	247000
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	...
	Total number of households covered through door-to-door collection of solid waste	..
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	103
	Daily average quantum of waste water treated by STPs in the city (MLD)	44.5
Electricity	Total number of authorized electrical connections in the city	525368
	Total electricity supplied to the city (kWh)	2118778857
Public and Open Spaces	Total area covered by green spaces in the city (m²)	...
Roads and Transport	Total Length of Road Network in the City (Km)	534
	Total length of arterial and sub-arterial road network in the city (Km)	42.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	112

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

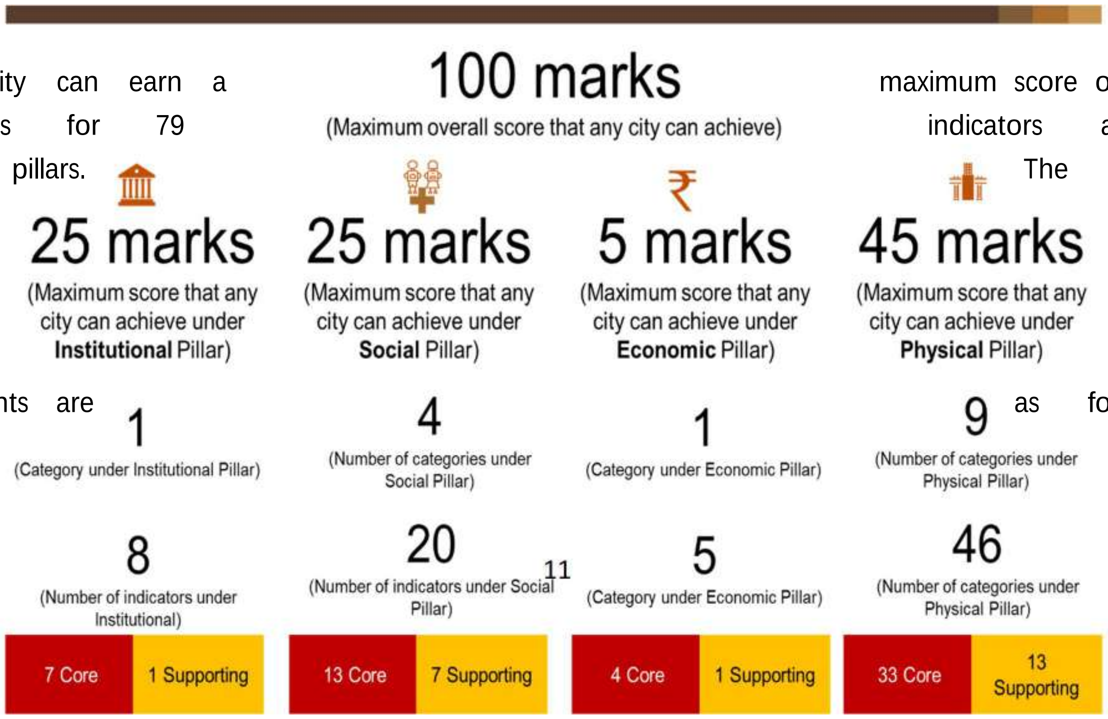
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows:



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\mathit{indicator\ value\ for\ the\ city} - \mathit{indicator\ value\ for\ the\ worst\ performing\ city}}{\mathit{benchmark} - \mathit{indicator\ value\ for\ the\ worst\ performing\ city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB accounts department
Urban Local Body	For Park and Recreation Related Questions	ULB Engineering department, health department and ULB secretary
Urban Local Body	For Water Supply and Drainage related questions	Kerala Water authority and Kerala water authority sewerage division

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Heritage sites related data	Archeological survey of India site
Urban Local Body	For Ecological sites related data	ULB master plan document provided by ULB secretary
Urban Local Body	For Housing related data	PMAY data provided by Rahul project officer PMAY
Urban Local Body	For Building plan related data	ULB Engineering department
Urban Local Body	For Roads related data	Kerala Road Fund Board and Public Works department
Urban Local Body	For Solid waste management related data	ULB Health department
Urban Local Body	For IT services related data	ULB Information technology department
Urban Local Body	For Vendor committee related data	NULM department of ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution control board
Development Authority	Building Infrastructure	ULB Engineering department
	Construction planning	ULB Engineering department
	Green Building	ULB Engineering department
	Rain water harvesting	ULB Engineering department
	Universal Design Principle	ULB Engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Kerala State Electricity Board
State Disaster management authority		ULB disaster management cell
State Education Department		District education office
State Health Department	Health care professionals	Medical council, Dental council,
	Citizen Services	District medical office
	Disease Prevalence	District medical office
	Health Infrastructure	District medical office
State Renewable Energy Development Agency		Agency for Non-conventional Energy and Rural Technology (ANERT)
State Sales / Commercial		State commercial tax

Designated data owners	Subcategories	Data owners at city level
Taxes Department		department
Town and Country Planning Department	Land Use	Town and country planning department
Traffic and Police Department		Kerala Police
Transport Authorities	Buses	Kerala state road transport corporation
	Registered Vehicles	Trivandrum Road transport office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 58 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	**2**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	1
State Health Department	**3**
Transport Authority	**3**

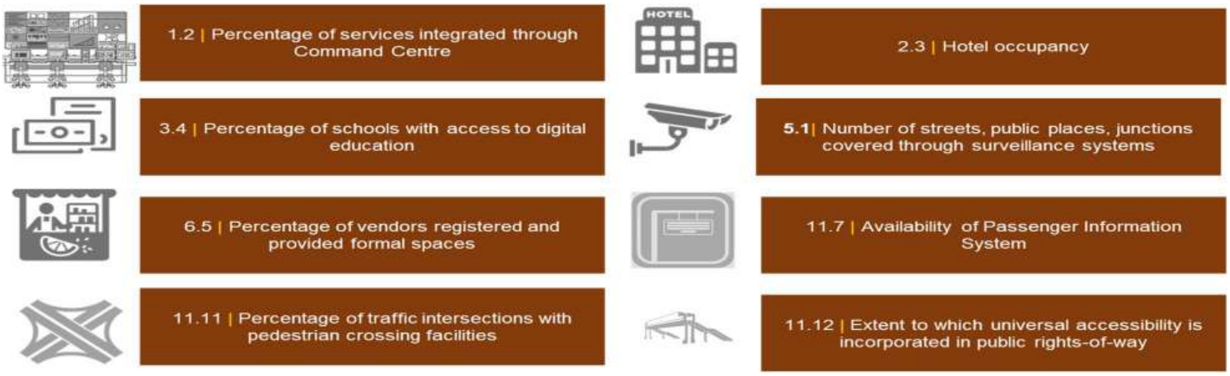
Disaster Management	**0**
Urban Local Body	**45**
Total	**58***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

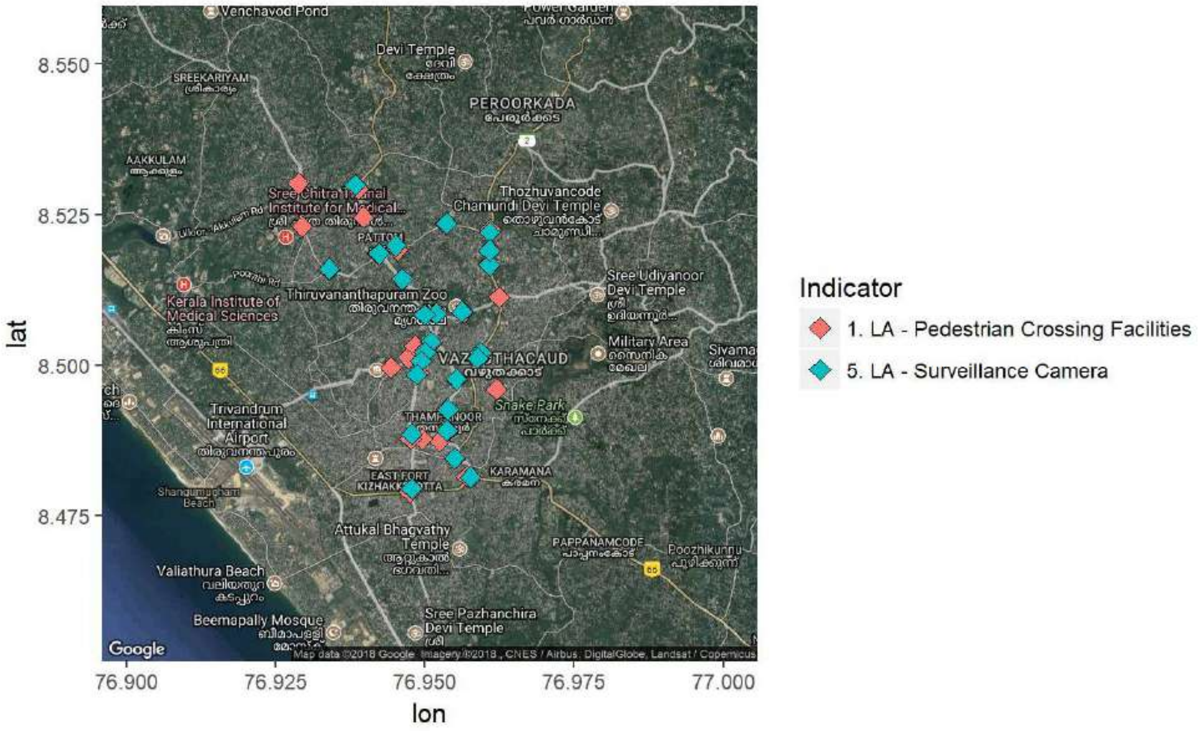
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
8.550
8.525
8.500
8.475
lon
76.900
76.925
76.950
76.975
77.000
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
Venchavod Pond
Devi Temple
SREEKARIYAM
PEROORKADA
AAKKULAM
Sree Chitra Tirunal Institute for Medical...
Thozhuvancode Chamundi Devi Temple
PATTOM
Thiruvananthapuram Zoo
Kerala Institute of Medical Sciences
Sree Udiyanoor Devi Temple
Military Area
VAZHUTHACAUD
Snake Park
Trivandrum International Airport
THAMPANOOR
EAST FORT KIZHAKKEKOTTA
KARAMANA
Shanghumugham Beach
Attukal Bhagvathy Temple
PAPPANAMCODE
Poozhikunnu
Valiathura Beach
Beemapally Mosque
Sree Pazhanchira Devi Temple
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate

Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**46.25**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.666666667
	1.1i professional tax	0
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.666666667
Unit	Percentage	

Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**7.14**
Description	Services integrated through an integrated or a singular operations command centre	1.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**39.3**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	0.39295313
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.33**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0

	1.4f parks and recreational spaces	8
	1.4g building plan	NA
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**94.64**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	8789
Denominator	Total demand raised for the year	9287
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**3462.14**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	9694
Denominator	Total O&M cost for providing water supply services during the year	280
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-74.04**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-32393
Denominator	Total expenditure (revenue and capital accounts) in the same year	43751
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	100
Denominator	Total number of wards	100
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	Data Unavailable
Denominator	Total number of historic buildings/sites identified	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	2
Denominator	Total number of ecologically important sites identified in the city	2
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**40697.62**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	14010968
Denominator	Total budget of the ULB (capital and revenue)	34427
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**602**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	602
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**80.94**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	88187
Denominator	Total population in the age group of 6-14 years	108956
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**89.08**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	47631
Denominator	Total female population in the age group of 6-14 years	53469
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	49355
Denominator	Total number of teachers available for primary grades (public and private schools)	Data Unavailable
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**70**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to	98

	digital resources such as NKN)	
Denominator	Total number of schools	140
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**111.37** 111.3713438
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**149.11** 186830446
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**52.14**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4110
Denominator	Total population of the city	788271
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**122.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	9691
Denominator	Total population of the city	788271
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**1**
Description	Total response time for health-related distress calls received in the city	1
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	20
Denominator	Total population of the city	788271
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**1.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	9356
Denominator	Total population of the city	788271
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**48.13**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	257
Denominator	Total length of road network in the city	534
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**6945.07**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	54746
Denominator	Total population of the city	788271
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**1.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	649
Denominator	Total crimes recorded in the same year	54746
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**1.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	649
Denominator	Total population of the city	54746
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**20.32**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	18918.7
Denominator	Total VAT/GST collection during preceding year	930.898

Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**9.15**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	315
Denominator	Total Professional Tax collection during preceding year	3442
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**7.94**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	540
Denominator	Number of construction permits during preceding year	68.05
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	85400
Denominator	Total labour force in the city	108956
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	7
Denominator	Total number of vendors in the city	2723.9

Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**14.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	8005
Denominator	Total number of slum and EWS households in the city	533.87
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Computable** Data Unavailable
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data Unavailable
Denominator	Total population of the city	788271
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**1.35**

Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	1062396
Denominator	Total population of the city	788271
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**12.47**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	26800000
Denominator	Total area of the city (total area of all land uses)	214860000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	788271
Denominator	Area allocated for residential land use (in hectares)	90673233
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**172.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	433055
Denominator	Total number of households in the city	251423
Unit	Percentage	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	525368
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**4561**
Description	Total number of sustained electrical interruptions in a year	4561
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	7900
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	426
Denominator	Total energy consumption from all sources	2118778857
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and**	**0.28**

	sewerage	
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2253307.833
Denominator	Total quantum of water and waste water handled during the period	9375
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	701472741
Denominator	Total number of street light installations	86138
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1054681
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	2118778857
Denominator	Total population of the city	788271
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated	

	as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.25**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	84.3
Denominator	Total area of the city (sq.km)	214.86
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	393
Denominator	Total population of the city	788271
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	43
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	534
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**85.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	6

Denominator	Total number of major transport interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.074
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.29**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	Data Unavailable
Denominator	Total number of signalised intersections in the city	Data Unavailable
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	1
Unit		

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**10.49**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	112
Denominator	Total length of road network in the city	1068
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	74
Denominator	Total number of junctions/ intersections on major roads in the city	74
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	1
Denominator	Total number of public right-of-way areas in the city	300
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**82.95**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	208565
Denominator	Total number of households in the city	251423
Unit	Percentage	
Benchmark	100%	

Indicator No: 12.2	**Per capita supply of water**	**339.98**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	268
Denominator	Total population of the city	788271
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	Data Unavailable
Denominator	Total number of samples tested for water quality	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**35**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	93.8
Denominator	Quantum of water put into the distribution system (mld)	268
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**100.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	272422
Denominator	Total number of water connections in the city	272306
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**10.93**
Formula:	*Numerator / Denominator*	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	831
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	7604
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**95.28**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	273629
Denominator	Total number of properties in the city	287189
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**102.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	293346
Denominator	Total number of properties in the city	287189
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**43.2**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	44.5
Denominator	Total waste water generated in the city per day	103
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**95.96**

Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	42.7
Denominator	Total waste water received at treatment plants per day	44.5
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**22.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	119.78
Denominator	Total length of road network in the city	534
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	0
Denominator	Total number of households and establishments in the city	278113
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	0
Denominator	Total quantum of MSW generated in the city	350
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or	Data Unavailable

	recycled (tons per month)	
Denominator	Average MSW generated in the city (tons per month)	0
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**10.01**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	10.01
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**25.32**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	25.32
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**52.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	52.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**40**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed	24

	standards	
Denominator	Total number of samples tested	60
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

TUMKUR

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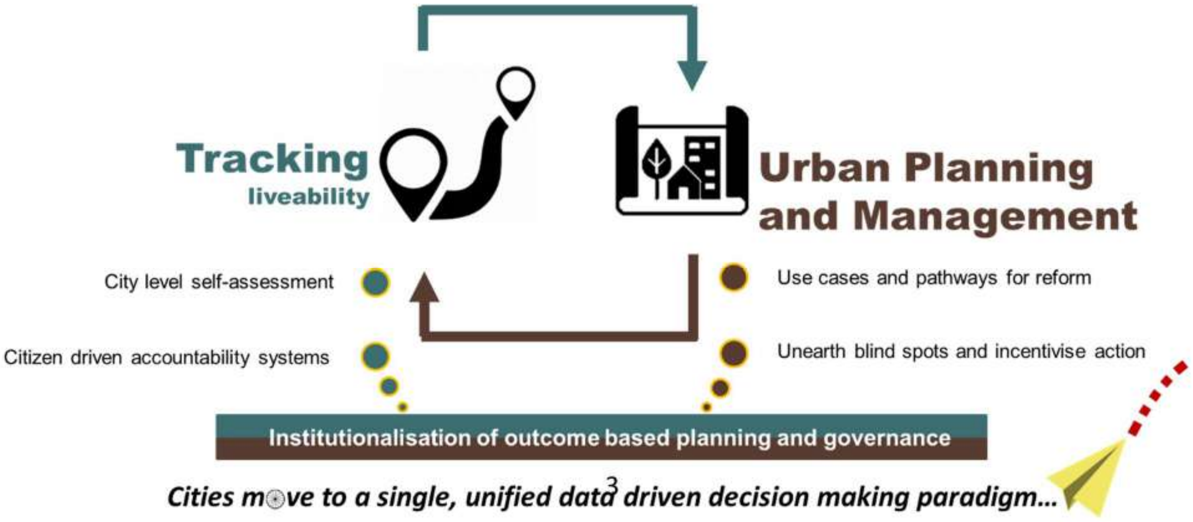
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

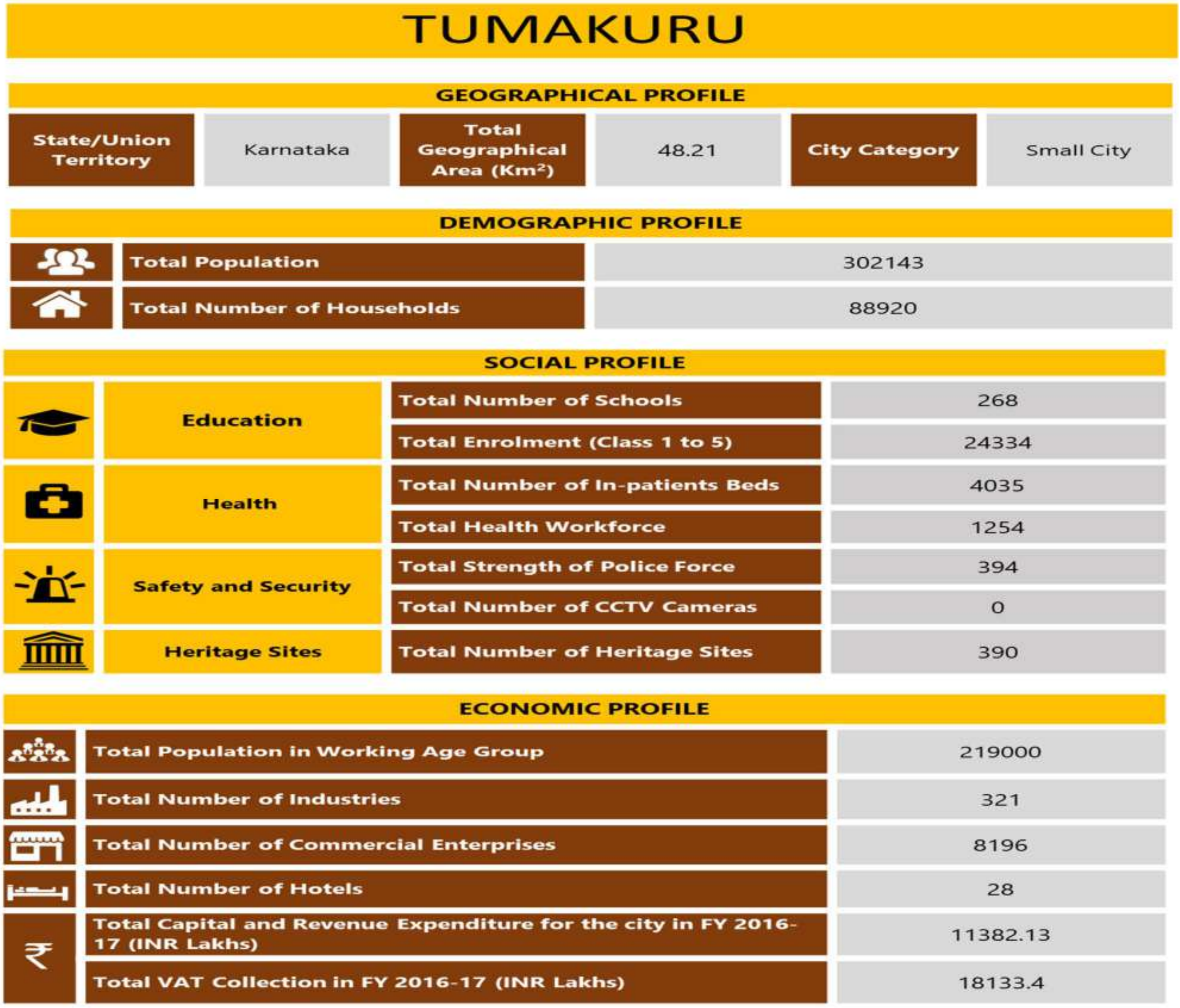
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



TUMAKURU

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km^2)	48.21	City Category	Small City

DEMOGRAPHIC PROFILE

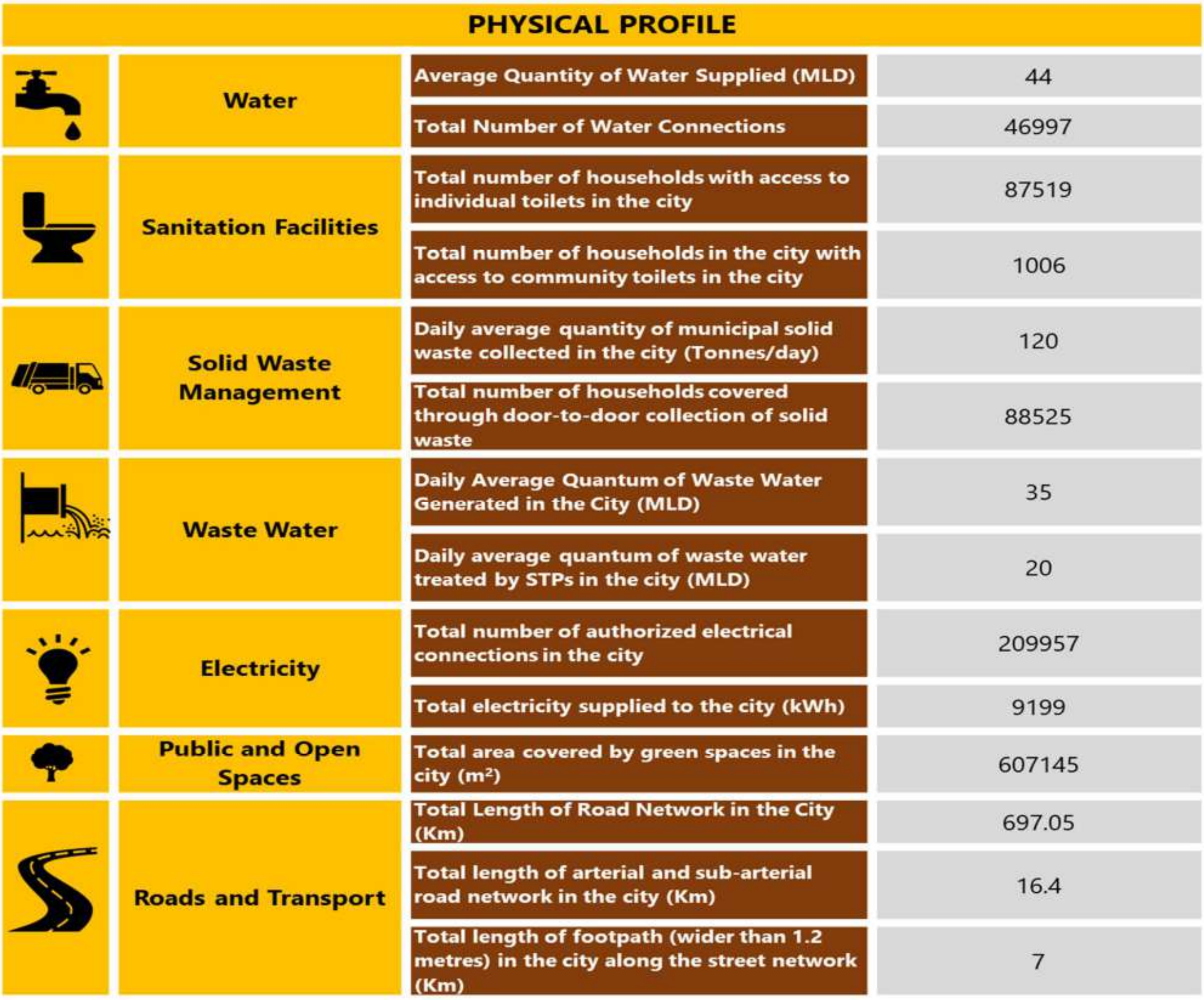
Total Population	302143
Total Number of Households	88920

SOCIAL PROFILE

Education	Total Number of Schools	268
	Total Enrolment (Class 1 to 5)	24334
Health	Total Number of In-patients Beds	4035
	Total Health Workforce	1254
Safety and Security	Total Strength of Police Force	394
	Total Number of CCTV Cameras	0
Heritage Sites	Total Number of Heritage Sites	390

ECONOMIC PROFILE

Total Population in Working Age Group	219000
Total Number of Industries	321
Total Number of Commercial Enterprises	8196
Total Number of Hotels	28
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	11382.13
Total VAT Collection in FY 2016-17 (INR Lakhs)	18133.4



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	44
	Total Number of Water Connections	46997
Sanitation Facilities	Total number of households with access to individual toilets in the city	87519
	Total number of households in the city with access to community toilets in the city	1006
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	120
	Total number of households covered through door-to-door collection of solid waste	88525
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	35
	Daily average quantum of waste water treated by STPs in the city (MLD)	20
Electricity	Total number of authorized electrical connections in the city	209957
	Total electricity supplied to the city (kWh)	9199
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	607145
Roads and Transport	Total Length of Road Network in the City (Km)	697.05
	Total length of arterial and sub-arterial road network in the city (Km)	16.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

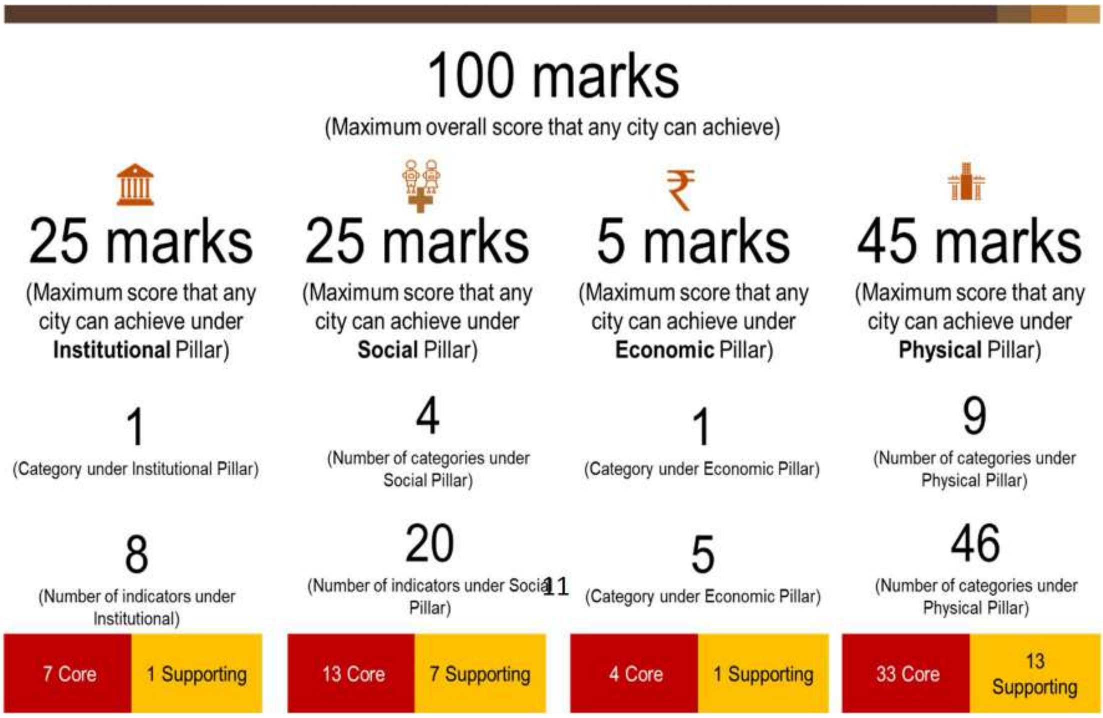
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Engineering (civil) Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering (ele) Section
Urban Local Body	For Heritage sites related data	Engineering (Civil) Section
Urban Local Body	For Ecological sites related data	Engineering (Civil) Section
Urban Local Body	For Housing related data	National Urban Livelihoods Mission
Urban Local Body	For Building plan related data	Building license section
Urban Local Body	For Roads related data	Engineering (Civil) Section
Urban Local Body	For Solid waste management related data	Environment Section
Urban Local Body	For IT services related data	Income Tax Section
Urban Local Body	For Vendor committee related data	National Urban Livelihoods Mission
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Professional Tax, Department of Health & Family Welfare Services, Karnataka Slum Development Board, Under Ground Drainage section, Karnataka Industrial Area

Designated data owners	Subcategories	Data owners at city level
		Development Board, Statistical Department, Tumkur Urban Development Authority, Karnataka State Road Transport Corporation, Employment Department.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Building license section, City Corporation Tumkur
	Construction planning	Building license section, City Corporation Tumkur
	Green Building	Building license section, City Corporation Tumkur
	Rain water harvesting	Building license section, City Corporation Tumkur
	Universal Design Principle	Engineering (Civil) section, City Corporation Tumkur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Accounts and Technical Section
State Disaster management authority		Not Applicable
State Education Department		Block Resource Center
State Health Department	Health care professionals	District Health Officer Section
	Citizen Services	District Health Officer Section
	Disease Prevalence	District Health Officer Section
	Health Infrastructure	District Health Officer Section
State Renewable Energy Development Agency	Renewable Energy	Accounts and Technical Section of Bangalore Electricity Supply Company Ltd., (BESCOM)
State Sales / Commercial Taxes Department		Commercial taxes Department(LGSTO 175 & 170)
Town and Country Planning Department	Land Use	Planning Section .
Traffic and Police Department		District Crime Record Bureau (DCRB Section)
Transport Authorities	Buses	Divisional Traffic Section & Depot computerization system
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 135 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**3**
State Education Department	**8**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**6**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**14**
State Health Department	**4**
Transport Authority	**6**
Disaster Management	**1**
Urban Local Body	**87**
Total	**135***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

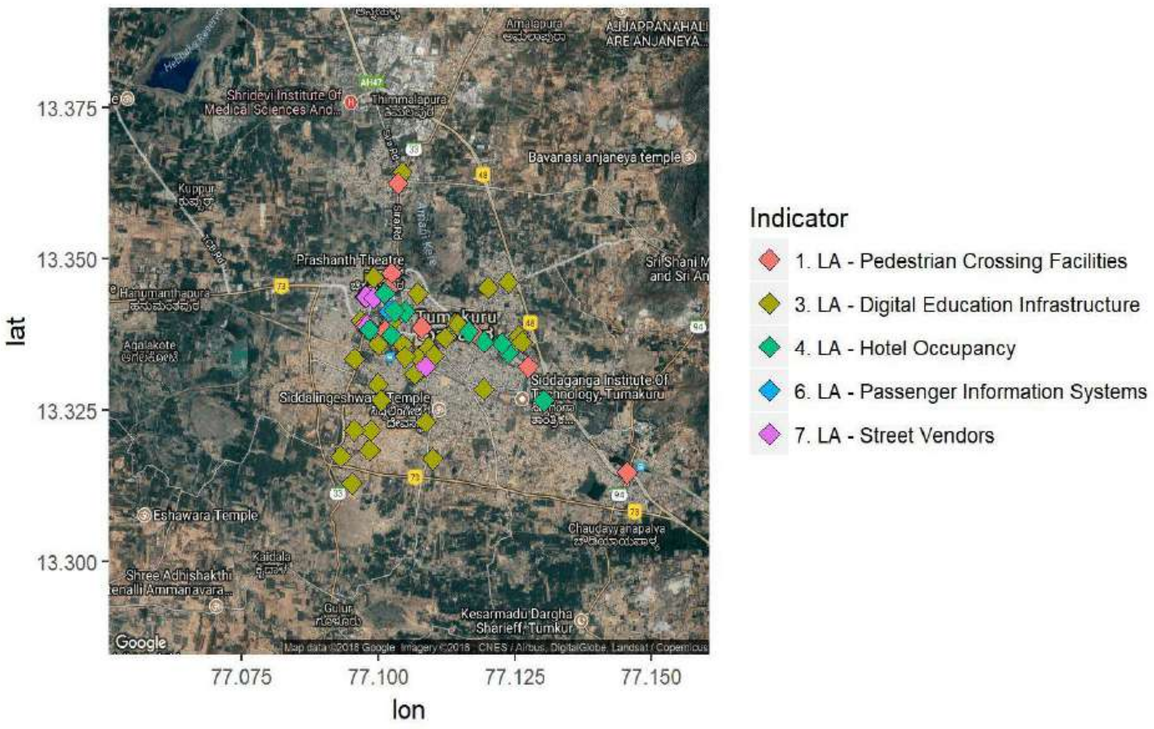
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
13.375
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13.300
lon
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Shridevi Institute Of Medical Sciences And...
Thimmalapura
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Amalapura
AJJAPPANAHALLI ARE ANJANEYA
Kuppur
Prashanth Theatre
Tumakuru
Hanumanthapura
Agalakote
Siddalingeshwar Temple
Siddaganga Institute Of Technology, Tumakuru
Eshawara Temple
Shree Adhishakthi Tenalli Ammanavara...
Kaidala
Gulur
Kesarmadu Dargha Sharieff, Tumkur
Chaudayyanapalya
Sri Shani M and Sri An
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
7. LA - Street Vendors

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc.,

and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**57.15**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0.75
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	0.5
	1.1m Building plan	0.333333333
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.03**

Description		
Sub Indicators	1.3a Building plan	0
	1.3b Birth/Death Certificate	0
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0.00194135
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	2.23404E-05
	1.3i information	0
	1.3j electricity	0.000323876
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.14**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0.5
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**83.79**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2026.29
Denominator	Total demand raised for the year	2418.4
Unit	Percentage	

Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**21.88**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	487.21
Denominator	Total O&M cost for providing water supply services during the year	2227
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-0.11**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-19.77
Denominator	Total expenditure (revenue and capital accounts) in the same year	17474.43
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered**	**Non-**

	through projects for restoration	**Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**2.43**
Description	Average Occupancy rate of Hotels	2.428571429
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.2**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	22.75
Denominator	Total budget of the ULB (capital and revenue)	11382.13
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**1**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	1
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**79.75**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	38820
Denominator	Total population in the age group of 6-14 years	48678
Unit	Percentage	

Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**78.92**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	18753
Denominator	Total female population in the age group of 6-14 years	23762
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	24334
Denominator	Total number of teachers available for primary grades (public and private schools)	1130
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**52.99**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	142
Denominator	Total number of schools	268
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**108.01**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	108.008501
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**107.41**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	23636340
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**133.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4035
Denominator	Total population of the city	302143
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**41.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	1254
Denominator	Total population of the city	302143
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**1.83**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	5520
Denominator	Total population of the city	302143
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	202
Denominator	Total population of the city	302143
Unit	Percentage	

Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	0
Denominator	Total length of road network in the city	697.05
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**463.36**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1400
Denominator	Total population of the city	302143
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	164
Denominator	Total crimes recorded in the same year	1400
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**31.44**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	95
Denominator	Total population of the city	302143
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**26.9**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	3843.88
Denominator	Total VAT/GST collection during preceding year	142.8952
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-8.79**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-51.59
Denominator	Total Professional Tax collection during preceding year	586.69
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**51.41**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	474
Denominator	Number of construction permits during preceding year	9.22
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2894
Denominator	Total labour force in the city	48678
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	1216.95
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**2.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	163
Denominator	Total number of slum and EWS households in the city	75.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**14.94**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	69235291876
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**2.01**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	607145
Denominator	Total population of the city	302143
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	

Indicator No: 8.2	Per capita availability of public and recreational places	**7.6**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2296646.96
Denominator	Total population of the city	302143
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	Data Unavailable
Denominator	Total area of the city (total area of all land uses)	48210000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**46.83**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	302143
Denominator	Area allocated for residential land use (in hectares)	6451.52
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**132.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	117895

Denominator	Total number of households in the city	88920
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	209957
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1194**
Description	Total number of sustained electrical interruptions in a year	1194
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.77**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	24270
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.09**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	110
Denominator	Total energy consumption from all sources	9559
Unit	Percentage	

Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	179454.5833
Denominator	Total quantum of water and waste water handled during the period	1920
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	19071250
Denominator	Total number of street light installations	39892
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	9559
Denominator	Total population of the city	302143
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated	

	as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	75
Denominator	Total area of the city (sq.km)	48.21
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	51
Denominator	Total population of the city	302143
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	12
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	697.05
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	0
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	5
Denominator	Total number of signalised intersections in the city	5
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	4.1
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.5**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	7
Denominator	Total length of road network in the city	1394.1
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	10
Denominator	Total number of junctions/ intersections on major roads in the city	10
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	0
Denominator	Total number of public right-of-way areas in the city	78
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**50.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	45007
Denominator	Total number of households in the city	88920
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**145.63**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	44
Denominator	Total population of the city	302143
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	

Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	48
Denominator	Total number of samples tested for water quality	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**34.09**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	15
Denominator	Quantum of water put into the distribution system (mld)	44
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	46997
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**2.23**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	40
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	1792
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 13.1	**Coverage of toilets**	**92.91**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	91486
Denominator	Total number of properties in the city	98471
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**53.38**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	52559
Denominator	Total number of properties in the city	98471
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**57.14**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	20
Denominator	Total waste water generated in the city per day	35
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	20
Denominator	Total waste water received at treatment plants per day	20
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**153.07**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	1067
Denominator	Total length of road network in the city	697.05
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	96721
Denominator	Total number of households and establishments in the city	97116
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**92.31**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	120
Denominator	Total quantum of MSW generated in the city	130
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.07**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	38.35
Denominator	Average MSW generated in the city (tons per month)	3600
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**3.99**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	3.99
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**31.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	31.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	

Indicator No: 15.3	**Concentration of PM10 - air pollution**	**105**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	105
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	48
Denominator	Total number of samples tested	48
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

UDAIPUR

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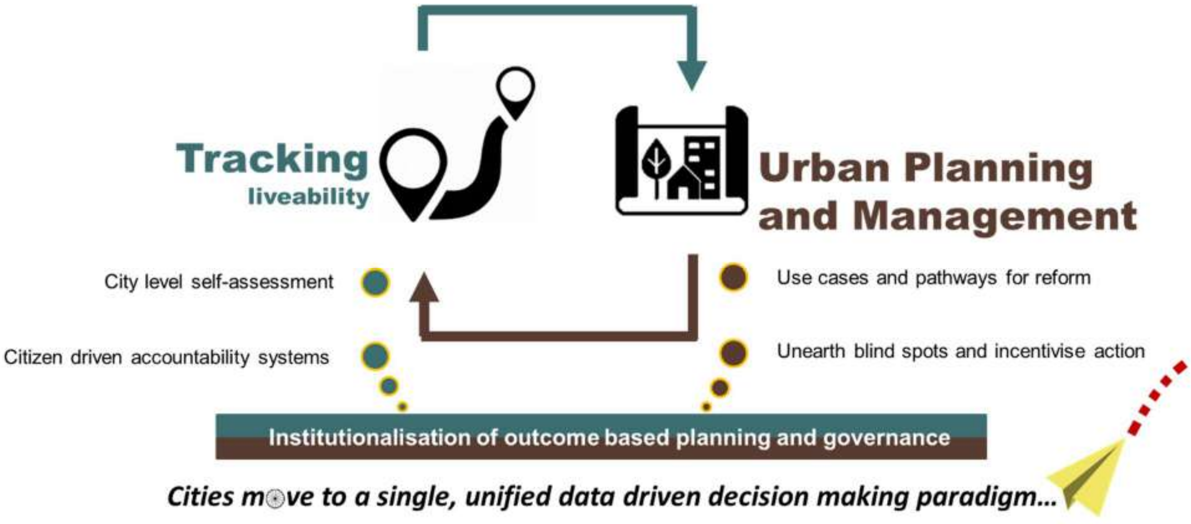
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

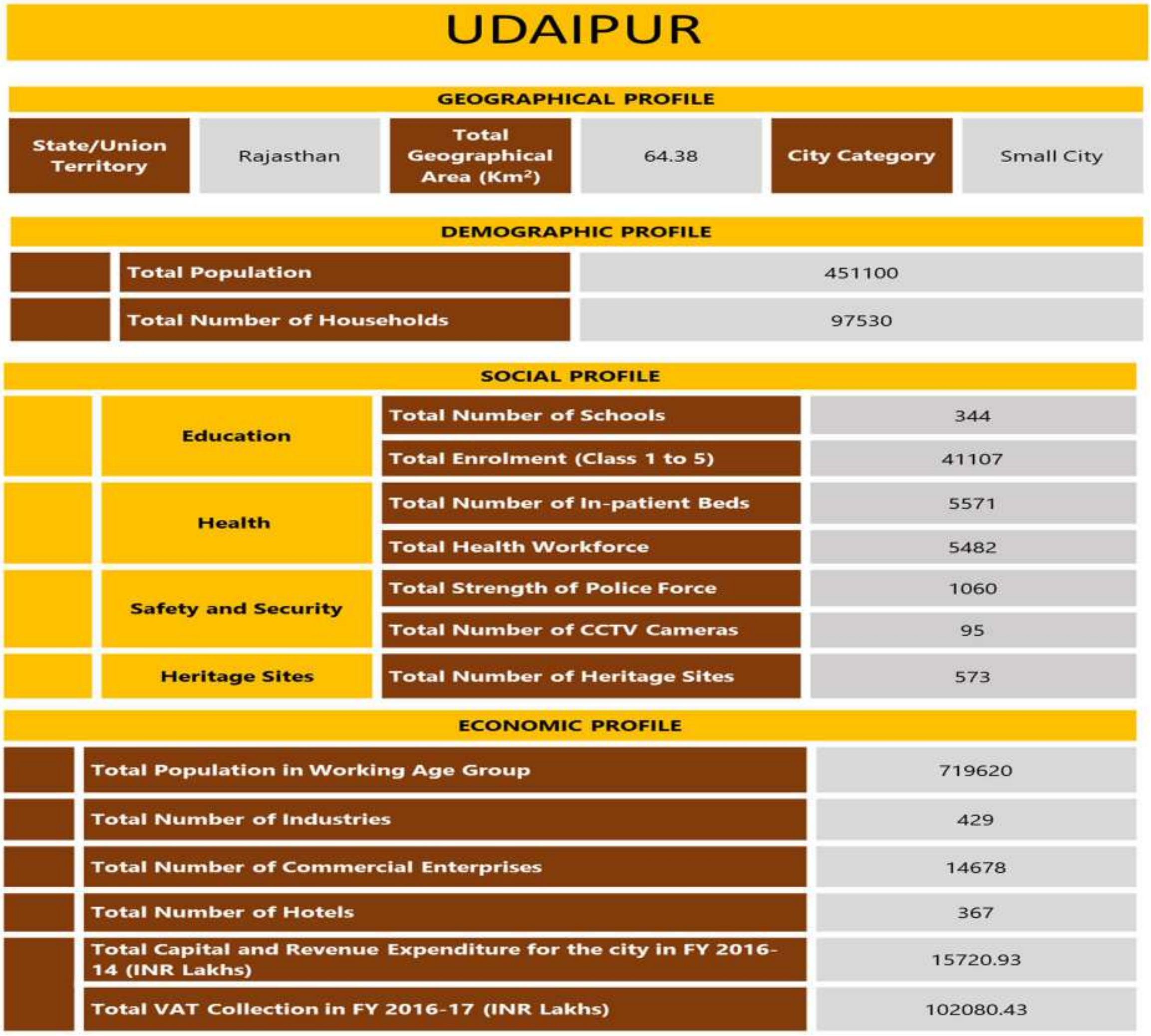
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



UDAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	**Total Geographical Area (Km²)**	64.38	**City Category**	Small City

DEMOGRAPHIC PROFILE

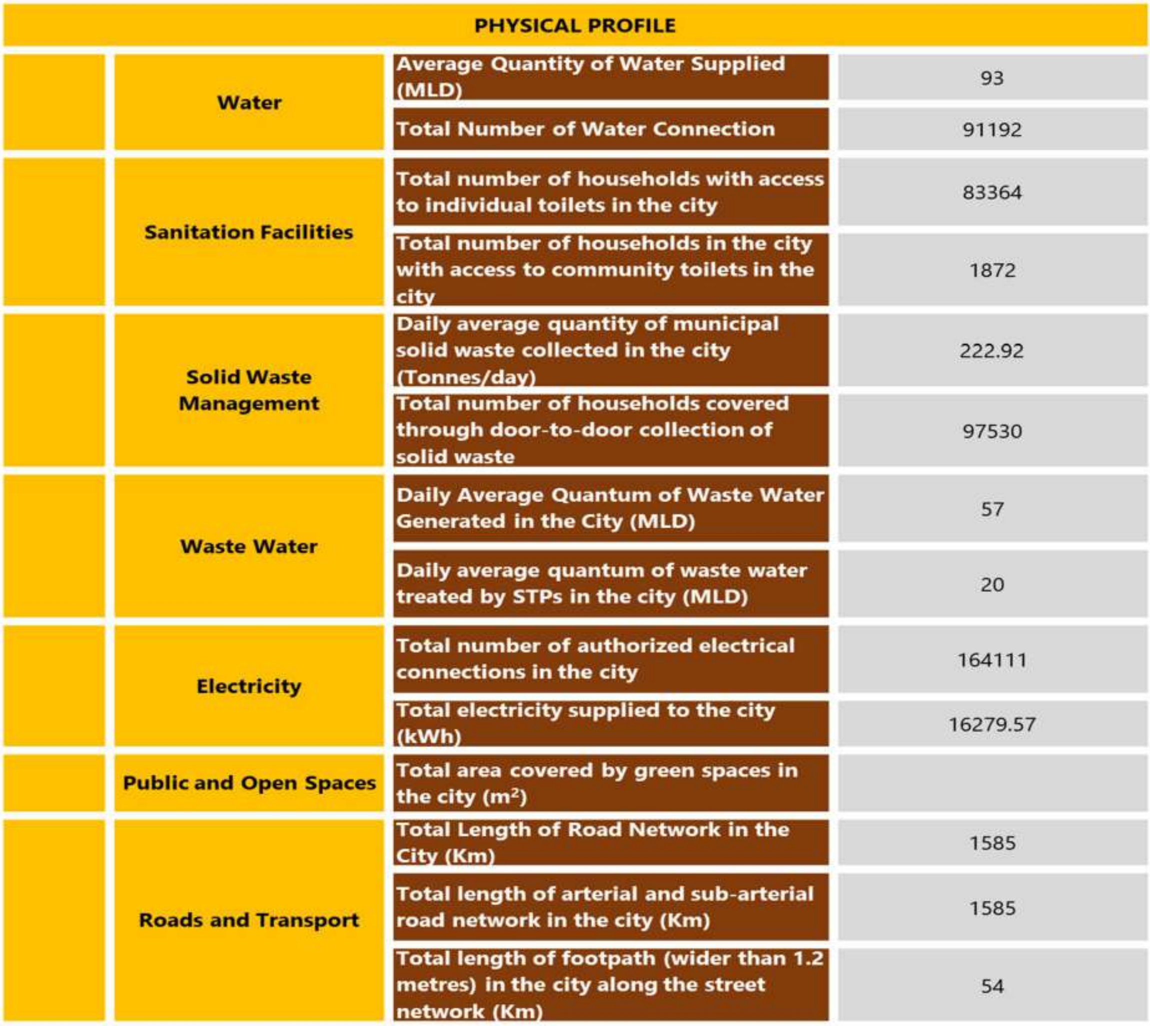
	Total Population	451100
	Total Number of Households	97530

SOCIAL PROFILE

	Education	**Total Number of Schools**	344
		Total Enrolment (Class 1 to 5)	41107
	Health	**Total Number of In-patient Beds**	5571
		Total Health Workforce	5482
	Safety and Security	**Total Strength of Police Force**	1060
		Total Number of CCTV Cameras	95
	Heritage Sites	**Total Number of Heritage Sites**	573

ECONOMIC PROFILE

	Total Population in Working Age Group	719620
	Total Number of Industries	429
	Total Number of Commercial Enterprises	14678
	Total Number of Hotels	367
	Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	15720.93
	Total VAT Collection in FY 2016-17 (INR Lakhs)	102080.43



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	93
		Total Number of Water Connection	91192
	Sanitation Facilities	Total number of households with access to individual toilets in the city	83364
		Total number of households in the city with access to community toilets in the city	1872
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	222.92
		Total number of households covered through door-to-door collection of solid waste	97530
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	57
		Daily average quantum of waste water treated by STPs in the city (MLD)	20
	Electricity	Total number of authorized electrical connections in the city	164111
		Total electricity supplied to the city (kWh)	16279.57
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
	Roads and Transport	Total Length of Road Network in the City (Km)	1585
		Total length of arterial and sub-arterial road network in the city (Km)	1585
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	54

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

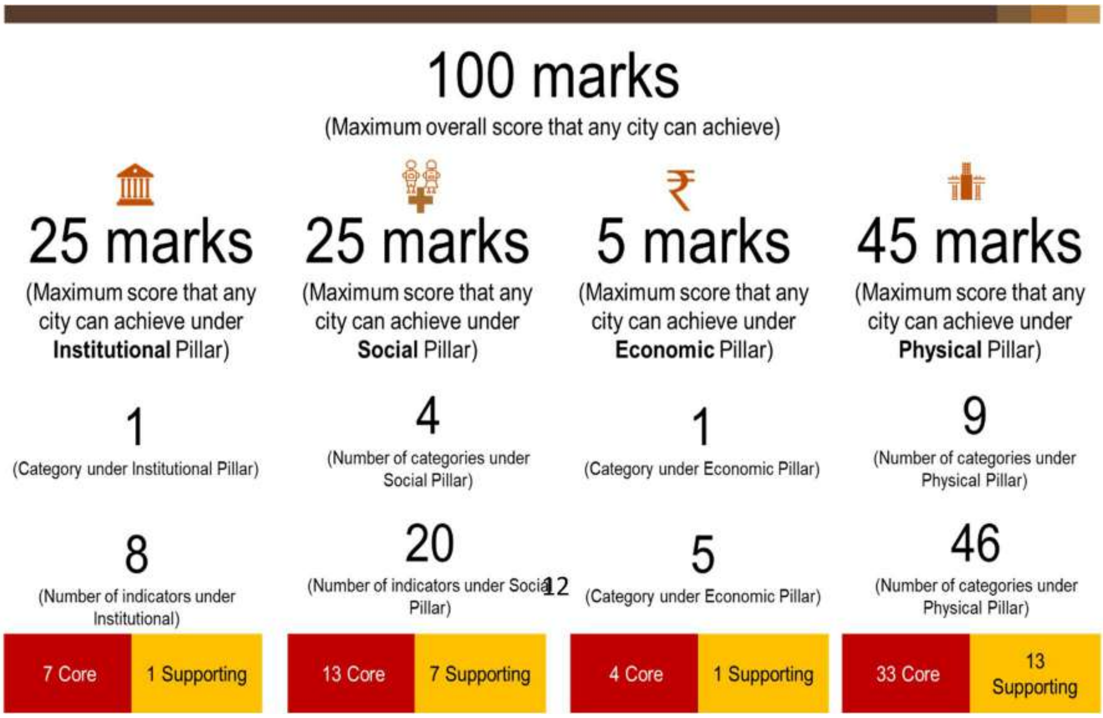
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal corporation
Urban Local Body	For Park and Recreation Related Questions	Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Municipal corporation
Urban Local Body	For Heritage sites related data	Municipal corporation
Urban Local Body	For Ecological sites related data	Municipal corporation
Urban Local Body	For Housing related data	Nagar vikas pranyas
Urban Local Body	For Building plan related data	Nagar vikas pranyas
Urban Local Body	For Roads related data	Municipal corporation
Urban Local Body	For Solid waste management related data	Municipal corporation
Urban Local Body	For IT services related data	Municipal corporation
Urban Local Body	For Vendor committee related data	Municipal corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public health engineering department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	UIT{nagar vikas pranyas}
	Construction planning	UIT
	Green Building	UIT
	Rain water harvesting	Municipal corporation
	Universal Design Principle	Municipal corporation,UIT

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	AVVNL
State Disaster management authority		Disaster control office
State Education Department		
State Health Department	Health care professionals	Public health department
	Citizen Services	Municipal corporation
	Disease Prevalence	Public health department
	Health Infrastructure	Public health department
State Renewable Energy Development Agency		AVVNL
State Sales / Commercial Taxes Department		Revenue department
Town and Country Planning Department	Land Use	UIT
Traffic and Police Department		City police headquarters
Transport Authorities	Buses	MUNICIPAL CORPORATION
	Registered Vehicles	ROAD TRANSPORT OFFICE
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 50 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

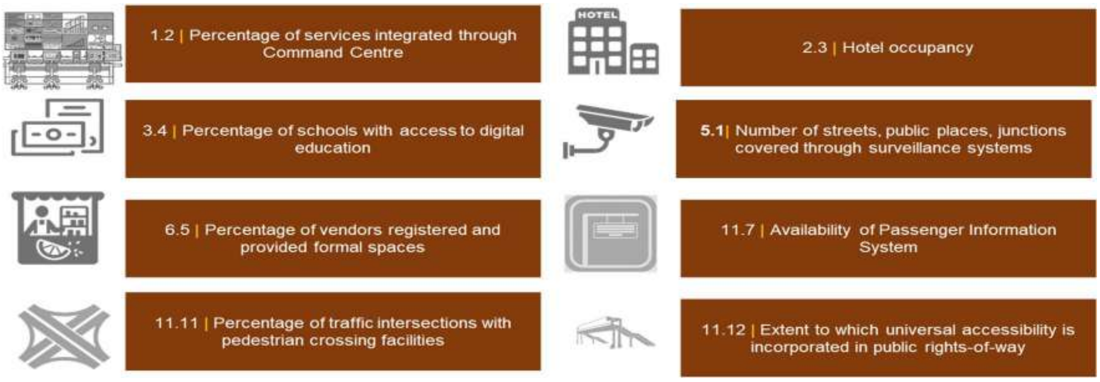
Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**2**
DISCOM/Electricity Department	**4**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**3**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**2**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**36**
Total	**50***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were

found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

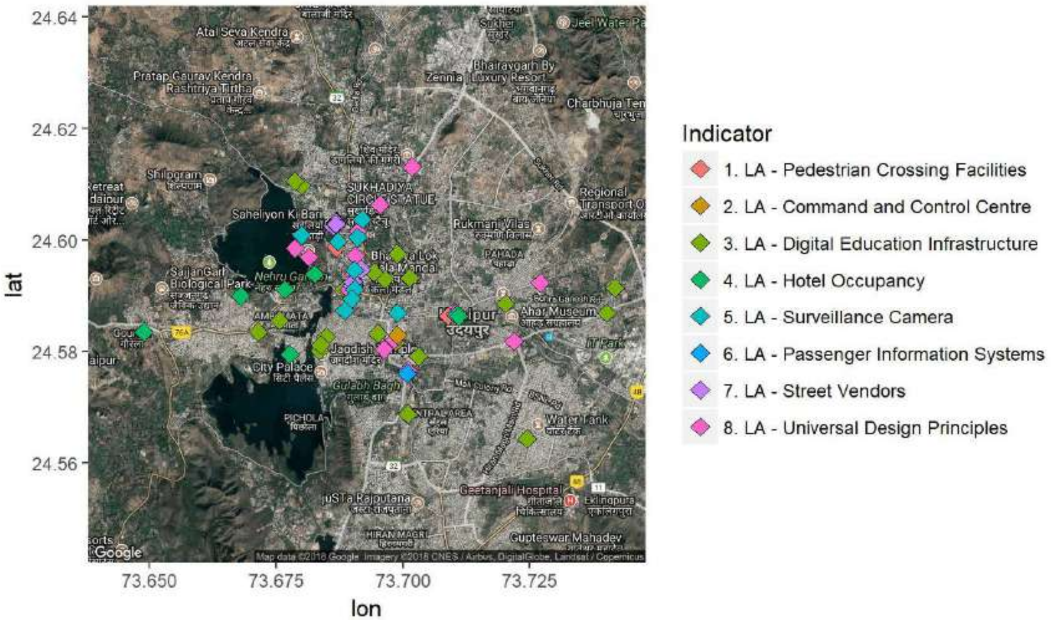
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


24.64
24.62
24.60
24.58
24.56
lat
73.650
73.675
73.700
73.725
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate

Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**51.48**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	0.692307692
	1.1k Grievance redressal	1
	1.1l electricity	1

	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**Non-Computable**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	NA
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	NA

	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	NA
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**75.15**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	1073.34
Denominator	Total demand raised for the year	1428.18
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**44.97**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2391.07
Denominator	Total O&M cost for providing water supply services during the year	5316.88
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-1625.16**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-22927.72
Denominator	Total expenditure (revenue and capital accounts) in the same year	1410.8
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	Data Unavailable

Denominator	Total number of wards	55
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**2.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	10
Denominator	Total number of historic buildings/sites identified	390
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	Data Unavailable
Denominator	Total number of ecologically important sites identified in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	

Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.75**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	117.6
Denominator	Total budget of the ULB (capital and revenue)	15720.93
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**1**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	1
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**85.95**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	65885
Denominator	Total population in the age group of 6-14 years	76651
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**84.71**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	29824
Denominator	Total female population in the age group of 6-14 years	35206
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.2**

Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	41107
Denominator	Total number of teachers available for primary grades (public and private schools)	1939
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**27.91**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	96
Denominator	Total number of schools	344
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**91.24**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	91.23699757
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**98.11**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	70165680
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**123.5**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	5571

Denominator	Total population of the city	451100
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**121.53**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	5482
Denominator	Total population of the city	451100
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**4.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	18873
Denominator	Total population of the city	451100
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**2.59**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	11664
Denominator	Total population of the city	451100
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**5.99**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	95
Denominator	Total length of road network in the city	1585
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**774.55**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3494
Denominator	Total population of the city	451100
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**12.54**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	438
Denominator	Total crimes recorded in the same year	3494
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**17.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	80
Denominator	Total population of the city	451100
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**2.58**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2567.3
Denominator	Total VAT/GST collection during preceding year	995.1313
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**40**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	100
Denominator	Number of construction permits during preceding year	2.5
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	2975
Denominator	Total labour force in the city	76651

Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**24.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	750
Denominator	Total number of vendors in the city	3058
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**39.2**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	7602
Denominator	Total number of slum and EWS households in the city	193.93
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	1327488
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	Data

		Unavailable
Denominator	Total population of the city	451100
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	360000
Denominator	Total population of the city	451100
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	64380000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	451100
Denominator	Area allocated for residential land use (in hectares)	32580000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**148.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	144898
Denominator	Total number of households in the city	97530
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**116.97**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	191960
Denominator	Total number of electricity connections in the city	164111
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**Non-Computable**

Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1095585
Denominator	Total energy consumption from all sources	16279.57
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	2823529.333
Denominator	Total quantum of water and waste water handled during the period	3390
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	6950739
Denominator	Total number of street light installations	36701
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	0
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	16279.57
Denominator	Total population of the city	451100
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	533.52
Denominator	Total area of the city (sq.km)	64.38
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	47
Denominator	Total population of the city	451100
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	2

Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	5
Denominator	Total length of road network in the city	1585
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-Computable**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	Data Unavailable
Denominator	Total number of major interchanges in the city	1
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of signalised intersections in the city	4
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	9
Denominator	Total available on-street parking spaces in the city	18
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	54
Denominator	Total length of road network in the city	3170
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**48**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	12
Denominator	Total number of junctions/ intersections on major roads in the city	25
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2.12**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	8
Denominator	Total number of public right-of-way areas in the city	377
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**44.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	43618
Denominator	Total number of households in the city	97530
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**206.16**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	93
Denominator	Total population of the city	451100
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	365
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	93
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**90.53**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	82553

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Denominator	Total number of water connections in the city	91192
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**80.87**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	296
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	366
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**87.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	85236
Denominator	Total number of properties in the city	97530
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**215.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	209872
Denominator	Total number of properties in the city	97530
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.3	**Collection efficiency of sewerage network**	**35.09**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	20
Denominator	Total waste water generated in the city per day	57
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**285**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	57
Denominator	Total waste water received at treatment plants per day	20
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**21.77**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	345
Denominator	Total length of road network in the city	1585
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**87.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	97918
Denominator	Total number of households and establishments in the city	112208
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private	222.92

	operator	
Denominator	Total quantum of MSW generated in the city	222.92
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**19.85**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	1327.5
Denominator	Average MSW generated in the city (tons per month)	6687.6
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6.85**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6.8458
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**35.16**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	35.1633
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**98.17**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	98.1666
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	4
Denominator	Total number of noise samples	4

Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

UJJAIN

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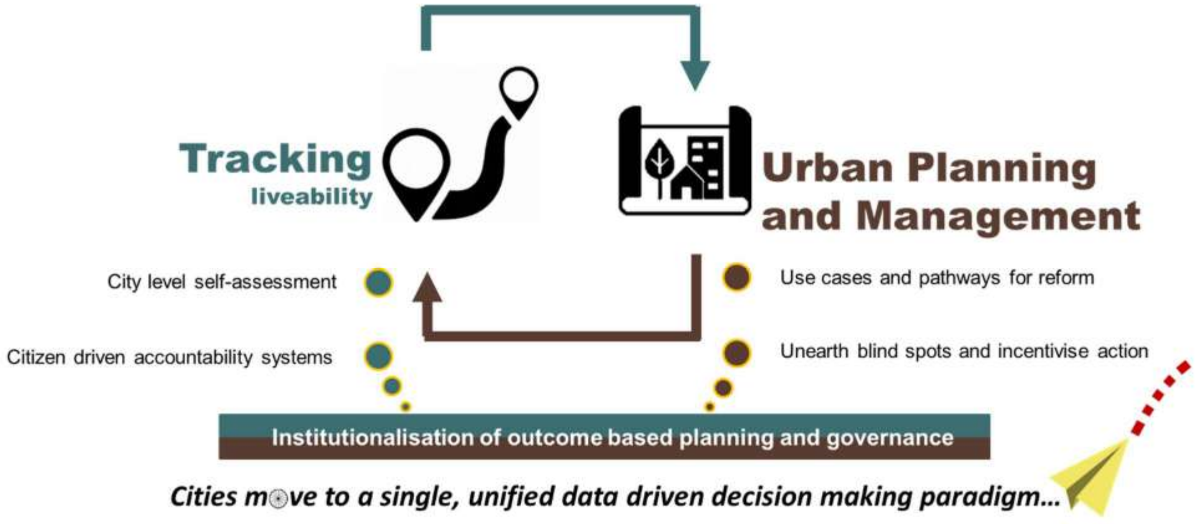
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

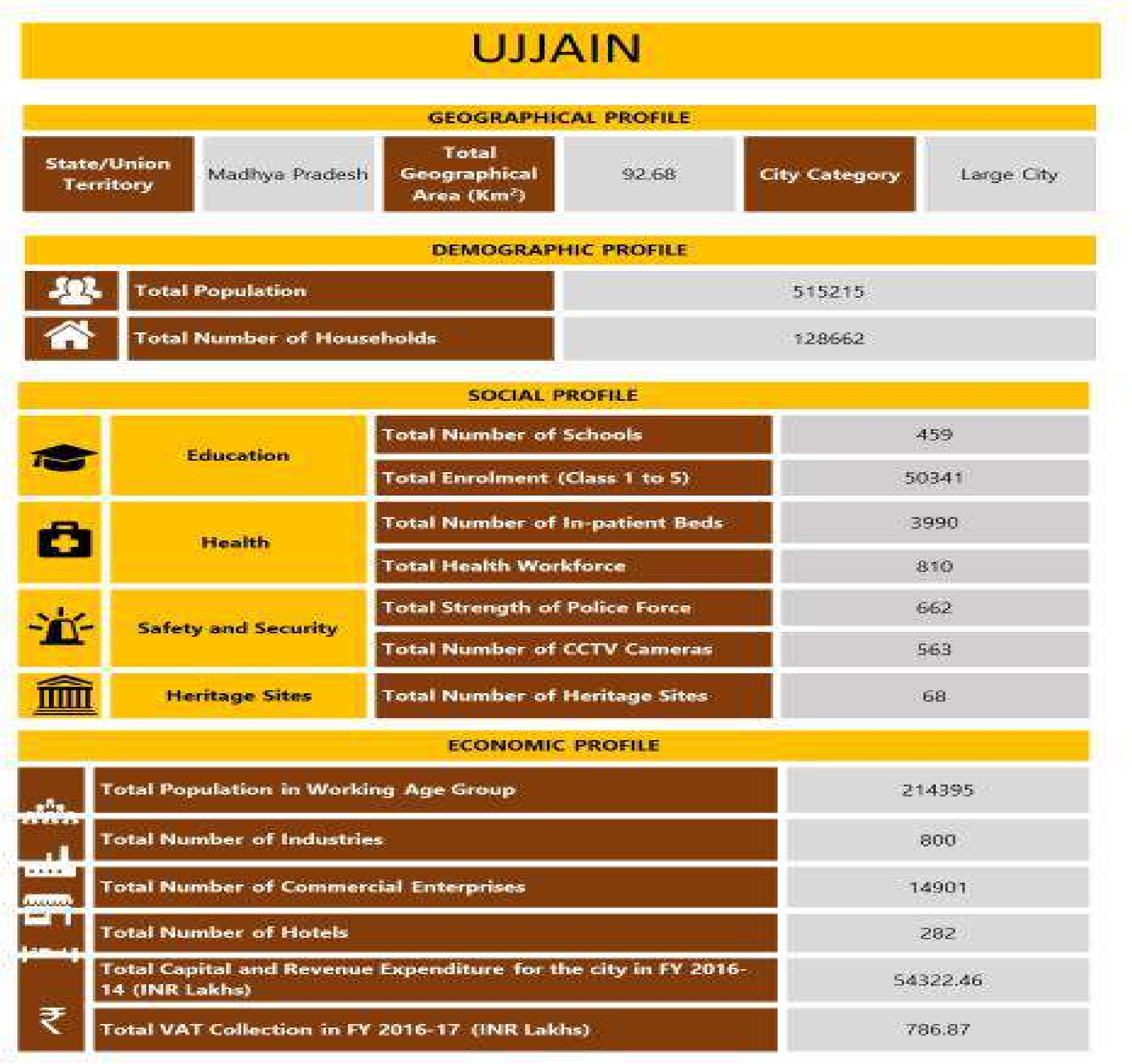
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



UJJAIN

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	92.68	City Category	Large City

DEMOGRAPHIC PROFILE

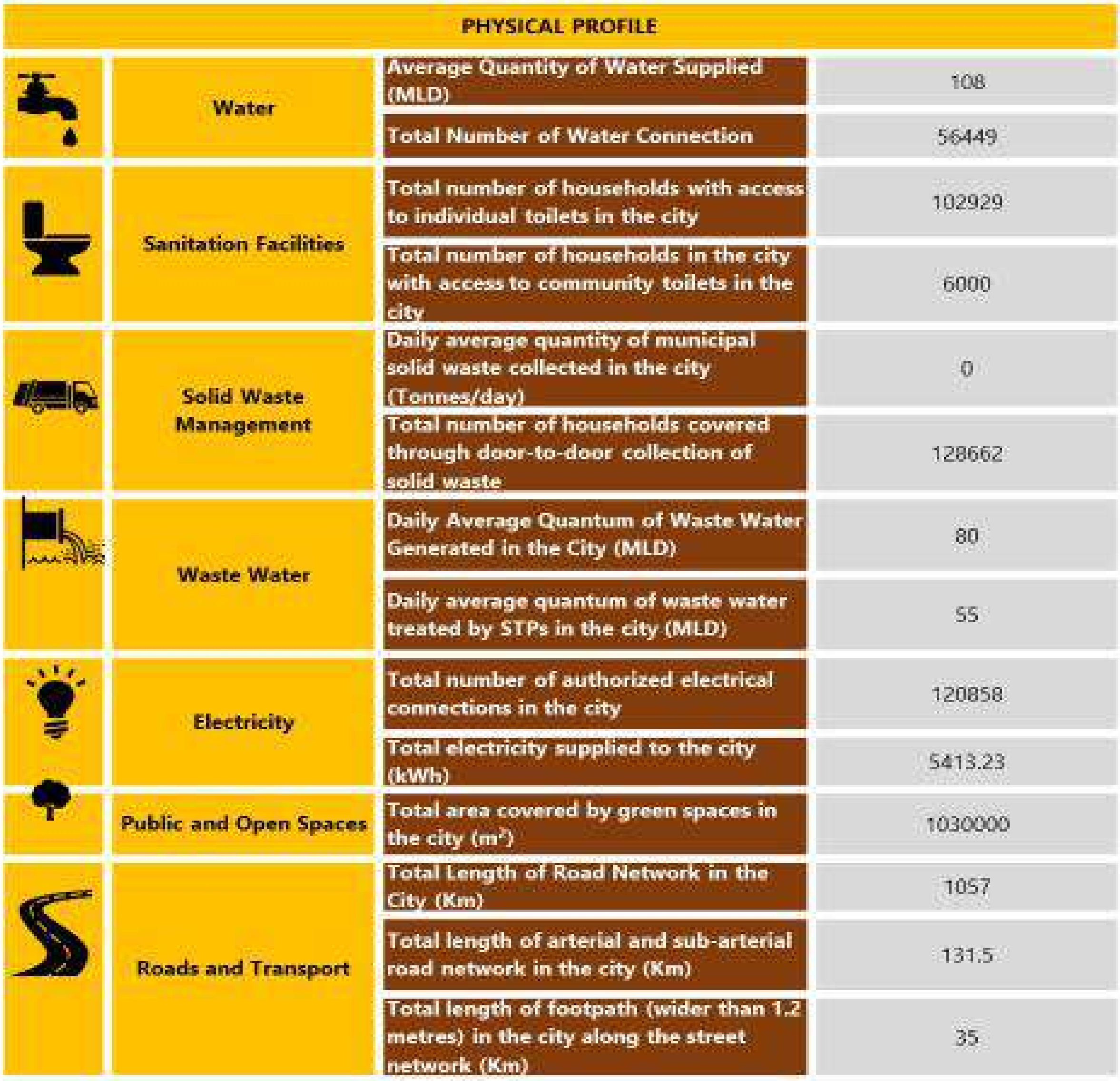
Total Population	515215
Total Number of Households	128662

SOCIAL PROFILE

Education	Total Number of Schools	459
	Total Enrolment (Class 1 to 5)	50341
Health	Total Number of In-patient Beds	3990
	Total Health Workforce	810
Safety and Security	Total Strength of Police Force	662
	Total Number of CCTV Cameras	563
Heritage Sites	Total Number of Heritage Sites	68

ECONOMIC PROFILE

Total Population in Working Age Group	214395
Total Number of Industries	800
Total Number of Commercial Enterprises	14901
Total Number of Hotels	282
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	54322.46
Total VAT Collection in FY 2016-17 (INR Lakhs)	786.87



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	108
	Total Number of Water Connection	56449
Sanitation Facilities	Total number of households with access to individual toilets in the city	102929
	Total number of households in the city with access to community toilets in the city	6000
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0
	Total number of households covered through door-to-door collection of solid waste	128662
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	80
	Daily average quantum of waste water treated by STPs in the city (MLD)	55
Electricity	Total number of authorized electrical connections in the city	120858
	Total electricity supplied to the city (kWh)	5413.23
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1030000
Roads and Transport	Total Length of Road Network in the City (Km)	1057
	Total length of arterial and sub-arterial road network in the city (Km)	131.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	35

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

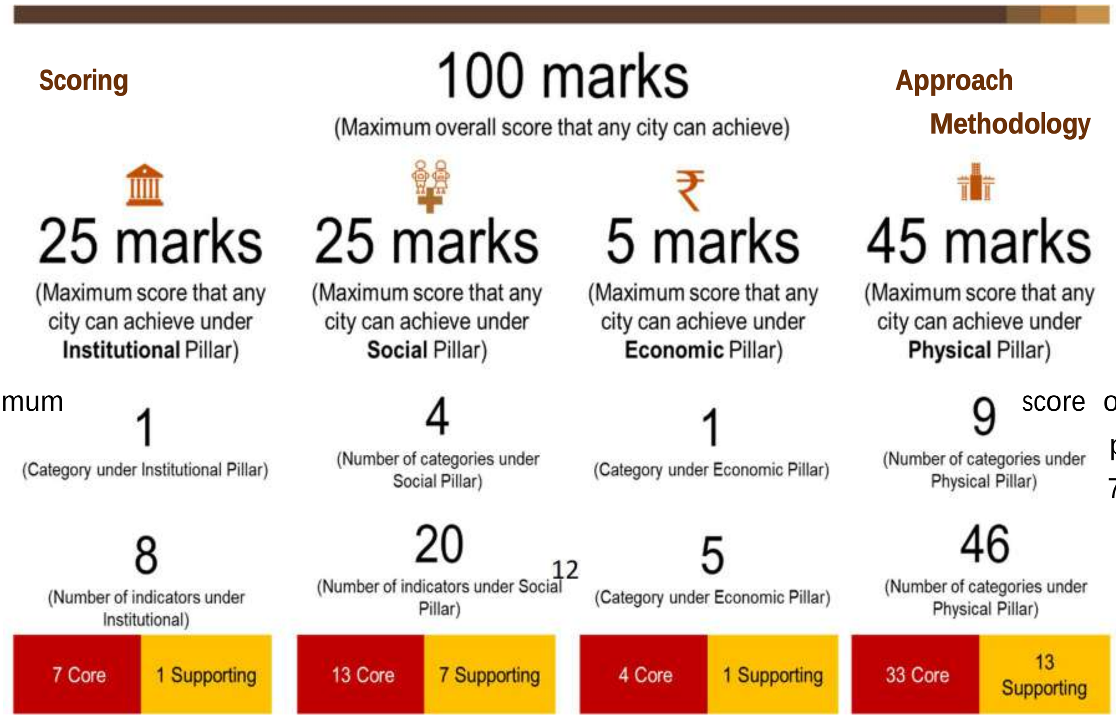
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by

the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
	Accounts	Accounts Department, Ujjain Municipal Corporation
	Park and Recreation	Ujjain Municipal Corporation
	Water Supply and Drainage	Water Supply department, Ujjain Municipal Corporation
	Heritage sites	Ujjain Municipal Corporation
	Ecological sites	Ujjain Municipal Corporation

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Housing	Housing section, Ujjain Municipal Corporation
	Building plan	Ujjain Municipal Corporation
	Roads	Ujjain Municipal Corporation
	Solid waste management	Solid waste management, Ujjain Municipal Corporation
	IT services	IT Section, Ujjain Municipal Corporation
	Vendor committee	Ujjain Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Ujjain Development Authority
	Construction planning	Ujjain Development Authority
	Green Building	Ujjain Development Authority
	Rain water harvesting	Ujjain Development Authority
	Universal Design Principle	Ujjain Development Authority
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police		Traffic and Police Department,

Designated data owners	Sub categories	Data owners at city level
Department		Ujjain
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 67 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	3
DISCOM/Electricity Department	6
Traffic and Police Department	5
Development Authority	7
Pollution Control Board	3
State Renewable Energy Department	5
Town and Country Planning	2
State Health Department	4
Transport Authority	9
Disaster Management	2
Urban Local Body	18
Total	67

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

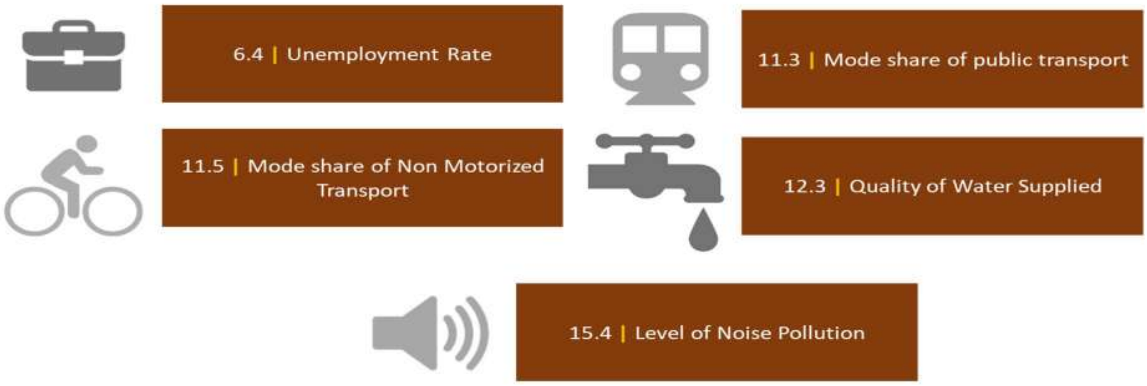
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

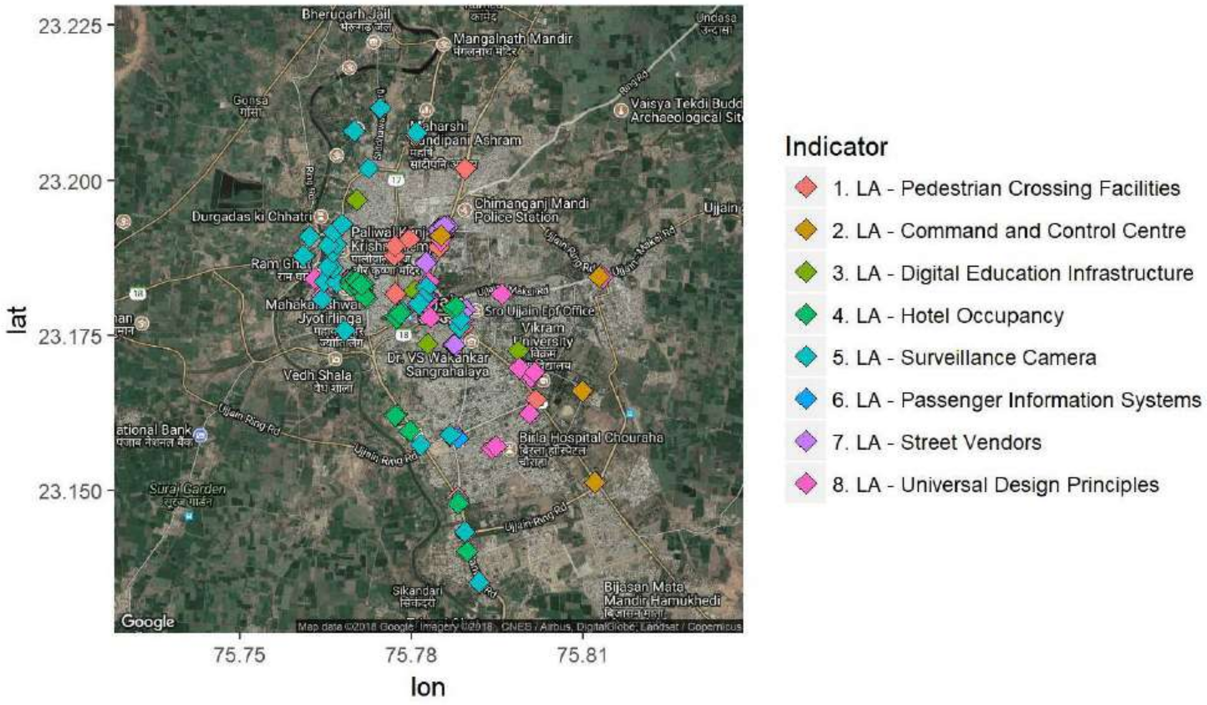
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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23.200
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lat
75.75
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lon
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	**Indicator title**
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**88.56**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0.666666667
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**11.9**
Description	Services integrated through an integrated or a singular operations command centre	2.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**10.88**
Description		
Sub Indicators	1.3a Building plan	0.023195392
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.003245962
	1.3d solid waste management	0.000976291
	1.3e property tax	0.000405745
	1.3f professional tax (RC)	0.072407801
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.024261716
	1.3i information	0.000190212
	1.3j electricity	0.745354052
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**39.41**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	2154.15
Denominator	Total demand raised for the year	5466.53
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**43.65**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	689.08

Denominator	Total O&M cost for providing water supply services during the year	1578.7
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-15.94**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-4192.65
Denominator	Total expenditure (revenue and capital accounts) in the same year	26296.81
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	54
Denominator	Total number of wards	54
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**16.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	97
Denominator	Total number of historic buildings/sites identified	573
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	2
Denominator	Total number of ecologically important sites identified in the city	3

Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**48.57**
Description	Average Occupancy rate of Hotels	48.57142857
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	69.6
Denominator	Total budget of the ULB (capital and revenue)	54322.46
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**689**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	689
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**83.17**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	77603
Denominator	Total population in the age group of 6-14 years	93311
Unit	Percentage	
Benchmark	100%	

Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**81.79**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	36050
Denominator	Total female population in the age group of 6-14 years	44074
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**97.56**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	50341
Denominator	Total number of teachers available for primary grades (public and private schools)	516
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	1
Denominator	Total number of schools	459
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**87.87**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	87.87352771
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**92.38**

Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	80114100
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**77.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3990
Denominator	Total population of the city	515215
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**15.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	810
Denominator	Total population of the city	515215
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**30**
Description	Total response time for health-related distress calls received in the city	30
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**8.35**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	43005
Denominator	Total population of the city	515215

Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	38
Denominator	Total population of the city	515215
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**53.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	563
Denominator	Total length of road network in the city	1057
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**305.31**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	1573
Denominator	Total population of the city	515215
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**99.17**
Formula:	*Numerator / Denominator*	

Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1560
Denominator	Total crimes recorded in the same year	1573
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**13.39**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	69
Denominator	Total population of the city	515215
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-19.39**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-189.26
Denominator	Total VAT/GST collection during preceding year	9.7613
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-4.86**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-26.47
Denominator	Total Professional Tax collection during preceding year	544.4
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	**Increase in issuance of Construction Permits**	**31.28**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	563
Denominator	Number of construction permits during preceding year	18
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	22085
Denominator	Total labour force in the city	93311
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**90.45**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2110
Denominator	Total number of vendors in the city	2332.775
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**7.06**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	5183

Denominator	Total number of slum and EWS households in the city	733.96
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**23.27** 11577502575360
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**2**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	1030000
Denominator	Total population of the city	515215
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**0.98**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	504450
Denominator	Total population of the city	515215
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0.58**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	539400
Denominator	Total area of the city (total area of all land uses)	92680000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	515215
Denominator	Area allocated for residential land use (in hectares)	35930000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**74.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	95450
Denominator	Total number of households in the city	128662
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**1.57**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	1896
Denominator	Total number of electricity connections in the city	120858
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**5837**
Description	Total number of sustained electrical interruptions in a year	5837
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	44028
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	1037.05
Denominator	Total energy consumption from all sources	24613.23
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.28**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1101097.25

Denominator	Total quantum of water and waste water handled during the period	4890
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	24287049
Denominator	Total number of street light installations	39320
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	2000
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	276971
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	24613.23
Denominator	Total population of the city	515215
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.7**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	164
Denominator	Total area of the city (sq.km)	92.68
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	57
Denominator	Total population of the city	515215
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	27.52
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1057
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA

Denominator	Total number of major transport interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0.33
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.67**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	16
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.66**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	35
Denominator	Total length of road network in the city	2114
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	20
Denominator	Total number of junctions/ intersections on major roads in the city	20
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**23.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	40
Denominator	Total number of public right-of-way areas in the city	172
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**11.66**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	15000
Denominator	Total number of households in the city	128662

Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**209.62**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	108
Denominator	Total population of the city	515215
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	48
Denominator	Total number of samples tested for water quality	48
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**0.51**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	0.5464
Denominator	Quantum of water put into the distribution system (mld)	108
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**15.91**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	8981
Denominator	Total number of water connections in the city	56449
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**2.57**

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	58
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2258
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**83.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	119583
Denominator	Total number of properties in the city	143563
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**58.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	84162
Denominator	Total number of properties in the city	143563
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**68.75**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	55
Denominator	Total waste water generated in the city per day	80
Unit	Percentage	
Benchmark	100%	

Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	55
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**1.32**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	14
Denominator	Total length of road network in the city	1057
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	143563
Denominator	Total number of households and establishments in the city	143563
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	0
Denominator	Total quantum of MSW generated in the city	180
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**Non-**

Formula:	*Numerator / Denominator*	**Computable**
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	5156
Denominator	Average MSW generated in the city (tons per month)	0
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**13.07**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	13.07
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**14.75**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	14.75
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**72.85**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	72.85
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	44
Denominator	Total number of noise samples	96
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**

Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	48
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

VADODARA

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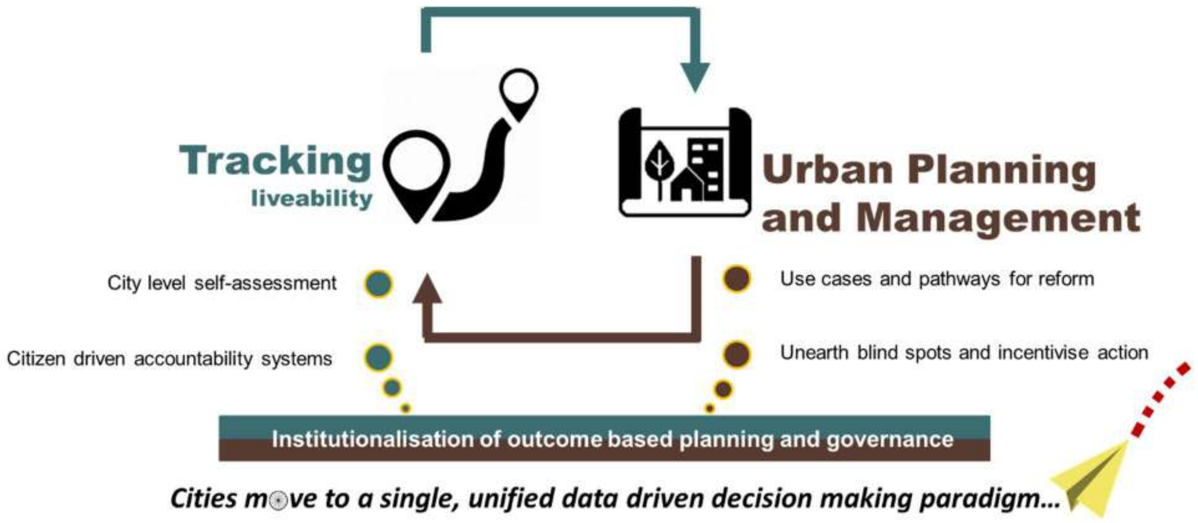
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

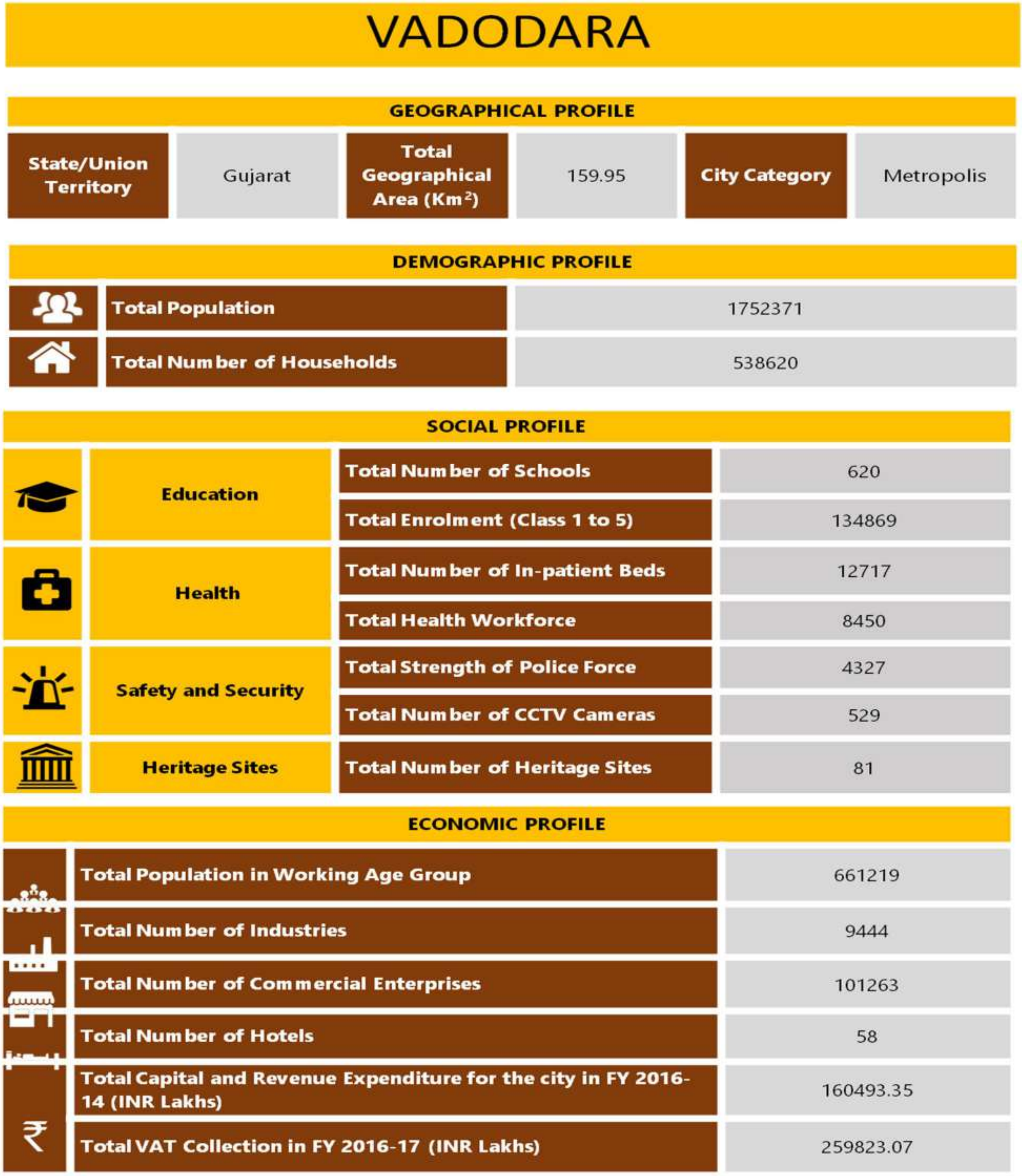

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VADODARA

GEOGRAPHICAL PROFILE

State/Union Territory	Gujarat	**Total Geographical Area (Km^2)**	159.95	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1752371
Total Number of Households	538620

SOCIAL PROFILE

Education	**Total Number of Schools**	620
	Total Enrolment (Class 1 to 5)	134869
Health	**Total Number of In-patient Beds**	12717
	Total Health Workforce	8450
Safety and Security	**Total Strength of Police Force**	4327
	Total Number of CCTV Cameras	529
Heritage Sites	**Total Number of Heritage Sites**	81

ECONOMIC PROFILE

Total Population in Working Age Group	661219
Total Number of Industries	9444
Total Number of Commercial Enterprises	101263
Total Number of Hotels	58
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	160493.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	259823.07

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	470
	Total Number of Water Connection	678363
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	638539
	Total number of households in the city with access to community toilets in the city	1344
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1200
	Total number of households covered through door-to-door collection of solid waste	538620
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	359
	Daily average quantum of waste water treated by STPs in the city (MLD)	341
Electricity	**Total number of authorized electrical connections in the city**	665380
	Total electricity supplied to the city (kWh)	1883118077
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	26600000
Roads and Transport	**Total Length of Road Network in the City (Km)**	1455
	Total length of arterial and sub-arterial road network in the city (Km)	78
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	149.55

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

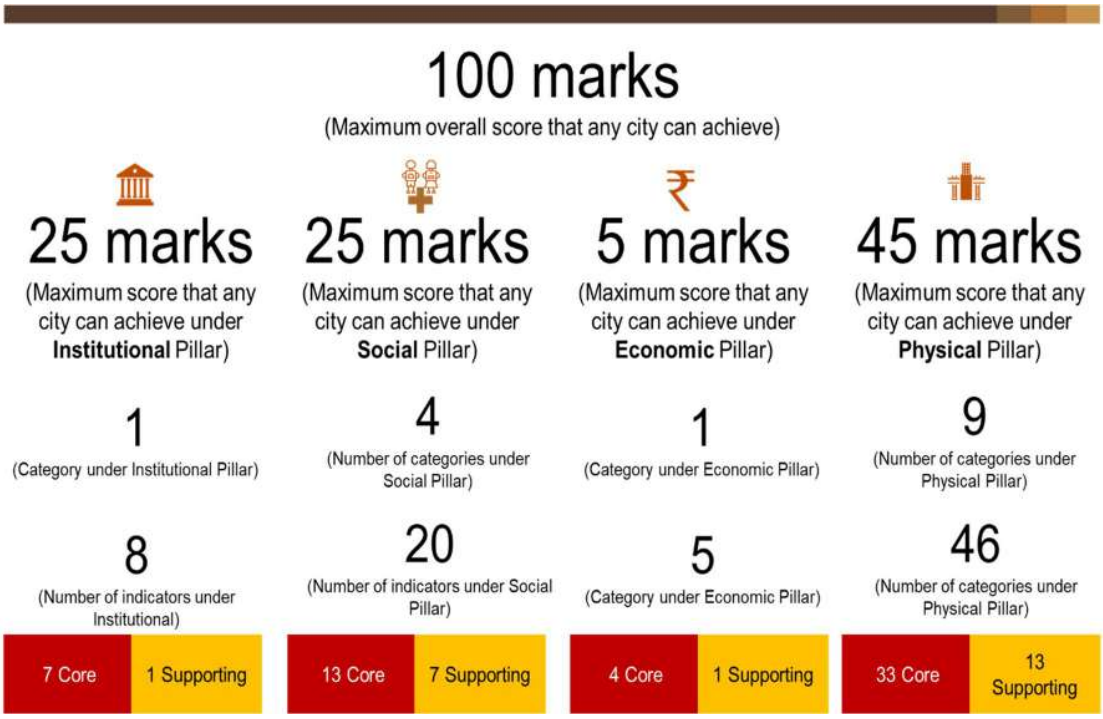
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts dep.
Urban Local Body	For Park and Recreation Related Questions	Parks and Garden
Urban Local Body	For Water Supply and Drainage related questions	Housing building and Drainage
Urban Local Body	For Heritage sites related data	Heritage dep.
Urban Local Body	For Ecological sites related data	Yet not charge taken by any department
Urban Local Body	For Housing related data	Housing building
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Road dep.
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	IT dep.
Urban Local Body	For Vendor committee related data	Estate dep.
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Affordable housing
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Town planning
	Construction planning	Housing building, town

Designated data owners	Subcategories	Data owners at city level
		planning
	Green Building	Town planing
	Rain water harvesting	Town planing
	Universal Design Principle	Solid west management
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MGVCL/ Madhya Gujarat
State Disaster management authority		Fire and Emergency services
State Education Department		Education dep. (SSA)
State Health Department	Health care professionals	Health dep.
	Citizen Services	Health dep.
	Disease Prevalence	Health dep.
	Health Infrastructure	Health dep.
State Renewable Energy Development Agency		Gujarat Energy Development Agency (GEDA)
State Sales / Commercial Taxes Department		state tax Joint commissioner office
Town and Country Planning Department	Land Use	Development authority, town planning department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Vechiclepool department
	Registered Vehicles	RTO Regional transport office
	Sub urban rail transport	N.A.
	Mono Rail Authority	N.A.
	Tramways	N.A.
	Marine Transport Authority	N.A.

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 71 number of documents.

Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	4
Traffic and Police Department	3
Development Authority	5
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	2
Transport Authority	3
Disaster Management	0
Urban Local Body	47
Total	71*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

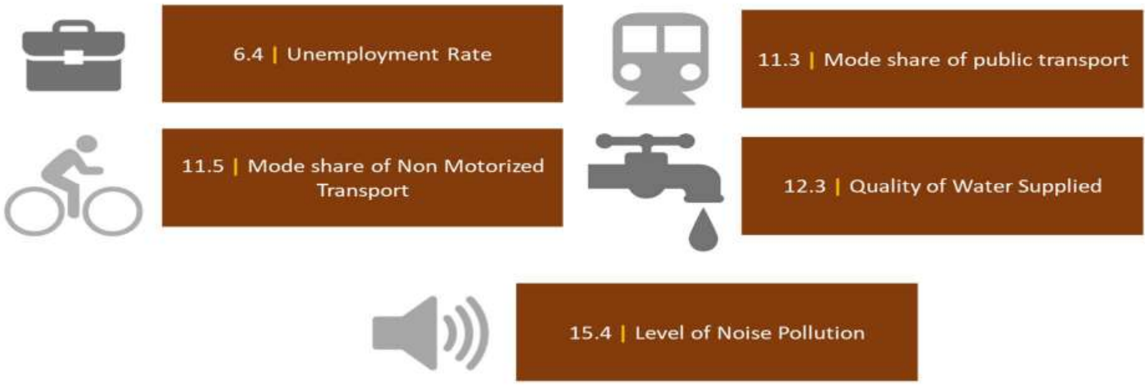
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

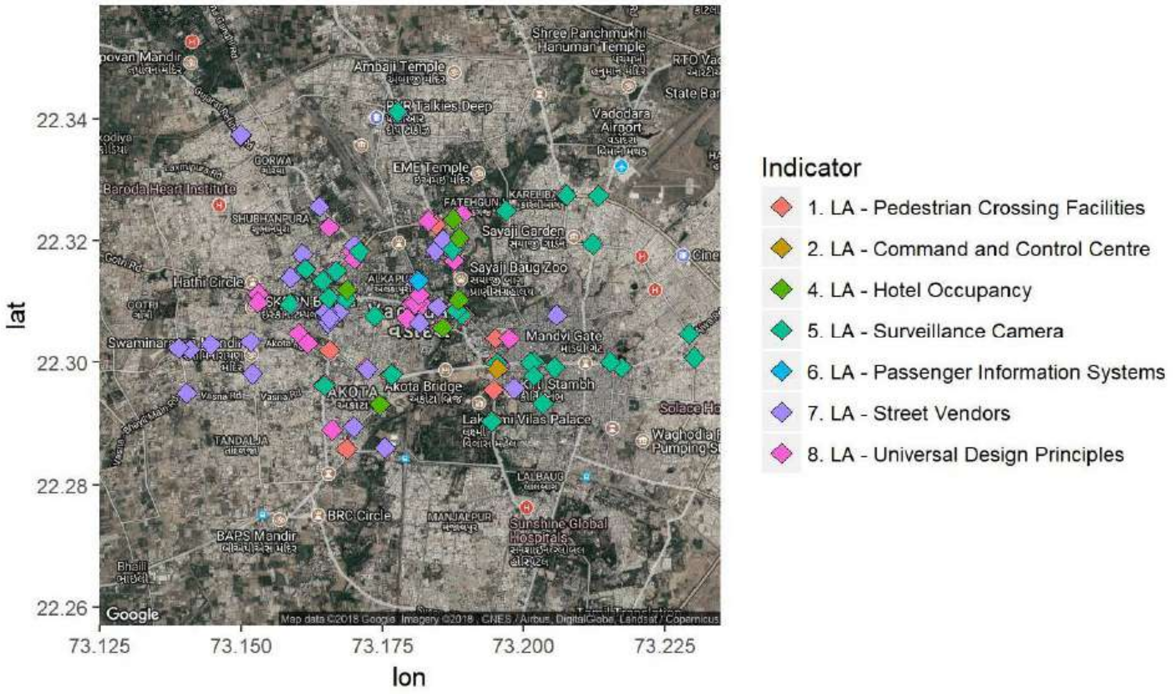
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**59.12**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	0.25
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.666666667
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**57.14**
Description	Services integrated through an integrated or a singular operations command centre	12
Unit	Percentage	
Benchmark	100%	

Indicator No. 1.3	**Percentage of citizens using online services**	**0.27**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.002300122
	1.3c water supply	1.00104E-05
	1.3d solid waste management	NA
	1.3e property tax	0.00577906
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	0.007841796
	1.3h complaints/ grievance redressal	0.000388997
	1.3i information	NA
	1.3j electricity	1.5029E-06
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	

Indicator No: 1.5	**Tax collected as percentage of tax billed**	**114.31**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	20980.27
Denominator	Total demand raised for the year	18354.48
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**118.33**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	6611.12
Denominator	Total O&M cost for providing water supply services during the year	5587.15
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**9.67**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	29580.47
Denominator	Total expenditure (revenue and capital accounts) in the same year	305870.71
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	12
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**2.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	68
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**Non-Computable**
Description	Average Occupancy rate of Hotels	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.21**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	339.9
Denominator	Total budget of the ULB (capital and revenue)	160493.35
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**2032**

Description	Number of cultural/sports events hosted by the city authority in the preceding year	2032
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**77.01**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	216536
Denominator	Total population in the age group of 6-14 years	281164
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**77.5**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	97977
Denominator	Total female population in the age group of 6-14 years	126420
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**37.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	134869
Denominator	Total number of teachers available for primary grades (public and private schools)	3573
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**73.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	456

Denominator	Total number of schools	620
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**80.43** 80.42610338
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**97.42** 745192100
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	**97.42**

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**72.57**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	12717
Denominator	Total population of the city	1752371
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**48.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	8450
Denominator	Total population of the city	1752371
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**11**
Description	Total response time for health-related distress calls received in the city	11
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.72**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	12693
Denominator	Total population of the city	1752371
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1899
Denominator	Total population of the city	1752371
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**36.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	529
Denominator	Total length of road network in the city	1455
Unit	Percentage	
Benchmark	100%	

Indicator No: 5.2	**Number of recorded crimes per lakh population**	**1415.68**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	24808
Denominator	Total population of the city	1752371
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**11.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	2867
Denominator	Total crimes recorded in the same year	24808
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**53.7**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	941
Denominator	Total population of the city	1752371
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**11.31**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	26407.95
Denominator	Total VAT/GST collection during preceding year	2334.1512
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**8.8**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	334.81
Denominator	Total Professional Tax collection during preceding year	3803.46
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-2.53**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-44
Denominator	Number of construction permits during preceding year	17.41
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	16801
Denominator	Total labour force in the city	281164
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**7.22**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	822
Denominator	Total number of vendors in the city	11379
Unit	Percentage	

Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**61.65**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	24707
Denominator	Total number of slum and EWS households in the city	400.75
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0.02** 11026593625
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	
Unit	Percentage	
Benchmark	100%	**0.02**

Category 8: Public Open Spaces

Indicator No: 8.1	**Per capita availability of green spaces**	**15.18**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	26600000
Denominator	Total population of the city	1752371
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	**Per capita availability of public and recreational places**	**15.89**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	27846887

Denominator	Total population of the city	1752371
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**99.6**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	159310000
Denominator	Total area of the city (total area of all land uses)	159950000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**17329.62**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1752371
Denominator	Area allocated for residential land use (in hectares)	101.12
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**104.41**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	562385
Denominator	Total number of households in the city	538620
Unit	Percentage	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	665380
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1027**
Description	Total number of sustained electrical interruptions in a year	1027
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	24594
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	12338.44
Denominator	Total energy consumption from all sources	1883136259
Unit	Percentage	
Benchmark	10%	

Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.27**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	6652066.333
Denominator	Total quantum of water and waste water handled during the period	24330
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	23220907
Denominator	Total number of street light installations	82000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	649330.41
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.52**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	1883136259
Denominator	Total population of the city	1752371
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	274
Denominator	Total area of the city (sq.km)	159.95
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	80
Denominator	Total population of the city	1752371
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	4
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	4.8
Denominator	Total length of road network in the city	1455
Unit	Percentage	

Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	8
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.25**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	2
Denominator	Total number of major interchanges in the city	8
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	8
Denominator	Total number of signalised intersections in the city	32
Unit	Percentage	
Benchmark	>=75	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	5
Denominator	Total available on-street parking spaces in the city	5
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**5.14**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	149.55
Denominator	Total length of road network in the city	2910
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**38.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	35
Denominator	Total number of junctions/ intersections on major roads in the city	91
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**1.07**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	129
Denominator	Total number of public right-of-way areas in the city	12107
Unit	Percentage	

Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**97.96**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	527617
Denominator	Total number of households in the city	538620
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**268.21**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	470
Denominator	Total population of the city	1752371
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	1917
Denominator	Total number of samples tested for water quality	76874
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	470
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**1.82**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	12372
Denominator	Total number of water connections in the city	678363
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**4.47**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	97
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	2171
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**191.42**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	1242955
Denominator	Total number of properties in the city	649327
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**98.34**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	638539
Denominator	Total number of properties in the city	649327

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**94.99**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	341
Denominator	Total waste water generated in the city per day	359
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	341
Denominator	Total waste water received at treatment plants per day	341
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**27.63**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	402
Denominator	Total length of road network in the city	1455
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	635415
Denominator	Total number of households and establishments in the city	639883
Unit	Percentage	
Benchmark	100% door to door collection	

Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	1200
Denominator	Total quantum of MSW generated in the city	1200
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**8.1**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	2917
Denominator	Average MSW generated in the city (tons per month)	36000
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**17**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	17
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**23.4**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	23.4
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**104.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	104.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean	

	concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	37
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

VARANASI

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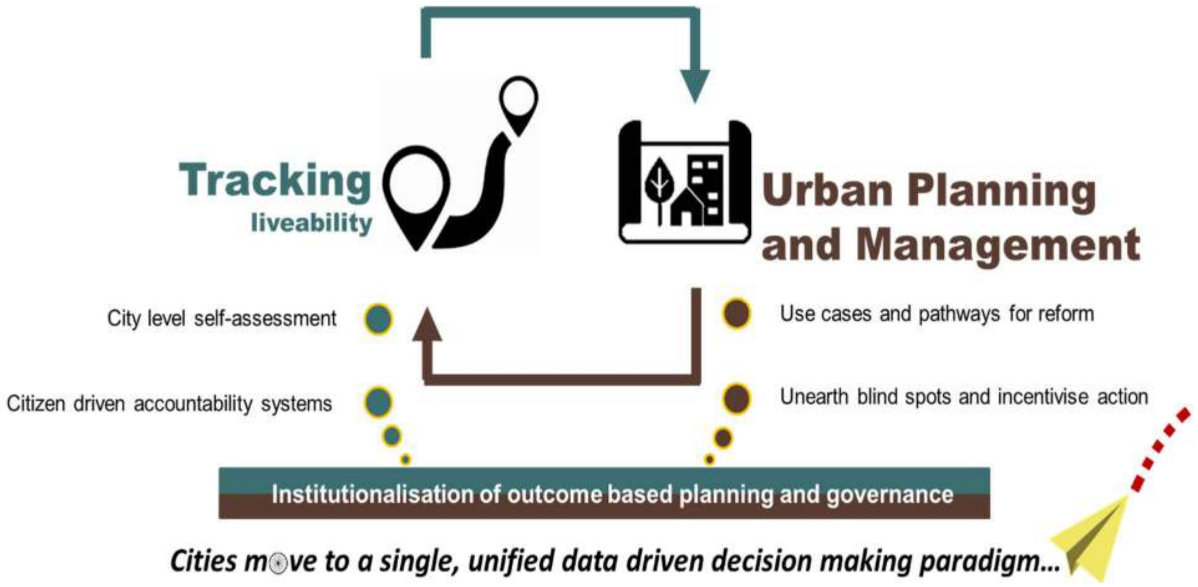
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

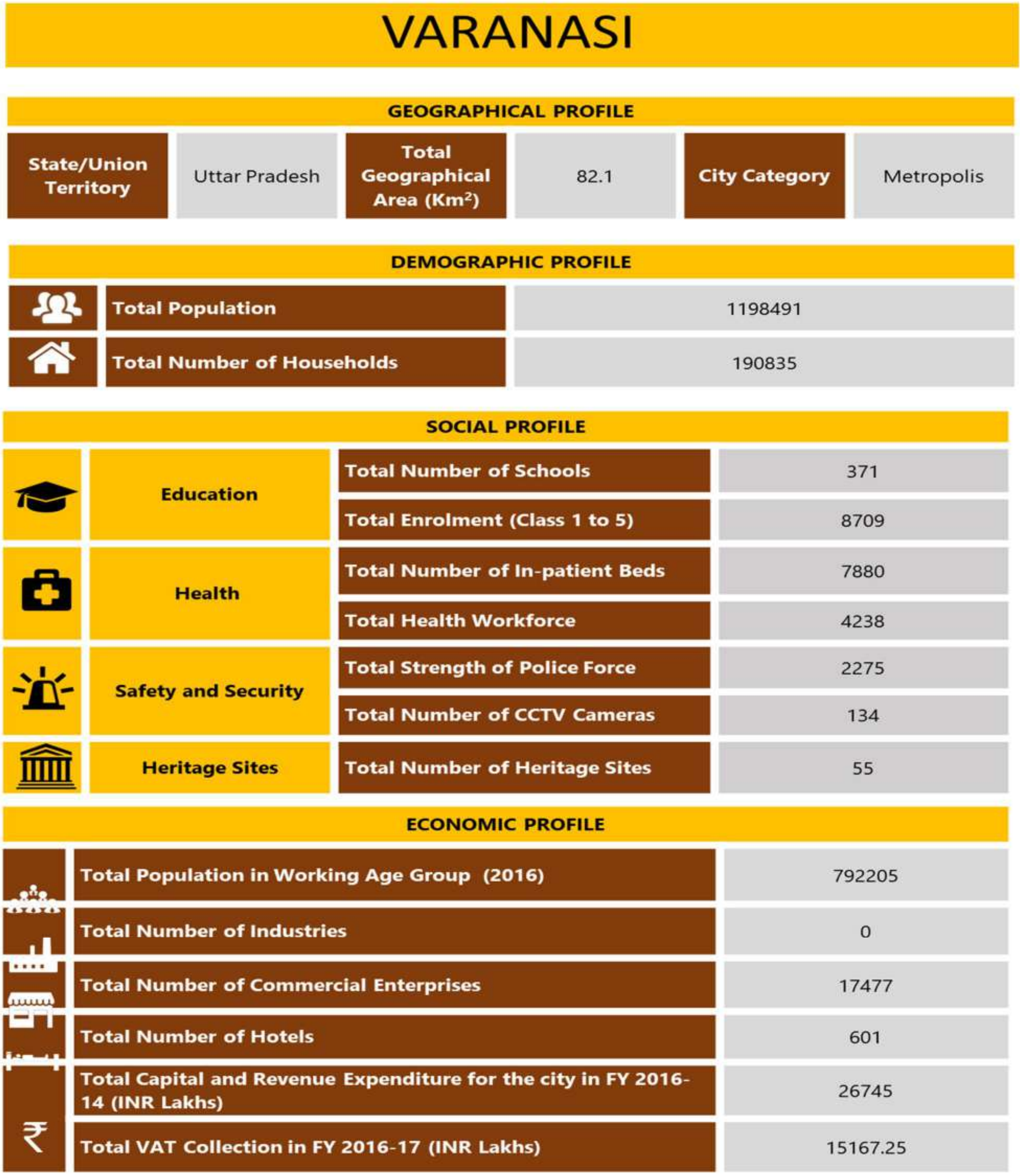
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VARANASI

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	82.1	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

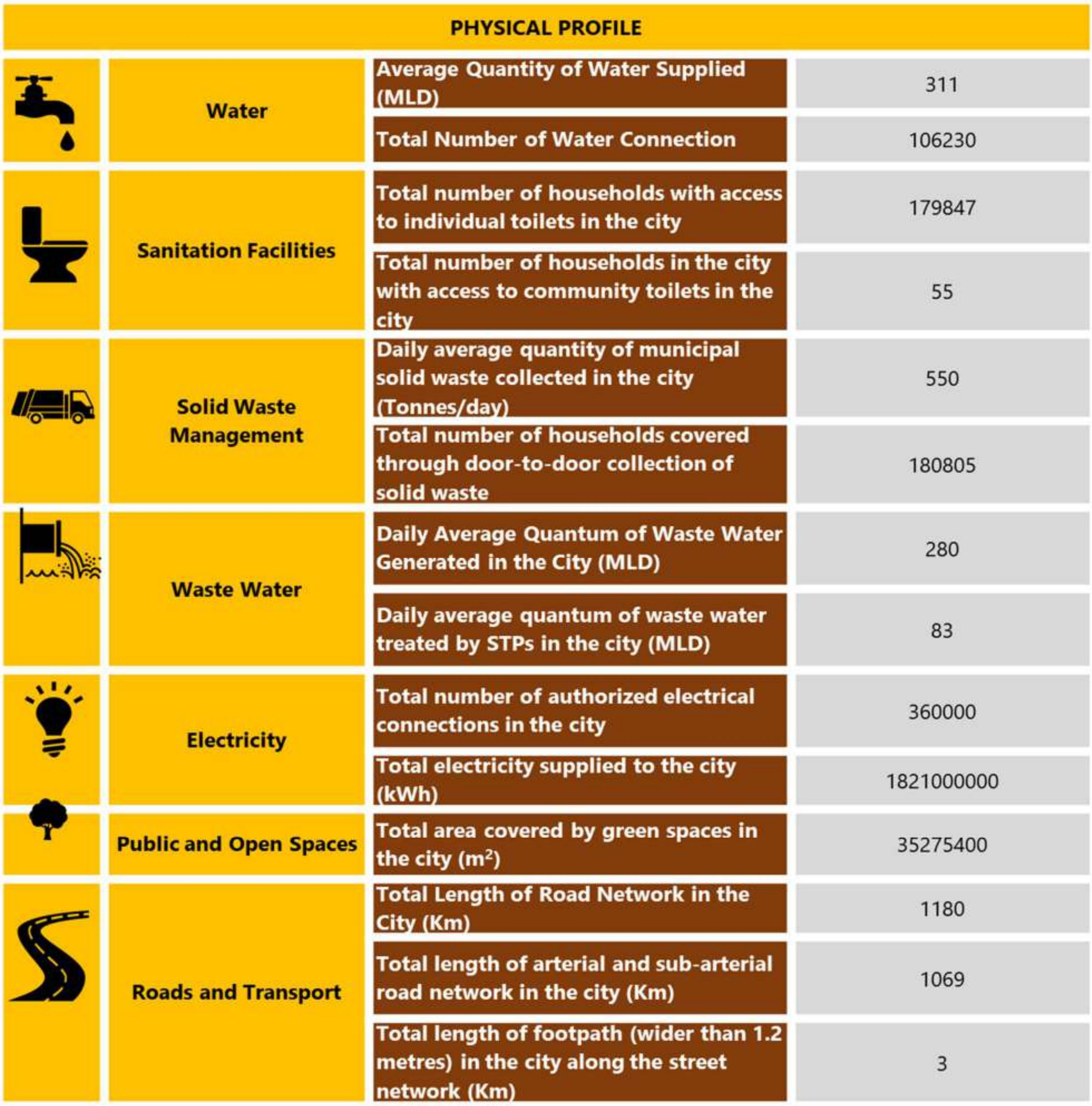
Total Population	1198491
Total Number of Households	190835

SOCIAL PROFILE

Education	**Total Number of Schools**	371
	Total Enrolment (Class 1 to 5)	8709
Health	**Total Number of In-patient Beds**	7880
	Total Health Workforce	4238
Safety and Security	**Total Strength of Police Force**	2275
	Total Number of CCTV Cameras	134
Heritage Sites	**Total Number of Heritage Sites**	55

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	792205
Total Number of Industries	0
Total Number of Commercial Enterprises	17477
Total Number of Hotels	601
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	26745
Total VAT Collection in FY 2016-17 (INR Lakhs)	15167.25



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	311
	Total Number of Water Connection	106230
Sanitation Facilities	Total number of households with access to individual toilets in the city	179847
	Total number of households in the city with access to community toilets in the city	55
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	550
	Total number of households covered through door-to-door collection of solid waste	180805
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	280
	Daily average quantum of waste water treated by STPs in the city (MLD)	83
Electricity	Total number of authorized electrical connections in the city	360000
	Total electricity supplied to the city (kWh)	1821000000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	35275400
Roads and Transport	Total Length of Road Network in the City (Km)	1180
	Total length of arterial and sub-arterial road network in the city (Km)	1069
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators,

various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000

Pillars of Comprehensive Development	Category	Indicators
		population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting

Pillars of Comprehensive Development	Category	Indicators
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

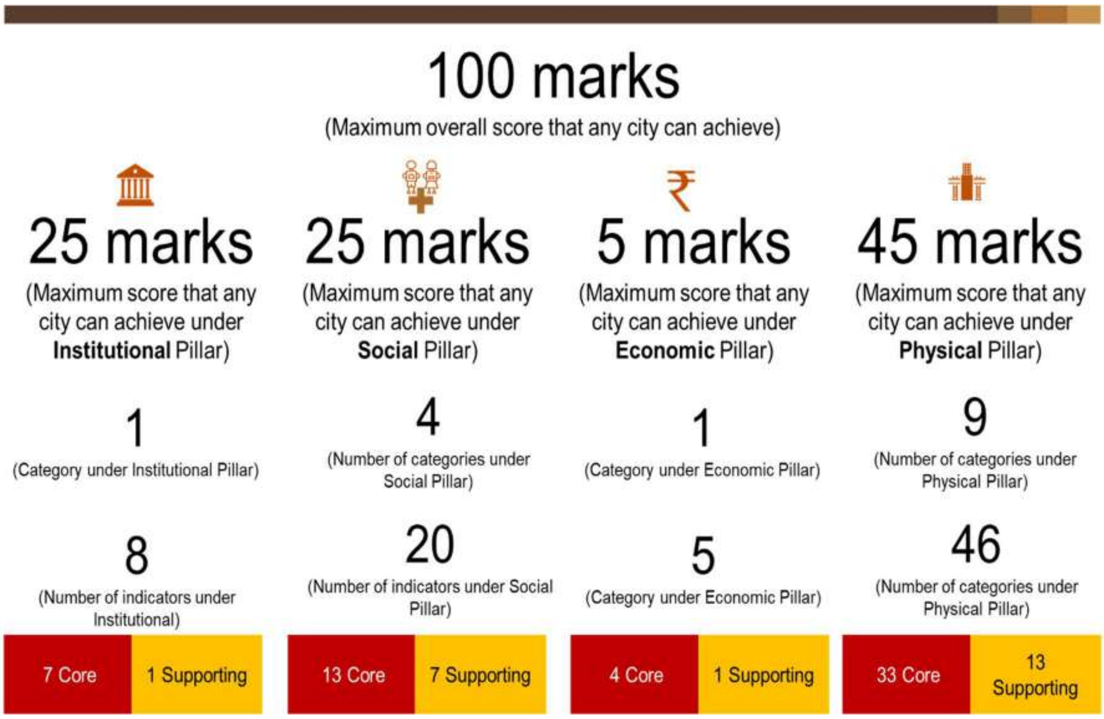
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Acount department Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Udyan adhikshak Nagar nigam, AMRUT yojna
Urban Local Body	For Water Supply and Drainage related questions	Jalkal
Urban Local Body	For Heritage sites related data	Hriday yojna office Nagar nigam
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	DUDA/NRLM Nagar nigam
Urban Local Body	For Building plan related data	Computer cell Nagar nigam
Urban Local Body	For Roads related data	Chief engineer office Nagar nigam
Urban Local Body	For Solid waste management related data	Swaksha Bharat Mission office Nagar nigam
Urban Local Body	For IT services related data	Coordinator Computer cell
Urban Local Body	For Vendor committee related data	DUDA/NRLM office Nagar nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, Employment exchange, Town and country planning, Ward parishad.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Varanasi development authority
	Construction planning	Varanasi development authority
	Green Building	Varanasi development authority
	Rain water harvesting	Varanasi development authority
	Universal Design Principle	Varanasi development authority

Designated data owners	Subcategories	Data owners at city level
DISCOM /Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Urban electricity distribution circle Bhelupur
State Disaster management authority		District disaster management authority
State Education Department		Basic Shiksha Adhikari office
State Health Department	Health care professionals	Chief Medical Officer office
	Citizen Services	Chief Medical Officer office
	Disease Prevalence	Chief Medical Officer office
	Health Infrastructure	Chief Medical Officer office
State Renewable Energy Development Agency	Renewable Energy	Project Officer NEDA
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country Planning Department	Land Use	Town and Country planning Department Varanasi
Traffic and Police Department		Varishth Police adhikshak office
Transport Authorities	Buses	ARM city bus office
	Registered Vehicles	Sambhagiya parivahan adhikari office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 35 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**0**
Development Authority	**2**
Pollution Control Board	**3**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**0**
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**25**
Total	**35***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

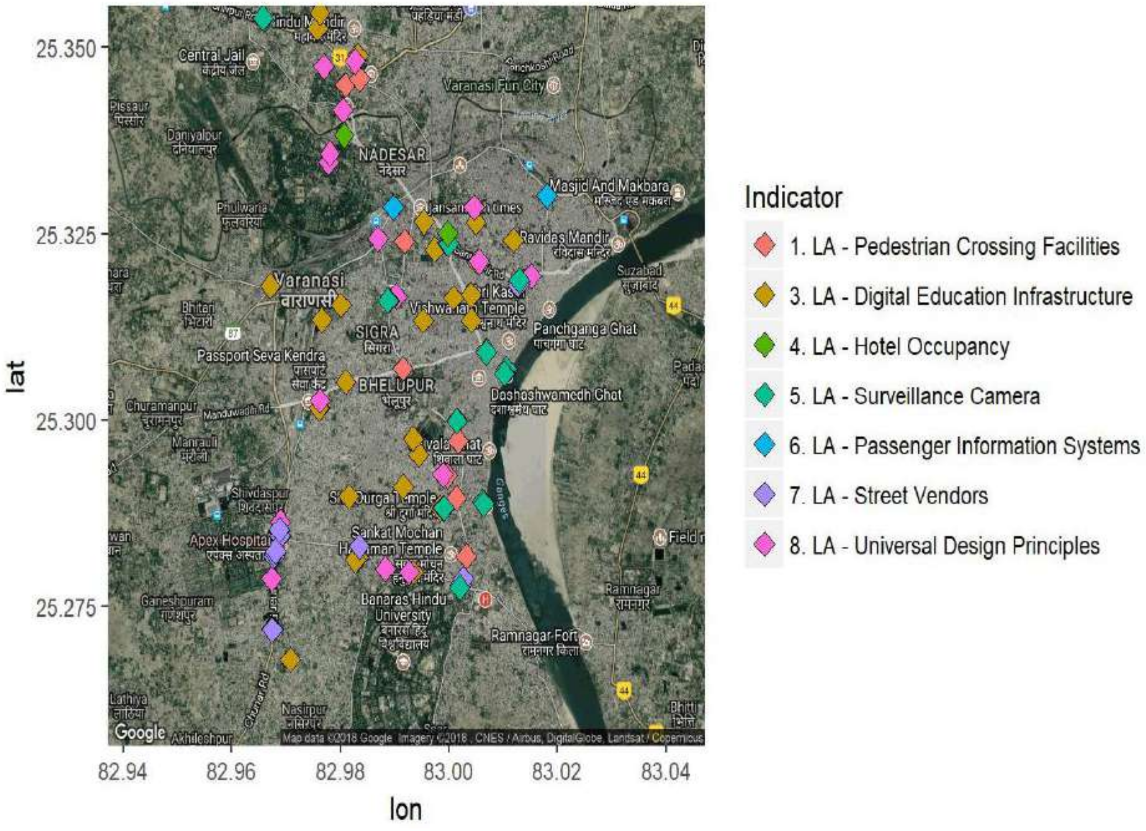
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
lat
25.350
25.325
25.300
25.275
lon
82.94
82.96
82.98
83.00
83.02
83.04
Central Jail
Varanasi Fun City
NADESAR
Masjid And Makbara
Ravidas Mandir
Varanasi
SIGRA
Passport Seva Kendra
BHELUPUR
Panchganga Ghat
Dashashwamedh Ghat
Durga Temple
Sankat Mochan Hanuman Temple
Banaras Hindu University
Ramnagar Fort
Ramnagar
Apex Hospital
Ganeshpuram
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**37.9**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0.333333333
	1.1i professional tax	0
	1.1j information	0.538461538
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.555555556
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.13**
Description		

Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.001342661
	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	0.000812222
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.001668765
	1.3i information	NA
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.08**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**96.59**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3263.91
Denominator	Total demand raised for the year	3379
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water**	**0**

	supply services	
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	0
Denominator	Total O&M cost for providing water supply services during the year	245.03
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-450.25**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-40946
Denominator	Total expenditure (revenue and capital accounts) in the same year	9094
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**60**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	54
Denominator	Total number of wards	90
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	81
Denominator	Total number of historic buildings/sites identified	81
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0

Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**26.36**
Description	Average Occupancy rate of Hotels	26.36285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	26745
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**6**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	6
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**3.98**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	9724
Denominator	Total population in the age group of 6-14 years	244410
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**4.1**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	4717

Denominator	Total female population in the age group of 6-14 years	114953
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**24.88**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	8709
Denominator	Total number of teachers available for primary grades (public and private schools)	350
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	371
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**71.56**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	71.56447871
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**89.03**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	74124
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**65.75**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	7880
Denominator	Total population of the city	1198491
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**35.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4238
Denominator	Total population of the city	1198491
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**21.49**
Description	Total response time for health-related distress calls received in the city	21.49
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.76**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	9066
Denominator	Total population of the city	1198491
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	525
Denominator	Total population of the city	1198491
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**11.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	134
Denominator	Total length of road network in the city	1180
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**2731.27**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	32734
Denominator	Total population of the city	1198491
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**3.18**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1042
Denominator	Total crimes recorded in the same year	32734
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**7.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	91
Denominator	Total population of the city	1198491
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**22.71**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	2807.48
Denominator	Total VAT/GST collection during preceding year	123.5977
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	NA
Denominator	Total Professional Tax collection during preceding year	NA
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**0.84**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	2
Denominator	Number of construction permits during preceding year	2.39
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	13461
Denominator	Total labour force in the city	244410
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	

Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	0
Denominator	Total number of vendors in the city	24472
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**13.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	12489
Denominator	Total number of slum and EWS households in the city	946.58
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**29.43**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	35275400
Denominator	Total population of the city	1198491
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**8.73**
Formula:	*Numerator / Denominator*	

Numerator	Total area of public and recreational places (sq.m.)	10467055
Denominator	Total population of the city	1198491
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**17.34**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	14237600
Denominator	Total area of the city (total area of all land uses)	82100000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1198491
Denominator	Area allocated for residential land use (in hectares)	118981100
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**188.64**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	360000
Denominator	Total number of households in the city	190835
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.03**

Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	110
Denominator	Total number of electricity connections in the city	360000
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1188**
Description	Total number of sustained electrical interruptions in a year	1188
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	2075
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	52000
Denominator	Total energy consumption from all sources	1821300000
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.33**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	724213.8333
Denominator	Total quantum of water and waste water handled during the period	11820
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	32490
Denominator	Total number of street light installations	36000
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	8000
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.4**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1821300000
Denominator	Total population of the city	1198491
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	168
Denominator	Total area of the city (sq.km)	82.1
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	130
Denominator	Total population of the city	1198491
Unit	Number per 1000 persons	

Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	40
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1180
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**50**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	1
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**0.5**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	1
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of signalised intersections that are synchronised	7
Denominator	Total number of signalised intersections in the city	7
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	43
Denominator	Total available on-street parking spaces in the city	43
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.13**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	3
Denominator	Total length of road network in the city	2360
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**225**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	9
Denominator	Total number of junctions/ intersections on major roads in the city	4
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**7.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	32
Denominator	Total number of public right-of-way areas in the city	412
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**55.67**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	106230
Denominator	Total number of households in the city	190835
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**259.49**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	311
Denominator	Total population of the city	1198491
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	3000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	311
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	106230
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**74.9**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	182
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	243
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**99.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	180074
Denominator	Total number of properties in the city	180472
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**1.35**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	2441
Denominator	Total number of properties in the city	180472
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**32.14**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	90
Denominator	Total waste water generated in the city per day	280
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**228.92**
Formula:	*Numerator / Denominator*	

Numerator	Quantum of waste water recycled or reused per day	190
Denominator	Total waste water received at treatment plants per day	83
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**6.44**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	76
Denominator	Total length of road network in the city	1180
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**87.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	181595
Denominator	Total number of households and establishments in the city	208312
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	550
Denominator	Total quantum of MSW generated in the city	550
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**84.55**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	13950
Denominator	Average MSW generated in the city (tons per month)	16500
Unit	Percentage	
Benchmark	80% or more	

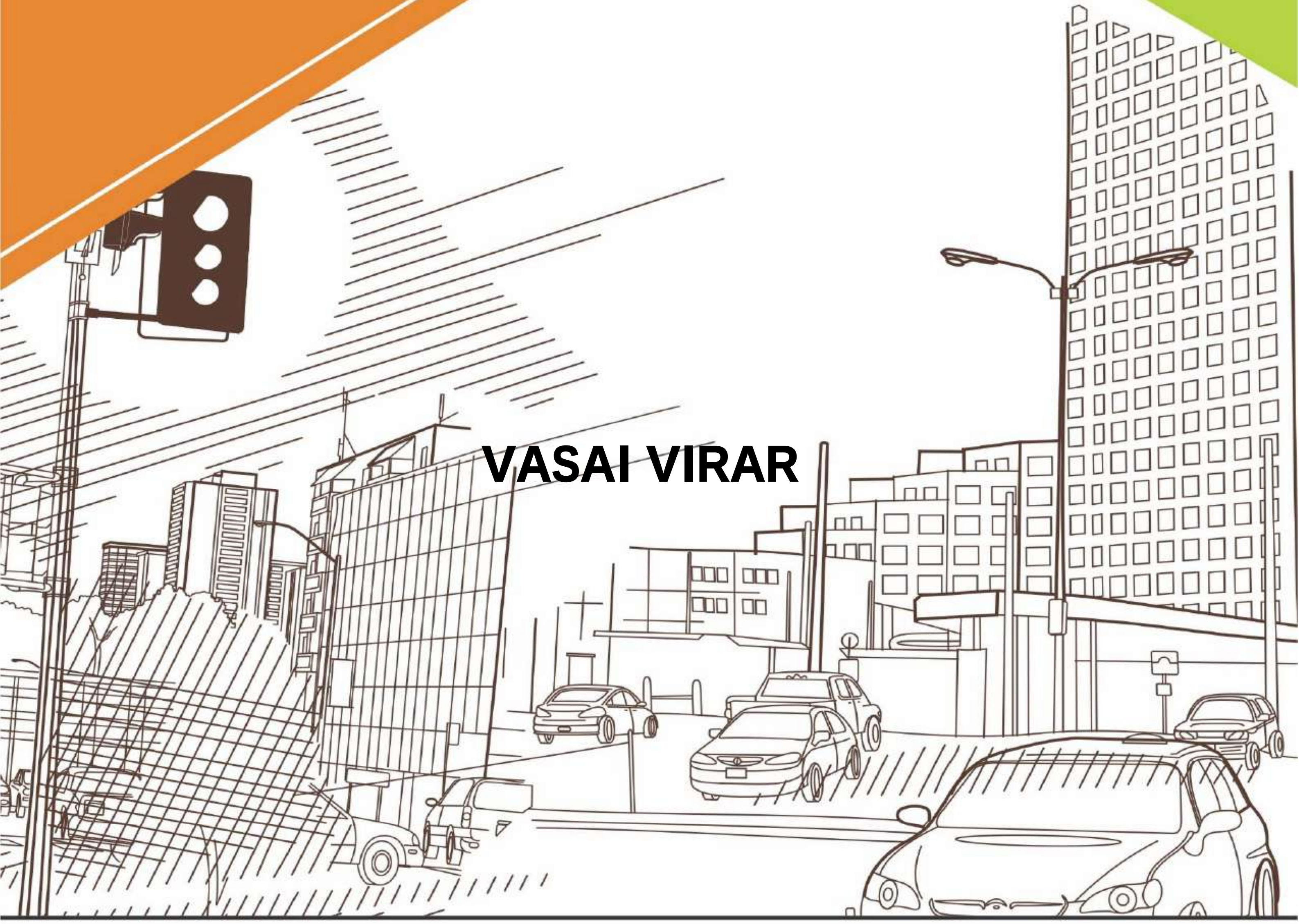
Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.8**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.8
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**46.1**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	46.1
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**228**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	228
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	11
Denominator	Total number of noise samples	192
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	24
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India



VASAI VIRAR

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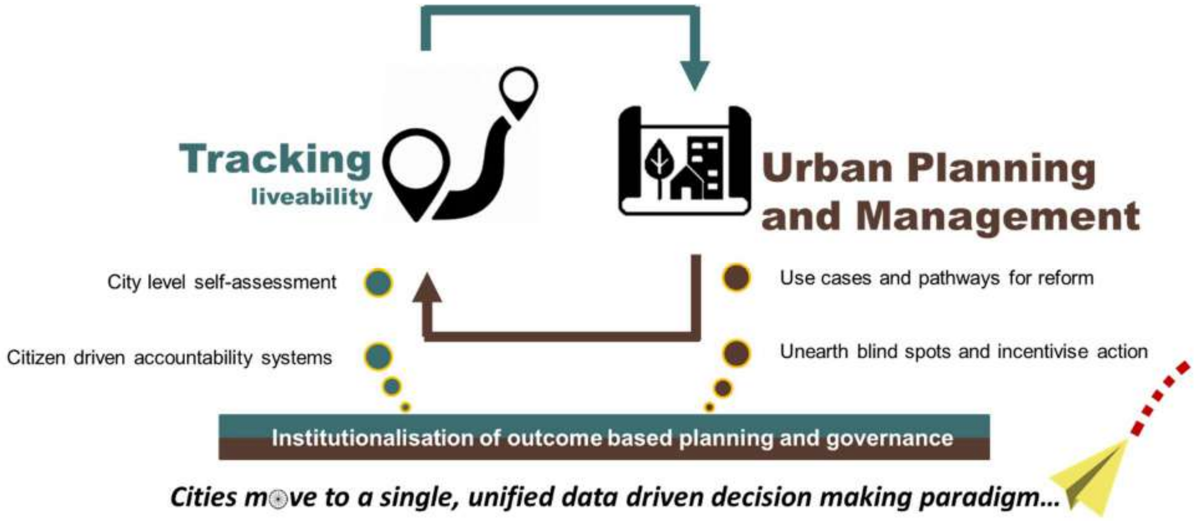
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

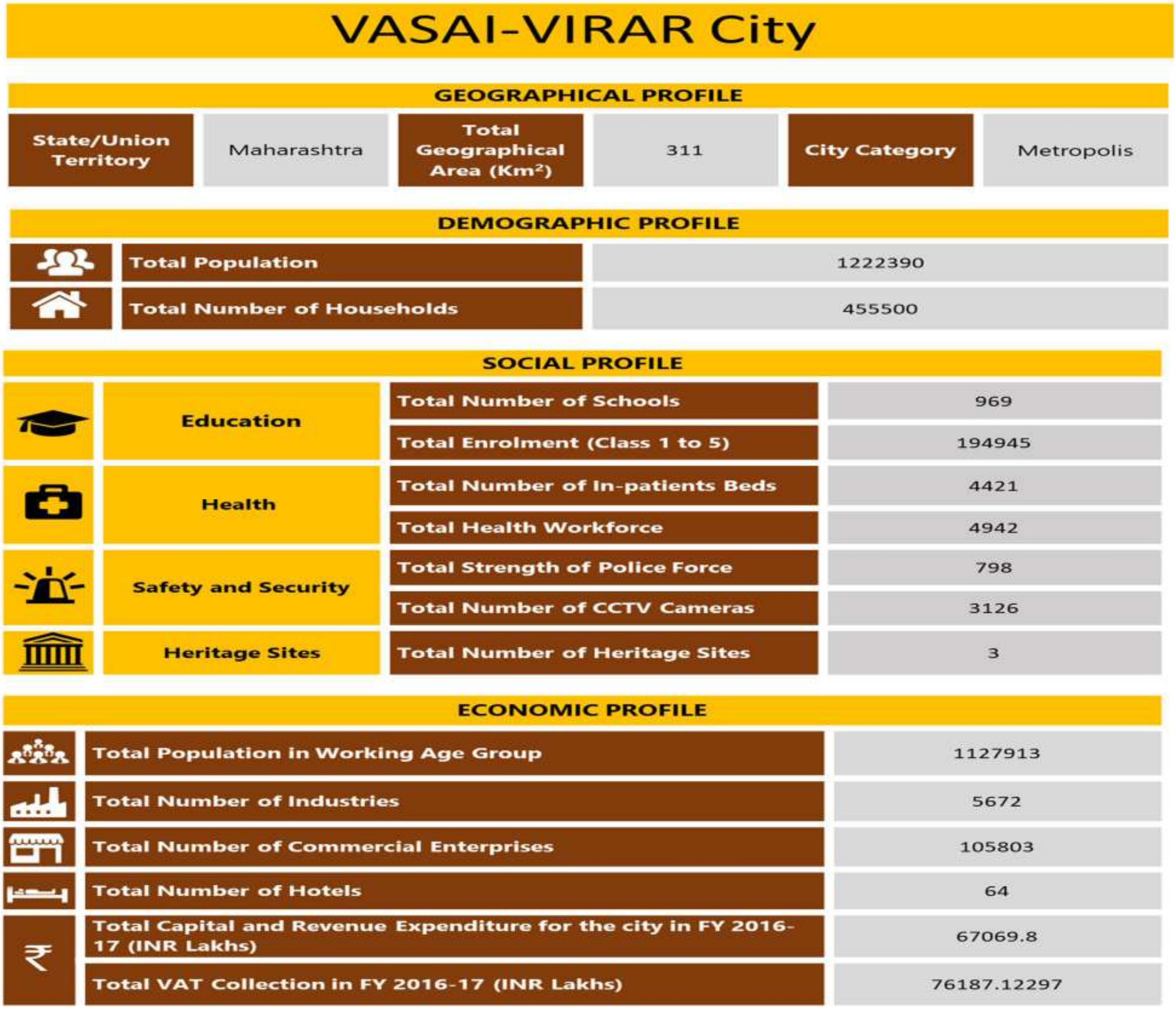
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VASAI-VIRAR City

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	311	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

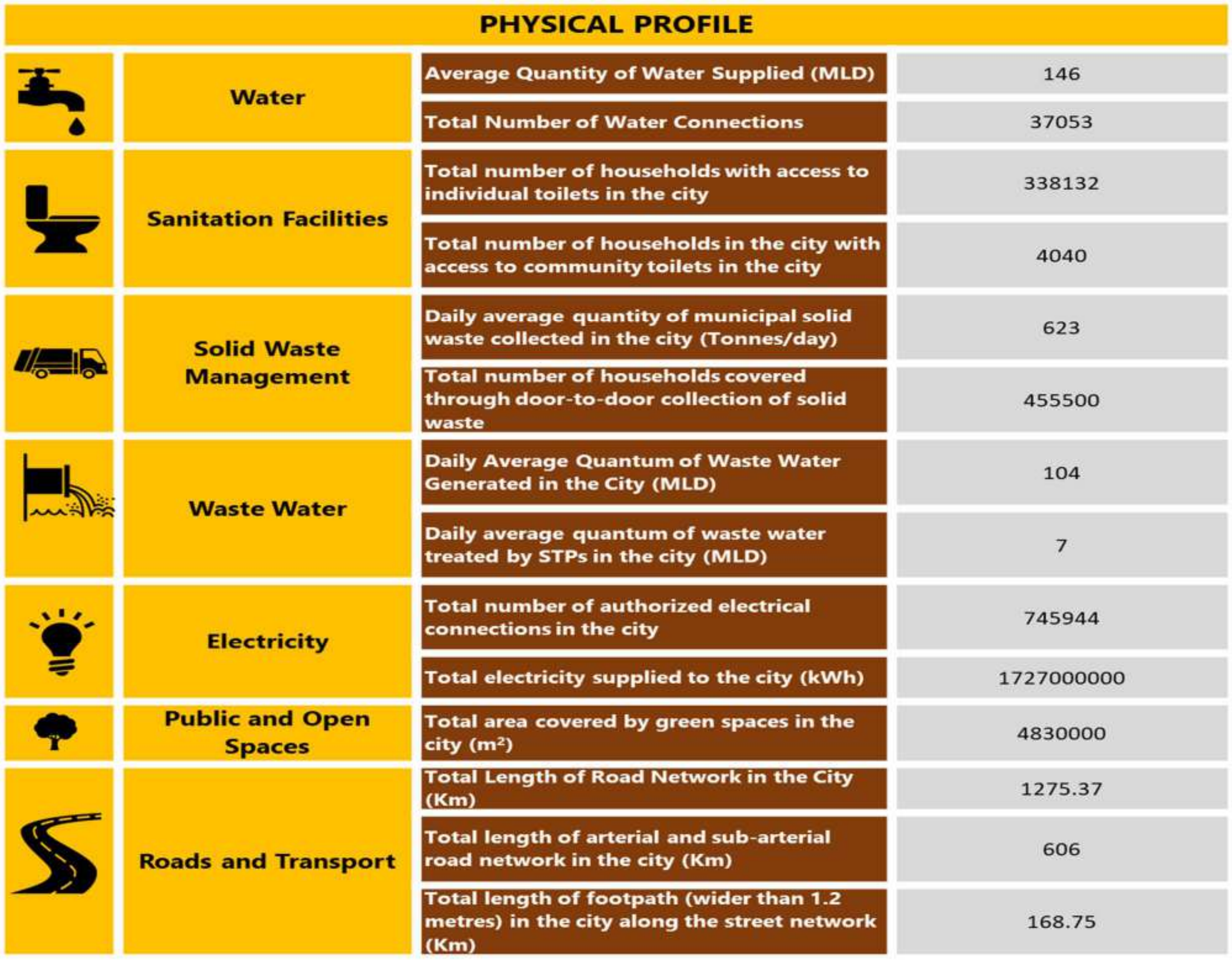
Total Population	1222390
Total Number of Households	455500

SOCIAL PROFILE

Education	**Total Number of Schools**	969
	Total Enrolment (Class 1 to 5)	194945
Health	**Total Number of In-patients Beds**	4421
	Total Health Workforce	4942
Safety and Security	**Total Strength of Police Force**	798
	Total Number of CCTV Cameras	3126
Heritage Sites	**Total Number of Heritage Sites**	3

ECONOMIC PROFILE

Total Population in Working Age Group	1127913
Total Number of Industries	5672
Total Number of Commercial Enterprises	105803
Total Number of Hotels	64
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	67069.8
Total VAT Collection in FY 2016-17 (INR Lakhs)	76187.12297



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	146
	Total Number of Water Connections	37053
Sanitation Facilities	Total number of households with access to individual toilets in the city	338132
	Total number of households in the city with access to community toilets in the city	4040
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	623
	Total number of households covered through door-to-door collection of solid waste	455500
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	104
	Daily average quantum of waste water treated by STPs in the city (MLD)	7
Electricity	Total number of authorized electrical connections in the city	745944
	Total electricity supplied to the city (kWh)	1727000000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	4830000
Roads and Transport	Total Length of Road Network in the City (Km)	1275.37
	Total length of arterial and sub-arterial road network in the city (Km)	606
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	168.75

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

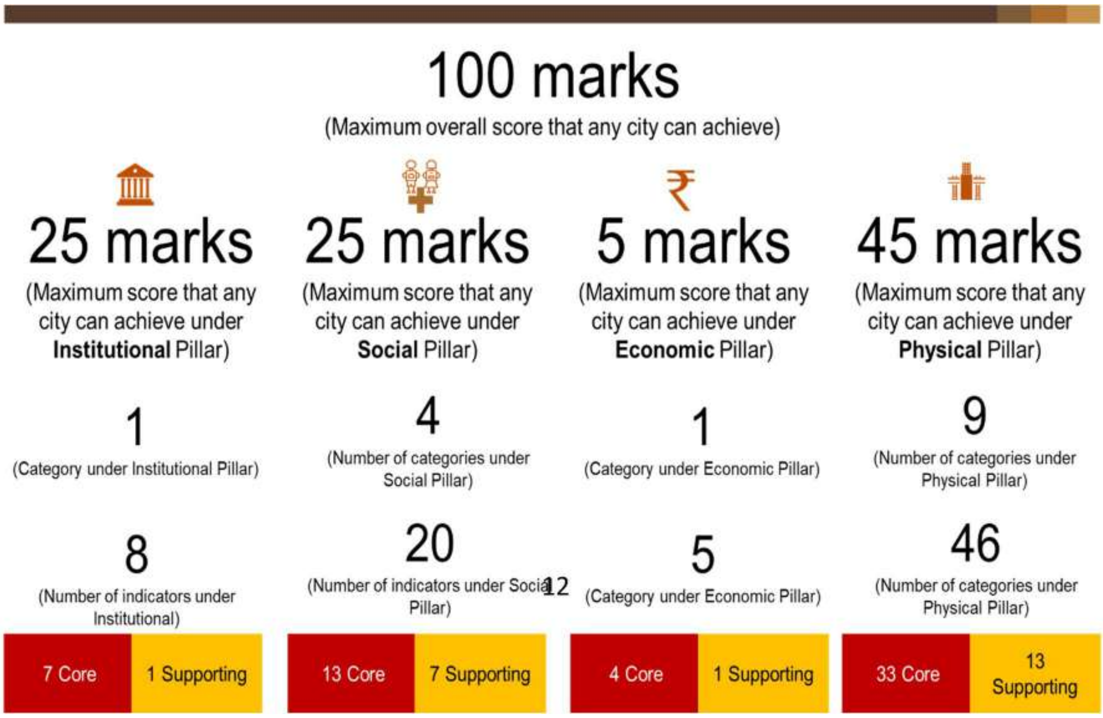
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Pwd department
Urban Local Body	For Water Supply and Drainage related questions	Water department
Urban Local Body	For Heritage sites related data	Town planning department
Urban Local Body	For Ecological sites related data	Forest department
Urban Local Body	For Housing related data	Housing department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department/ pwd dept
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	Social welfare department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment exchange department

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department, mpcb
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	Pwd department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Electricity department
State Sales / Commercial Taxes Department		Sales tax department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department
	Registered Vehicles	Transport department (rto)
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 143 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register,

signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

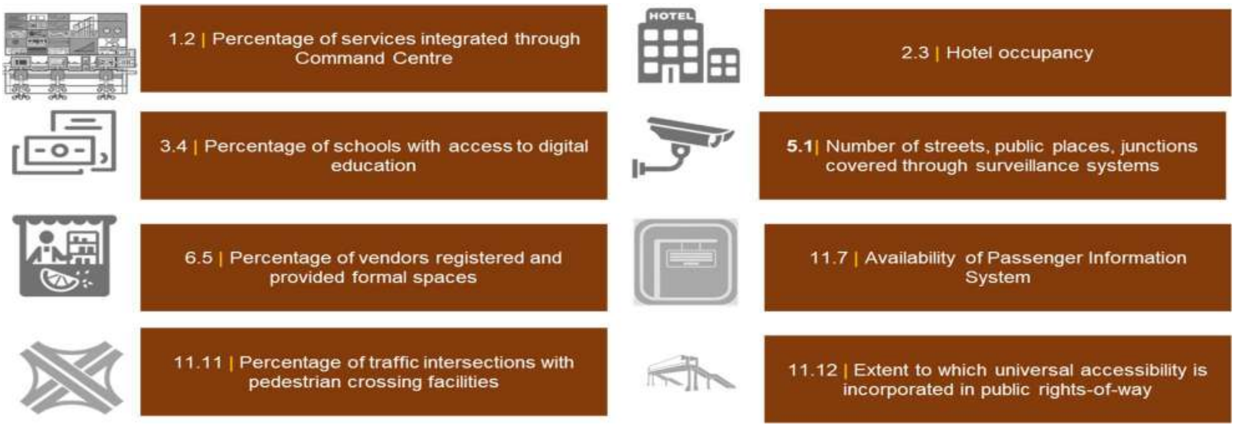
Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**1**
DISCOM/Electricity Department	**11**
Traffic and Police Department	**7**
Development Authority	**3**
Pollution Control Board	**3**
State Renewable Energy Department	**8**
Town and Country Planning	**1**
State Health Department	**8**
Transport Authority	**9**
Disaster Management	**3**
Urban Local Body	**89**
Total	**143***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

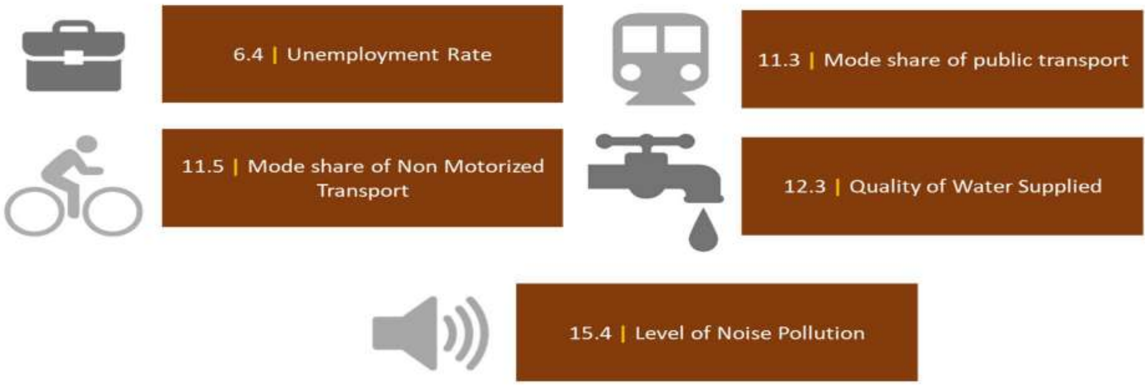
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

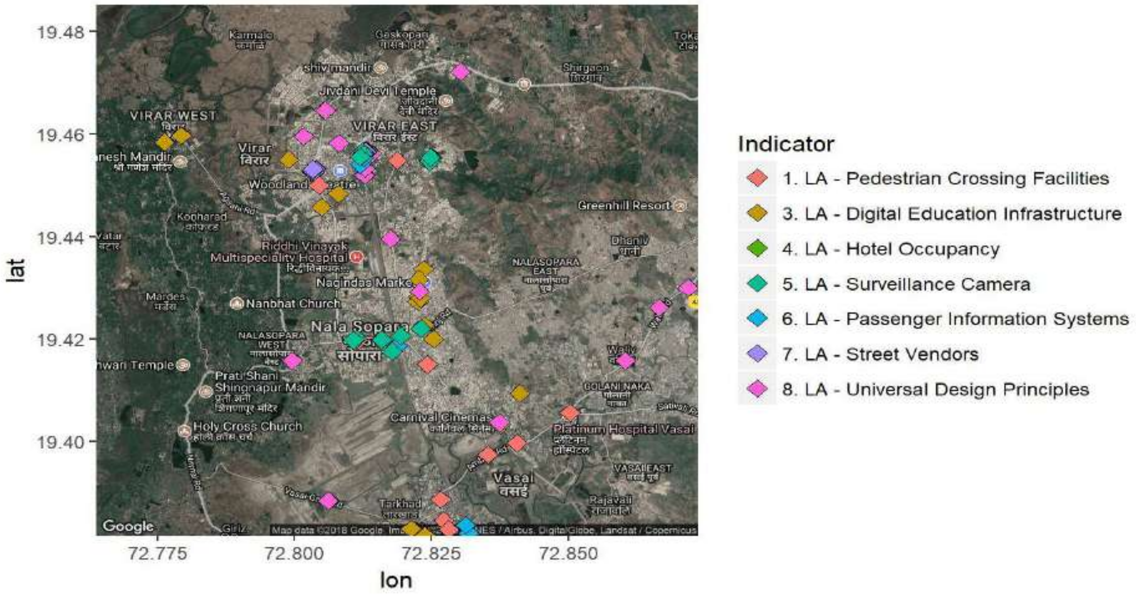
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.48
19.46
19.44
19.42
19.40
lat
72.775
72.800
72.825
72.850
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
VIRAR WEST
VIRAR EAST
Virar
Nala Sopara
Vasai
Google

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**70.51**
Description	Average citizen services available online	

Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	0
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	0.5
	1.1h property tax	0.666666667
	1.1i professional tax	1
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**16.67**
Description	Services integrated through an integrated or a singular operations command centre	3.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**1.17**
Description		
Sub Indicators	1.3a Building plan	NA
	1.3b Birth/Death Certificate	0.001324864
	1.3c water supply	6.94798E-07
	1.3d solid waste management	0.006654996
	1.3e property tax	0.004877943
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.00033759
	1.3i information	0.068448695
	1.3j electricity	0.000128026
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**NC**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	NA
	1.4f parks and recreational spaces	0
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**78.59**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	14882.28
Denominator	Total demand raised for the year	18936.85
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**84.32**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2879.35532
Denominator	Total O&M cost for providing water supply services during the year	3414.83
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**51.2**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	105085.46
Denominator	Total expenditure (revenue and capital accounts) in the same year	205250.09
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	115
Denominator	Total number of wards	115
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	55
Denominator	Total number of historic buildings/sites identified	55
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	1
Denominator	Total number of ecologically important sites identified in the city	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**16**
Description	Average Occupancy rate of Hotels	16

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	543.25
Denominator	Total budget of the ULB (capital and revenue)	67069.8
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**306**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	306
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**139.29**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	296926
Denominator	Total population in the age group of 6-14 years	213173
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**138.13**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	138772
Denominator	Total female population in the age group of 6-14 years	100462
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**21.66**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	194945
Denominator	Total number of teachers available for primary grades (public and private schools)	9000
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**47.78**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	463
Denominator	Total number of schools	969
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**136.76**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	136.7586469
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**108.14**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1104975228
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**36.17**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	4421
Denominator	Total population of the city	1222390
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	

Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**40.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	4942
Denominator	Total population of the city	1222390
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**15**
Description	Total response time for health-related distress calls received in the city	15
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	650
Denominator	Total population of the city	1222390
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	297
Denominator	Total population of the city	1222390
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**245.11**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	3126
Denominator	Total length of road network in the city	1275.37

Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**262.52**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3209
Denominator	Total population of the city	1222390
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**51.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1667
Denominator	Total crimes recorded in the same year	3209
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**22.25**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	272
Denominator	Total population of the city	1222390
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.33**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	8960.63503
Denominator	Total VAT/GST collection during preceding year	672.2648794
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-0.76**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-16.73882
Denominator	Total Professional Tax collection during preceding year	2199.01882
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**141.46**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	58
Denominator	Number of construction permits during preceding year	0.41
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	9733
Denominator	Total labour force in the city	213173
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**99.95**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	15157
Denominator	Total number of vendors in the city	15165
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	401
Denominator	Total number of slum and EWS households in the city	2060.73
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**17.14**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	733936545575750
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**3.95**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	4830000
Denominator	Total population of the city	1222390
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**28**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	34232722.29
Denominator	Total population of the city	1222390
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	311000000
Denominator	Total area of the city (total area of all land uses)	311000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1222390
Denominator	Area allocated for residential land use (in hectares)	36425000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**142.44**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	648792
Denominator	Total number of households in the city	455500
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	745944

Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**731**
Description	Total number of sustained electrical interruptions in a year	731
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	731
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	553061
Denominator	Total energy consumption from all sources	1727003935
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.22**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1986946.333
Denominator	Total quantum of water and waste water handled during the period	4590
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**

Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	16333044
Denominator	Total number of street light installations	34776
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	91292.655
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	1727003935
Denominator	Total population of the city	1222390
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.64**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	368.6
Denominator	Total area of the city (sq.km)	311
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**4.7**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	5743

Denominator	Total population of the city	1222390
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	67.1
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	1275.37
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**64.29**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	9
Denominator	Total number of major transport interchanges in the city	14
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	1.4
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**27.64**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	387
Denominator	Total number of major interchanges in the city	14
Unit	Percentage	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	15
Denominator	Total number of signalised intersections in the city	15
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**91.67**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	11
Denominator	Total available on-street parking spaces in the city	12
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**6.62**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	168.75
Denominator	Total length of road network in the city	2550.74
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**62.5**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	25
Denominator	Total number of junctions/ intersections on major roads in the city	40
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**99.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	634
Denominator	Total number of public right-of-way areas in the city	636

Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**63.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	288488
Denominator	Total number of households in the city	455500
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**119.44**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	146
Denominator	Total population of the city	1222390
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	3954
Denominator	Total number of samples tested for water quality	4013
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**22.29**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	32.54
Denominator	Quantum of water put into the distribution system (mld)	146
Unit	Percentage	

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	37053
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**99.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	110
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	111
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**63.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	455500
Denominator	Total number of properties in the city	719634
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	719634
Denominator	Total number of properties in the city	719634
Unit	Percentage	

Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**6.73**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	7
Denominator	Total waste water generated in the city per day	104
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**171.43**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	12
Denominator	Total waste water received at treatment plants per day	7
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**43.91**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	560
Denominator	Total length of road network in the city	1275.37
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	561303
Denominator	Total number of households and establishments in the city	561303
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**99.2**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	623
Denominator	Total quantum of MSW generated in the city	628

Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**37.72**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	7050
Denominator	Average MSW generated in the city (tons per month)	18690
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**27.45**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	27.45
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**14**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	14
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**80**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	80
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	100
Denominator	Total number of noise samples	100
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

VELLORE

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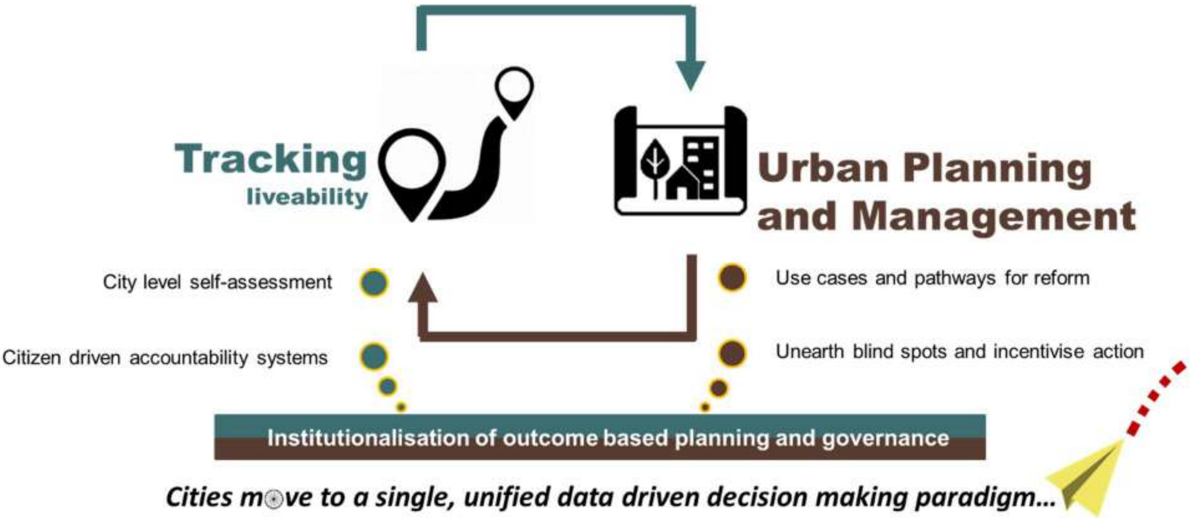
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

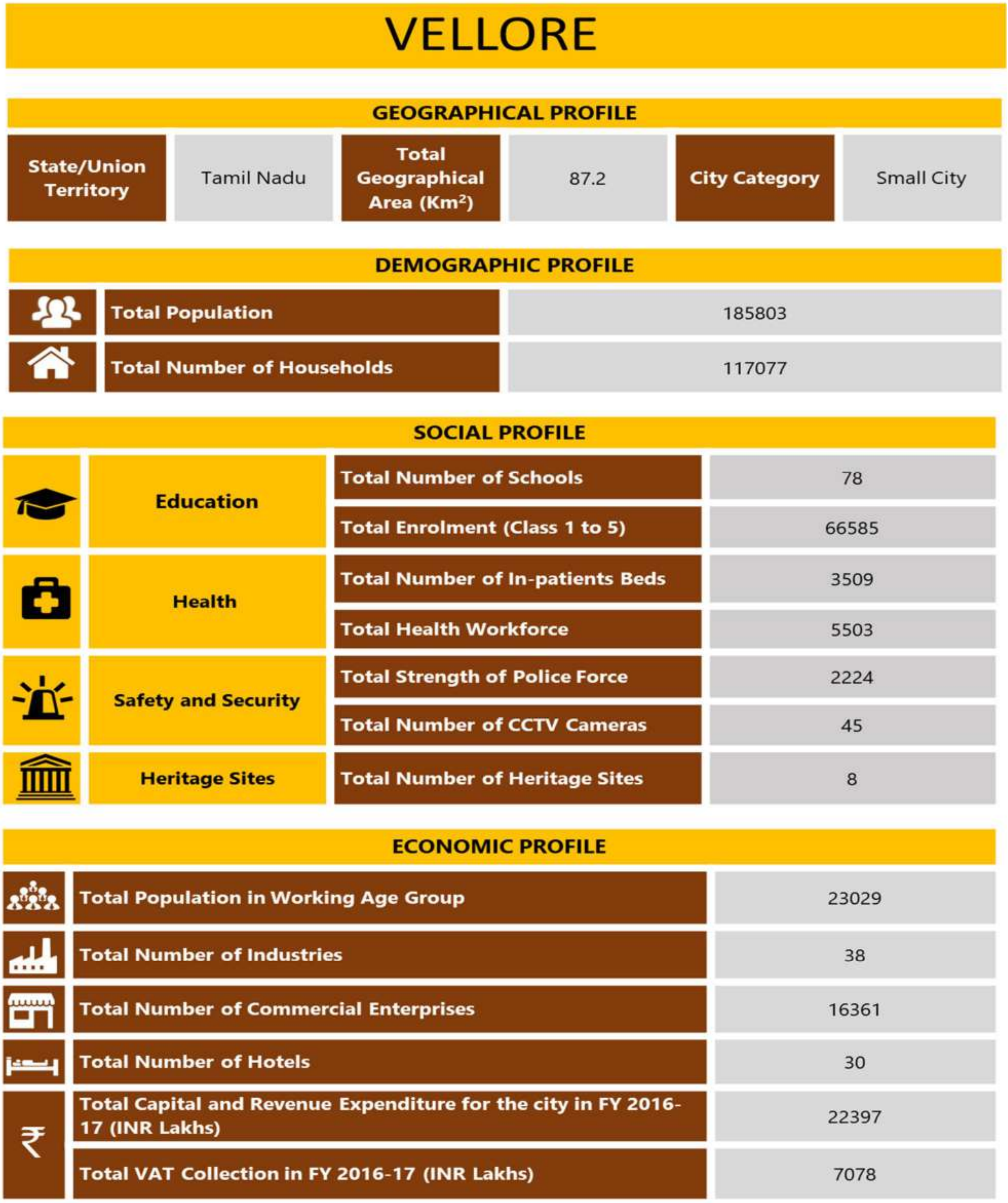

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VELLORE

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km²)	87.2	City Category	Small City

DEMOGRAPHIC PROFILE

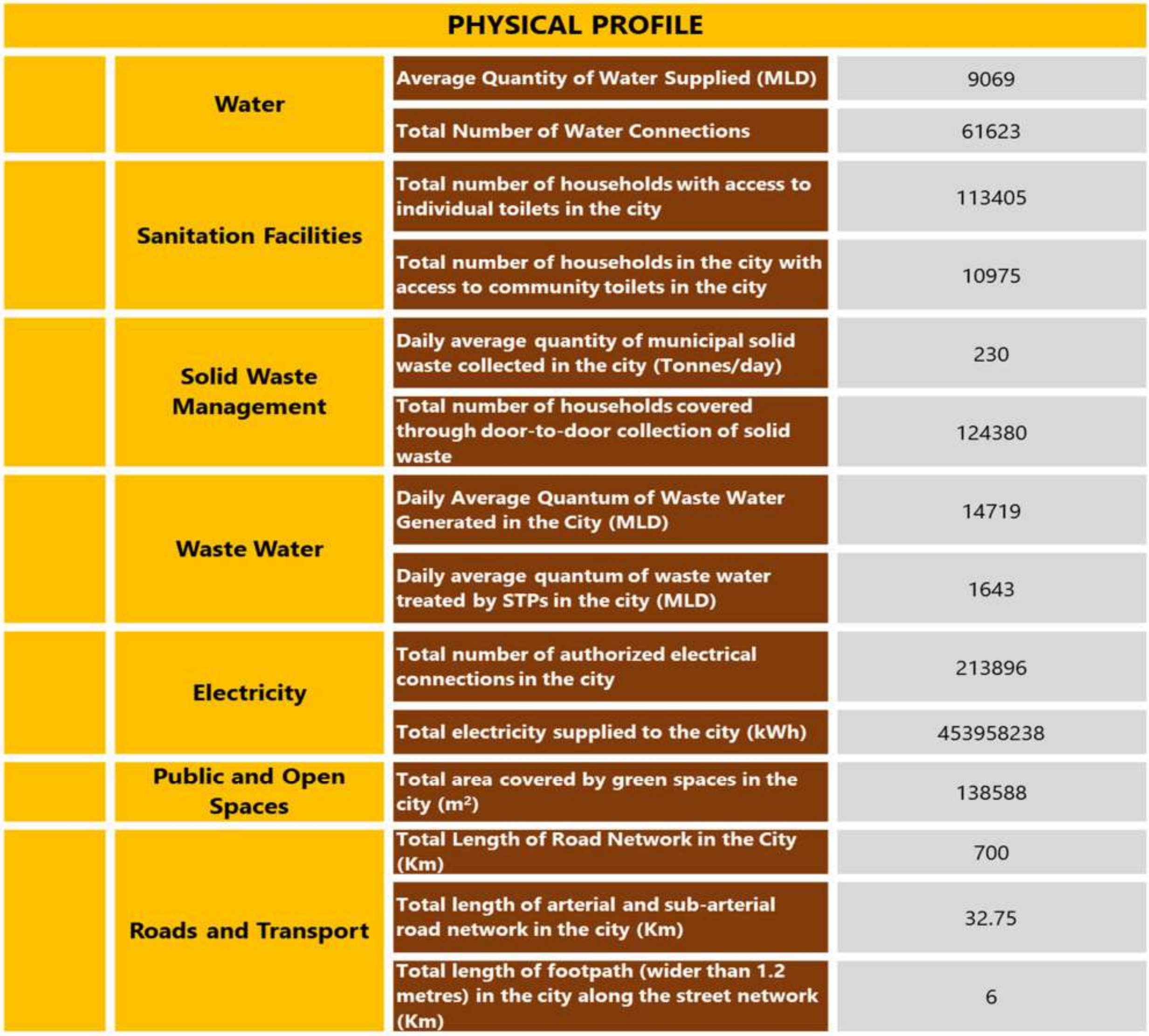
Total Population	185803
Total Number of Households	117077

SOCIAL PROFILE

Education	Total Number of Schools	78
	Total Enrolment (Class 1 to 5)	66585
Health	Total Number of In-patients Beds	3509
	Total Health Workforce	5503
Safety and Security	Total Strength of Police Force	2224
	Total Number of CCTV Cameras	45
Heritage Sites	Total Number of Heritage Sites	8

ECONOMIC PROFILE

Total Population in Working Age Group	23029
Total Number of Industries	38
Total Number of Commercial Enterprises	16361
Total Number of Hotels	30
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	22397
Total VAT Collection in FY 2016-17 (INR Lakhs)	7078



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	9069
		Total Number of Water Connections	61623
	Sanitation Facilities	Total number of households with access to individual toilets in the city	113405
		Total number of households in the city with access to community toilets in the city	10975
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	230
		Total number of households covered through door-to-door collection of solid waste	124380
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	14719
		Daily average quantum of waste water treated by STPs in the city (MLD)	1643
	Electricity	Total number of authorized electrical connections in the city	213896
		Total electricity supplied to the city (kWh)	453958238
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	138588
	Roads and Transport	Total Length of Road Network in the City (Km)	700
		Total length of arterial and sub-arterial road network in the city (Km)	32.75
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m

Pillars of Comprehensive Development	Category	Indicators
		11.11 Percentage of traffic intersections with pedestrian crossing facilities 11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections 12.2 Per capita supply of water 12.3 Quality of water supplied 12.4 Level of non-revenue water – NRW 12.5 Percentage of water connections covered through meters 12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets 13.2 Coverage of sewerage network and/or septage 13.3 Collection efficiency of sewerage network 13.4 Extent of reuse and recycling of waste water 13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection 14.2 Efficiency of collection of municipal solid waste 14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution 15.2 Concentration of NO2- air pollution 15.3 Concentration of PM10 - air pollution 15.4 Level of noise pollution

Pillars of Comprehensive Development	Category	Indicators
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

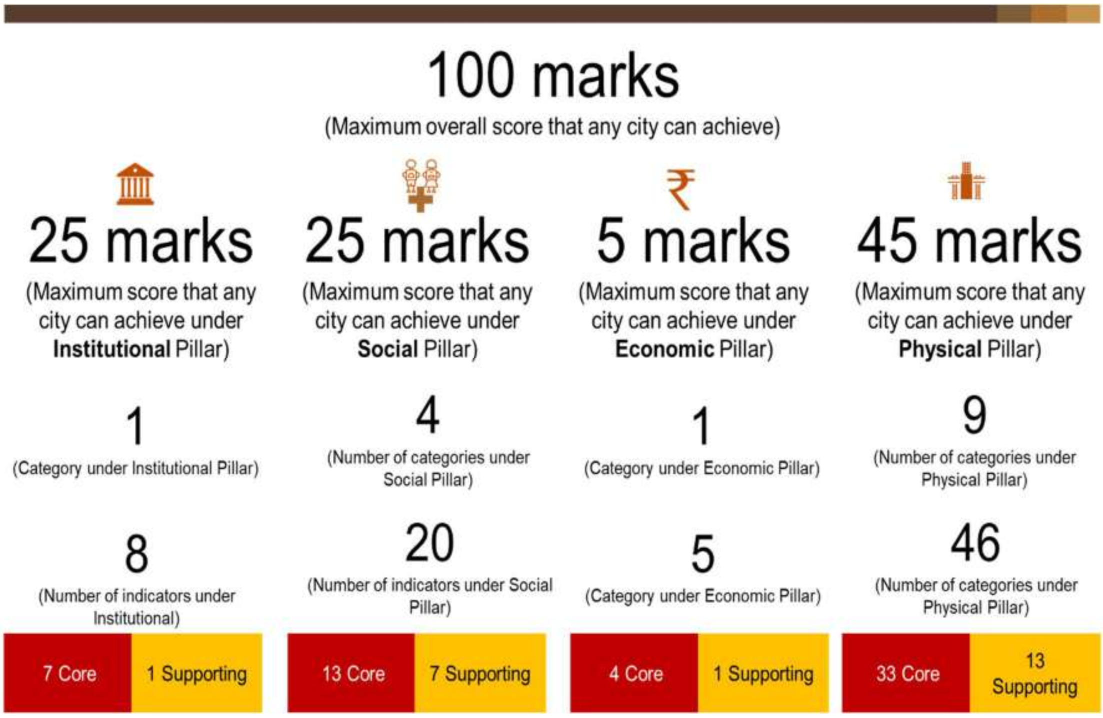
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts
Urban Local Body	For Park and Recreation Related Questions	Engineering
Urban Local Body	For Water Supply and Drainage related questions	Engineering
Urban Local Body	For Heritage sites related data	Town Planning
Urban Local Body	For Ecological sites related data	Town Planning
Urban Local Body	For Housing related data	Town Planning
Urban Local Body	For Building plan related data	Town Planning
Urban Local Body	For Roads related data	Engineering

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	Health Dept. ULB
Urban Local Body	For IT services related data	IT Dept
Urban Local Body	For Vendor committee related data	Town Planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Town Planning
	Construction planning	Town Planning
	Green Building	Town Planning
	Rain water harvesting	Town Planning
	Universal Design Principle	Town Planning
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	TamilNadu Generation and Distribution Corporation Limited
State Disaster management authority		District Disaster Management Unit
State Education Department		District Chief Educational Officer
State Health Department	Health care professionals	Deputy Director Health Services
	Citizen Services	Deputy Director Health Services
	Disease Prevalence	Deputy Director Health Services
	Health Infrastructure	Deputy Director Health Services
State Renewable Energy Development Agency		Tamil Nadu Energy Development Agency
State Sales / Commercial Taxes Department		Deputy Commissioner, Commercial Taxes
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		District Superintendent of Police
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 94 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**10**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**2**
Town and Country Planning	**3**
State Health Department	**1**
Transport Authority	**3**
Disaster Management	**1**
Urban Local Body	**67**
Total	**94***

* The count of documents is based on first round of submission.

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

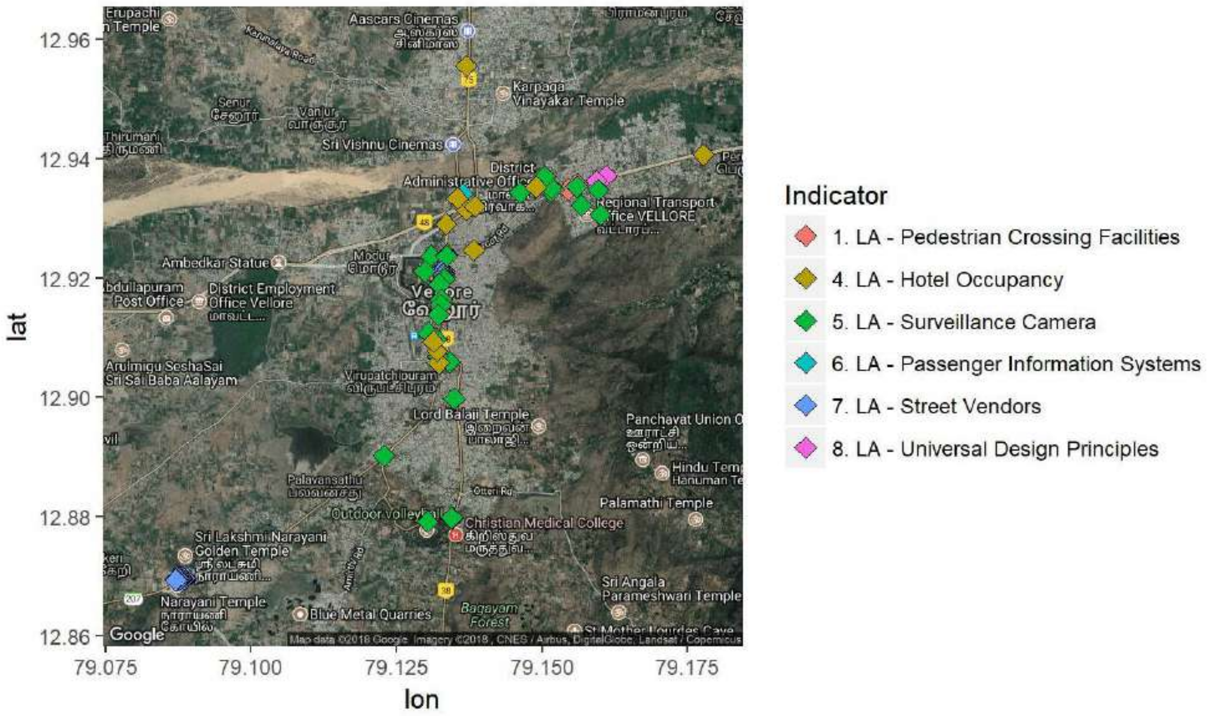
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


lat
lon
12.96
12.94
12.92
12.90
12.88
12.86
79.075
79.100
79.125
79.150
79.175
Vellore
Christian Medical College
Regional Transport Office VELLORE
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**79.16**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	0
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.444444444
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**2.38**
Description	Services integrated through an integrated or a singular operations command centre	0.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0**
Description		
Sub Indicators	1.3a Building plan	0

	1.3b Birth/Death Certificate	1.30066E-05
	1.3c water supply	0
	1.3d solid waste management	0
	1.3e property tax	0
	1.3f professional tax (RC)	0
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0
	1.3i information	0
	1.3j electricity	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.36**
Description		
Sub Indicators	1.4a water supply	0
	1.4b solid waste	0
	1.4c street lights	0
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	2.5
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**68.79**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	3008.53
Denominator	Total demand raised for the year	4373.24
Unit	Percentage	
Benchmark	90%	

Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**46.15**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	150
Denominator	Total O&M cost for providing water supply services during the year	325
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**55.42**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	35648
Denominator	Total expenditure (revenue and capital accounts) in the same year	64327
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**6.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	4
Denominator	Total number of wards	60
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	0
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**31.43**
Description	Average Occupancy rate of Hotels	31.42857143
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	0
Denominator	Total budget of the ULB (capital and revenue)	22397
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**11**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	11
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**226.19**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	68252
Denominator	Total population in the age group of 6-14 years	30175
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**23.01**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3392
Denominator	Total female population in the age group of 6-14 years	14741
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**19.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	66585
Denominator	Total number of teachers available for primary grades (public and private schools)	3472
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	0
Denominator	Total number of schools	78
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**802524.77**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	802524.7706
Numerator	Percentage	

Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**94.84**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	288444
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**188.86**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	3509
Denominator	Total population of the city	185803
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**296.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	5503
Denominator	Total population of the city	185803
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**20**
Description	Total response time for health-related distress calls received in the city	20
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	454
Denominator	Total population of the city	185803
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases	

	(amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	36
Denominator	Total population of the city	185803
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**6.43**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	45
Denominator	Total length of road network in the city	700
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**2689.95**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	4998
Denominator	Total population of the city	185803
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**0.84**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	42
Denominator	Total crimes recorded in the same year	4998
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size	

	classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**91.49**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	170
Denominator	Total population of the city	185803
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**21.03**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1230
Denominator	Total VAT/GST collection during preceding year	58.48
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**39.07**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	418.59
Denominator	Total Professional Tax collection during preceding year	1071.5
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**-14.53**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	-112
Denominator	Number of construction permits during preceding year	7.71
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	369783
Denominator	Total labour force in the city	30175
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**37.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	1558
Denominator	Total number of vendors in the city	4210
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**144.84**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	18428
Denominator	Total number of slum and EWS households in the city	127.23
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**277494.43**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	171019472256
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.75**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	138588
Denominator	Total population of the city	185803
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.63**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	117199
Denominator	Total population of the city	185803
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**81.42**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	71000000
Denominator	Total area of the city (total area of all land uses)	87200000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	185803
Denominator	Area allocated for residential land use (in hectares)	53000000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a	

	benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**142.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	166274
Denominator	Total number of households in the city	117077
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	0
Denominator	Total number of electricity connections in the city	213896
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**1885**
Description	Total number of sustained electrical interruptions in a year	1885
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	1671
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	79
Denominator	Total energy consumption from all sources	453958238
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1008156.083
Denominator	Total quantum of water and waste water handled during the period	321360
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	4139401
Denominator	Total number of street light installations	19710
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1737
Unit	Percentage	

Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.73**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	453958238
Denominator	Total population of the city	185803
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.51**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	70
Denominator	Total area of the city (sq.km)	87.2
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	64
Denominator	Total population of the city	185803
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	36.1
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	700
Unit	Percentage	
Benchmark	>=50	

Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**200**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	4
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	5
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**2**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	4
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**217.65**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	37
Denominator	Total number of signalised intersections in the city	17
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	3
Unit		

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	6
Denominator	Total length of road network in the city	1400
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**173.33**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	26
Denominator	Total number of junctions/ intersections on major roads in the city	15
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**2.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	19
Denominator	Total number of public right-of-way areas in the city	909
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**51.85**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	60705
Denominator	Total number of households in the city	117077
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**48809.76**
Formula:	*Numerator / Denominator*	

Numerator	Total quantity of water supplied into the distribution system	9069
Denominator	Total population of the city	185803
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	365
Denominator	Total number of samples tested for water quality	365
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	9069
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	0
Denominator	Total number of water connections in the city	61623
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**113.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	752
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	660

---

[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**116.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	127400
Denominator	Total number of properties in the city	109012
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**208.78**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	227592
Denominator	Total number of properties in the city	109012
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**11.16**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	1643
Denominator	Total waste water generated in the city per day	14719
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	1563
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**6.93**
Formula:	*Numerator / Denominator*	

Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	48.5
Denominator	Total length of road network in the city	700
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**95.26**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	127110
Denominator	Total number of households and establishments in the city	133438
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	230
Denominator	Total quantum of MSW generated in the city	230
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.45**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	100
Denominator	Average MSW generated in the city (tons per month)	6900
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean	

	concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**Non=Computable**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	Data Unavailable
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	Data Unavailable
Denominator	Total number of noise samples	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	Data Unavailable
Denominator	Total number of samples tested	Data Unavailable
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

VIJAYAWADA

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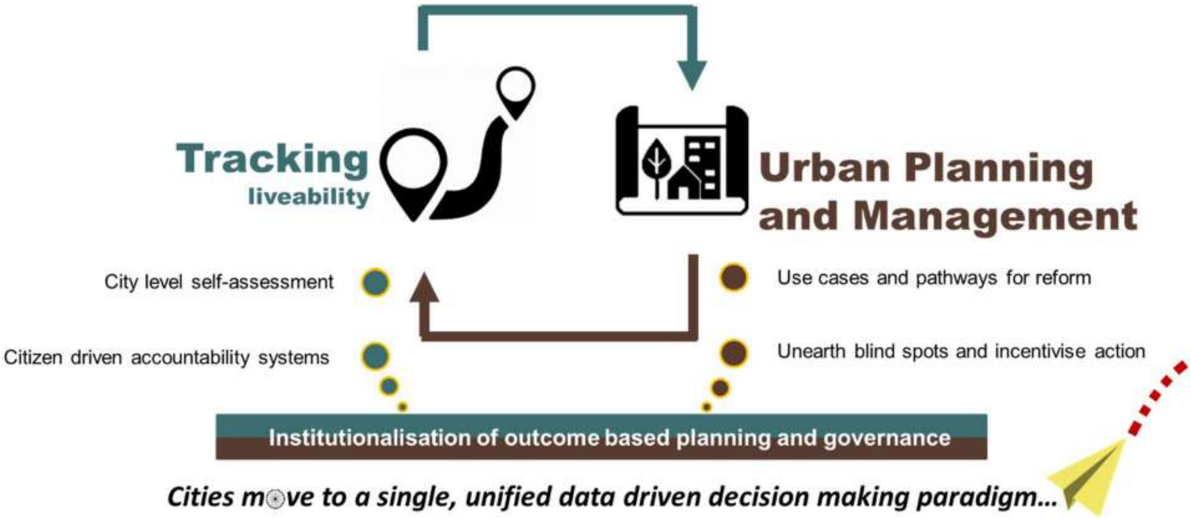
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

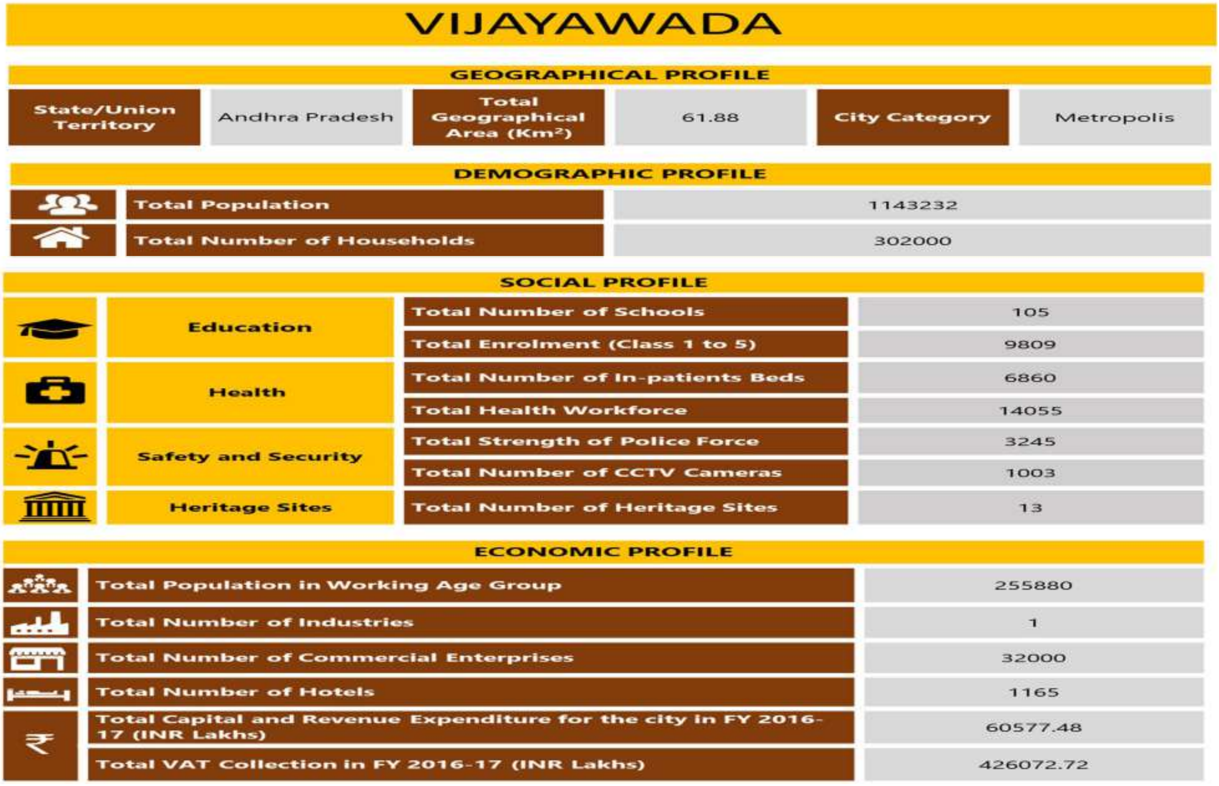

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	Total Geographical Area (Km²)	61.88	City Category	Metropolis

DEMOGRAPHIC PROFILE

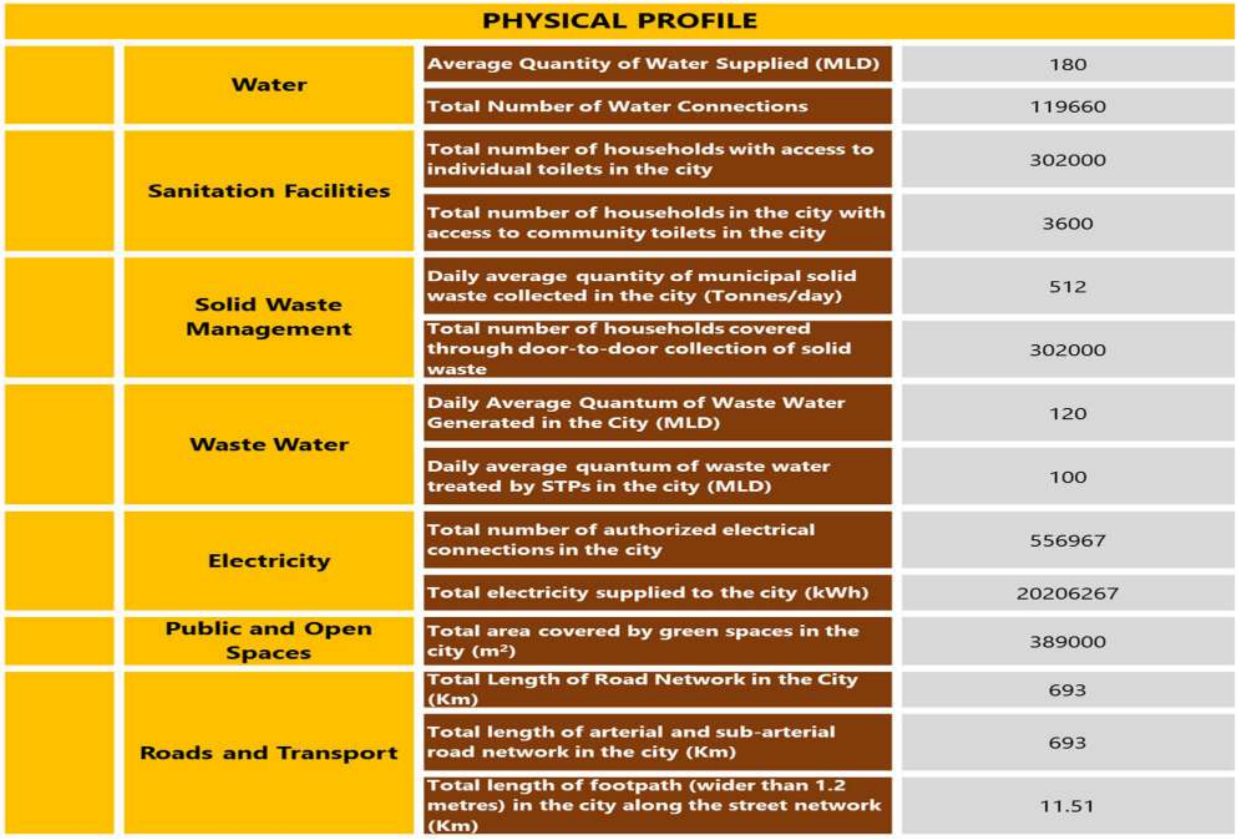
Total Population	1143232
Total Number of Households	302000

SOCIAL PROFILE

Education	Total Number of Schools	105
	Total Enrolment (Class 1 to 5)	9809
Health	Total Number of In-patients Beds	6860
	Total Health Workforce	14055
Safety and Security	Total Strength of Police Force	3245
	Total Number of CCTV Cameras	1003
Heritage Sites	Total Number of Heritage Sites	13

ECONOMIC PROFILE

Total Population in Working Age Group	255880
Total Number of Industries	1
Total Number of Commercial Enterprises	32000
Total Number of Hotels	1165
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	60577.48
Total VAT Collection in FY 2016-17 (INR Lakhs)	426072.72



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	180
		Total Number of Water Connections	119660
	Sanitation Facilities	Total number of households with access to individual toilets in the city	302000
		Total number of households in the city with access to community toilets in the city	3600
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	512
		Total number of households covered through door-to-door collection of solid waste	302000
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
		Daily average quantum of waste water treated by STPs in the city (MLD)	100
	Electricity	Total number of authorized electrical connections in the city	556967
		Total electricity supplied to the city (kWh)	20206267
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	389000
	Roads and Transport	Total Length of Road Network in the City (Km)	693
		Total length of arterial and sub-arterial road network in the city (Km)	693
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	11.51

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters

Pillars of Comprehensive Development	Category	Indicators
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water

Pillars of Comprehensive Development	Category	Indicators
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

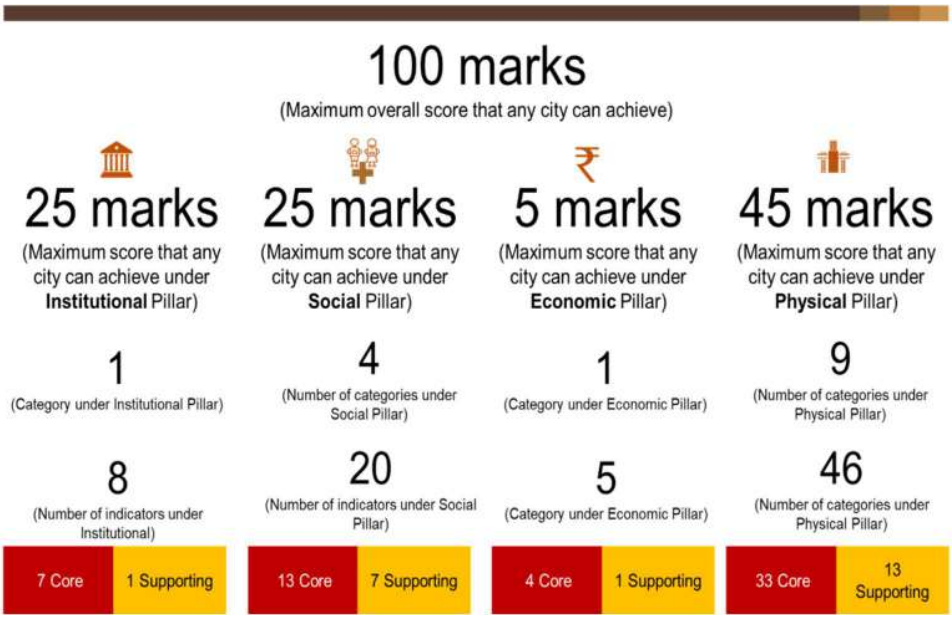
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State

Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Horticulture Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering section
Urban Local Body	For Heritage sites related data	Estate Section
Urban Local Body	For Ecological sites related data	Horticulture section
Urban Local Body	For Housing related data	Housing Section
Urban Local Body	For Building plan related data	Planning section
Urban Local Body	For Roads related data	Engineering section
Urban Local Body	For Solid waste management related data	Engineering section
Urban Local Body	For IT services related data	VOICE section
Urban Local Body	For Vendor committee related data	UCD Section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Planning section
	Construction planning	Planning section
	Green Building	Planning section
	Rain water harvesting	Planning section
	Universal Design Principle	Planning section
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Southern power/DISCOM, Vijayawada
State Disaster management authority		District Disaster Management Authority AC[P]
State Education Department		Deputy Education Officer
State Health Department	Health care professionals	District Medical and Health Officer

Designated data owners	Subcategories	Data owners at city level
	Citizen Services	Do
	Disease Prevalence	Do
	Health Infrastructure	Do
State Renewable Energy Development Agency	Renewable Energy	NEDCAP
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Commissioner of Police
Transport Authorities	Buses	District Transport Dept
	Registered Vehicles	Do
	Sub urban rail transport	Do
	Mono Rail Authority	Do
	Tramways	Do
	Marine Transport Authority	Do

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 25 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**5**
State Education Department	**4**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**6**

Disaster Management	**0**
Urban Local Body	**7**
Total	**25***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

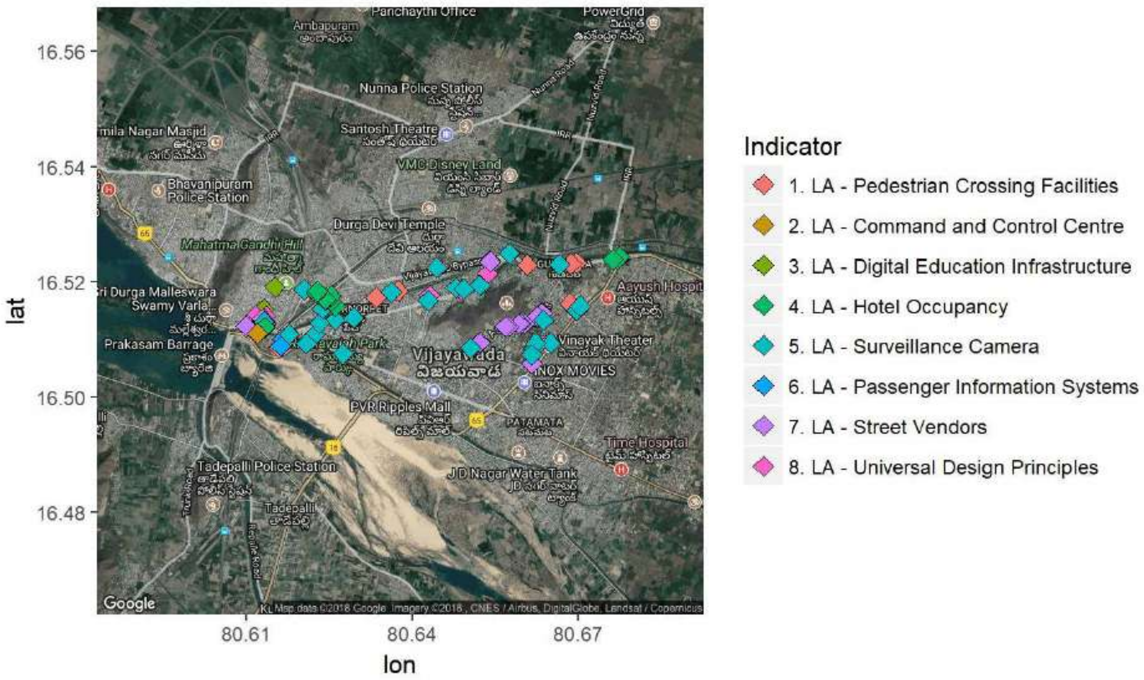
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


16.56
16.54
16.52
16.50
16.48
lat
80.61
80.64
80.67
lon
Panchaythi Office
PowerGrid
Ambapuram
Nunna Police Station
Santosh Theatre
VMC Disney Land
Bhavanipuram Police Station
Durga Devi Temple
Mahatma Gandhi Hill
Sri Durga Malleswara Swamy Varla...
Prakasam Barrage
Vijayawada
Aayush Hospital
Vinayak Theater
INOX MOVIES
PVR Ripples Mall
PATAMATA
Time Hospital
Tadepalli Police Station
J D Nagar Water Tank
Tadepalli
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**94.38**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0.75
	1.1b death certificate	0.75
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	1
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.769230769
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**147.62**
Description	Services integrated through an integrated or a singular operations command centre	31
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.74**
Description		
Sub Indicators	1.3a Building plan	0.026328727
	1.3b Birth/Death Certificate	0.00131207
	1.3c water supply	0.001914817
	1.3d solid waste management	3.67379E-05
	1.3e property tax	0.016284566

	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.001612315
	1.3i information	0.004512645
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**1.21**
Description		
Sub Indicators	1.4a water supply	2.5
	1.4b solid waste	0
	1.4c street lights	3
	1.4d sewerage	1
	1.4e professional tax	0
	1.4f parks and recreational spaces	2
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**90.41**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	9503.84
Denominator	Total demand raised for the year	10511.46
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**63.07**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	2187.44
Denominator	Total O&M cost for providing water supply services during the year	3468.34
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**22.11**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	24447.72
Denominator	Total expenditure (revenue and capital accounts) in the same year	110571.09
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	59
Denominator	Total number of wards	59
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	8
Denominator	Total number of historic buildings/sites identified	8
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	NA
Denominator	Total number of ecologically important sites identified in the city	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**67.14**
Description	Average Occupancy rate of Hotels	67.14285714
Unit	Percentage	

Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.04**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	26.1
Denominator	Total budget of the ULB (capital and revenue)	60577.48
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**54**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	54
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**9.77**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	17365
Denominator	Total population in the age group of 6-14 years	177653
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**10.29**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	8955
Denominator	Total female population in the age group of 6-14 years	87059
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**17.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	9809
Denominator	Total number of teachers available for primary grades (public and private schools)	550

Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**5.71**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	6
Denominator	Total number of schools	105
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**153.28**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	153.2784265
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**109.96**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	6749595
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**60.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6860
Denominator	Total population of the city	1143232
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**122.94**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	14055
Denominator	Total population of the city	1143232
Unit	Number per 10,000 population	

Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**1**
Description	Total response time for health-related distress calls received in the city	1
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	712
Denominator	Total population of the city	1143232
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	390
Denominator	Total population of the city	1143232
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**144.73**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	1003
Denominator	Total length of road network in the city	693
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**826.78**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	9452
Denominator	Total population of the city	1143232
Unit	Crimes per lakh	

Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**15.38**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1454
Denominator	Total crimes recorded in the same year	9452
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**33.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	384
Denominator	Total population of the city	1143232
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**-21.91**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-119511.74
Denominator	Total VAT/GST collection during preceding year	5455.8446
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**8.28**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	88.44
Denominator	Total Professional Tax collection during preceding year	1068.37
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 6.3	**Increase in issuance of Construction Permits**	**59400**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	2376
Denominator	Number of construction permits during preceding year	0.04
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	73198
Denominator	Total labour force in the city	177653
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**48.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2273
Denominator	Total number of vendors in the city	4727
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**15.23**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	20533
Denominator	Total number of slum and EWS households in the city	1348.24
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic**	**0.03**

	services	
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	80585383392
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	389000
Denominator	Total population of the city	1143232
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**0.35**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	396592
Denominator	Total population of the city	1143232
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	20
Denominator	Total area of the city (total area of all land uses)	61880000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**22864.64**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1143232
Denominator	Area allocated for residential land use (in hectares)	50

Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**184.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	556967
Denominator	Total number of households in the city	302000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	556967
Denominator	Total number of electricity connections in the city	556967
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**2**
Description	Total number of sustained electrical interruptions in a year	2
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.81**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	8
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0.04**

Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	184389
Denominator	Total energy consumption from all sources	41719238
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.29**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	1683850.583
Denominator	Total quantum of water and waste water handled during the period	8400
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.32**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	13721953
Denominator	Total number of street light installations	32226
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	NA
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	NA
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.8**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	41719238
Denominator	Total population of the city	1143232
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst	

	cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.67**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	76
Denominator	Total area of the city (sq.km)	61.88
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**2.19**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	2508
Denominator	Total population of the city	1143232
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	80
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	693
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	2
Denominator	Total number of major transport interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	

Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	2
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**170**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	340
Denominator	Total number of major interchanges in the city	2
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	NA
Denominator	Total number of signalised intersections in the city	36
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**35.56**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	16
Denominator	Total available on-street parking spaces in the city	45
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0.83**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	11.51
Denominator	Total length of road network in the city	1386
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**250**
Formula:	*Numerator / Denominator*	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Total number of intersections with pedestrian crossing facilities on major roads	30
Denominator	Total number of junctions/ intersections on major roads in the city	12
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**20.2**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	20
Denominator	Total number of public right-of-way areas in the city	99
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**40.69**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	122890
Denominator	Total number of households in the city	302000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**157.45**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	180
Denominator	Total population of the city	1143232
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	0
Denominator	Total number of samples tested for water quality	109500
Unit	Percentage	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**61.11**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	110
Denominator	Quantum of water put into the distribution system (mld)	180
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**7.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	9112
Denominator	Total number of water connections in the city	119660
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	NA
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	NA
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**1662.62**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	321269
Denominator	Total number of properties in the city	19323
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**781.45**

Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	151000
Denominator	Total number of properties in the city	19323
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	120
Denominator	Total waste water generated in the city per day	120
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**240**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	360
Denominator	Total waste water received at treatment plants per day	150
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**4.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	29.4
Denominator	Total length of road network in the city	693
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**100.15**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	334500
Denominator	Total number of households and establishments in the city	334000
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	

Numerator	Total quantum of MSW collected by the ULB or private operator	512
Denominator	Total quantum of MSW generated in the city	512
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.5**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	230
Denominator	Average MSW generated in the city (tons per month)	15360
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**6**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	6
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**5.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	5.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	365
Unit	Percentage	
Benchmark		

Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	12
Denominator	Total number of samples tested	12
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

VISAKHAPATNAM

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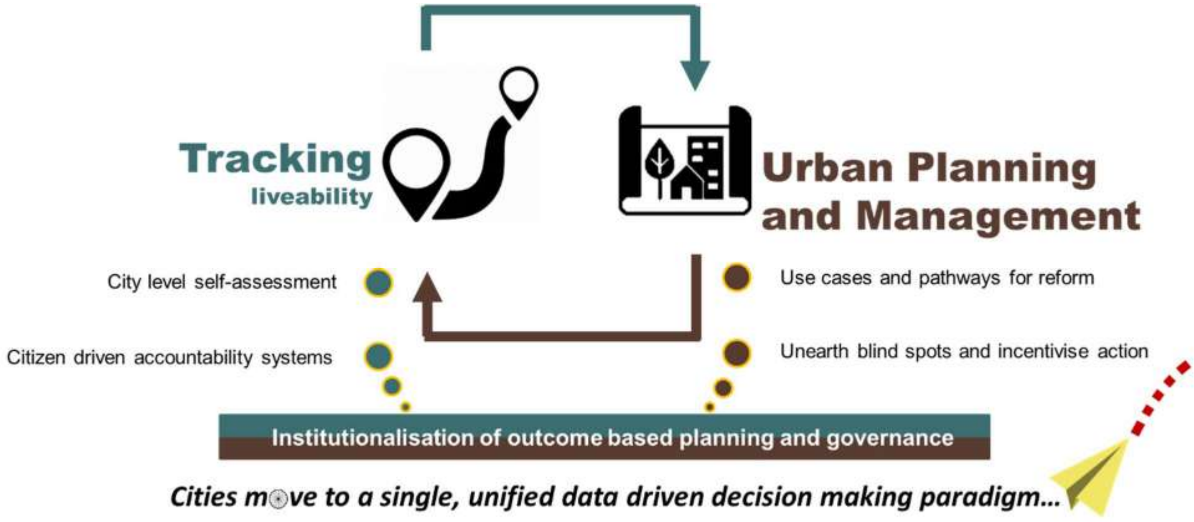
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

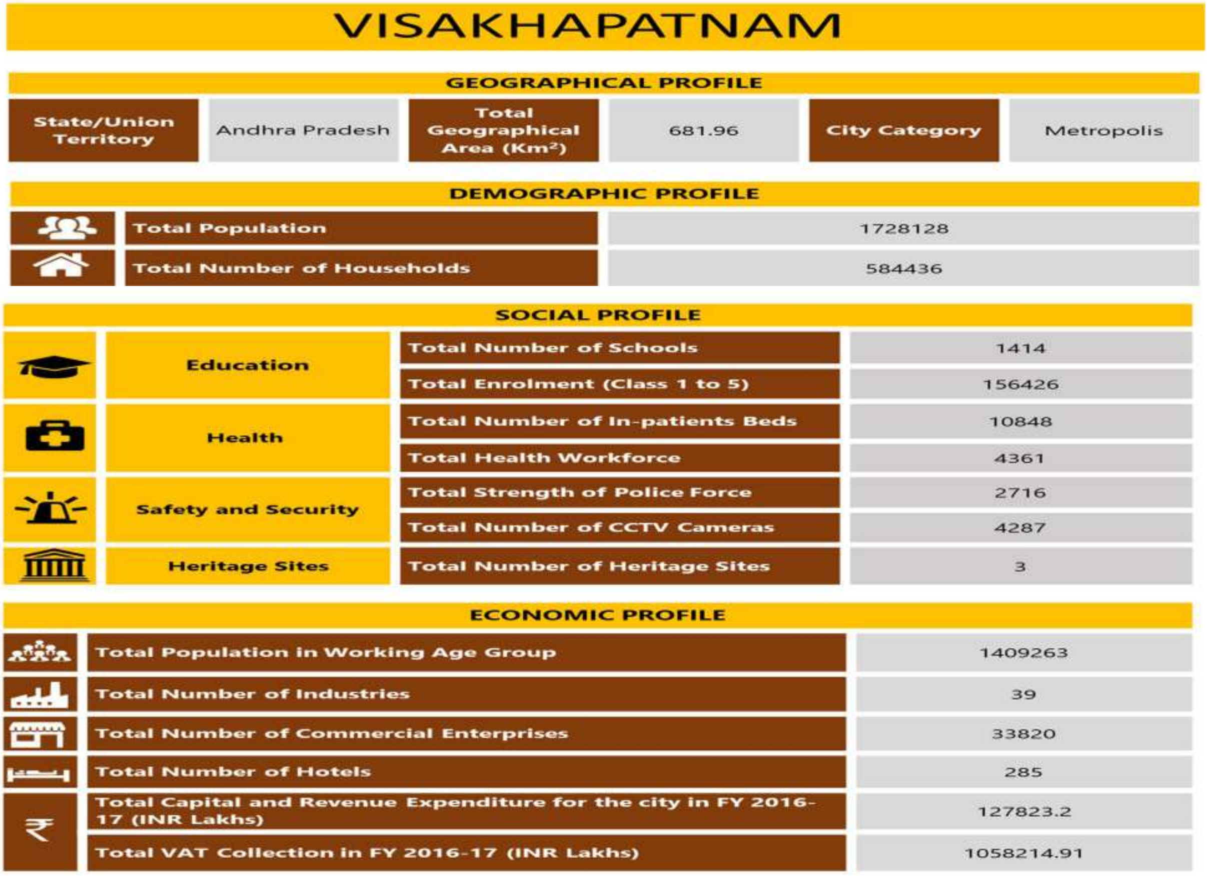
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VISAKHAPATNAM

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	Total Geographical Area (Km²)	681.96	City Category	Metropolis

DEMOGRAPHIC PROFILE

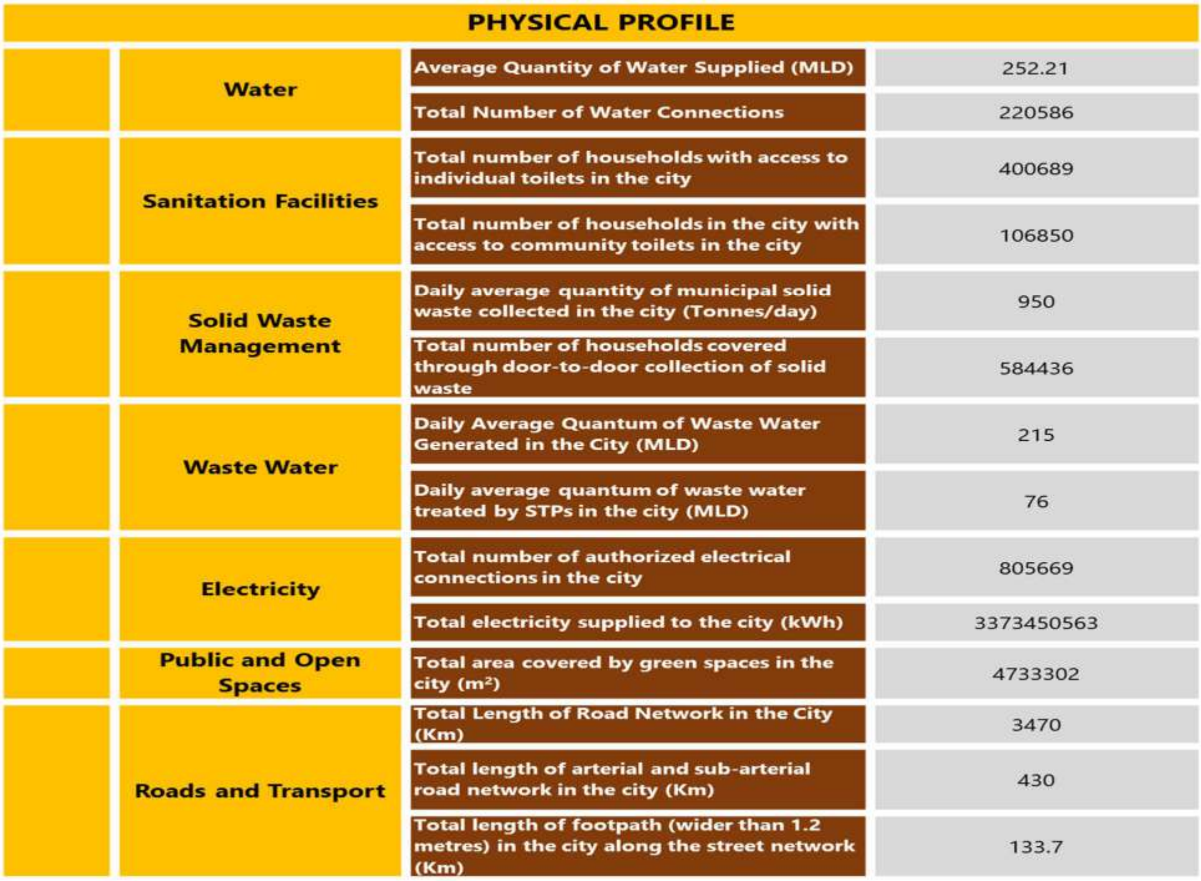
Total Population	1728128
Total Number of Households	584436

SOCIAL PROFILE

Education	Total Number of Schools	1414
	Total Enrolment (Class 1 to 5)	156426
Health	Total Number of In-patients Beds	10848
	Total Health Workforce	4361
Safety and Security	Total Strength of Police Force	2716
	Total Number of CCTV Cameras	4287
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	1409263
Total Number of Industries	39
Total Number of Commercial Enterprises	33820
Total Number of Hotels	285
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	127823.2
Total VAT Collection in FY 2016-17 (INR Lakhs)	1058214.91



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	252.21
		Total Number of Water Connections	220586
	Sanitation Facilities	Total number of households with access to individual toilets in the city	400689
		Total number of households in the city with access to community toilets in the city	106850
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	950
		Total number of households covered through door-to-door collection of solid waste	584436
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	215
		Daily average quantum of waste water treated by STPs in the city (MLD)	76
	Electricity	Total number of authorized electrical connections in the city	805669
		Total electricity supplied to the city (kWh)	3373450563
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	4733302
	Roads and Transport	Total Length of Road Network in the City (Km)	3470
		Total length of arterial and sub-arterial road network in the city (Km)	430
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	133.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

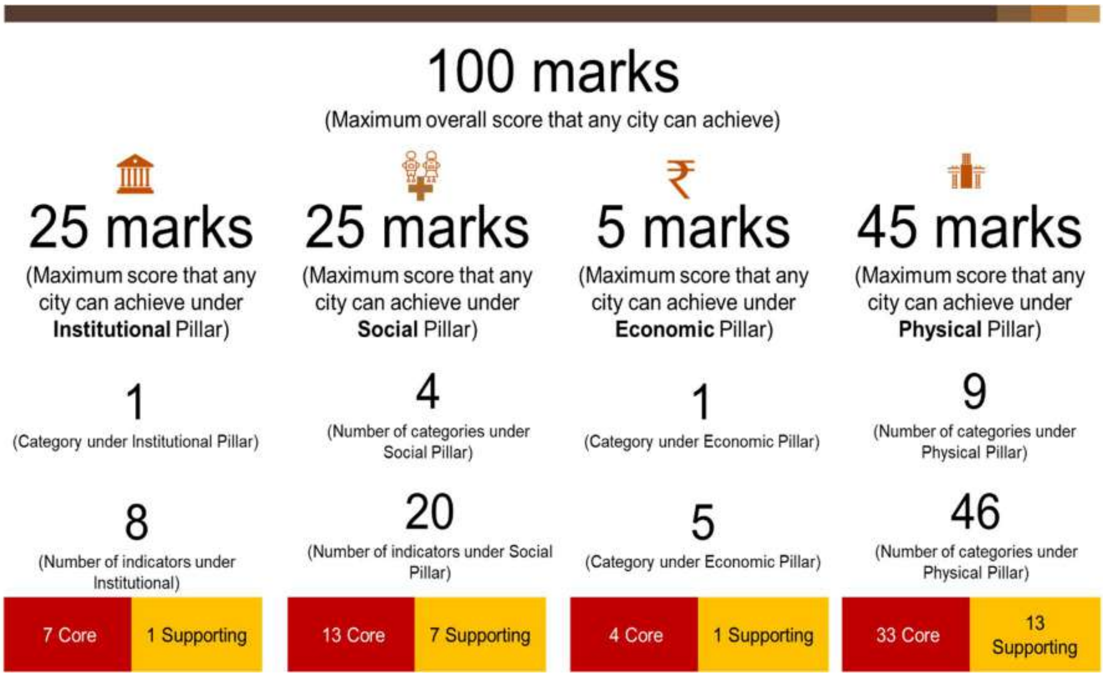
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts , Revenue and Audit departments
Urban Local Body	For Park and Recreation Related Questions	Assistant Director, Horticulture, Director of Sports& Town Planning
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department(Water supply & projects)
Urban Local Body	For Heritage sites related data	Archaeological Department, Town Planning & Visakhapatnam Urban Development Authority.
Urban Local Body	For Ecological sites related data	Archaeological Department, Town Planning & Visakhapatnam Urban Development Authority.
Urban Local Body	For Housing related data	Urban Community Development, Town Planning
Urban Local Body	For Building plan related data	Town Planning Department & Visakhapatnam urban Development Authority
Urban Local Body	For Roads related data	Engineering-Public Works, Andhra University GIS team & Low carbon Mobility Plan report.
Urban Local Body	For Solid waste management related data	Public Health Department
Urban Local Body	For IT services related data	Information Technology Department
Urban Local Body	For Vendor committee related data	Urban Community Development
Urban Local Body	Any other departments	IT Department and Administration

Designated data owners	Subcategories	Data owners at city level
	involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Town planning Department & Visakhapatnam Urban Development Authority (VUDA)
	Construction planning	Town planning Department & VUDA
	Green Building	Town planning Department & VUDA
	Rain water harvesting	Town planning Department & VUDA
	Universal Design Principle	Town planning Department & VUDA
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL)
State Disaster management authority		Addition Commissioner (Projects) District DM Authority,
State Education Department		District Educational Officer
State Health Department	Health care professionals	District Medical & Health Department
	Citizen Services	District Medical & Health Department
	Disease Prevalence	District Medical & Health Department
	Health Infrastructure	District Medical & Health Department
State Renewable Energy Development Agency	Renewable Energy	National Renewable Energy Corporation Limited
State Sales / Commercial Taxes Department		Deputy Commercial tax Department
Town and Country Planning Department	Land Use	Town Planning Department.
Traffic and Police Department		Office of Commissioner of Police.
Transport Authorities	Buses	Road Transport Authority
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 77 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**3**
Development Authority	**0**
Pollution Control Board	**6**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**10**
Disaster Management	**0**
Urban Local Body	**53**
Total	**77***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that

data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

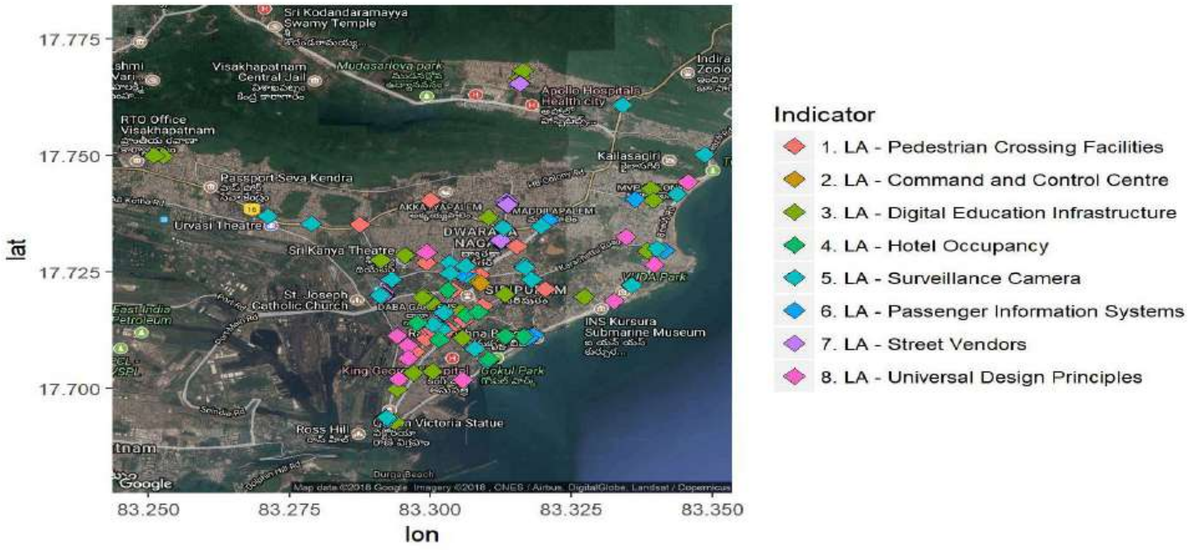
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


17.775
17.750
17.725
17.700
lat
83.250
83.275
83.300
83.325
83.350
lon
Sri Kodandaramayya Swamy Temple
Visakhapatnam Central Jail
Mudasarlova park
Apollo Hospitals Health city
RTO Office Visakhapatnam
Passport Seva Kendra
Kailasagiri
Urvasi Theatre
AKKAYYAPALEM
MADDILAPALEM
DWARAKA NAGAR
Sri Kanya Theatre
St. Joseph Catholic Church
INS Kursura Submarine Museum
VUDA Park
Gokul Park
Ross Hill
Victoria Statue
Durga Beach
East India Petroleum
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**82.36**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	0.75
	1.1e water supply	0.333333333
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.846153846
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	0.777777778
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**111.9**
Description	Services integrated through an integrated or a singular operations command centre	23.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**19.86**
Description		
Sub Indicators	1.3a Building plan	0.000762614
	1.3b Birth/Death Certificate	0.000615454
	1.3c water supply	0.012730584

	1.3d solid waste management	0.035904748
	1.3e property tax	0.007300866
	1.3f professional tax (RC)	0.371969697
	1.3g professional tax (EC)	0.017996892
	1.3h complaints/ grievance redressal	0.001337285
	1.3i information	0.031501717
	1.3j electricity	1.505700852
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.93**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0.5
	1.4c street lights	0.5
	1.4d sewerage	2
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	2.5
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**92.15**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	22437.21
Denominator	Total demand raised for the year	24348.7
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**175.25**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	22576.39

Denominator	Total O&M cost for providing water supply services during the year	12882.31
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**33.3**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	79379.88
Denominator	Total expenditure (revenue and capital accounts) in the same year	238355.68
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	132
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**23.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	3
Denominator	Total number of historic buildings/sites identified	13
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	20
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**52.14**

Description	Average Occupancy rate of Hotels	52.14285714
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	63.25
Denominator	Total budget of the ULB (capital and revenue)	127823.2
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**133**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	133
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**94.13**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	256293
Denominator	Total population in the age group of 6-14 years	272271
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**91.61**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	120423
Denominator	Total female population in the age group of 6-14 years	131457
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**143.25**
Formula:	*Numerator / Denominator*	

Numerator	Total number of students in primary grades (public and private)	156426
Denominator	Total number of teachers available for primary grades (public and private schools)	1092
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**2.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	31
Denominator	Total number of schools	1414
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**137.17**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	137.166431
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**108.88**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	1101007284
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**62.77**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	10848
Denominator	Total population of the city	1728128
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**25.24**
Formula:	*Numerator / Denominator*	

Numerator	Total number of qualified healthcare professionals	4361
Denominator	Total population of the city	1728128
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**10**
Description	Total response time for health-related distress calls received in the city	10
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.43**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	7484
Denominator	Total population of the city	1728128
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.11**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	1854
Denominator	Total population of the city	1728128
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**123.54**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	4287
Denominator	Total length of road network in the city	3470
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**539.95**
Formula:	Numerator / Denominator	

Numerator	Total number of crimes recorded in a year	9331
Denominator	Total population of the city	1728128
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**12.61**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	1177
Denominator	Total crimes recorded in the same year	9331
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**21.87**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	378
Denominator	Total population of the city	1728128
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**12.78**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	119879.71
Denominator	Total VAT/GST collection during preceding year	9383.352
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**10.62**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	192

Denominator	Total Professional Tax collection during preceding year	1808
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**242.12**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	3058
Denominator	Number of construction permits during preceding year	12.63
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	85450
Denominator	Total labour force in the city	272271
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**15.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	2000
Denominator	Total number of vendors in the city	12557
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0

Denominator	Total number of slum and EWS households in the city	4430.11
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**1.36**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	121077122949864
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**2.74**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	4733302
Denominator	Total population of the city	1728128
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**96.7**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	167108230
Denominator	Total population of the city	1728128
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	681960000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	

Indicator No: 9.2	**Net Density**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	1728128
Denominator	Area allocated for residential land use (in hectares)	133840000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**121.09**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	707672
Denominator	Total number of households in the city	584436
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.19**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	1502
Denominator	Total number of electricity connections in the city	805669
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**23435**
Description	Total number of sustained electrical interruptions in a year	23435
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.73**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	431663
Unit	Hours	

Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	22200
Denominator	Total energy consumption from all sources	3373450563
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0.23**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	3665385.083
Denominator	Total quantum of water and waste water handled during the period	9846.3
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	13000000
Denominator	Total number of street light installations	108251
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	1032490
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.28**
Formula:	*Numerator / Denominator*	

Numerator	Total energy consumption (for all uses) in the city	3373450563
Denominator	Total population of the city	1728128
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.38**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	410.8
Denominator	Total area of the city (sq.km)	681.96
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.47**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	809
Denominator	Total population of the city	1728128
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	27
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	3470
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**15.22**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with	7

	bicycle parking facility (within 250m radius)	
Denominator	Total number of major transport interchanges in the city	46
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport[1]**	**To be computed**
Description	Mode share of non-motorised transport	0.38
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**3.67**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	169
Denominator	Total number of major interchanges in the city	46
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	50
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**0.91**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	1
Denominator	Total available on-street parking spaces in the city	110
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**1.93**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	133.7
Denominator	Total length of road network in the city	6940
Unit	Percentage	

---

[1] The data for this indicator will be computed based on the primary data which is currently being collected

Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**34.14**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	141
Denominator	Total number of junctions/ intersections on major roads in the city	413
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**3.94**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	82
Denominator	Total number of public right-of-way areas in the city	2082
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**32.36**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	189147
Denominator	Total number of households in the city	584436
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**145.94**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	252.21
Denominator	Total population of the city	1728128
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Numerator	Number of samples meeting or exceeding specified potable water standards	993215
Denominator	Total number of samples tested for water quality	993215
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**4.18**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	10.537
Denominator	Quantum of water put into the distribution system (mld)	252.21
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**2.69**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	5924
Denominator	Total number of water connections in the city	220586
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**138.85**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	6037
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	4348
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**113.17**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	534353

Denominator	Total number of properties in the city	472170
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**190.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	900334
Denominator	Total number of properties in the city	472170
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**35.35**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	76
Denominator	Total waste water generated in the city per day	215
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	76
Denominator	Total waste water received at treatment plants per day	76
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**92.56**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	3212
Denominator	Total length of road network in the city	3470
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**94.83**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	586296
Denominator	Total number of households and establishments in the city	618256

Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	950
Denominator	Total quantum of MSW generated in the city	950
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	230
Denominator	Average MSW generated in the city (tons per month)	28500
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**17.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	17.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**72.9**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	72.9
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	140

Denominator	Total number of noise samples	140
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	0
Denominator	Total number of samples tested	0
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
DRAFT REPORT

Ministry of Urban Development
Government of India

WARANGAL

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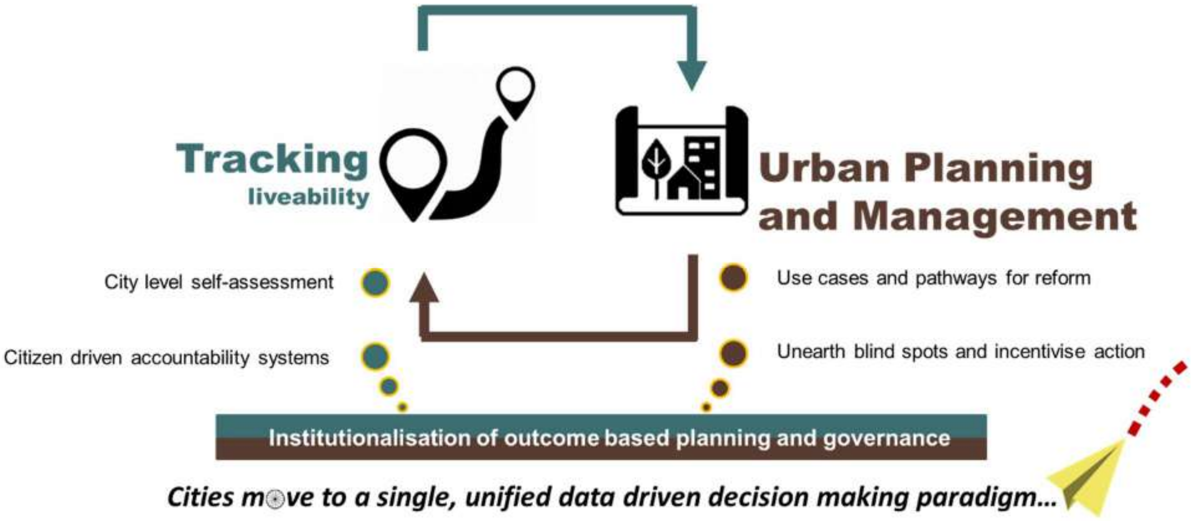
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

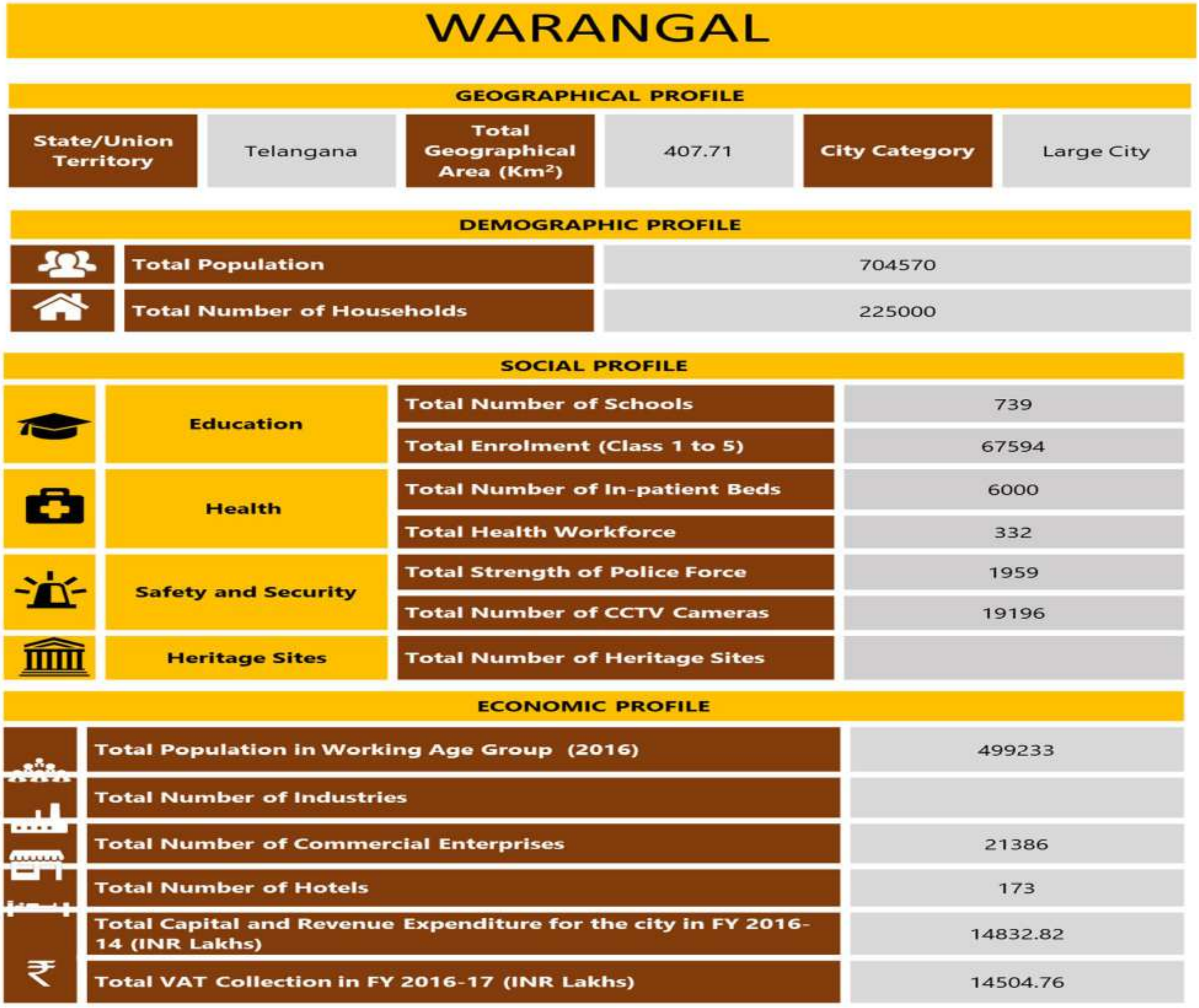

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart

cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



WARANGAL

GEOGRAPHICAL PROFILE

State/Union Territory	Telangana	**Total Geographical Area (Km²)**	407.71	**City Category**	Large City

DEMOGRAPHIC PROFILE

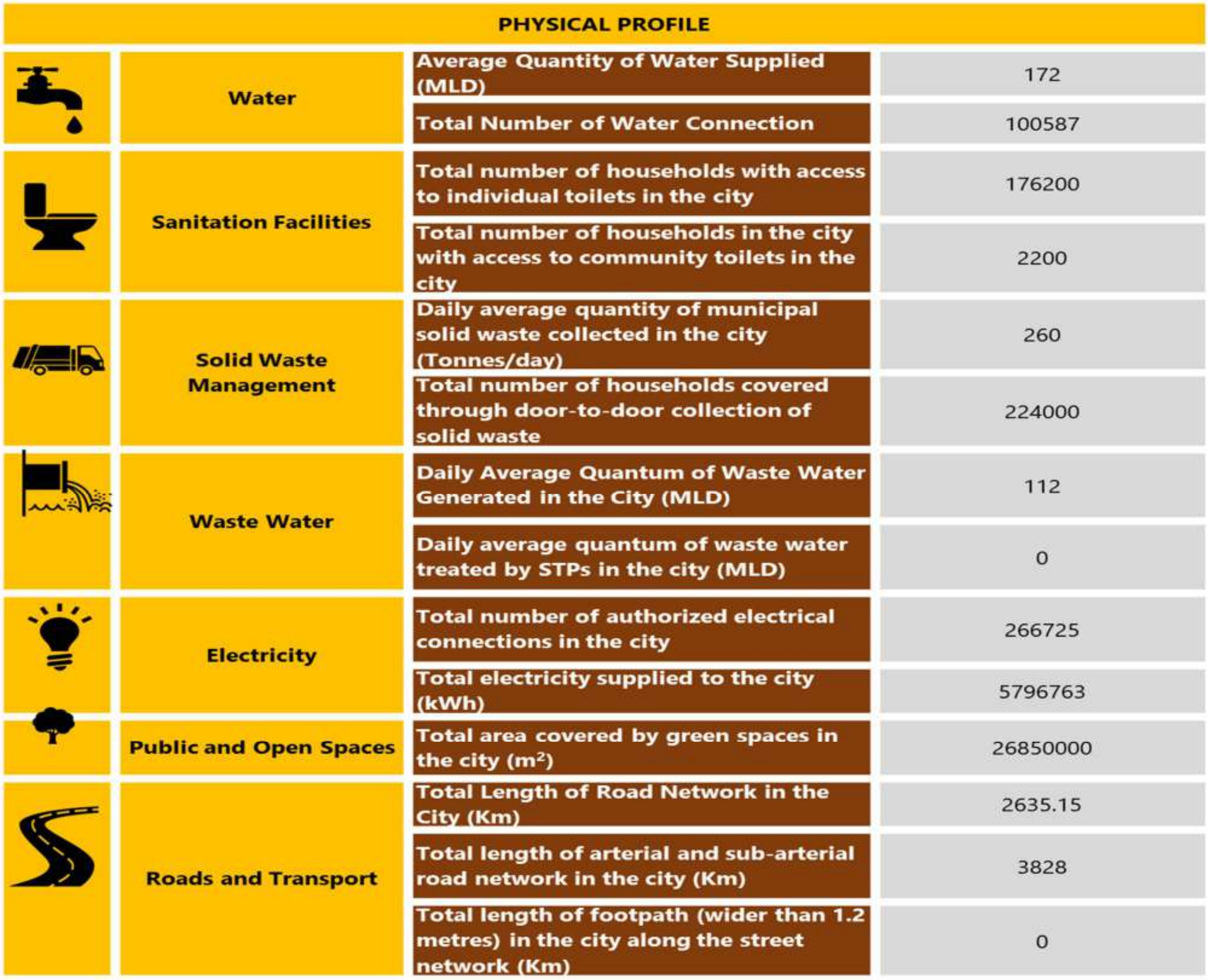
Total Population	704570
Total Number of Households	225000

SOCIAL PROFILE

Education	**Total Number of Schools**	739
	Total Enrolment (Class 1 to 5)	67594
Health	**Total Number of In-patient Beds**	6000
	Total Health Workforce	332
Safety and Security	**Total Strength of Police Force**	1959
	Total Number of CCTV Cameras	19196
Heritage Sites	**Total Number of Heritage Sites**	

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	499233
Total Number of Industries	
Total Number of Commercial Enterprises	21386
Total Number of Hotels	173
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	14832.82
Total VAT Collection in FY 2016-17 (INR Lakhs)	14504.76



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	172
	Total Number of Water Connection	100587
Sanitation Facilities	Total number of households with access to individual toilets in the city	176200
	Total number of households in the city with access to community toilets in the city	2200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	260
	Total number of households covered through door-to-door collection of solid waste	224000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	112
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	266725
	Total electricity supplied to the city (kWh)	5796763
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	26850000
Roads and Transport	Total Length of Road Network in the City (Km)	2635.15
	Total length of arterial and sub-arterial road network in the city (Km)	3828
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	0

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

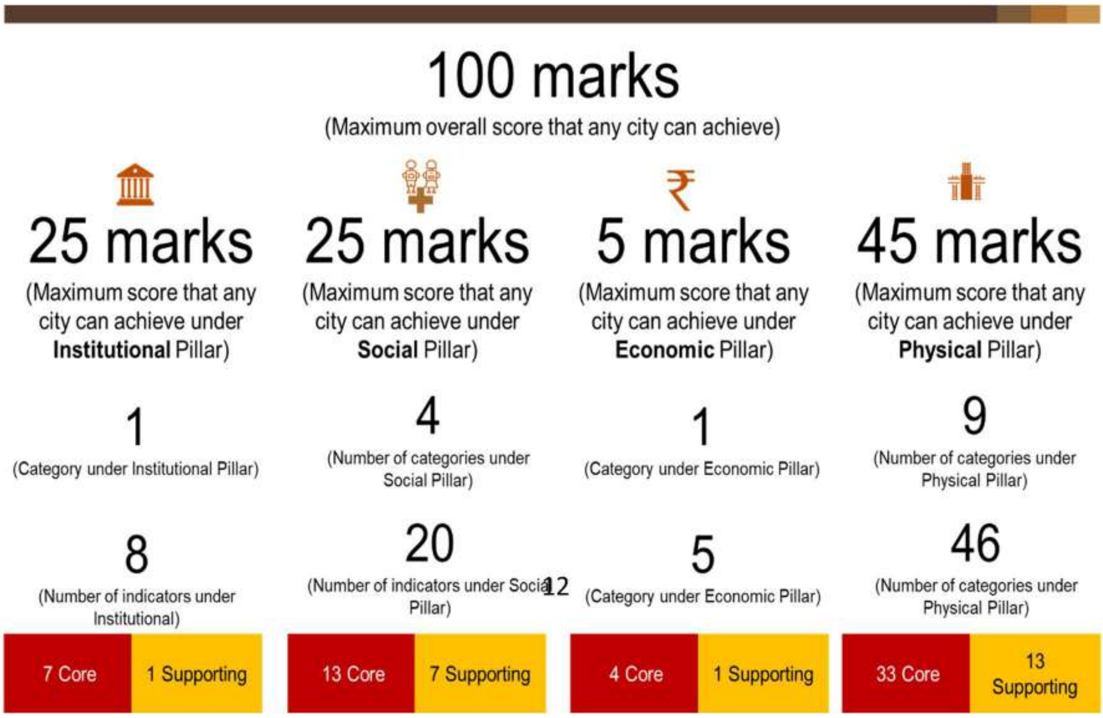
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken

down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Administration wing c1 Greater Warangal municipal corporation
Urban Local Body	For Park and Recreation Related Questions	Town planning wing Greater Warangal municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering section Greater Warangal municipal corporation
Urban Local Body	For Heritage sites related data	ENGINEERING
Urban Local Body	For Ecological sites related data	ENGINEERING
Urban Local Body	For Housing related data	
Urban Local Body	For Building plan related data	City planner
Urban Local Body	For Roads related data	engineering
Urban Local Body	For Solid waste management related data	Public health
Urban Local Body	For IT services related data	IT WING
Urban Local Body	For Vendor committee related data	MEPMA
Urban Local Body	Any other departments	ADMINISTRATION

Designated data owners	Subcategories	Data owners at city level
	involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	ENGINEERING AND
Development Authority	Building Infrastructure	TOWN PLANNING
	Construction planning	TOWN PLANNING
	Green Building	ENGINEERING
	Rain water harvesting	TOWN PLANNING
	Universal Design Principle	TOWN PLANNING
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ELECTRICAL SUPERENTANDANT
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	DMHO
	Citizen Services	DMHO
	Disease Prevalence	DMHO
	Health Infrastructure	DMHO
State Renewable Energy Development Agency	Renewable Energy	
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	TOWN PLANNING
Traffic and Police Department		
Transport Authorities	Buses	
	Registered Vehicles	Road transport authority
	Sub urban rail transport	Not applicable
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 27 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

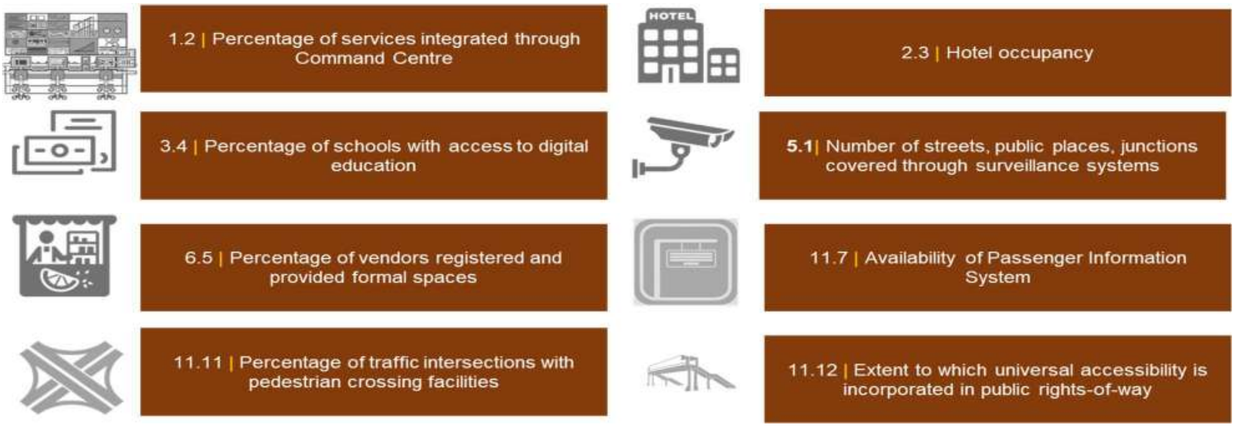
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	4
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	19
Total	27*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

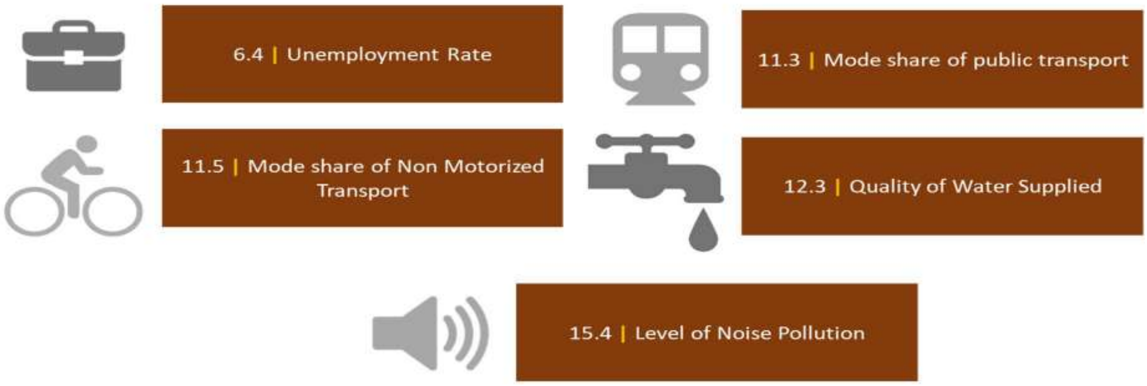
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

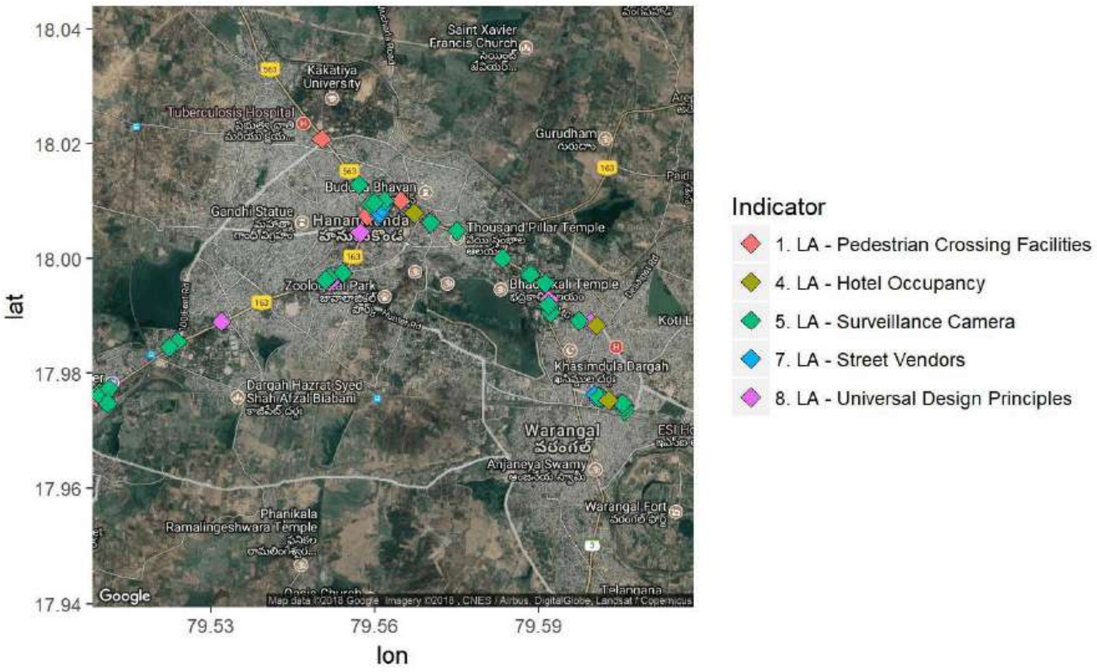
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


18.04
18.02
18.00
17.98
17.96
17.94
lat
79.53
79.56
79.59
lon
Kakatiya University
Saint Xavier Francis Church
Tuberculosis Hospital
Gurudham
Buddha Bhavan
Gandhi Statue
Hanamkonda
Thousand Pillar Temple
Zoological Park
Bhadrakali Temple
Khasimdula Dargah
Dargah Hazrat Syed Shah Afzal Biabani
Warangal
Anjaneya Swamy
Warangal Fort
Phanikala Ramalingeshwara Temple
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5 Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	**Percentage of citizen services available online**	**91.72**
Description	Average citizen services available online	

Sub Indicators	1.1a birth certificate	1
	1.1b death certificate	1
	1.1c trade license	1
	1.1d solid waste management	1
	1.1e water supply	1
	1.1f sewerage/drainage	0
	1.1g fogging	1
	1.1h property tax	1
	1.1i professional tax	1
	1.1j information	0.923076923
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	**Percentage of services integrated through Command Centre**	**0**
Description	Services integrated through an integrated or a singular operations command centre	0
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	**Percentage of citizens using online services**	**0.38**
Description		
Sub Indicators	1.3a Building plan	0.001055593
	1.3b Birth/Death Certificate	NA
	1.3c water supply	0.000610325
	1.3d solid waste management	NA
	1.3e property tax	0.014454431
	1.3f professional tax (RC)	NA

	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	0.000631591
	1.3i information	0.000618817
	1.3j electricity	0.005143875
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	**Average delay in grievance redressal**	**0.57**
Description		
Sub Indicators	1.4a water supply	1
	1.4b solid waste	0
	1.4c street lights	1
	1.4d sewerage	0
	1.4e professional tax	0
	1.4f parks and recreational spaces	0
	1.4g building plan	2
Unit	Days	
Benchmark	0	
Indicator No: 1.5	**Tax collected as percentage of tax billed**	**101.6**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	5733.12
Denominator	Total demand raised for the year	5642.93
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	**Extent of cost recovery (O&M) in water supply services**	**64.37**
Formula:	*Numerator / Denominator*	
Numerator	Total collection of user charges in water supply in a year	1416.14
Denominator	Total O&M cost for providing water supply services during the year	2200
Unit	Percentage	
Benchmark	100%	

Indicator No: 1.7	**Capital spending as percentage of total expenditure**	**-18.32**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	-3721.15
Denominator	Total expenditure (revenue and capital accounts) in the same year	20312.9
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	**Percentage of population covered under Ward Committees/ Area *Sabhas***	**0**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	0
Denominator	Total number of wards	58
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	**Restoration and reuse of historic buildings**	**33.33**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	1
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	**Percentage of ecologically important areas covered through projects for restoration**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	**Hotel Occupancy**	**14.29**
Description	Average Occupancy rate of Hotels	14.28571429

Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	**Percentage of budget allocated towards cultural/sports activities**	**0.24**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	36.02
Denominator	Total budget of the ULB (capital and revenue)	14832.82
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	**Number of cultural/sports events hosted by city**	**44**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	44
Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	**Percentage of school-aged population enrolled in schools**	**93.58**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	109963
Denominator	Total population in the age group of 6-14 years	117505
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	**Percentage of female school-aged population enrolled in schools**	**90.6**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	51411
Denominator	Total female population in the age group of 6-14 years	56745
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	**Primary education student-teacher ratio**	**28.42**

Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	67594
Denominator	Total number of teachers available for primary grades (public and private schools)	2378
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	**Percentage of schools with access to digital education**	**19.08**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	141
Denominator	Total number of schools	739
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	**Percentage of students completing primary education**	**89.24**
Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	89.23806835
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	**Percentage of students completing secondary education**	**103.41**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	202805240
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	**Number of in-patient hospital beds per 10,000 population**	**85.16**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	6000
Denominator	Total population of the city	704570
Unit	Number per 10,000 population	

Benchmark	25 beds per 10000 population	
Indicator No: 4.2	**Healthcare professionals per 10,000 population**	**4.71**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	332
Denominator	Total population of the city	704570
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	**Average response time in case of health emergencies**	**18**
Description	Total response time for health-related distress calls received in the city	18
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	**Period prevalence of water borne diseases**	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	105
Denominator	Total population of the city	704570
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	**Period prevalence of vector borne diseases**	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	390
Denominator	Total population of the city	704570
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	**Total number of CCTV cameras installed in the city**	**728.46**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	19196

Denominator	Total length of road network in the city	2635.15
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	**Number of recorded crimes per lakh population**	**562.33**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	3962
Denominator	Total population of the city	704570
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	**Extent of crimes recorded against women, children and elderly per year**	**10.55**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	418
Denominator	Total crimes recorded in the same year	3962
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	**Transport-related fatality per lakh population**	**19.59**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	138
Denominator	Total population of the city	704570
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	**Increase in VAT/GST collection**	**13.8**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	1758.84
Denominator	Total VAT/GST collection during preceding year	127.4592
Unit	Percentage	

Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	**Increase in collection of Professional Tax**	**-3.22**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	-0.58
Denominator	Total Professional Tax collection during preceding year	17.99
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	**Increase in issuance of Construction Permits**	**92.11**
Formula:	*Numerator / Denominator*	
Numerator	(Number of permits issued during the year – Number of permits during preceding year)	35
Denominator	Number of construction permits during preceding year	0.38
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	**Unemployment Rate**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	117505
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	**Percentage of vendors registered and provided formal spaces**	**4.93**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	152
Denominator	Total number of vendors in the city	3085
Unit	Percentage	

Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	**Percentage of Slum/EWS households covered through formal/ housing**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	0
Denominator	Total number of slum and EWS households in the city	674.78
Unit	Percentage	
Benchmark	100%	
Indicator No: 7.2	**Percentage of slum areas covered through basic services**	**0**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	**0**
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**38.11**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	26850000
Denominator	Total population of the city	704570
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**3.59**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	2530909
Denominator	Total population of the city	704570
Unit	Square metres (sq.m.)	

Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	**Share of mixed land use area in overall city land use**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	0
Denominator	Total area of the city (total area of all land uses)	407710000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 9.2	**Net Density**	**0.05**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	704570
Denominator	Area allocated for residential land use (in hectares)	13140000
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	**Percentage of city population with authorized electrical service**	**117.1**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	263471
Denominator	Total number of households in the city	225000
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	**Percentage of electrical connections covered through smart meters**	**0.1**
Formula:	*Numerator / Denominator*	

Numerator	Number of electrical connections (residential and commercial) with smart meters	266
Denominator	Total number of electricity connections in the city	266725
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	**Average number of electrical interruptions per year**	**15958**
Description	Total number of sustained electrical interruptions in a year	15958
Unit	Number	
Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	**Average length of electrical interruptions per year**	**0.8**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	40000
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	**Percentage of total energy derived from renewable sources**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	914
Denominator	Total energy consumption from all sources	5796763
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	**Energy consumption per unit - water supply and sewerage**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	5919947
Denominator	Total quantum of water and waste water handled during the period	5160
Unit	kWh per million litres	

Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	**Energy consumption per unit – street lighting**	**0.34**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	10865621
Denominator	Total number of street light installations	66219
Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	**Percentage of new and redeveloped buildings following green building norms**	**0.17**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	2000
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	5000
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	**Total energy consumption per capita**	**0.81**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	5796763
Denominator	Total population of the city	704570
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	**Geographical coverage of public transport**	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	10
Denominator	Total area of the city (sq.km)	407.71
Unit	Transport length (kms) per square km	

Benchmark	>=1	
Indicator No: 11.2	**Availability of public transport**	**0.1**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	69
Denominator	Total population of the city	704570
Unit	Number per 1000 persons	
Benchmark	>=0.6	
Indicator No: 11.3	**Mode share of public transport**	**To be computed**
Description	Mode share of public transport	60
Unit	Percentage	
Benchmark		
Indicator No: 11.4	**Percentage of road network with dedicated bicycle tracks**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	0
Denominator	Total length of road network in the city	2635.15
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	**Percentage of interchanges with bicycle parking facilities**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	NA
Denominator	Total number of major transport interchanges in the city	15
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	**Mode share of non-motorised transport**[1]	**To be computed**
Description	Mode share of non-motorised transport	0
Unit	Percentage	
Benchmark		
Indicator No: 11.7	**Availability of Passenger Information System**	**Non-**

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

		Computable
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	NA
Denominator	Total number of major interchanges in the city	15
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.8	**Extent of signal synchronisation**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	18
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	**Availability of paid parking spaces**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	0
Denominator	Total available on-street parking spaces in the city	0
Unit		
Benchmark		
Indicator No: 11.10	**Percentage coverage of footpaths – wider than 1.2m**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	0
Denominator	Total length of road network in the city	5270.3
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	**Percentage of traffic intersections with pedestrian crossing facilities**	**218.75**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	35

Denominator	Total number of junctions/ intersections on major roads in the city	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	**Extent to which universal accessibility is incorporated in public rights-of-way**	**1.21**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	20
Denominator	Total number of public right-of-way areas in the city	1652
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	**Household level coverage of direct water supply connections**	**34.3**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	77169
Denominator	Total number of households in the city	225000
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	**Per capita supply of water**	**244.12**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	172
Denominator	Total population of the city	704570
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	**Quality of water supplied**[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified	72

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

	potable water standards	
Denominator	Total number of samples tested for water quality	72
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	**Level of non-revenue water – NRW**	**35**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	60.2
Denominator	Quantum of water put into the distribution system (mld)	172
Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	**Percentage of water connections covered through meters**	**0.56**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	565
Denominator	Total number of water connections in the city	100587
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	**Percentage of plots with rainwater harvesting facility**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	Data Unavailable
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	Data Unavailable
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	**Coverage of toilets**	**102.72**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual	178410

	and/or community toilets	
Denominator	Total number of properties in the city	173678
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	**Coverage of sewerage network and/or septage**	**88.27**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	153310
Denominator	Total number of properties in the city	173678
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	**Collection efficiency of sewerage network**	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	0
Denominator	Total waste water generated in the city per day	112
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	**Extent of reuse and recycling of waste water**	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	0
Denominator	Total waste water received at treatment plants per day	0
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	**Coverage of storm water drains**	**0.95**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	25
Denominator	Total length of road network in the city	2635.15
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	**Household level coverage of municipal solid waste collection**	**99.47**
Formula:	*Numerator / Denominator*	

Numerator	Total number of households and establishments covered through doorstep collection	245088
Denominator	Total number of households and establishments in the city	246386
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	**Efficiency of collection of municipal solid waste**	**92.86**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	260
Denominator	Total quantum of MSW generated in the city	280
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	**Extent of municipal solid waste recovered through reuse**	**1.54**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	120
Denominator	Average MSW generated in the city (tons per month)	7800
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**7.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	7.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**24.7**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	24.7
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**66.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	66.5

Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	0
Denominator	Total number of noise samples	36
Unit	Percentage	
Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**47.92**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	23
Denominator	Total number of samples tested	48
Unit	Percentage	
Benchmark	100%	

Copies of the [illegible] reports were placed in the Project Monitoring Committee chaired by Secretary (HUA) held on 17.07.2018. The reports were approved by the committee / JS (AMRUT). (minutes of the meeting attached).
Submitted.
Reema Jain

To, US (CBUD)

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.

Re: **Contract Reference No: 1554254 –'Assessment of Liveability Indices for 116 cities'- Submission of Draft City Assessment Report**

Dear Sir,

We, hereby submit the Draft City Assessment Reports of 116 cities for 'Assessment of Liveability Indices for 116 cities' (Contract reference number 1554254). The reports are in line with the report structure approved by the Chairman of the Project Implementation Committee. Each city report contains the following:

1. Introduction, City Profile, Liveability Framework and Indicators
2. City Reconnaissance Meeting: Data Collection and Verification
3. Indicator Values

Thank you.

We remain,

Yours sincerely,

Recd on 5/6/2018

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Copies of Report have to be submitted to JS (AMRUT) for approval

Name and Title: Parijat Chakraborty, Executive Director-Ipsos Public Affairs
Name of Consultant: Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist Intelligence Unit

10/7/2018

Dir (AMRUT-I)

D.D (RJ)

10/07/2018

K14011/14/2018-AMRUT II
Government of India
Ministry of Housing and Urban Affairs
(AMRUT Division)
Nirman Bhawan, New Delhi
Dated: 06 August, 2018

OFFICE MEMORANDUM

Subject : Minutes of the Project Monitoring Committee on "Ease of Living Index" held on 17 July, 2018 -reg.

The undersigned is directed to circulate the minutes of the Project Monitoring Committee on "Ease of Living Index" which was held under Chairmanship of Secretary (HUA) on 17 July, 2018 at 05:00 PM in Conference Hall (123-C), Nirman Bhawan, New Delhi.

This issues with the approval of competent authority.

Encl.: As above

Reema Jain
06/08/2018.

(Reema Jain)
Deputy Director (AMRUT)
Tel: 011-23062273

To

JS (SC), JS (DAY-NULM), EA (PPP), Director (Smart City), Director (NIUA), TCPO, Lead member of the Consortium (Ms Deepa, Athena Infonomics, Ms Tripti, IPSOS)

Copy for information to:

PPS to Secretary (HUA), PS to JS(AMRUT), PS to Director (AMRUT-I)

Minutes of the Meeting of the Monitoring Committee on "Ease of Living Index" held on 17th July, 2018 under the Chairmanship of Shri Durga Shanker Mishra, Secretary (HUA)

The meeting of the Monitoring Committee on "Ease of Living Index" was held on 17th July, 2018 under the Chairmanship of Shri Durga Shanker Mishra, Secretary (HUA) at 5:00 PM in Conference Hall (Room No. 123 C), Nirman Bhawan, New Delhi. The list of participants is at annexure-I.

Secretary (HUA) welcomed all the members and discussions were initiated to review the progress on ease of living assessment in 111 cities. On behalf of the consortia, Mr. Ankit Chatri Lead Consultant, Athena Infonomics and Ms. Tripti Sharma, Research Director, Ipsos Public Affairs presented progress on key deliverables. The consortia briefed on the following:

- Progress on ranking
- Presentation of the ranking dashboard
- Presentation of the video (Hindi)
- Presentation of draft National and City assessment reports

The following decisions were taken:

1. It was informed that the ranking has been finalised on the basis of 78 indicators instead of 79 indicators. The indicator on unemployment has been excluded due to lack of reliable data.

2. The monitoring committee reviewed the ranking dashboard and suggested a few modifications.

3. The committee suggested revision in the Hindi version of the video. It was advised to use bright, vibrant and more relevant illustrations/images.

4. The format for integrated national report was presented and following suggestions were made:

    a. Change the cover page illustration (cover should have city features and people)
    b. Use of ease of living related images in the body of the report

5. The city assessment report structure in the form of a sample report was presented and approved. The monitoring committee was informed that the draft city assessment reports have been submitted

The meeting concluded with a vote of thanks to the Chair.

Annexure-I

List of Participants

1. Shri Durga Shanker Mishra, Secretary, MoHUA ...... In the Chair
2. ✓ Shri Shiv Das Meena, JS(AMRUT), MoHUA
3. Shri Kunal Kumar, JS(Smart Cities), MoHUA
4. Shri Sanjay Kumar, JS(DAY-NULM), MoHUA
5. Shri Anupam Mishra, EA(PPP), MoHUA
6. Shri R.Shrinivas, TCPO, MoHUA
7. Ms. Reema Jain, DD(AMRUT), MoHUA
8. Dr. Debolina Kundu, NIUA
9. Ms. Yogita, NIUA
10. Shri Ankit Chatri, Lead Consultant, Athena Infonomics,
11. Ms. Tripti Sharma, Research Director, Ipsos Public Affairs

Ipsos Research Private Limited

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New Delhi
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07 Delhi

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2nd invoice on Assessment of Liveability Indices for 116 cities in India

Total Budget Research	109,428,200.00
Already Billed	21,885,640.00
Percentage Billed on this Invoice	50.00%

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IGST 18.000 %	9,848,538.00	**INR**
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For Ipsos Research Pvt. Ltd.

Signed by : ANKIT AJMERA
(Personal , CID - 6446641)
Date : 29/May/2018 10:21:14
Location :
Reason :

Ankit Ajmera
Sr. Manager - Finance

DESAI SAKSENA & ASSOCIATES
Chartered Accountants

Laxmi Building
1st Floor
Sir P.M. Road, Fort
Mumbai- 400001

Tel : 66 26 16 00
Fax : 66 26 16 17
Email : contact@dsaca.co.in

Website : www.dsaca.co.in

TO WHOMSOEVER IT MAY CONCERN

As per the information, explanation given to us and as shown by the records produced before us, we hereby certify that M/s.Ipsos Research Private Limited, having registered office at Lotus Corporate Park, 1701, 17th Floor, F wing, Off Western Express Highway, Goregaon East, Mumbai – 400 063, the payment of IGST (18%) amounting Rs. 98,48,538/- pertaining to Ministry of Housing and Urban Affairs vide invoice ref no. 18271257 dated 29.05.2018 has been made to the Government on **19th June, 2018**.

Thanking You,
Yours Faithfully,

For DESAI SAKSENA & ASSOCIATES
Chartered Accountants

CA Varsha Nanwani
Taxation Manager
Membership No. 174729

Place: Mumbai
Date: 5th July, 2018

K-14012/101(11)/2017-SCM-III(V)/CBUD-pt-2

Government of India
Ministry of Housing & Urban Affairs
(CBUD Division)
****

Nirman Bhawan, New Delhi
Dated: 13th September, 2018

To

The Pay and Accounts Officer (Secretariat),
Ministry of Housing & Urban Affairs,
Nirman Bhawan, New Delhi.

Subject: - Payment of **Rs.5,47,14,100/-(Excl GST) [Rs. Five Crore Forty Seven Lakh Fourteen Thousand and One Hundred Only]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for Draft City Assessment Report of liveability indices in 116 cities.

Sir,

I am directed to convey the sanction of the Competent Authority for Payment of **Rs.5,47,14,100/-(Excl GST) [Rs. Five Crore Forty Seven Lakh Fourteen Thousand and One Hundred Only]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for Draft City Assessment Report of liveability indices in 116 cities under CBUD project funded by World Bank. the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The details of the payment are as under:-

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.

Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (Excl GST)**
			Fee	GST@18%	**Rs.5,47,14,100/-**
1.	18271257 dated 29-05-2018	Draft City Assessment Report (50%)	**Rs.5,47,14,100/-**	98,48,538/-	
	Grand total to be released				**Rs.5,47,14,100/-(Excl GST)**

2. Administration Section is requested to deduct TDS as per provision on Rs.5,47,14,100/-(Excl GST)

3. The e-payment may be drawn in favour of M/s IPSOS Research Pvt. Ltd with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Banking Corporatioin Ltd. Mumbai / Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	Ipsos Research Pvt. Ltd
Account no.	030777080001
IFSC Code	HSBC0400002

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.56 for the year 2018-19.

5. This issues with the approval of Integrated Finance Division and concurrence of JS & FA vide e-office No. 3136811 (Note #193 dated 11.9.2018 at 05:50 PM).

Yours faithfully

13/9/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

Copy to:-

1. Admn. II Section with original copy for forwarding to PAO.
2. Senior Associate Director-Finance, Ipsos Research Private Limited, Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western, Express Highway, Goregaon East, Mumbai-400063.
3. PPS to JS (CBUD), MoHUA Nirman Bhawan, New Delhi.
4. Integrated Finance Division, MoHUA Nirman Bhawan.
5. Sanction Folder.

13/9/2018

(G.Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

K-14012/101(11)/2017-SCM-III(V)/CBUD-pt-2
Government of India
Ministry of Housing & Urban Affairs
(CBUD Division)
****

Nirman Bhawan, New Delhi
Dated: 13th September, 2018

To

The Pay and Accounts Officer (Secretariat),
Ministry of Housing & Urban Affairs,
Nirman Bhawan, New Delhi.

Subject: - Payment of **Rs.98,48,538/- (Against GST@18%) [Rs. Ninety Eight Lakh Forty Eight Thousand Five Hundred and Thirty Eight Only]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for Draft City Assessment Report of liveability indices in 116 cities.

Sir,

I am directed to convey the sanction of the Competent Authority for Payment of **Rs.98,48,538/- (Against GST@18%) [Rs. Ninety Eight Lakh Forty Eight Thousand Five Hundred and Thirty Eight Only]** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for Draft City Assessment Report of liveability indices in 116 cities under CBUD project funded by World Bank. the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The details of the payment are as under:-

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			Fee	**GST@18%**	**Rs. 98,48,538/-**
1.	18271257 dated 29-05-2018	Draft City Assessment Report (50%)	Rs.5,47,14,100/-	**Rs.98,48,538/-**	
	Grand total to be released				**Rs. 98,48,538/- Against GST**

2. Administration Section is requested not to deduct TDS as this is the payment against GST.

3. The e-payment may be drawn in favor of M/s IPSOS Research Pvt. Ltd with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Banking Corporation Ltd. Mumbai / Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	Ipsos Research Pvt. Ltd
Account no.	030777080001
IFSC Code	HSBC0400002

अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.56 for the year 2018-19.

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13/9/2018

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Under Secretary to the Government of India
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जि. विजय कुमार/G. VIJAY KUMAR

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

AGARTALA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides un-	The indicator on unemployment will

#	Challenges	Proposed Solutions
	employment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

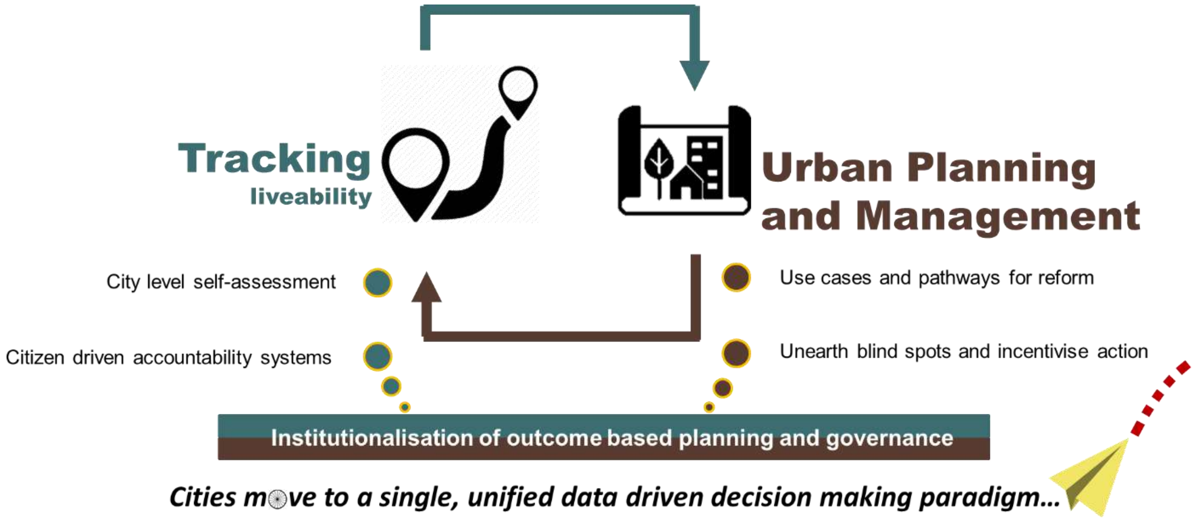
#	Challenges	Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

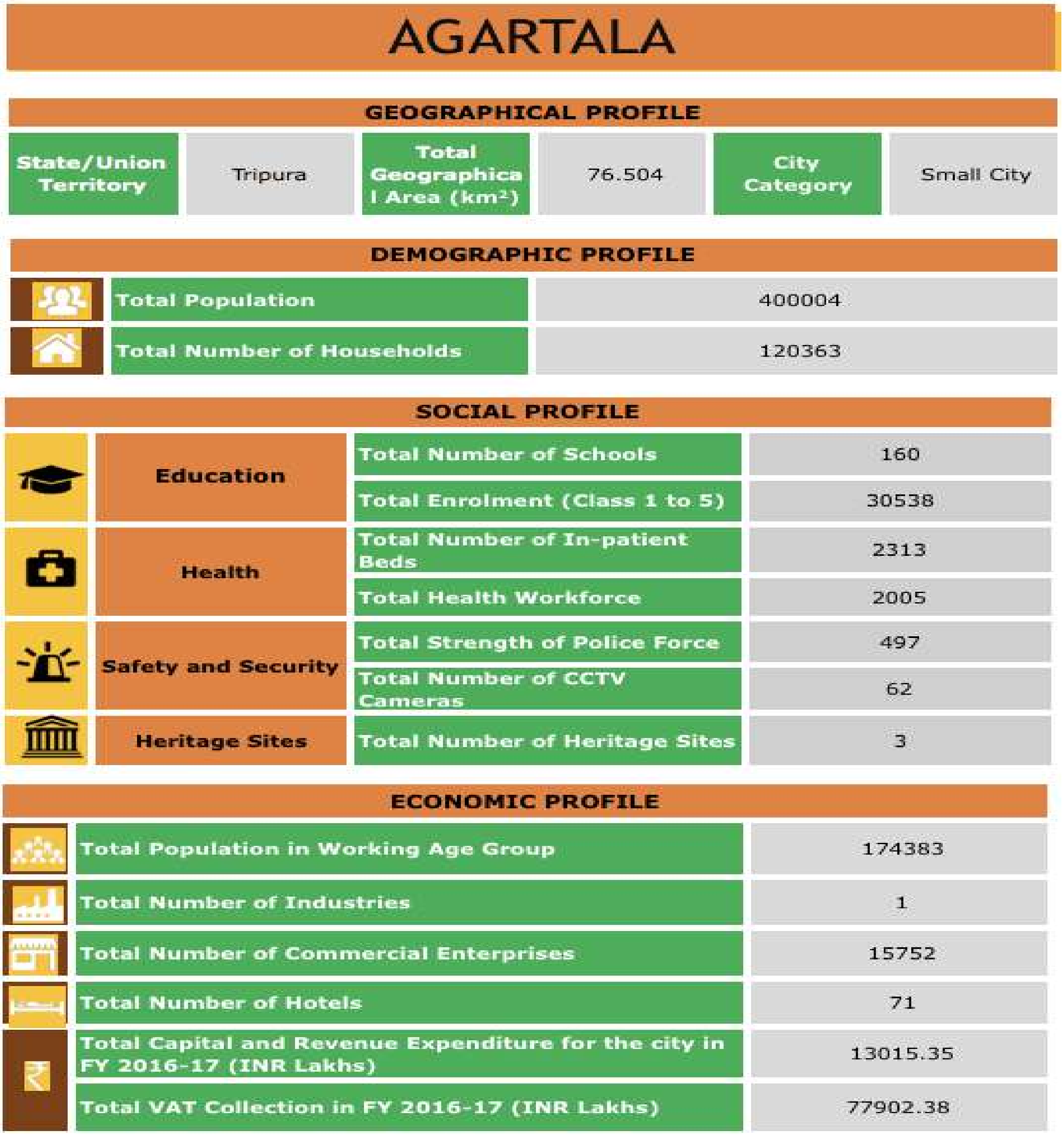

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AGARTALA

GEOGRAPHICAL PROFILE

State/Union Territory	Tripura	Total Geographical Area (km²)	76.504	City Category	Small City

DEMOGRAPHIC PROFILE

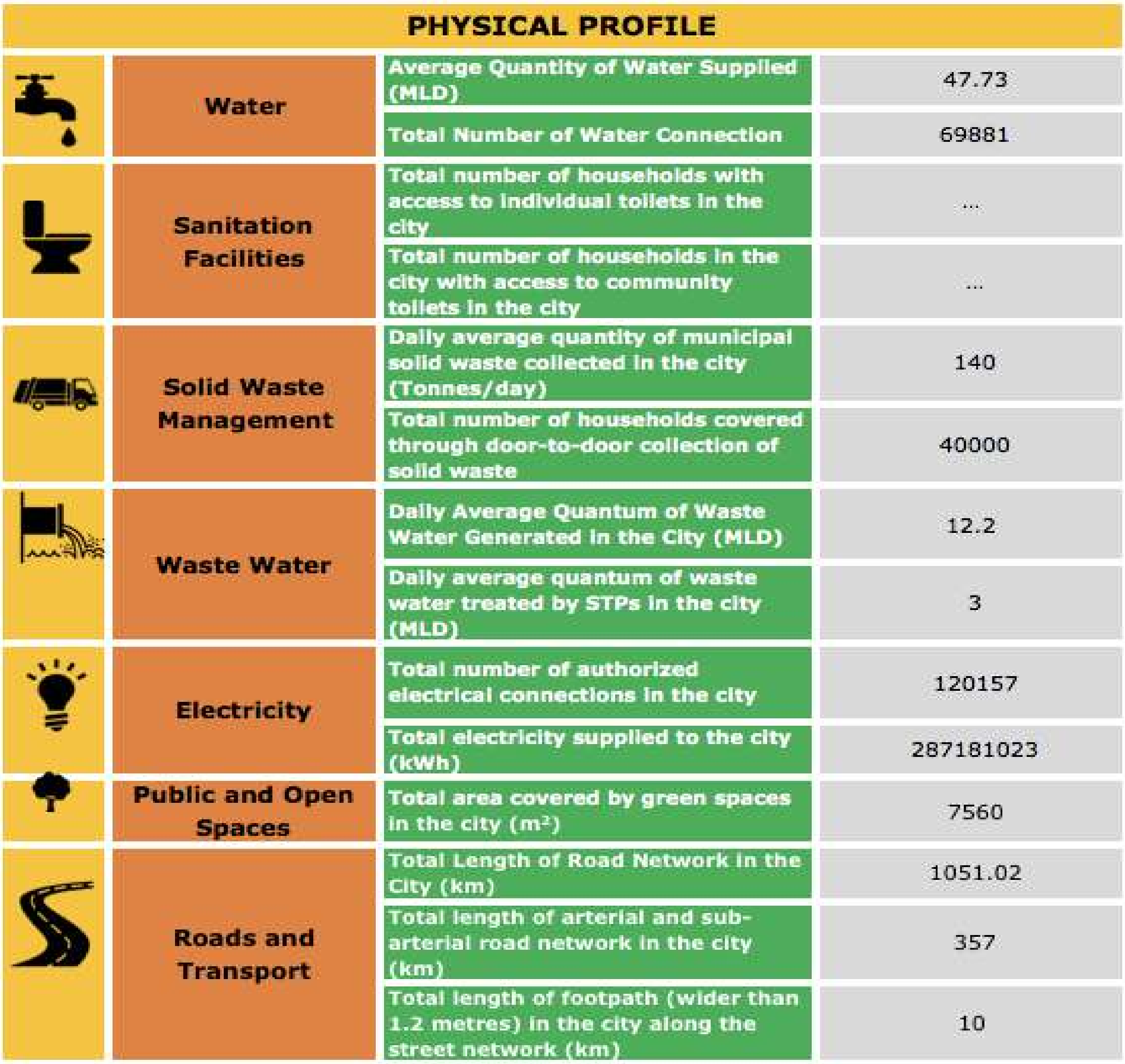
Total Population	400004
Total Number of Households	120363

SOCIAL PROFILE

Education	Total Number of Schools	160
	Total Enrolment (Class 1 to 5)	30538
Health	Total Number of In-patient Beds	2313
	Total Health Workforce	2005
Safety and Security	Total Strength of Police Force	497
	Total Number of CCTV Cameras	62
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	174383
Total Number of Industries	1
Total Number of Commercial Enterprises	15752
Total Number of Hotels	71
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13015.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	77902.38



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	47.73
	Total Number of Water Connection	69881
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	140
	Total number of households covered through door-to-door collection of solid waste	40000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	12.2
	Daily average quantum of waste water treated by STPs in the city (MLD)	3
Electricity	Total number of authorized electrical connections in the city	120157
	Total electricity supplied to the city (kWh)	287181023
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7560
Roads and Transport	Total Length of Road Network in the City (km)	1051.02
	Total length of arterial and sub-arterial road network in the city (km)	357
	Total length of footpath (wider than 1.2 metres) in the city along the street network (km)	10

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and**	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms

Pillars of Comprehensive Development	Category	Indicators
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and de-

velopment agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Agartala Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Public Work Section, Agartala Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Public Work Section, Agartala Municipal Corporation
Urban Local Body	For Heritage sites related data	Agartala Municipal Corporation
Urban Local Body	For Ecological sites related data	Agartala Municipal Corporation
Urban Local Body	For Housing related data	Agartala Municipal Corporation
Urban Local Body	For Building plan related data	Building Plan Section, Agartala Municipal Corporation
Urban Local Body	For Roads related data	Public Work section, Agartala Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management Section, Agartala Municipal Corporation
Urban Local Body	For IT services related data	IT Section, Agartala Municipal Corporation
Urban Local Body	For Vendor committee related data	Agartala Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tripura State Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Building Plan Section, Agartala Municipal Corporation
	Construction planning	Building Plan Section, Agartala Municipal Corporation
	Green Building	Building Plan Section, Agartala Municipal Corporation
	Rain water harvesting	Building Plan Section, Agartala Municipal Corporation
	Universal Design Principle	Building Plan Section, Agartala Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tripura State Electricity Corporation Limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Section, Agartala Municipal Corporation
	Citizen Services	Health and Family welfare department
	Disease Prevalence	Health and Family welfare department
	Health Infrastructure	Health and Family welfare department
State Renewable Energy Development Agency		Tripura Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Planning department, Tripura
Traffic and Police Department		State Police department
Transport Authorities	Buses	Tripura state road transport corporation
	Registered Vehicles	Tripura state road transport corporation
	Sub urban rail transport	NA

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 3 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	3

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

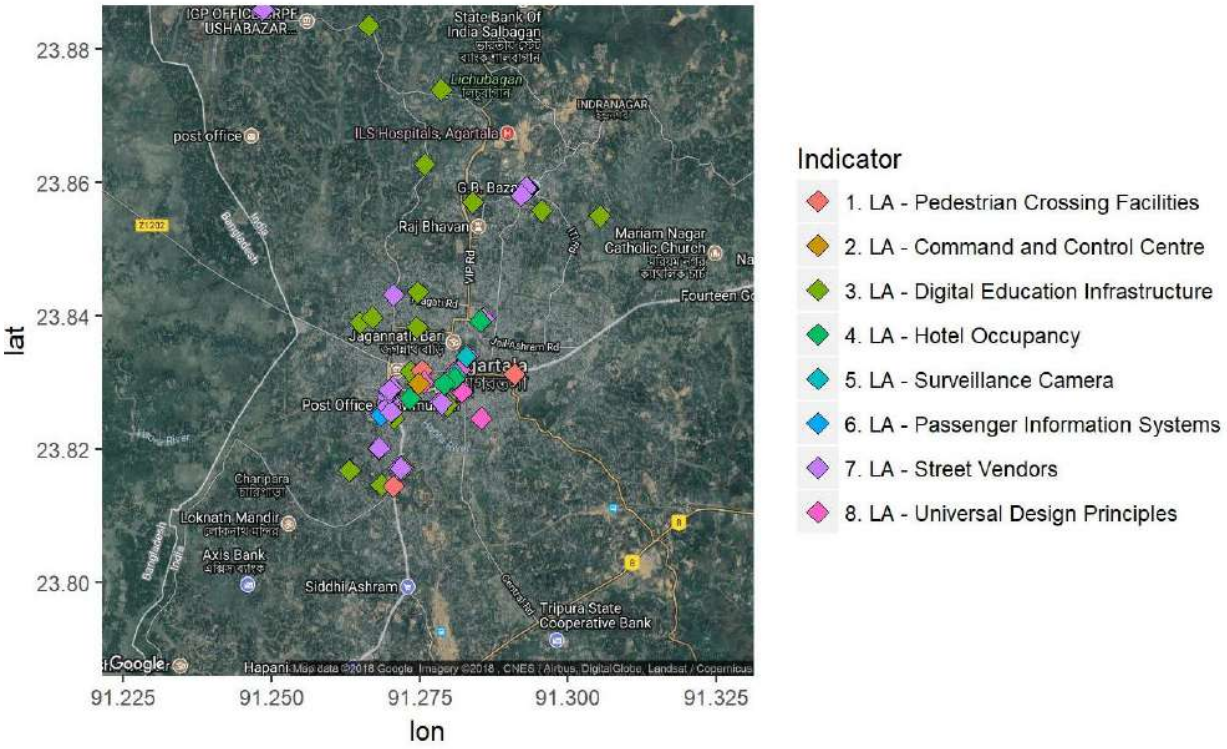
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
lon
23.88
23.86
23.84
23.82
23.80
91.225
91.250
91.275
91.300
91.325
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
State Bank Of India Salbagan
Lichubagan
INDRANAGAR
post office
ILS Hospitals, Agartala
G.B. Bazar
Raj Bhavan
Mariam Nagar Catholic Church
Jagannath Bari
Agartala
Post Office
Charipara
Loknath Mandir
Axis Bank
Siddhi Ashram
Tripura State Cooperative Bank
Hapania
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	60.30%
Identity & Culture	35%
Education	89%
Health	97%
Safety & Security	67%
Economy & Employment	33%
Housing & Inclusiveness	50%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	53%
Transport & Mobility	41%
Assured Water Supply	44%
Waste Water Management	45%
Solid Waste Management	45%
Reduced Pollution	77%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

AGRA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not	The indicator on unemployment will be excluded from scores. For final

#	Challenges	Proposed Solutions
	have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

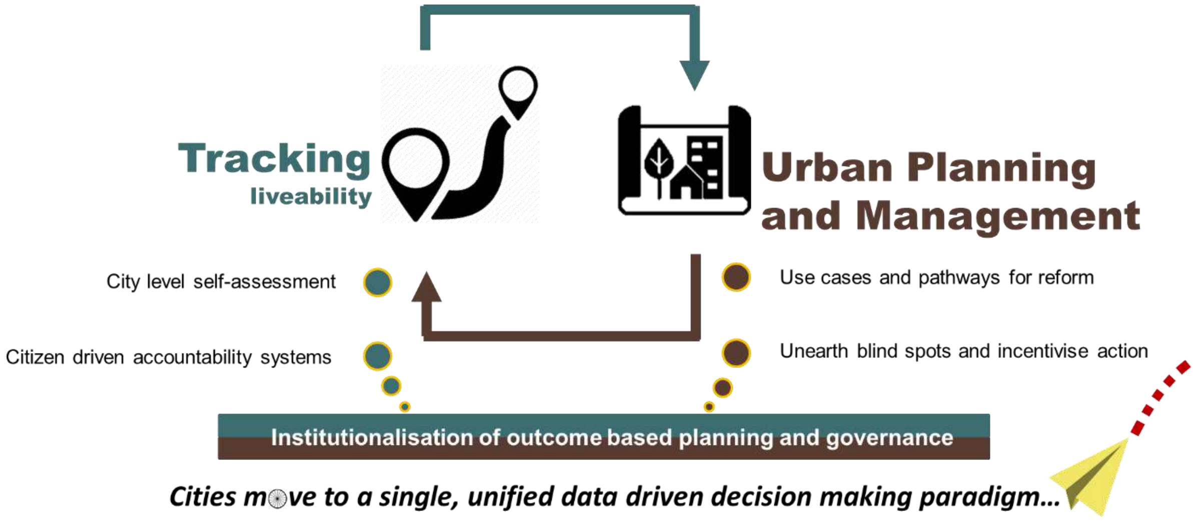
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

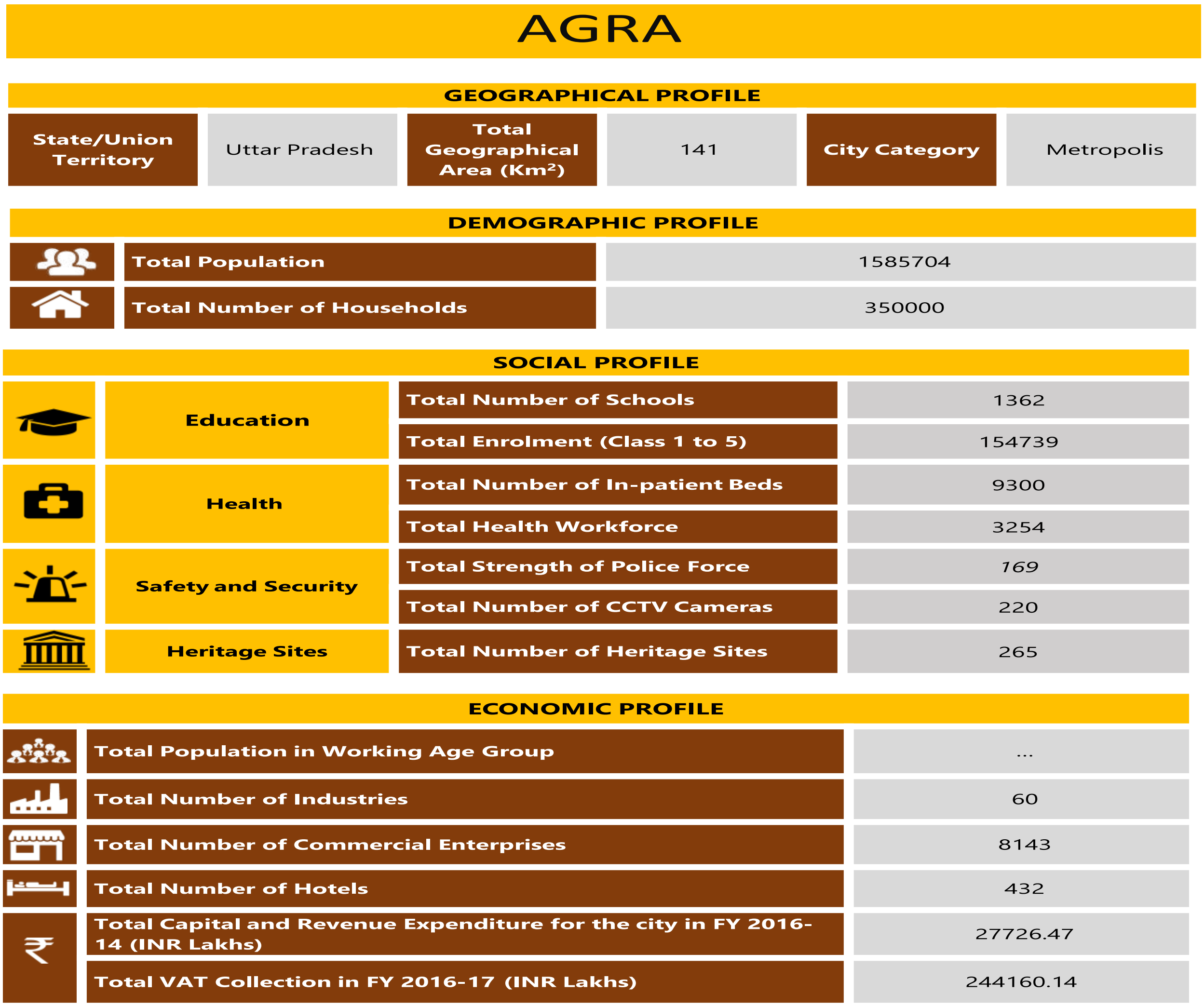
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	141	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1585704
Total Number of Households	350000

SOCIAL PROFILE

Education	Total Number of Schools	1362
	Total Enrolment (Class 1 to 5)	154739
Health	Total Number of In-patient Beds	9300
	Total Health Workforce	3254
Safety and Security	Total Strength of Police Force	*169*
	Total Number of CCTV Cameras	220
Heritage Sites	Total Number of Heritage Sites	265

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	60
Total Number of Commercial Enterprises	8143
Total Number of Hotels	432
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	27726.47
Total VAT Collection in FY 2016-17 (INR Lakhs)	244160.14

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	250
	Total Number of Water Connection	119776
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	186108
	Total number of households in the city with access to community toilets in the city	7620
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	700
	Total number of households covered through door-to-door collection of solid waste	180000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	233
	Daily average quantum of waste water treated by STPs in the city (MLD)	180
Electricity	**Total number of authorized electrical connections in the city**	428000
	Total electricity supplied to the city (kWh)	14583.33
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	3832555.26
Roads and Transport	**Total Length of Road Network in the City (Km)**	1728
	Total length of arterial and sub-arterial road network in the city (Km)	1728
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	99

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources

Pillars of Comprehensive Development	Category	Indicators
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks		25 marks		5 marks		45 marks	
(Maximum score that any city can achieve under **Institutional** Pillar)		(Maximum score that any city can achieve under **Social** Pillar)		(Maximum score that any city can achieve under **Economic** Pillar)		(Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Agra Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Park and Recreation, Agra Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Water supply office, Agra Municipal Corporation
Urban Local Body	For Heritage sites related data	Heritage and tourism department
Urban Local Body	For Ecological sites related data	Ecological section
Urban Local Body	For Housing related data	Housing section
Urban Local Body	For Building plan related data	Development Authorities
Urban Local Body	For Roads related data	Roads section, Agra Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management section, Agra Municipal Corporation
Urban Local Body	For IT services related data	Agra Smart city limited
Urban Local Body	For Vendor committee related data	Agra Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water supply office
Development Authority	Building Infrastructure	Development Authorities
	Construction planning	Development Authorities
	Green Building	Development Authorities

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Water supply department
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Discom/Electricity board
State Disaster management authority		Agra Municipal Corporation
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
	Citizen Services	
	Disease Prevalence	
	Health Infrastructure	
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	Town and country planning department
Traffic and Police Department		
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	Transport Authorities
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 16 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	7
DISCOM/Electricity Department	0
Traffic and Police Department	3
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	1
Total	15*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

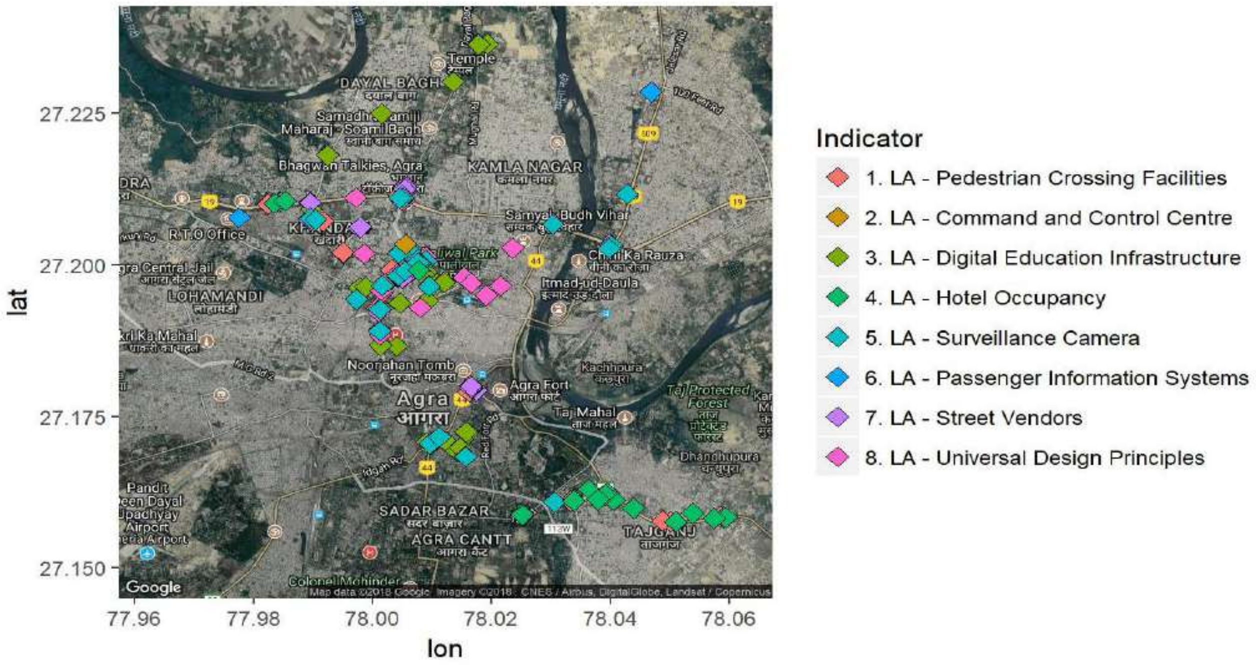
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


27.225
27.200
27.175
27.150
lat
77.96
77.98
78.00
78.02
78.04
78.06
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
DAYAL BAGH
KAMLA NAGAR
LOHAMANDI
Agra
आगरा
SADAR BAZAR
AGRA CANTT
TAJGANJ
Taj Mahal
Agra Fort
Google

5. City score on 15 categories of assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	63.86%
Identity & Culture	17%
Education	57%
Health	88%
Safety & Security	51%
Economy & Employment	11%
Housing & Inclusiveness	27%

Public Open Spaces	11%
Mixed Land Use & Compactness	2%
Power Supply	79%
Transport & Mobility	31%
Assured Water Supply	72%
Waste Water Management	77%
Solid Waste Management	74%
Reduced Pollution	55%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

AHMEDABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

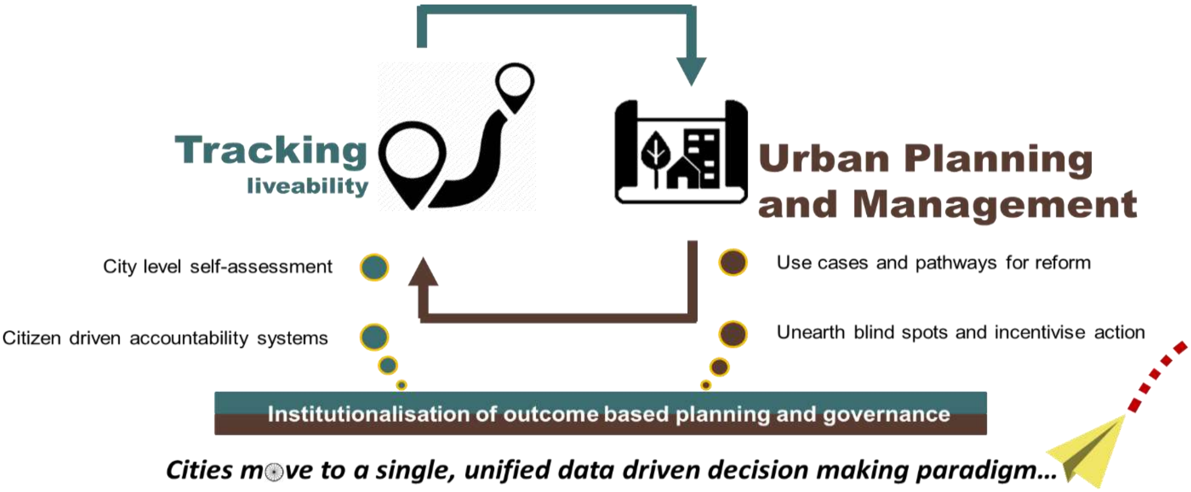
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

AHMEDABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km^2)**	466	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	5633927
Total Number of Households	1328014

SOCIAL PROFILE

Education	**Total Number of Schools**	1847
	Total Enrolment (Class 1 to 5)	321152
Health	**Total Number of In-patient Beds**	26386
	Total Health Workforce	31500
Safety and Security	**Total Strength of Police Force**	12941
	Total Number of CCTV Cameras	3256
Heritage Sites	**Total Number of Heritage Sites**	2766

ECONOMIC PROFILE

	Total Population in Working Age Group	1358554
	Total Number of Industries	6443
	Total Number of Commercial Enterprises	63186
	Total Number of Hotels	534
₹	**Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)**	457229.26
	Total VAT Collection in FY 2016-17 (INR Lakhs)	244160.14

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	1150
		Total Number of Water Connection	980726
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	1309487
		Total number of households in the city with access to community toilets in the city	38198
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	3893
		Total number of households covered through door-to-door collection of solid waste	1433337
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	800
		Daily average quantum of waste water treated by STPs in the city (MLD)	651
	Electricity	**Total number of authorized electrical connections in the city**	1818130
		Total electricity supplied to the city (kWh)	7017640000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	26335200
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2470
		Total length of arterial and sub-arterial road network in the city (Km)	520
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	730

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network

Pillars of Comprehensive Development	Category	Indicators
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

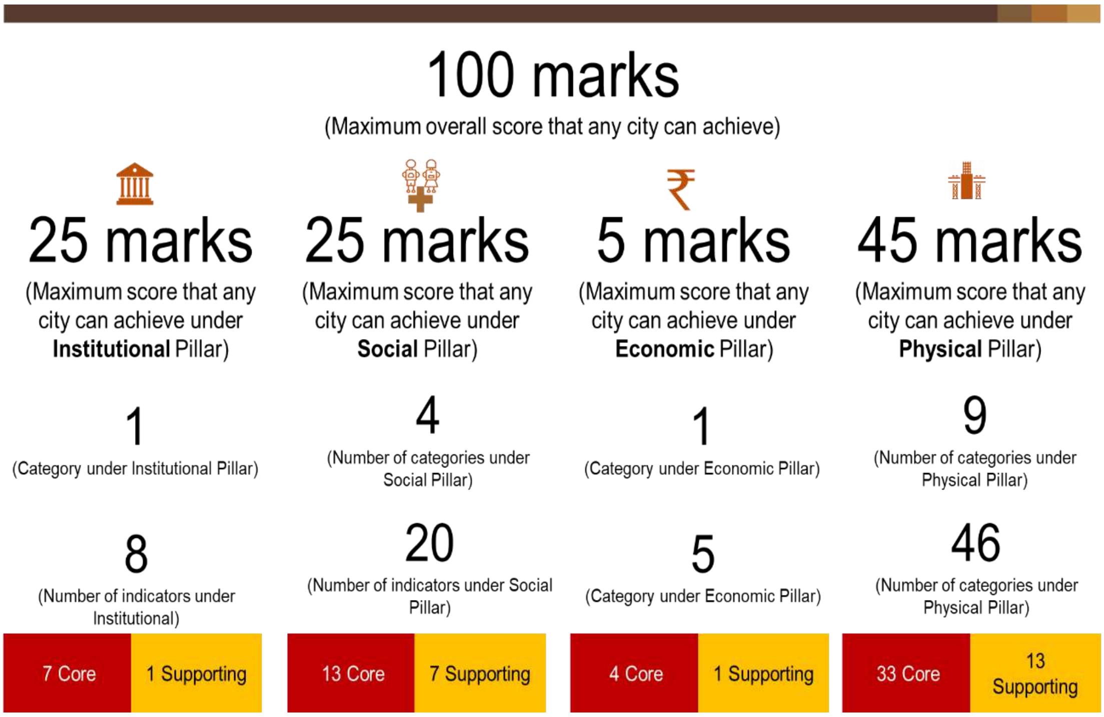
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Mr. Amish Shah, Chief Accounts Officer
Urban Local Body	For Park and Recreation Related Questions	Mr. Jignesh Patel, Director, Parks and Garden
Urban Local Body	For Water Supply and Drainage related questions	Jagdish A. Patel,(I/C) C.E (WRM),General Manager (SRFDCL)
Urban Local Body	For Heritage sites related data	P K Vasudevan Nair, Deputy GM of Heritage Cell
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Harpalsinh M. Zala Add. City Engineer, Housing Project, Slum Networking Project
Urban Local Body	For Building plan related data	Rajesh G Patel,TDO BPSP
Urban Local Body	For Roads related data	Hitesh Contractor,Additional City Engineer
Urban Local Body	For Solid waste management related data	Harshadrai Solanki, Director, Solid Waste Management & Conservancy Services
Urban Local Body	For IT services related data	Yatindra Naik (Physical)Manager,E-governance
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for	Jagdish Patel, City Engineer Girish Patel, In-charge, city and country

Designated data owners	Subcategories	Data owners at city level
	questions mentioned under Urban Local Body	planning
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Ms. Darshna Patel,Environment Engineer
Development Authority	Building Infrastructure	Rajesh G Patel,TDO BPSP
	Construction planning	Rajesh G Patel,TDO BPSP
	Green Building	Rajesh G Patel,TDO BPSP
	Rain water harvesting	Rajesh G Patel,TDO BPSP
	Universal Design Principle	Rajesh G Patel,TDO BPSP
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Naimesh Panchal, AM Customer Service, Torrent Power Dipak H Suthar,Add. Chief Engineer (Electrical)(Street Light & Project) Devang Darji, Power and DISCOM
State Disaster management authority		M.F.Dastoor Chief Fire Officer
State Education Department		Dr. Lagdhir Desai, Administrative Officer, Edu. Dept. Dr. Ashwin Trivedi, Assistant Administrative Officer, School Board
State Health Department	Health care professionals	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Citizen Services	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Disease Prevalence	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
	Health Infrastructure	Dr. Bhavin Solanki, Medical Officer of Health (I/C)
State Renewable Energy Development Agency		Discoms / Electricity Board Devang Darji, Add. Chief Eng. Electricity
State Sales / Commercial Taxes Department		Dipak Trivedi, Assessor and Tax Collector (professional Tax) Debashish Banerjee, Assessor and Tax Collector (Prop.Tax),

Designated data owners	Subcategories	Data owners at city level
Town and Country Planning Department	Land Use	Girish Patel, Country and City Palnning
Traffic and Police Department		P.A.Patel, Addl. City Engineer Police Commissioner office, Ahmedabad
Transport Authorities	Buses	1) Deepak Trivedi, General Manager (Operations), Ahmedabad Janmarg Limited (BRTS) 2) RajendraPrasad Pandey Dy. Transport Manager, AMTS
	Registered Vehicles	
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1

State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	48
Total	60

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

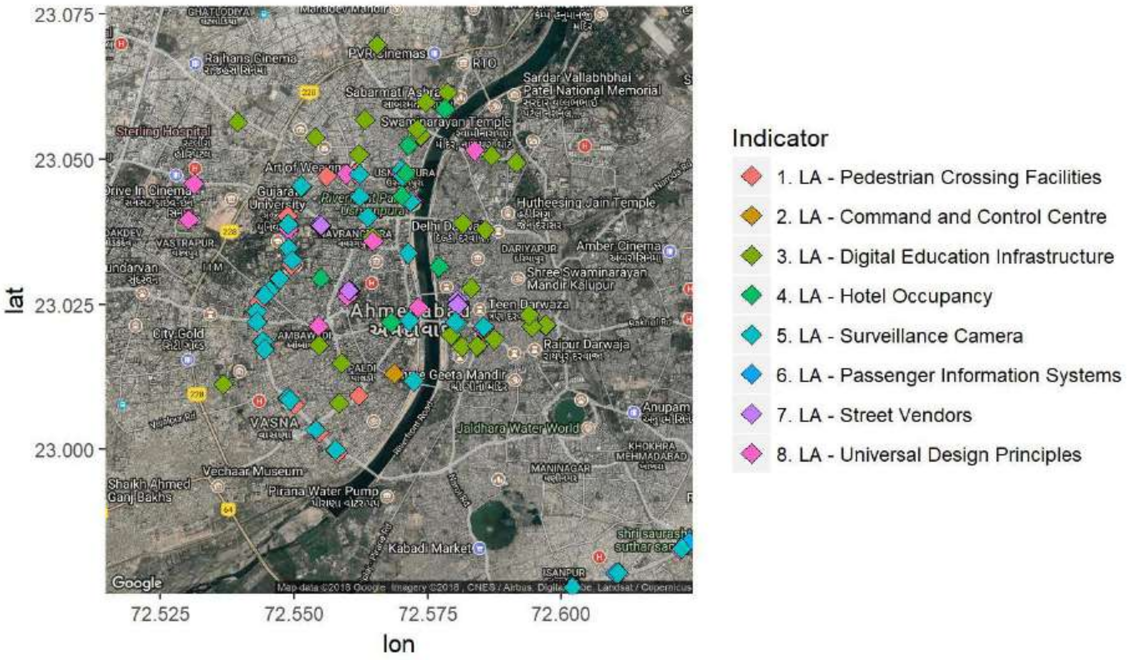
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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lon
Rajhans Cinema
PVR Cinemas
RTO
Sabarmati Ashram
Swaminarayan Temple
Sardar Vallabhbhai Patel National Memorial
Sterling Hospital
Art of Weavin
Gujarat University
Drive In Cinema
Hutheesing Jain Temple
VASTRAPUR
Amber Cinema
Shree Swaminarayan Mandir Kalupur
Ahmedabad
Teen Darwaza
City Gold
Raipur Darwaja
Geeta Mandir
Anupam
VASNA
Jaldhara Water World
KHOKHRA MEHMADABAD
Vechaar Museum
MANINAGAR
Shaikh Ahmed Ganj Bakhs
Pirana Water Pump
Kabadi Market
ISANPUR
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	78.18%
Identity & Culture	4%
Education	88%
Health	73%
Safety & Security	50%
Economy & Employment	29%
Housing & Inclusiveness	35%
Public Open Spaces	24%
Mixed Land Use & Compactness	50%
Power Supply	44%
Transport & Mobility	36%
Assured Water Supply	78%
Waste Water Management	46%
Solid Waste Management	77%
Reduced Pollution	84%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

AIZAWL

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

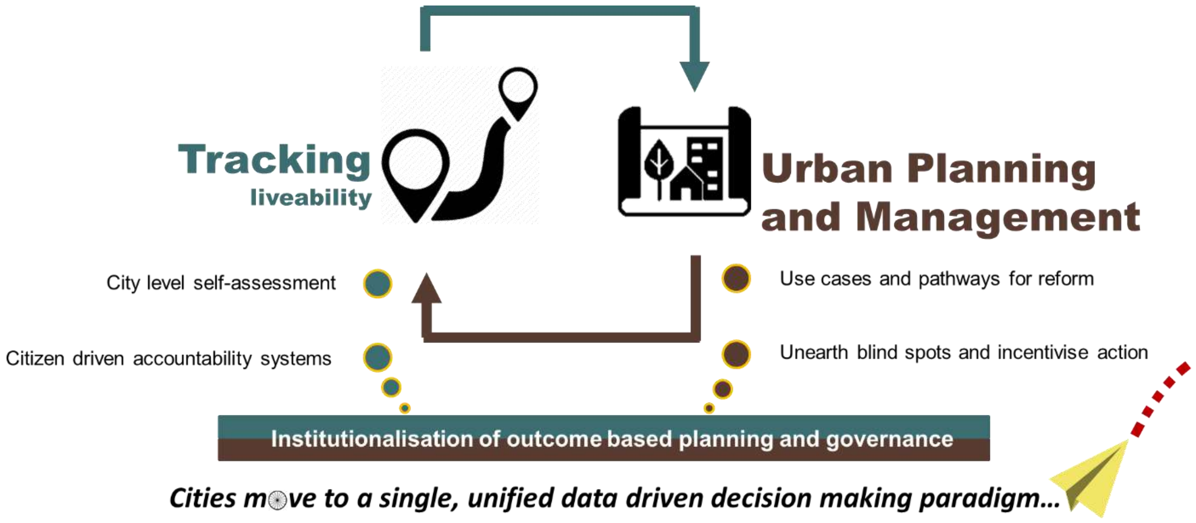
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

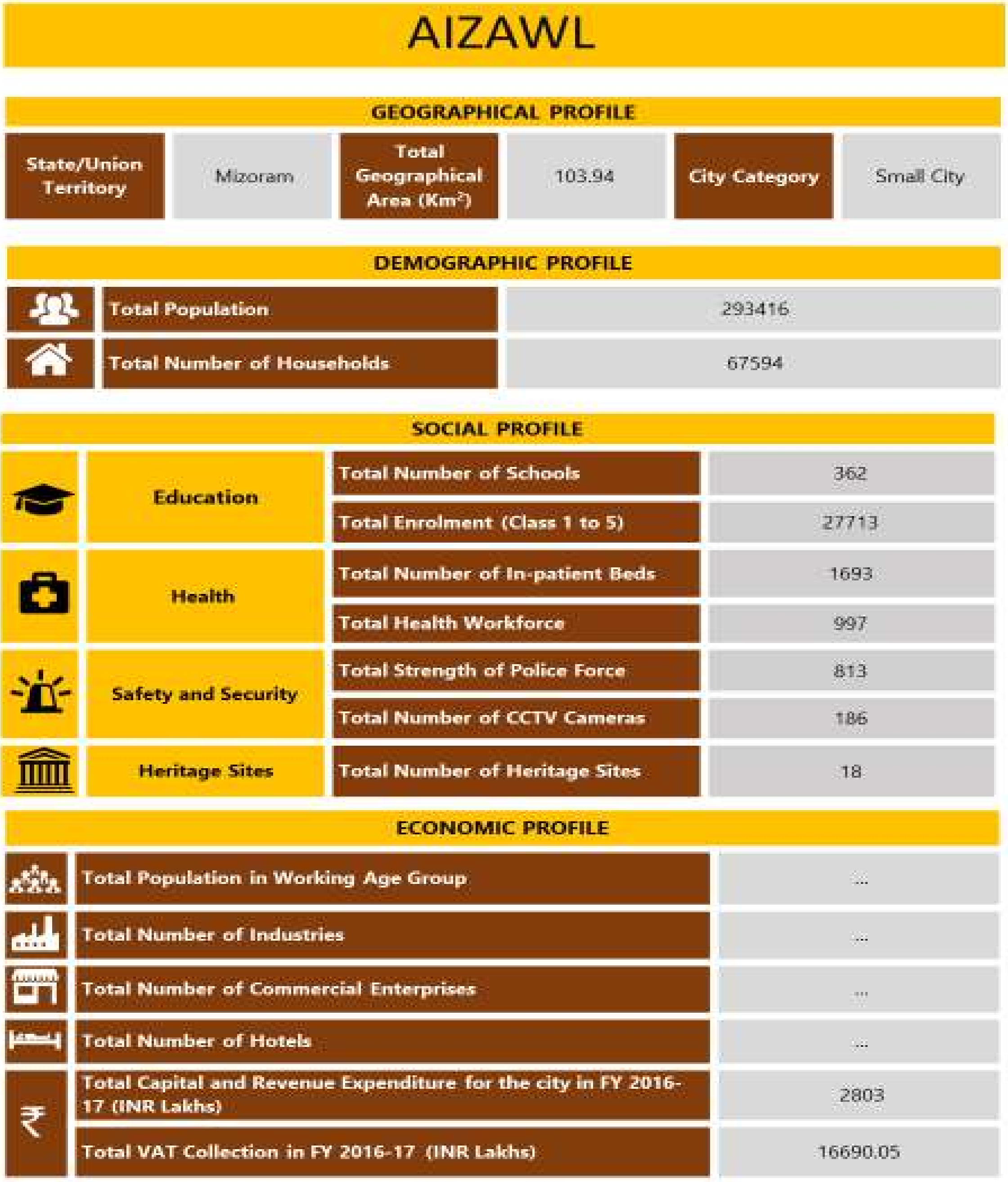

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AIZAWL

GEOGRAPHICAL PROFILE

State/Union Territory	Mizoram	Total Geographical Area (Km^2)	103.94	City Category	Small City

DEMOGRAPHIC PROFILE

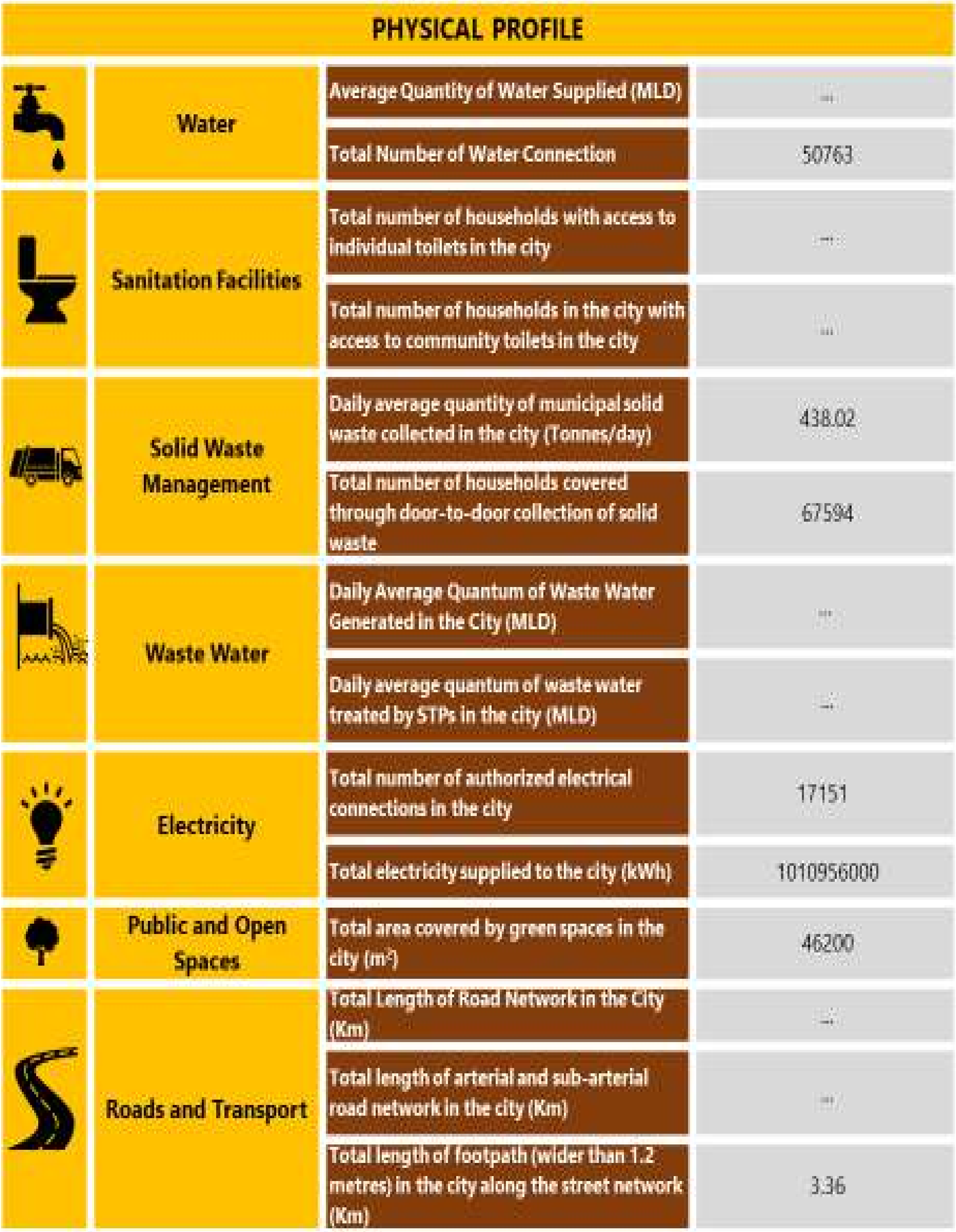
Total Population	293416
Total Number of Households	67594

SOCIAL PROFILE

Education	Total Number of Schools	362
	Total Enrolment (Class 1 to 5)	27713
Health	Total Number of In-patient Beds	1693
	Total Health Workforce	997
Safety and Security	Total Strength of Police Force	813
	Total Number of CCTV Cameras	186
Heritage Sites	Total Number of Heritage Sites	18

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	...
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2803
Total VAT Collection in FY 2016-17 (INR Lakhs)	16690.05



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	---
	Total Number of Water Connection	50763
Sanitation Facilities	Total number of households with access to individual toilets in the city	---
	Total number of households in the city with access to community toilets in the city	---
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	438.02
	Total number of households covered through door-to-door collection of solid waste	67594
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	---
	Daily average quantum of waste water treated by STPs in the city (MLD)	---
Electricity	Total number of authorized electrical connections in the city	17151
	Total electricity supplied to the city (kWh)	1010956000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	46200
Roads and Transport	Total Length of Road Network in the City (Km)	---
	Total length of arterial and sub-arterial road network in the city (Km)	---
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3.36

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

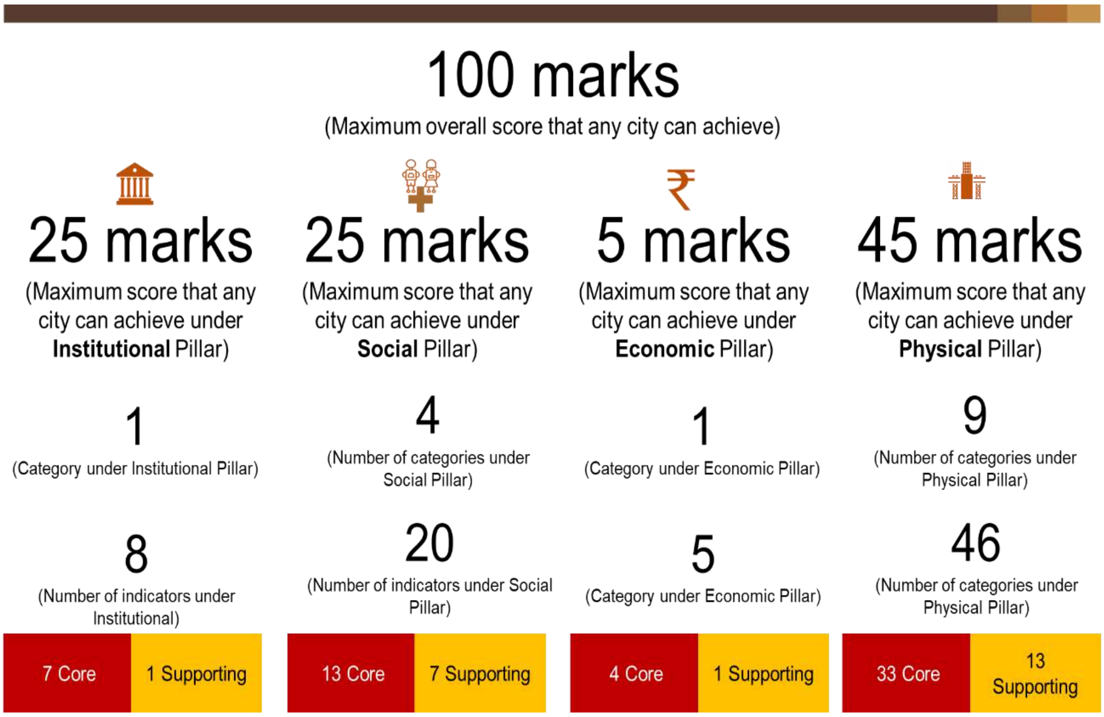
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Aizawl Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Aizawl Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Aizawl Municipal Corporation
Urban Local Body	For Heritage sites related data	Aizawl Municipal Corporation
Urban Local Body	For Ecological sites related data	Aizawl Municipal Corporation
Urban Local Body	For Housing related data	Aizawl Municipal Corporation
Urban Local Body	For Building plan related data	Aizawl Municipal Corporation
Urban Local Body	For Roads related data	Aizawl Municipal Corporation
Urban Local Body	For Solid waste management related data	Aizawl Municipal Corporation
Urban Local Body	For IT services related data	Aizawl Municipal Corporation
Urban Local Body	For Vendor committee related data	Aizawl Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Mizoram Pollution Control Board
Development Authority	Building Infrastructure	Urban Development and Poverty Alleviation Aizawl Municipal Corporation
	Construction planning	
	Green Building	

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Power and electricity department
State Disaster management authority		Disaster management and rehabilitation department
State Education Department		State education department, Mizoram
State Health Department	Health care professionals	Health Department, GoM
State Health Department	Citizen Services	
State Health Department	Disease Prevalence	
State Health Department	Health Infrastructure	
State Renewable Energy Development Agency		-
State Sales / Commercial Taxes Department		Taxation Department
Town and Country Planning Department	Land Use	Aizawl Municipal Corporation
Traffic and Police Department		Home Department
Transport Authorities	Buses	Transport Department, Mizoram
Transport Authorities	Registered Vehicles	
Transport Authorities	Sub urban rail transport	
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	1
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	2
Disaster Management	0
Urban Local Body	4
Total	7

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

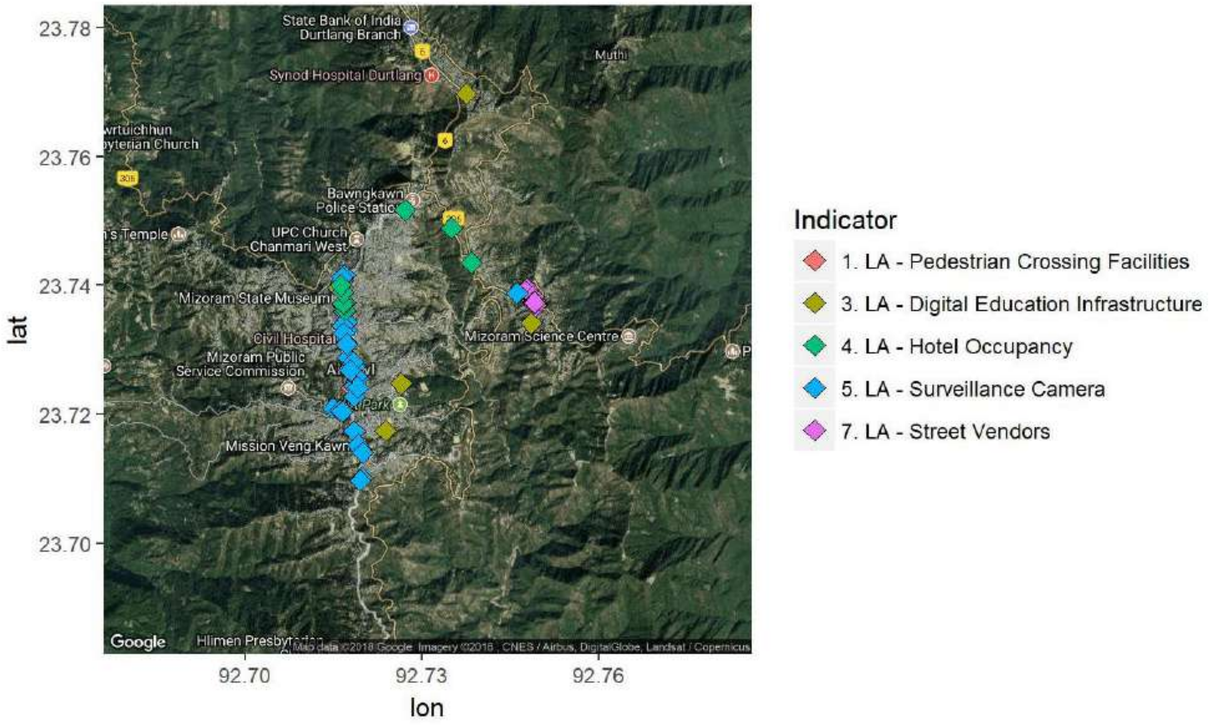
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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State Bank of India Durtlang Branch
Synod Hospital Durtlang
Muthi
Bawngkawn Police Station
UPC Church Chanmari West
Mizoram State Museum
Civil Hospital
Mizoram Public Service Commission
Mission Veng Kawn
Mizoram Science Centre
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	47.29%
Identity & Culture	0%
Education	76%
Health	98%
Safety & Security	67%

Economy & Employment	43%
Housing & Inclusiveness	100%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	24%
Transport & Mobility	55%
Assured Water Supply	47%
Waste Water Management	40%
Solid Waste Management	50%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs
Government of India

AJMER

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

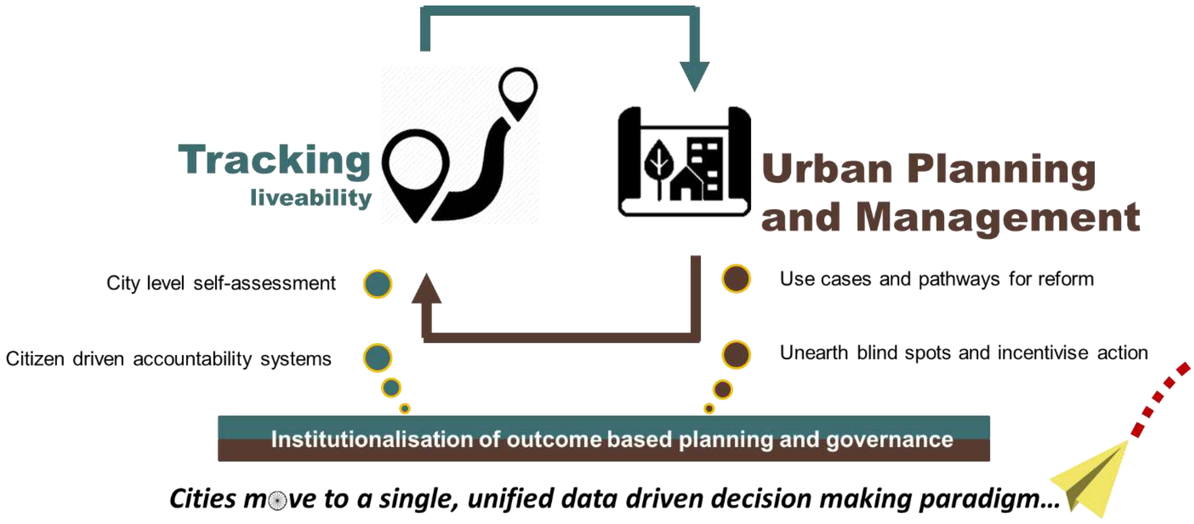
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

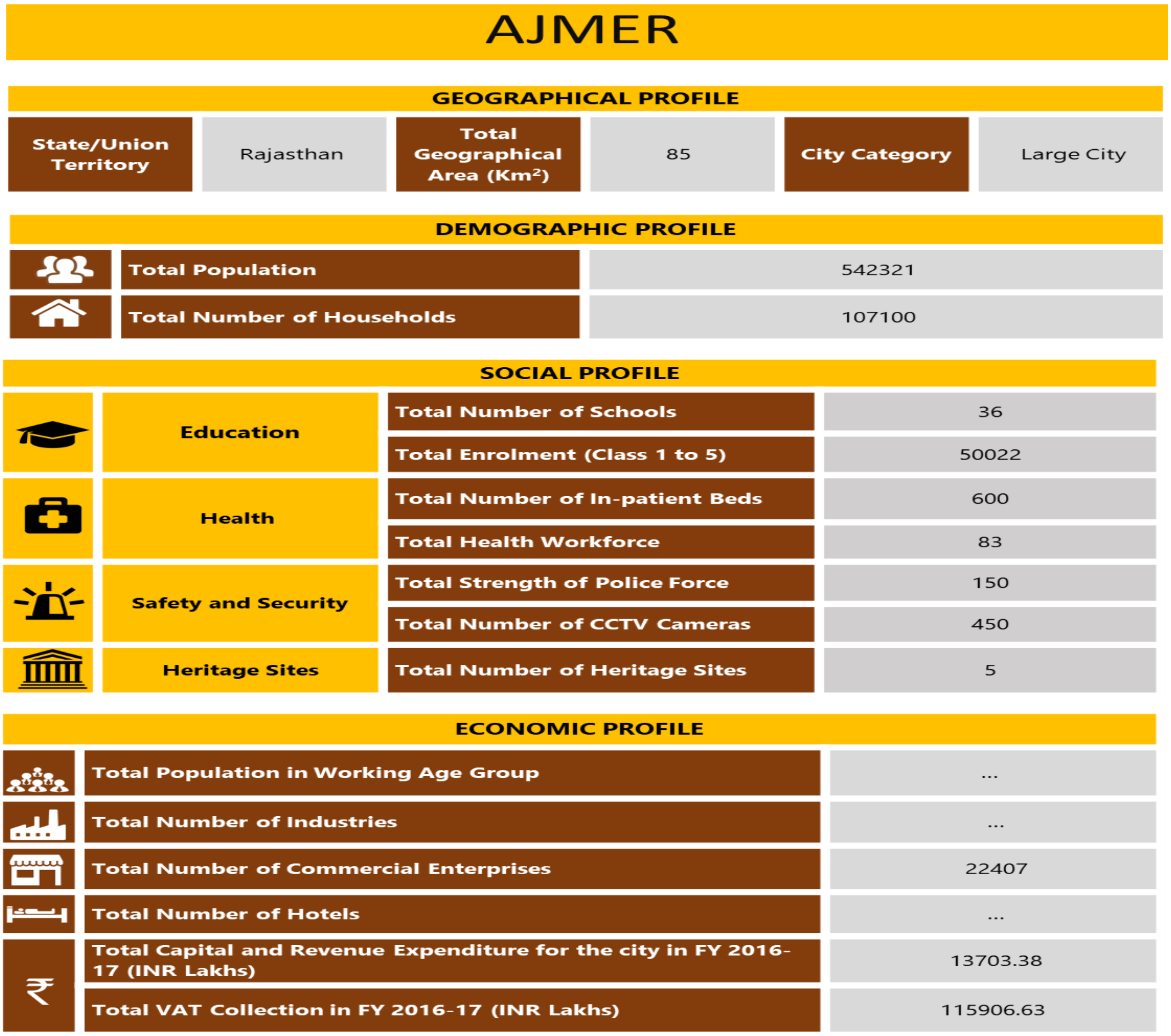

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	Total Geographical Area (Km^2)	85	City Category	Large City

DEMOGRAPHIC PROFILE

Total Population	542321
Total Number of Households	107100

SOCIAL PROFILE

Education	Total Number of Schools	36
	Total Enrolment (Class 1 to 5)	50022
Health	Total Number of In-patient Beds	600
	Total Health Workforce	83
Safety and Security	Total Strength of Police Force	150
	Total Number of CCTV Cameras	450
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	22407
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13703.38
Total VAT Collection in FY 2016-17 (INR Lakhs)	115906.63

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	95
		Total Number of Water Connection	151287
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
		Total number of households in the city with access to community toilets in the city	957
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	185
		Total number of households covered through door-to-door collection of solid waste	128094
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	15
		Daily average quantum of waste water treated by STPs in the city (MLD)	15
	Electricity	**Total number of authorized electrical connections in the city**	644595
		Total electricity supplied to the city (kWh)	8249.6
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
	Roads and Transport	**Total Length of Road Network in the City (Km)**	129.8
		Total length of arterial and sub-arterial road network in the city (Km)	129.8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Nagar Nigam , Tarun , NeeruGurjar
Urban Local Body	For Park and Recreation Related Questions	ADA& Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	PHED & Nagar Nigam NirmanShakha
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	
Urban Local Body	For Building plan related data	ADA & Town & Country Planning
Urban Local Body	For Roads related data	PWD
Urban Local Body	For Solid waste management related data	Nagar Nigam NirmanShakha
Urban Local Body	For IT services related data	Nagar Nigam
Urban Local Body	For Vendor committee related data	Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Nagar Nigam
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Development Authority
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Nagar Nigam & Energy Discom Power House
State Disaster management authority		Collectrate Disaster manegment
State Education Department		Education Board
State Health Department	Health care professionals	CM&HO office health department
	Citizen Services	
	Disease Prevalence	CM&HO office health department
	Health Infrastructure	CM&HO office health department
State Renewable Energy Development Agency		Power Discom
State Sales / Commercial Taxes Department		Commercial Tax department
Town and Country Planning Department	Land Use	Town and Country Planning
Traffic and Police Department		SP Office
Transport Authorities	Buses	Transport office
	Registered Vehicles	Transport office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	1
Disaster Management	0
Urban Local Body	39
Total	40*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

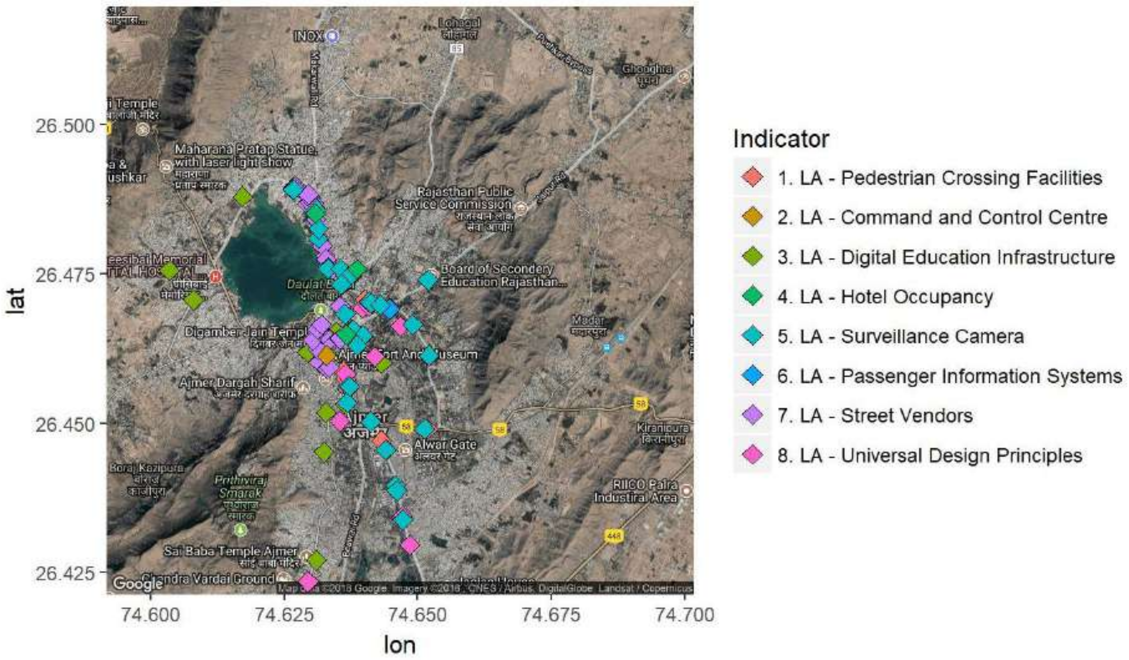
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.500
26.475
26.450
26.425
lat
74.600
74.625
74.650
74.675
74.700
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Maharana Pratap Statue with laser light show
Rajasthan Public Service Commission
Board of Secondery Education Rajasthan
Daulat Bagh
Digamber Jain Temple
Ajmer Dargah Sharif
Ajmer Fort And Museum
Alwar Gate
Prithviraj Smarak
Sai Baba Temple Ajmer
Kiranipura
RIICO Palra Industrial Area
Madar
Ghooghra
Lohagal
INOX
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	43.08%
Identity & Culture	46%
Education	81%
Health	45%
Safety & Security	62%
Economy & Employment	22%
Housing & Inclusiveness	2%
Public Open Spaces	2%

Mixed Land Use & Compactness	50%
Power Supply	43%
Transport & Mobility	42%
Assured Water Supply	75%
Waste Water Management	61%
Solid Waste Management	61%
Reduced Pollution	3%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

ALIGARH

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

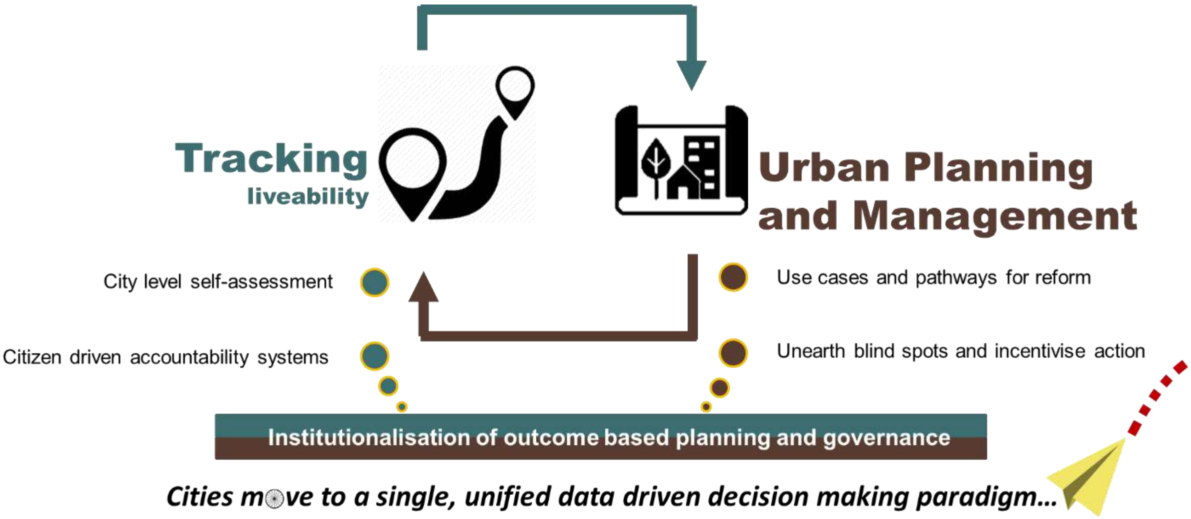
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

ALIGARH

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	36.9	City Category	Large City

DEMOGRAPHIC PROFILE

Total Population	874408
Total Number of Households	127229

SOCIAL PROFILE

Education	Total Number of Schools	470
	Total Enrolment (Class 1 to 5)	77244
Health	Total Number of In-patient Beds	1660
	Total Health Workforce	953
Safety and Security	Total Strength of Police Force	858
	Total Number of CCTV Cameras	108
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	279125
Total Number of Industries	152
Total Number of Commercial Enterprises	2072
Total Number of Hotels	42
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	19104.83
Total VAT Collection in FY 2016-17 (INR Lakhs)	28751.34

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	127.73
	Total Number of Water Connection	59284
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	125034
	Total number of households in the city with access to community toilets in the city	2195
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	430
	Total number of households covered through door-to-door collection of solid waste	68400
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	110.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	…
Electricity	**Total number of authorized electrical connections in the city**	184742
	Total electricity supplied to the city (kWh)	92589700
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	321868.69
Roads and Transport	**Total Length of Road Network in the City (Km)**	717.01
	Total length of arterial and sub-arterial road network in the city (Km)	717.01
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	…

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators,

various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage

Pillars of Comprehensive Development	Category	Indicators
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

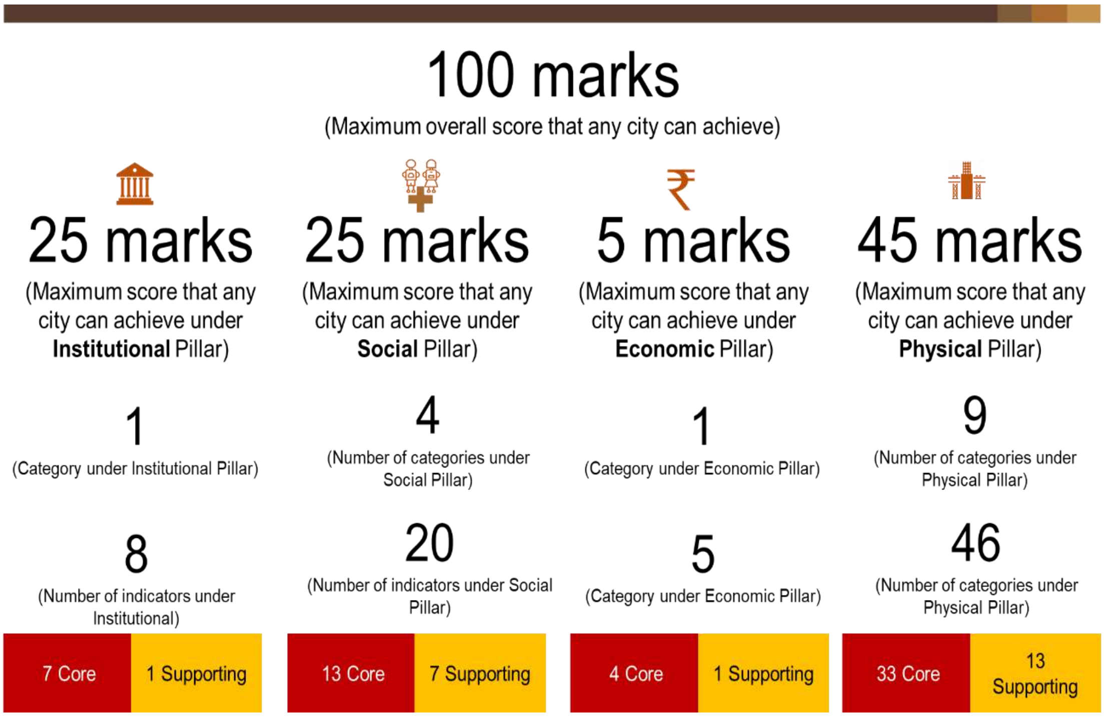
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index

Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Civil department
Urban Local Body	For Water Supply and Drainage related questions	Jalkal vibhag Nagar
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Civil Department
Urban Local Body	For Housing related data	Moradabad Development Authority / properties tax department
Urban Local Body	For Building plan related data	Aligarh Development Authority
Urban Local Body	For Roads related data	Public Works Department / civil department
Urban Local Body	For Solid waste management related data	Health Department Nagar Palika Parishad Aligarh
Urban Local Body	For IT services related data	IT department (main office) Nagar palika parishad Aligarh
Urban Local Body	For Vendor committee related data	Tex department ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development

Designated data owners	Subcategories	Data owners at city level
		Agency Aligarh
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Alighar
Development Authority	Building Infrastructure	Rampur development Authority
	Construction planning	Rampur development Authority
	Green Building	Rampur development Authority
	Rain water harvesting	Rampur development Authority
	Universal Design Principle	Rampur development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd
State Disaster management authority		State Disaster Management [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school (DIOS)
State Health Department	Health care professionals	UP State Health Department (CMO)
	Citizen Services	UP State Health Department (CMO)
	Disease Prevalence	UP State Health Department (CMO)
	Health Infrastructure	UP State Health Department (CMO)
State Renewable Energy Development Agency		State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic police, Civil police & Grand Railway police
Transport Authorities	Buses	Uttar Pradesh State transport Corporation &

Designated data owners	Subcategories	Data owners at city level
		Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	3
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	7
State Renewable Energy Department	2
Town and Country Planning	1
State Health Department	14
Transport Authority	6
Disaster Management	1
Urban Local Body	7
Total	45*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

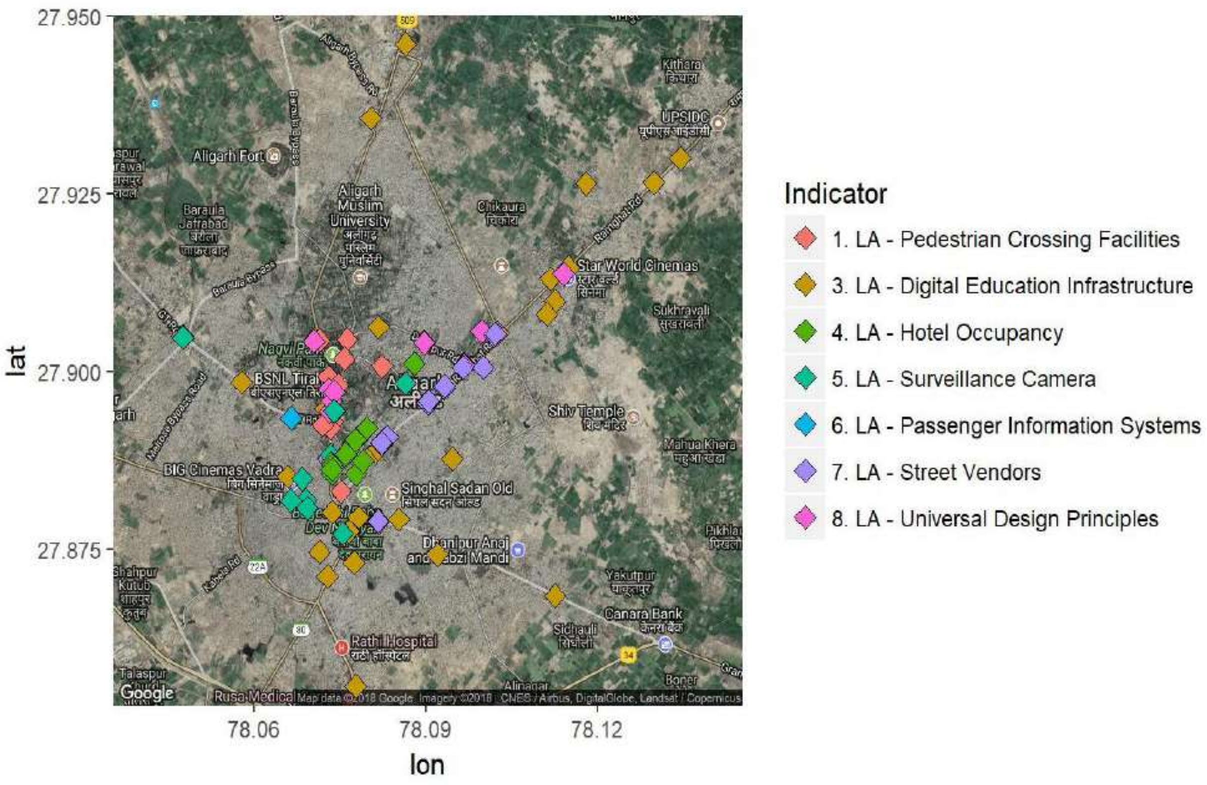
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Aligarh Muslim University
Chikaura
Star World Cinemas
Sukhravali
Shiv Temple
Mahua Khera
BIG Cinemas Vadra
Singhal Sadan Old
Dhanipur Anaj Sabzi Mandi
Yakutpur
Canara Bank
Rathi Hospital
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	57.42%
Identity & Culture	19%
Education	72%
Health	56%
Safety & Security	68%
Economy & Employment	21%
Housing & Inclusiveness	4%
Public Open Spaces	3%
Mixed Land Use & Compactness	0%
Power Supply	53%
Transport & Mobility	40%
Assured Water Supply	29%
Waste Water Management	41%
Solid Waste Management	84%
Reduced Pollution	21%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

ALLAHABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

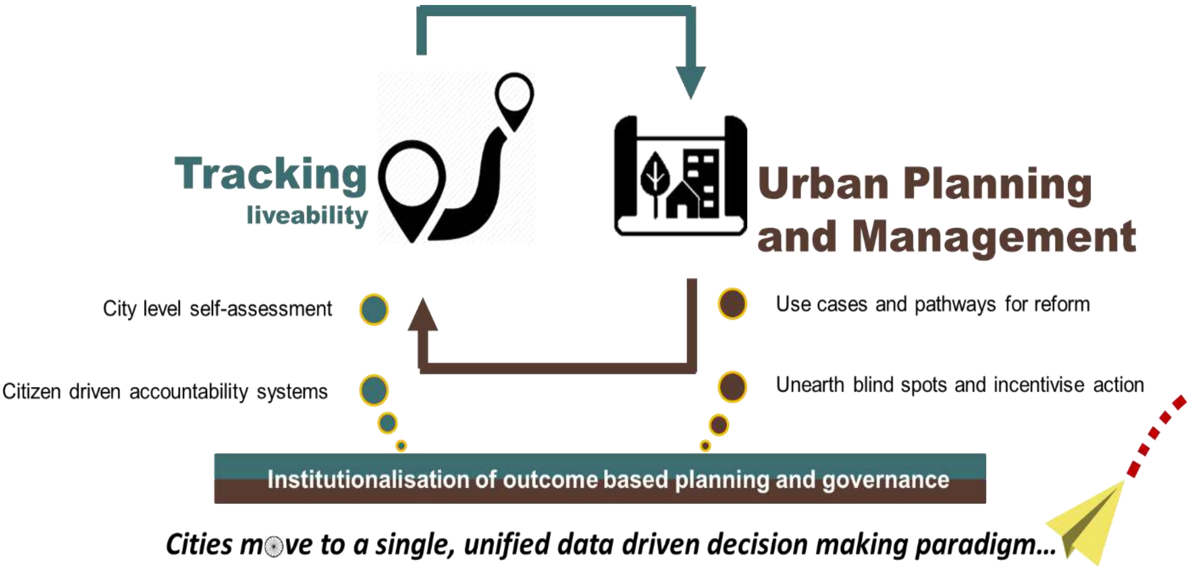
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

ALLAHABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	164	**City Category**	METROPOLIS

DEMOGRAPHIC PROFILE

Total Population	1168385
Total Number of Households	206972

SOCIAL PROFILE

Education	**Total Number of Schools**	3907
	Total Enrolment (Class 1 to 5)	333020
Health	**Total Number of In-patient Beds**	14242
	Total Health Workforce	638
Safety and Security	**Total Strength of Police Force**	6363
	Total Number of CCTV Cameras	476
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	5
Total Number of Commercial Enterprises	17140
Total Number of Hotels	139
Total Capital and Revenue Expenditure for the city in FY 2016-17 (Lakhs)	21727.03
Total VAT Collection in FY 2016-17 (Lakhs)	131540.35

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	338
	Total Number of Water Connection	196624
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	139995
	Total number of households in the city with access to community toilets in the city	11100
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	319148
	Total number of households covered through door-to-door collection of solid waste	80
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	275
	Daily average quantum of waste water treated by STPs in the city (MLD)	268
Electricity	**Total number of authorized electrical connections in the city**	244503
	Total electricity supplied to the city (kWh)	1630000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	…
Roads and Transport	**Total Length of Road Network in the City (Km)**	2702.9
	Total length of arterial and sub-arterial road network in the city (Km)	…
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	…

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account and Taxation Department Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Environment and Parks Department Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Environment and Parks Department Nagar Nigam
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Nagar Nigam
Urban Local Body	For Building plan related data	Nagar Nigam
Urban Local Body	For Roads related data	Nagar Nigam
Urban Local Body	For Solid waste management related data	Environment and Parks Department
Urban Local Body	For IT services related data	IT Department Nagar Nigam
Urban Local Body	For Vendor committee related data	Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	-
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Allahabad Development Authority
	Construction planning	Allahabad Development Authority
	Green Building	Allahabad Development

Designated data owners	Subcategories	Data owners at city level
		Authority
	Rain water harvesting	Allahabad Development Authority
	Universal Design Principle	Allahabad Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electrical Department
State Disaster management authority		Disaster Management Department
State Education Department		Basic Shiksha Adhikari
State Health Department	Health care professionals	Chief Medical Officer
	Citizen Services	Chief Medical Officer
	Disease Prevalence	Chief Medical Officer
	Health Infrastructure	Chief Medical Officer
State Renewable Energy Development Agency		Uttar Pradesh New and Renewable Energy Department Agency
State Sales / Commercial Taxes Department		Sales Tax Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Superintendent of police & Superintendent of traffic
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	99999
	Mono Rail Authority	99999
	Tramways	99999
	Marine Transport Authority	99999

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 52 numbers of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	4
DISCOM/Electricity Department	6
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	2
State Health Department	9
Transport Authority	2
Disaster Management	1
Urban Local Body	23
Total	52*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

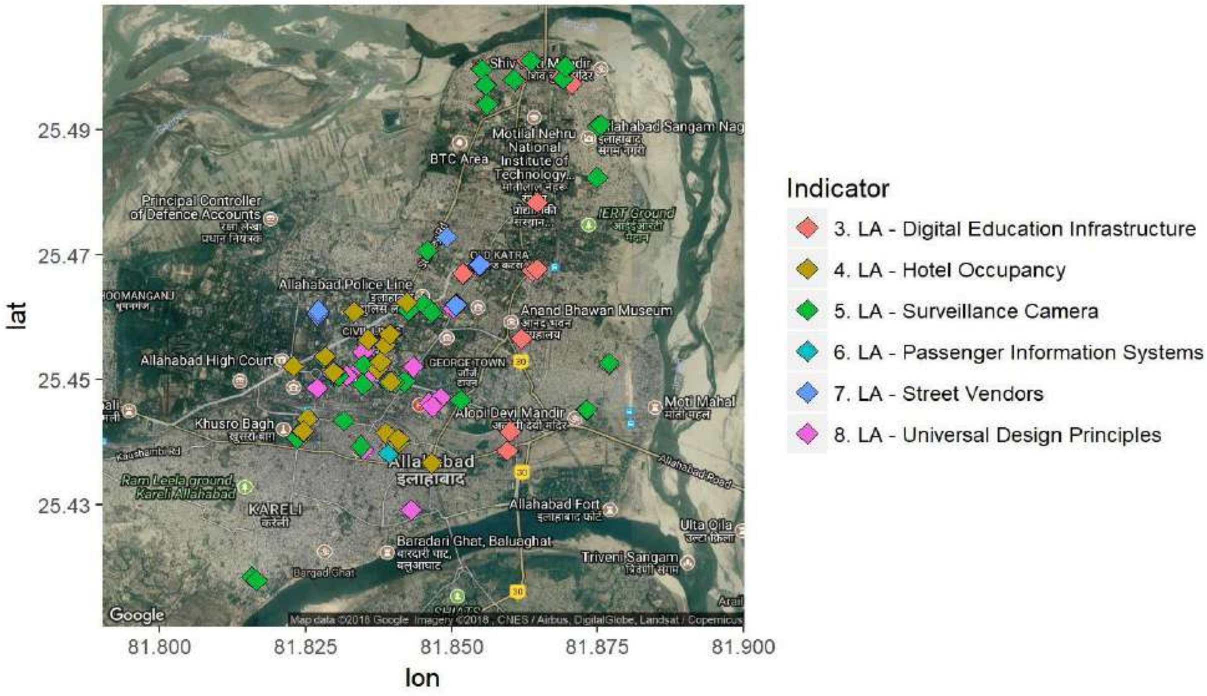
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
25.49
25.47
25.45
25.43
lon
81.800
81.825
81.850
81.875
81.900
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Motilal Nehru National Institute of Technology
BTC Area
Allahabad Sangam Nagar
Principal Controller of Defence Accounts
Allahabad Police Line
Anand Bhawan Museum
Allahabad High Court
George Town
Khusro Bagh
Alopi Devi Mandir
Moti Mahal
Allahabad
Allahabad Fort
KARELI
Ram Leela ground, Kareli Allahabad
Baradari Ghat, Baluaghat
Triveni Sangam
Ulta Qila
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	42.30%
Identity & Culture	26%
Education	91%
Health	64%
Safety & Security	56%
Economy & Employment	10%

Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	46%
Transport & Mobility	18%
Assured Water Supply	41%
Waste Water Management	61%
Solid Waste Management	33%
Reduced Pollution	57%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

AMARAVATI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

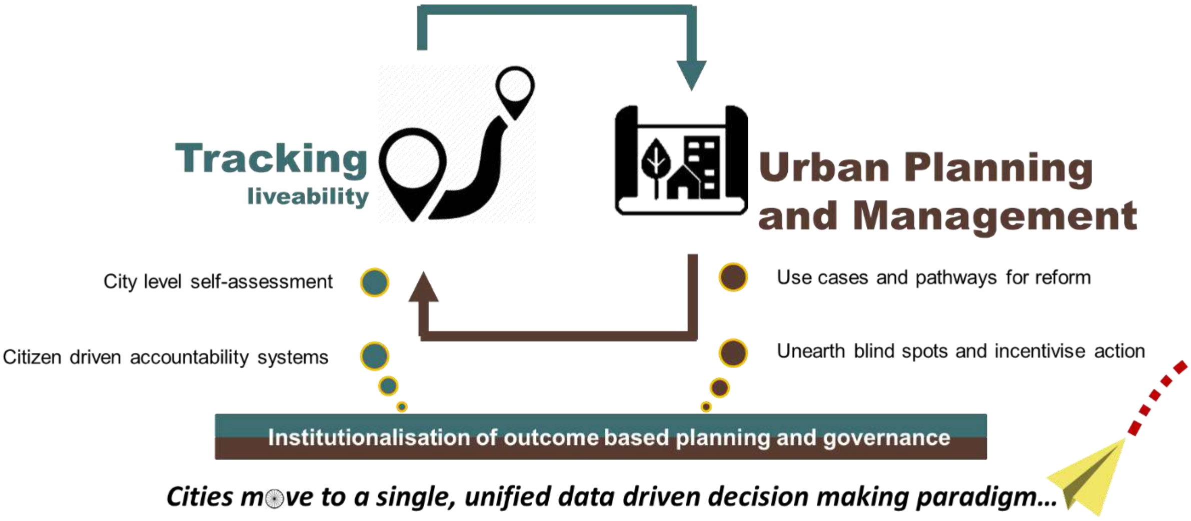
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

AMARAVATI

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	**Total Geographical Area**	217	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	103000
Total Number of Households	37959

SOCIAL PROFILE

Education	**Total Number of Schools**	74
	Total Enrolment (Class 1 to 5)	3988
Health	**Total Number of In-patient Beds**	34
	Total Health Workforce	110
Safety and Security	**Total Strength of Police Force**	...
	Total Number of CCTV Cameras	22
Heritage Sites	**Total Number of Heritage Sites**	3

ECONOMIC PROFILE

Total Population in Working Age Group	73907
Total Number of Industries	...
Total Number of Commercial Enterprises	81
Total Number of Hotels	...
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	0
Total VAT Collection in FY 2016-17 (INR Lakhs)	470.16

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	
		Total Number of Water Connections	38130
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	37959
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	14
		Total number of households covered through door-to-door collection of solid waste	37959
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	...
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	49838
		Total electricity supplied to the city (kWh)	61510253
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	63.93
	Roads and Transport	**Total Length of Road Network in the City (Km)**	196.81
		Total length of arterial and sub-arterial road network in the city (Km)	178.81
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	40

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards

Pillars of Comprehensive Development	Category	Indicators
		cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate

Pillars of Comprehensive Development	Category	Indicators
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network

Pillars of Comprehensive Development	Category	Indicators
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Town Planning,Education,Licence Departments
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage Department
Urban Local Body	For Heritage sites related data	Town Planning Department
Urban Local Body	For Ecological sites related data	Environment Department
Urban Local Body	For Housing related data	Town Planning Department
Urban Local Body	For Building plan related data	Town Planning Department
Urban Local Body	For Roads related data	City Engineer Department
Urban Local Body	For Solid waste management related data	Solid waste management/Sanitation Department
Urban Local Body	For IT services related data	IT/System Department
Urban Local Body	For Vendor committee related data	License Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Health,Transport,Garden Department etc.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	MPCB Regional office
Development Authority	Building Infrastructure	Town Planning Department

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Town Planning Department
	Green Building	Town Planning Department
	Rain water harvesting	Town Planning Department
	Universal Design Principle	Town Planning Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MSEB
State Disaster management authority		Disaster management
State Education Department		Education Department
State Health Department	Health care professionals	Health Department-Civil Surgeon
	Citizen Services	Health Department-Civil Surgeon
	Disease Prevalence	Health Department-Civil Surgeon
	Health Infrastructure	Health Department-Civil Surgeon
State Renewable Energy Development Agency		Deputy Engineer-Electrical Department
State Sales / Commercial Taxes Department		Sales Tax Department
Town and Country Planning Department	Land Use	Town Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Department
	Registered Vehicles	Transport Department
	Sub urban rail transport	Transport Department
	Mono Rail Authority	Transport Department
	Tramways	Transport Department
	Marine Transport Authority	Transport Department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 101 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	4
DISCOM/Electricity Department	10
Traffic and Police Department	5
Development Authority	6
Pollution Control Board	5
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	19
Transport Authority	5
Disaster Management	3
Urban Local Body	36
Total	101

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

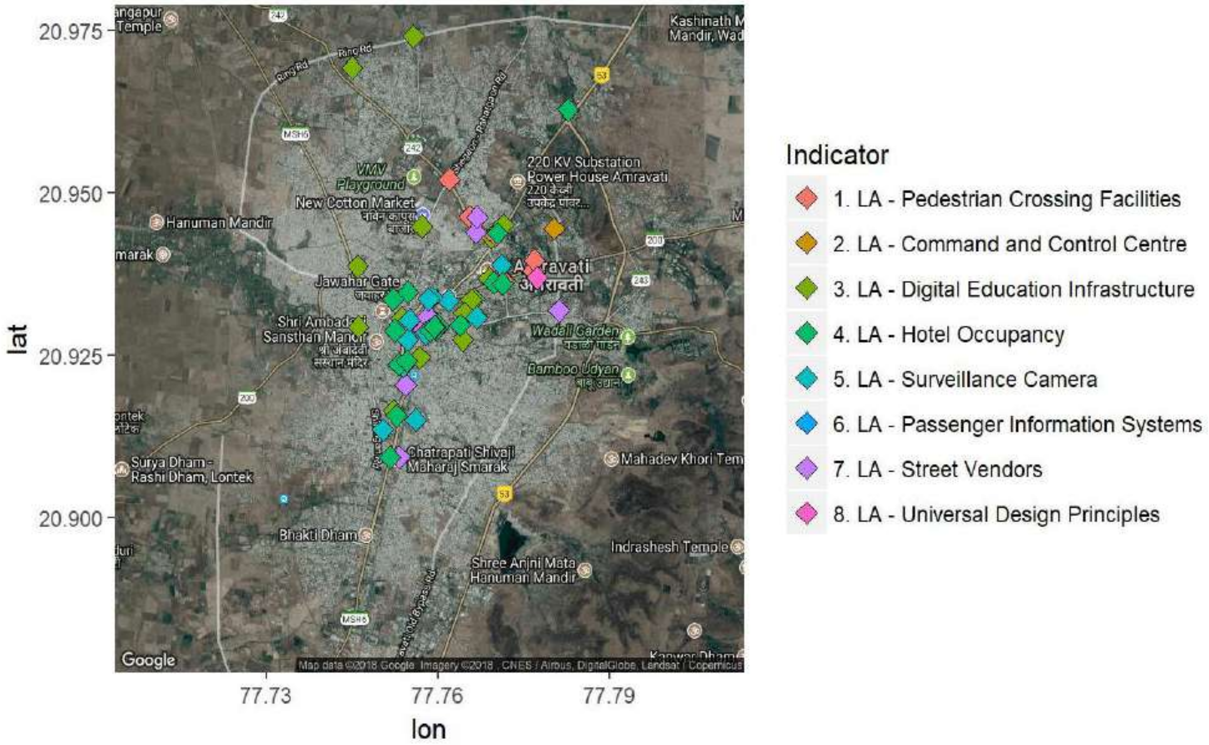
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


20.975
20.950
20.925
20.900
lat
77.73
77.76
77.79
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Hanuman Mandir
New Cotton Market
VMV Playground
220 KV Substation Power House Amravati
Amravati
Jawahar Gate
Shri Ambadevi Sansthan Mandir
Wadali Garden
Bamboo Udyan
Chatrapati Shivaji Maharaj Smarak
Mahadev Khori Temple
Surya Dham - Rashi Dham, Lontek
Bhakti Dham
Indrashesh Temple
Shree Anjni Mata Hanuman Mandir
Kashinath Mandir
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5 City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	51.74%
Identity & Culture	42%
Education	84%
Health	89%
Safety & Security	66%
Economy & Employment	57%

Housing & Inclusiveness	7%
Public Open Spaces	23%
Mixed Land Use & Compactness	33%
Power Supply	61%
Transport & Mobility	42%
Assured Water Supply	64%
Waste Water Management	37%
Solid Waste Management	64%
Reduced Pollution	66%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते
Ministry of Housing
and Urban Affairs
Government of India

AMRITSAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

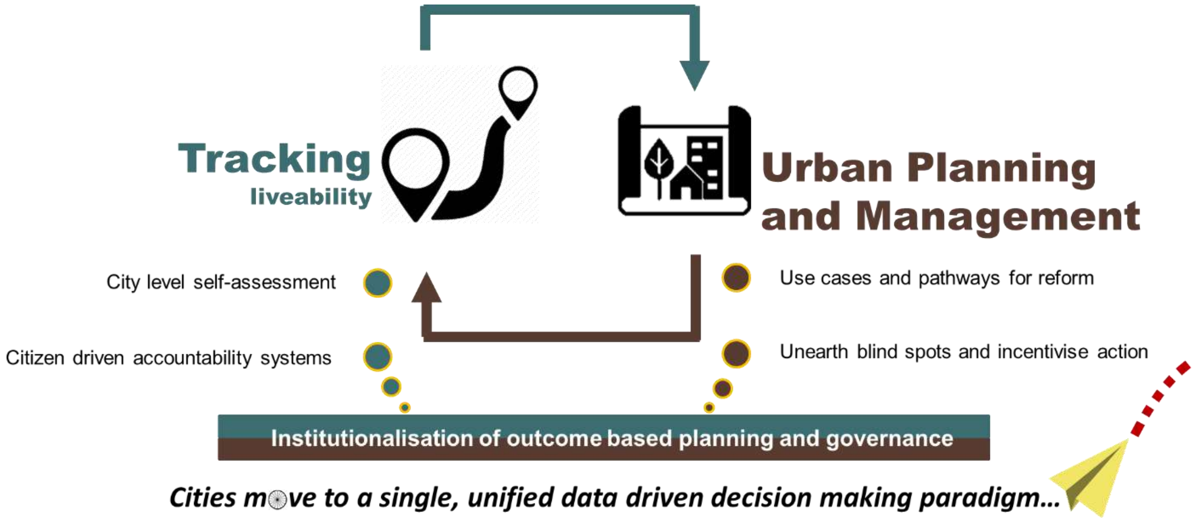
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

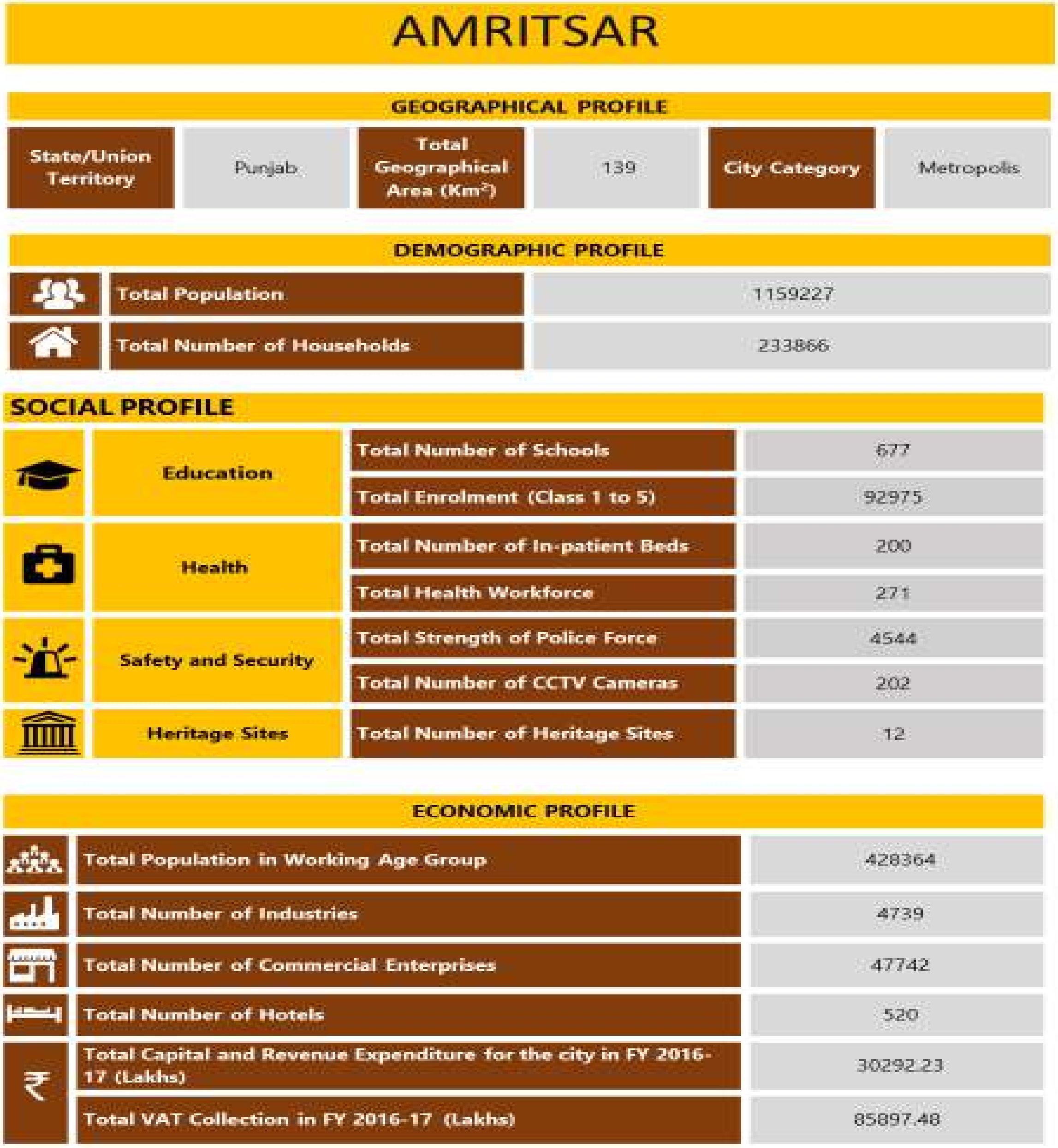

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AMRITSAR

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	Total Geographical Area (Km²)	139	City Category	Metropolis

DEMOGRAPHIC PROFILE

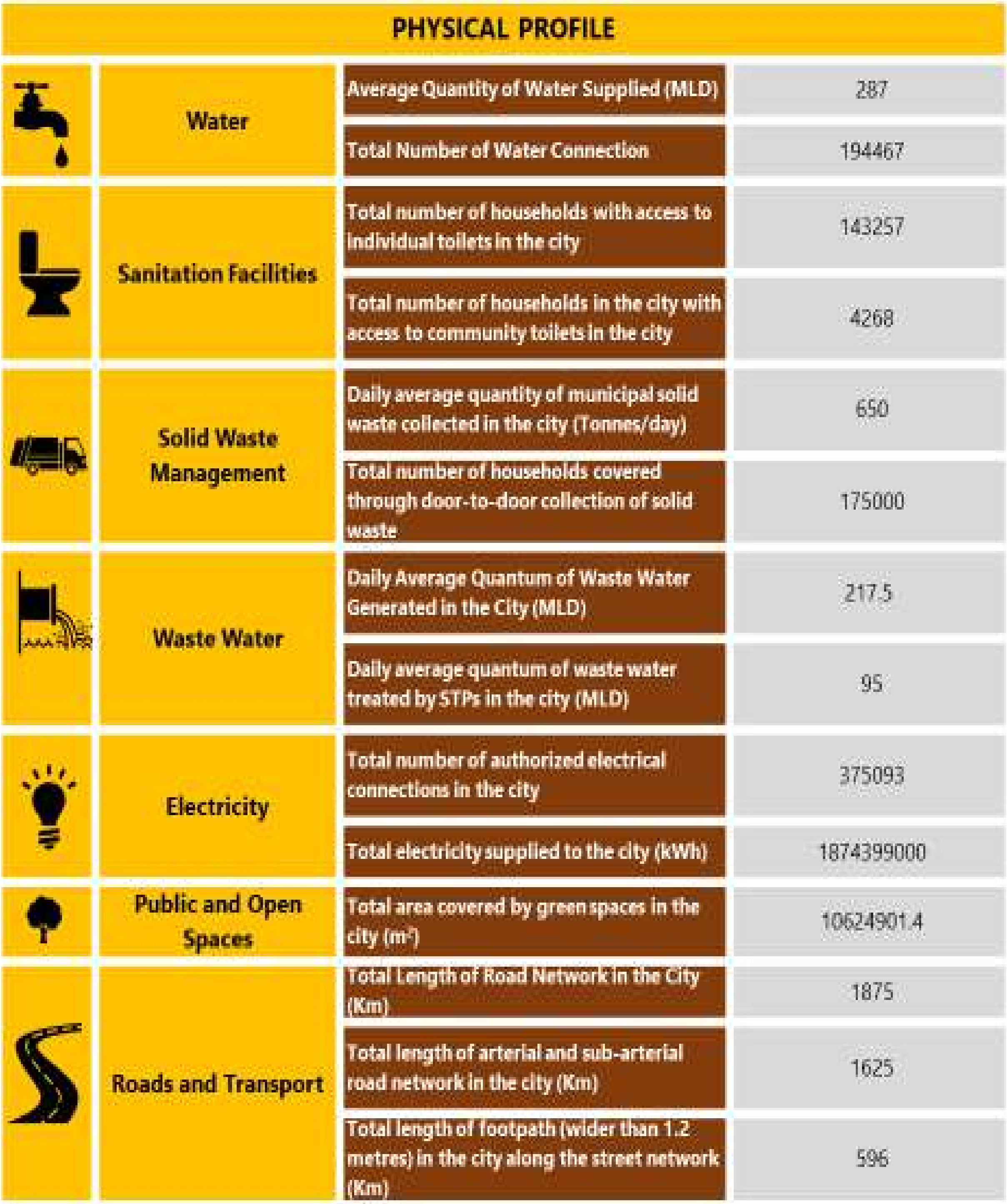
Total Population	1159227
Total Number of Households	233866

SOCIAL PROFILE

Education	Total Number of Schools	677
	Total Enrolment (Class 1 to 5)	92975
Health	Total Number of In-patient Beds	200
	Total Health Workforce	271
Safety and Security	Total Strength of Police Force	4544
	Total Number of CCTV Cameras	202
Heritage Sites	Total Number of Heritage Sites	12

ECONOMIC PROFILE

Total Population in Working Age Group	428364
Total Number of Industries	4739
Total Number of Commercial Enterprises	47742
Total Number of Hotels	520
Total Capital and Revenue Expenditure for the city in FY 2016-17 (Lakhs)	30292.23
Total VAT Collection in FY 2016-17 (Lakhs)	85897.48



PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	287
		Total Number of Water Connection	194467
	Sanitation Facilities	Total number of households with access to individual toilets in the city	143257
		Total number of households in the city with access to community toilets in the city	4268
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
		Total number of households covered through door-to-door collection of solid waste	175000
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	217.5
		Daily average quantum of waste water treated by STPs in the city (MLD)	95
	Electricity	Total number of authorized electrical connections in the city	375093
		Total electricity supplied to the city (kWh)	1874399000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10624901.4
	Roads and Transport	Total Length of Road Network in the City (Km)	1875
		Total length of arterial and sub-arterial road network in the city (Km)	1625
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	596

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

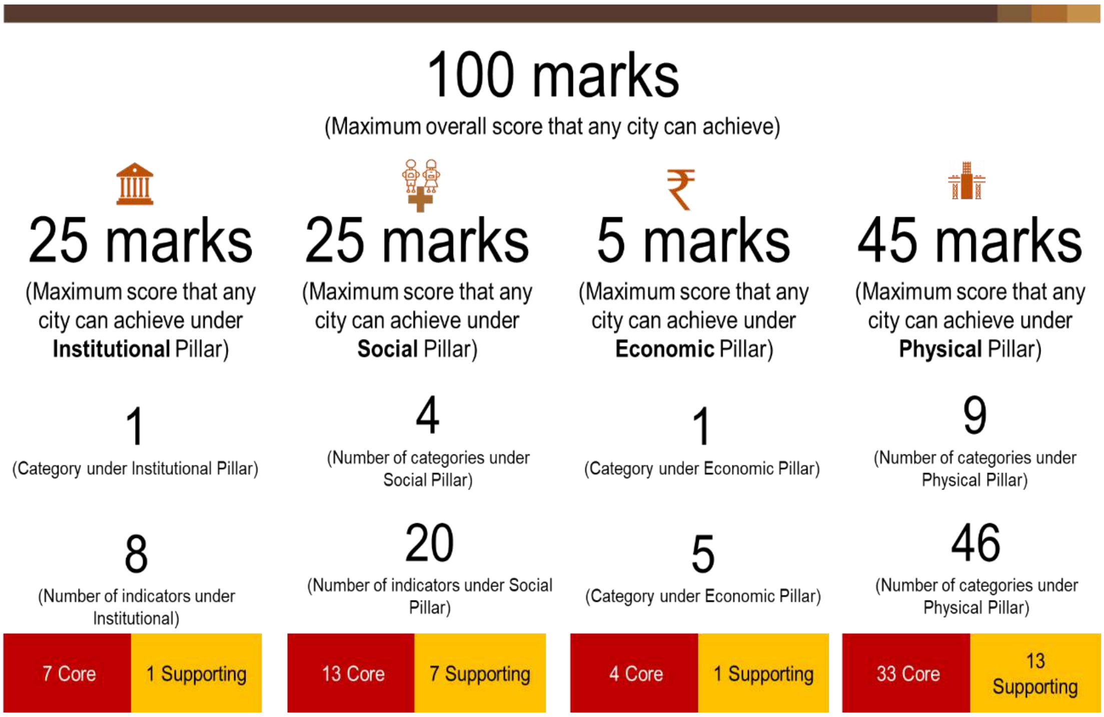
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Deputy Controller (Finance & Accounts)
Urban Local Body	For Park and Recreation Related Questions	Horticulture Department, Municipal Corporation, Amritsar.
Urban Local Body	For Water Supply and Drainage related questions	Operation & Maintenance Cell, Municipal Corporation, Amritsar.
Urban Local Body	For Heritage sites related data	1. Punjab Heritage and Tourism Promotion Board Department. 2. Civil Department, Municipal Corporation, Amritsar.
Urban Local Body	For Ecological sites related data	There are no ecological sites in Amritsar
Urban Local Body	For Housing related data	License & Census Branch, Municipal Corporation, Amritsar.
Urban Local Body	For Building plan related data	Municipal Town Planning Department, Municipal Corporation, Amritsar.
Urban Local Body	For Roads related data	Civil Department, Municipal Corporation, Amritsar.
Urban Local Body	For Solid waste management related data	Health Department, Municipal Corporation, Amritsar.
Urban Local Body	For IT services related data	IT Department, Municipal Corporation, Amritsar.
Urban Local Body	For Vendor committee related data	Estate Department, Municipal Corporation, Amritsar.
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	1. District Sports Office, Guru Nanak Stadium, Gandhi Ground Amritsar (Stadium Related Data). 2. Property Tax Department, Municipal

Designated data owners	Subcategories	Data owners at city level
		Corporation, Amritsar (Property Tax Related Data). 3. Employment Generation & Training Office (District Employment Exchange Related Data). 4. Public Works Development Department (Roads Related Data). 5. Amritsar Improvement Trust, Amritsar (Bicycle Track Related Data). 6. Street Light, Municipal Corporation Amritsar (Street Light Related Data) 7. Death & Birth Department, Municipal Corporation Amritsar (Online Services Birth & Death related data)
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board, Amritsar.
Development Authority	Building Infrastructure	1. Amritsar Development Authority (PUDA-Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Construction planning	1. Amritsar Development Authority (PUDA-Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Green Building	Amritsar Development Authority (PUDA-Punjab Urban Development Authority), Amritsar.
	Rain water harvesting	1. Amritsar Development Authority (PUDA-Punjab Urban Development Authority), Amritsar. 2. Municipal Town Planning Department, Municipal Corporation Amritsar.
	Universal Design Principle	Public Works Department, Amritsar.
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Punjab State Power Corporation Limited
State Disaster		Joint Commissioner, Municipal

Designated data owners	Subcategories	Data owners at city level
management authority		Corporation, Amritsar
State Education Department		1. Block Education Elementary Office (Primary), Punjab School Education Board. 2. District Education Office (Secondary), Punjab School Education Board.
State Health Department	Health care professionals	Chief Medical Office
State Health Department	Citizen Services	Chief Medical Office
State Health Department	Disease Prevalence	Chief Medical Office
State Health Department	Health Infrastructure	Indian Medical Association
State Renewable Energy Development Agency		Punjab Energy Development Authority, Zila Parishad Complex, Amritsar
State Sales / Commercial Taxes Department		Sales Tax & Excise Department, Amritsar
Town and Country Planning Department	Land Use	1. District Town Planner, Amritsar 2. Municipal Town Planner, Municipal Corporation Amritsar.
Traffic and Police Department		Traffic Police Department, Amritsar
Transport Authorities	Buses	General Manager Roadways
Transport Authorities	Registered Vehicles	Regional Transport Officer, Amritsar
Transport Authorities	Sub urban rail transport	Not exist in Amritsar city
Transport Authorities	Mono Rail Authority	Not exist in Amritsar city
Transport Authorities	Tramways	Not exist in Amritsar city
Transport Authorities	Marine Transport Authority	Not exist in Amritsar city

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 95 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	8
Traffic and Police Department	3
Development Authority	3
Pollution Control Board	3
State Renewable Energy Department	2
Town and Country Planning	7
State Health Department	9
Transport Authority	0
Disaster Management	0
Urban Local Body	57
Total	95

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

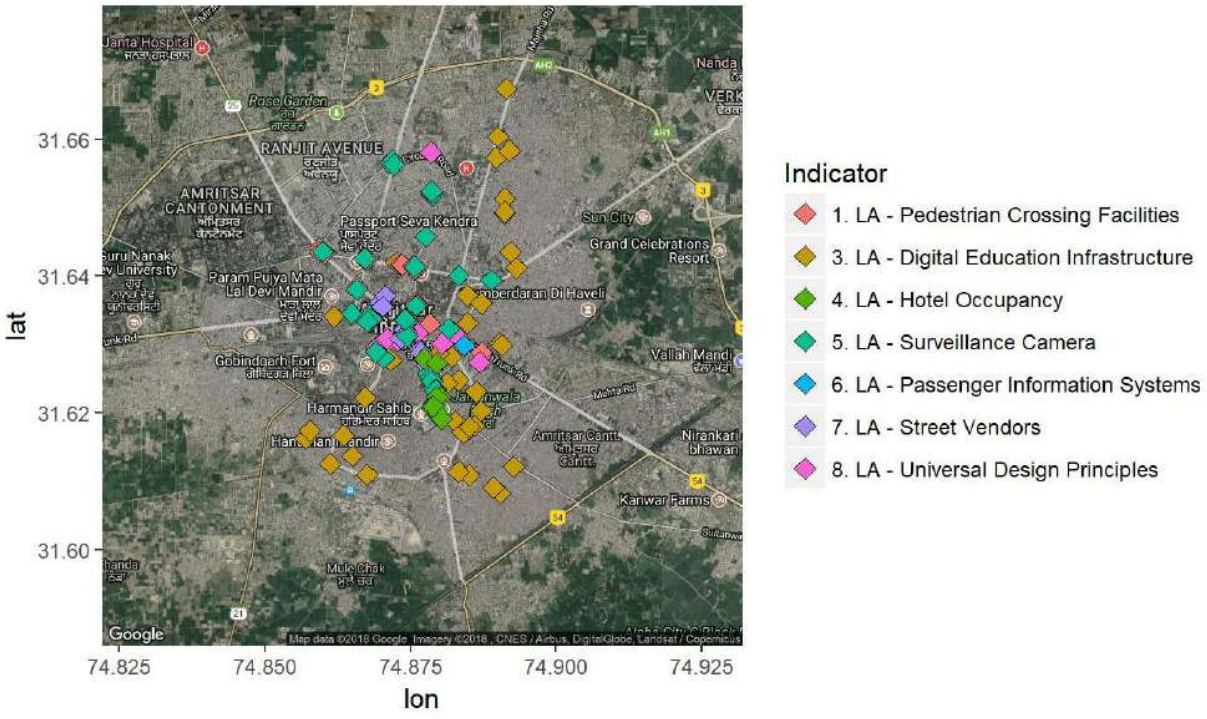
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


31.66
31.64
31.62
31.60
lat
74.825
74.850
74.875
74.900
74.925
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
RANJIT AVENUE
AMRITSAR CANTONMENT
Passport Seva Kendra
Harmandir Sahib
Gobindgarh Fort
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	44.89%
Identity & Culture	26%
Education	76%
Health	88%
Safety & Security	66%
Economy & Employment	12%
Housing & Inclusiveness	2%
Public Open Spaces	38%
Mixed Land Use & Compactness	1%

Power Supply	49%
Transport & Mobility	5%
Assured Water Supply	78%
Waste Water Management	32%
Solid Waste Management	57%
Reduced Pollution	63%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

सत्यमेव जयते
Ministry of Housing and Urban Affairs
Government of India

AURANGABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

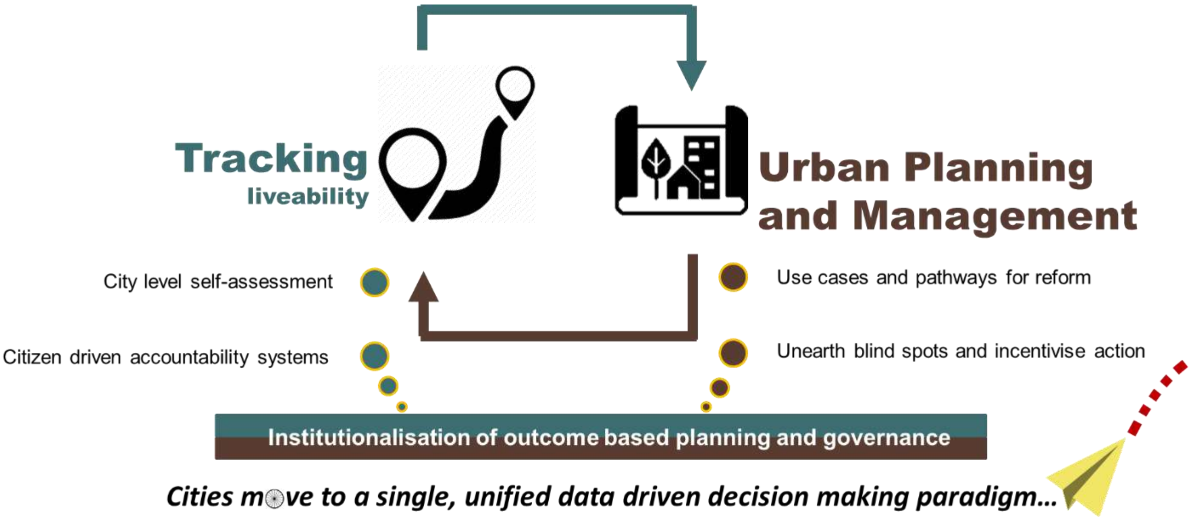
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

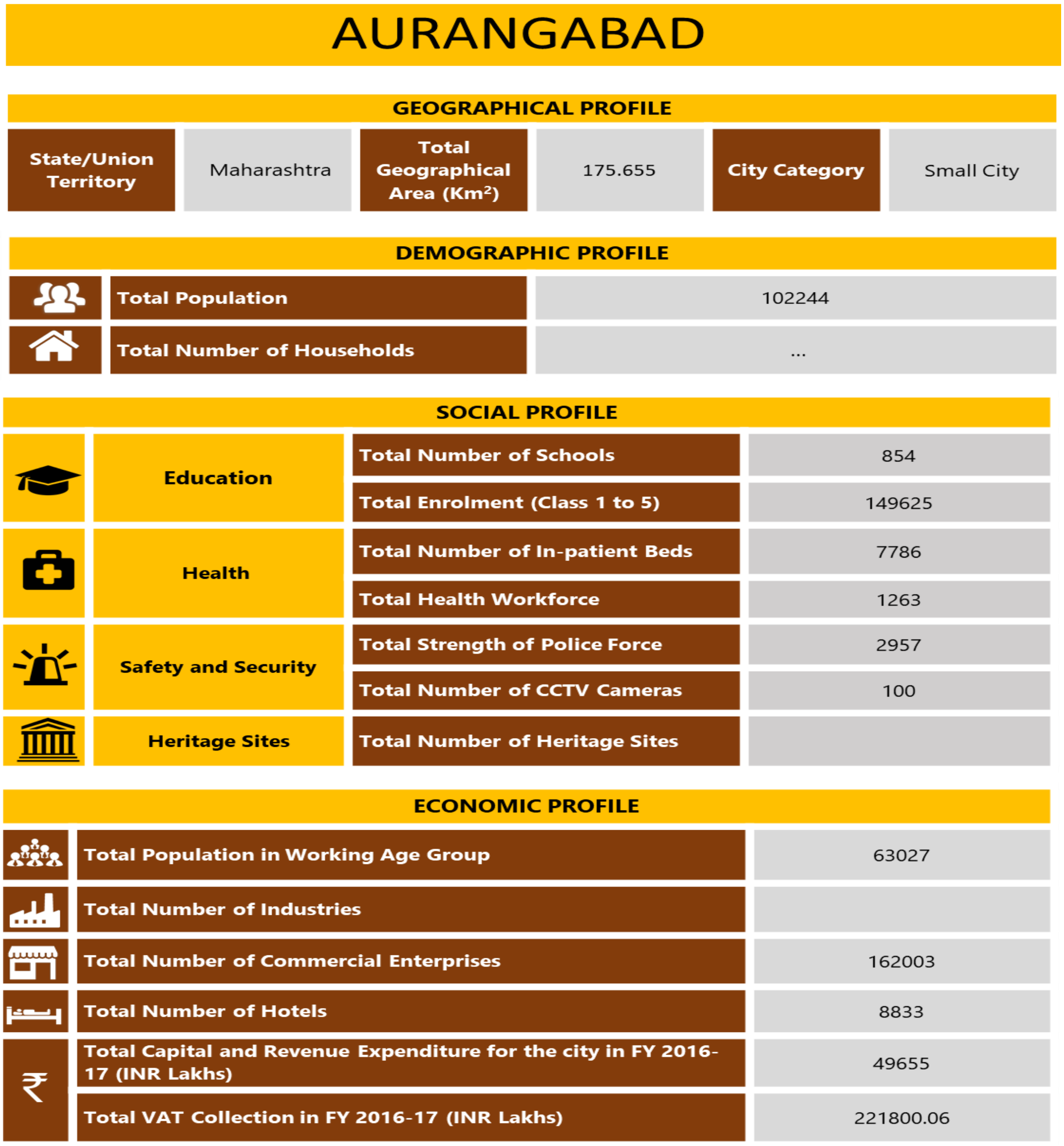

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AURANGABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	175.655	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	102244
Total Number of Households	…

SOCIAL PROFILE

Education	**Total Number of Schools**	854
	Total Enrolment (Class 1 to 5)	149625
Health	**Total Number of In-patient Beds**	7786
	Total Health Workforce	1263
Safety and Security	**Total Strength of Police Force**	2957
	Total Number of CCTV Cameras	100
Heritage Sites	**Total Number of Heritage Sites**	

ECONOMIC PROFILE

Total Population in Working Age Group	63027
Total Number of Industries	
Total Number of Commercial Enterprises	162003
Total Number of Hotels	8833
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	49655
Total VAT Collection in FY 2016-17 (INR Lakhs)	221800.06

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	113
		Total Number of Water Connections	...
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	...
		Total number of households covered through door-to-door collection of solid waste	...
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	103
		Daily average quantum of waste water treated by STPs in the city (MLD)	72
	Electricity	**Total number of authorized electrical connections in the city**	294882
		Total electricity supplied to the city (kWh)	2321520000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1579.74
		Total length of arterial and sub-arterial road network in the city (Km)	1175.17
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	43.42

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Catego

ries and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic

Pillars of Comprehensive Development	Category	Indicators
		services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking

Pillars of Comprehensive Development	Category	Indicators
		facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

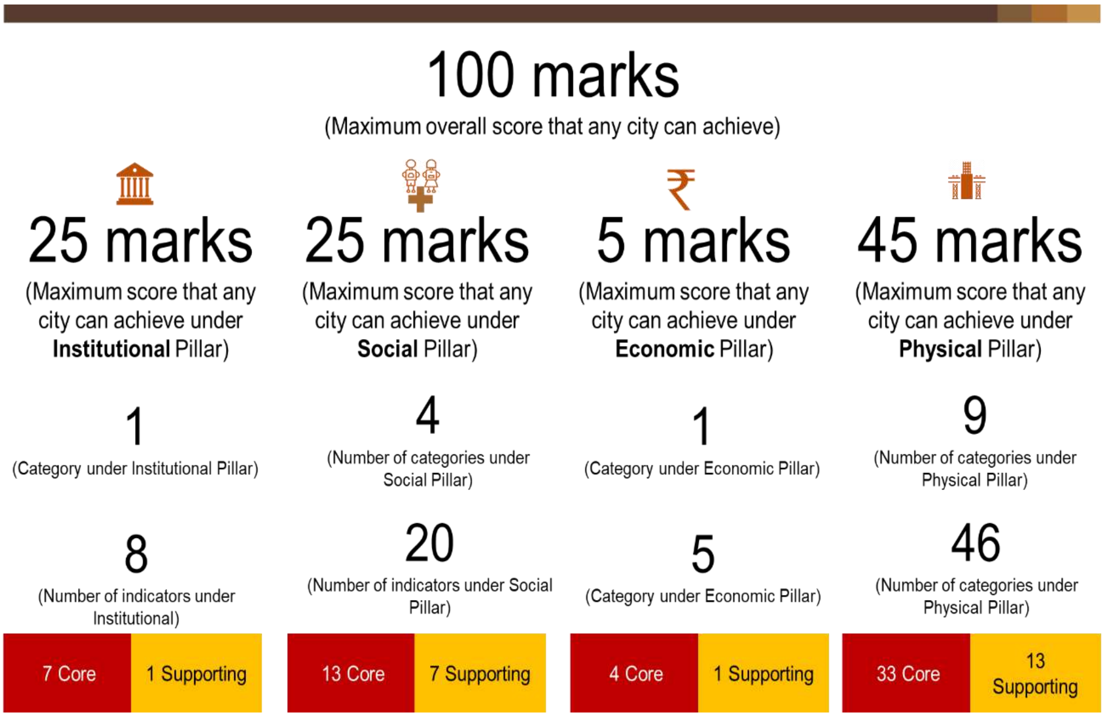
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Aurangabad Municipal corporation
Urban Local Body	For Park and Recreation Related Questions	Garden Department, Aurangabad Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, Aurangabad Municipal corporation
Urban Local Body	For Heritage sites related data	Town Planning Department, Aurangabad Municipal corporation
Urban Local Body	For Ecological sites related data	Aurangabad Municipal corporation
Urban Local Body	For Housing related data	Housing Section, Aurangabad Municipal Corporation
Urban Local Body	For Building plan related data	Town Planning Department, Aurangabad Municipal Corporation
Urban Local Body	For Roads related data	Town Planning Department, Aurangabad Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	Solid Waste Management Department, Aurangabad Municipal Corporation
Urban Local Body	For IT services related data	IT Department, Aurangabad Municipal Corporation
Urban Local Body	For Vendor committee related data	Vendor Committee, Aurangabad Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board
Development Authority	Building Infrastructure	Town Planning Department, Aurangabad Municipal Corporation
	Construction planning	Town Planning Department, Aurangabad Municipal Corporation
	Green Building	Town Planning Department, Aurangabad Municipal Corporation
	Rain water harvesting	Town Planning Department, Aurangabad Municipal Corporation
	Universal Design Principle	Town Planning Department, Aurangabad Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Development Corporation DISCOM, Aurangabad
State Disaster management authority		Disaster management Department, Aunganbad
State Education Department		District Education Department Education Department, AMC
State Health Department	Health care professionals	Health Department, AMC
	Citizen Services	Health Department, AMC
	Disease Prevalence	Health Department, AMC

Designated data owners	Subcategories	Data owners at city level
	Health Infrastructure	Health Department, AMC
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Taxes department, Aurangabad
Town and Country Planning Department	Land Use	Town Planning Department, Aurangabad Municipal Corporation
Traffic and Police Department		Commissioner of Police Office, Aurangabad
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Maharashtra State Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 136 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**8**
DISCOM/Electricity Department	**7**

Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**9**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**5**
Transport Authority	**7**
Disaster Management	**1**
Urban Local Body	**97**
Total	**136***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

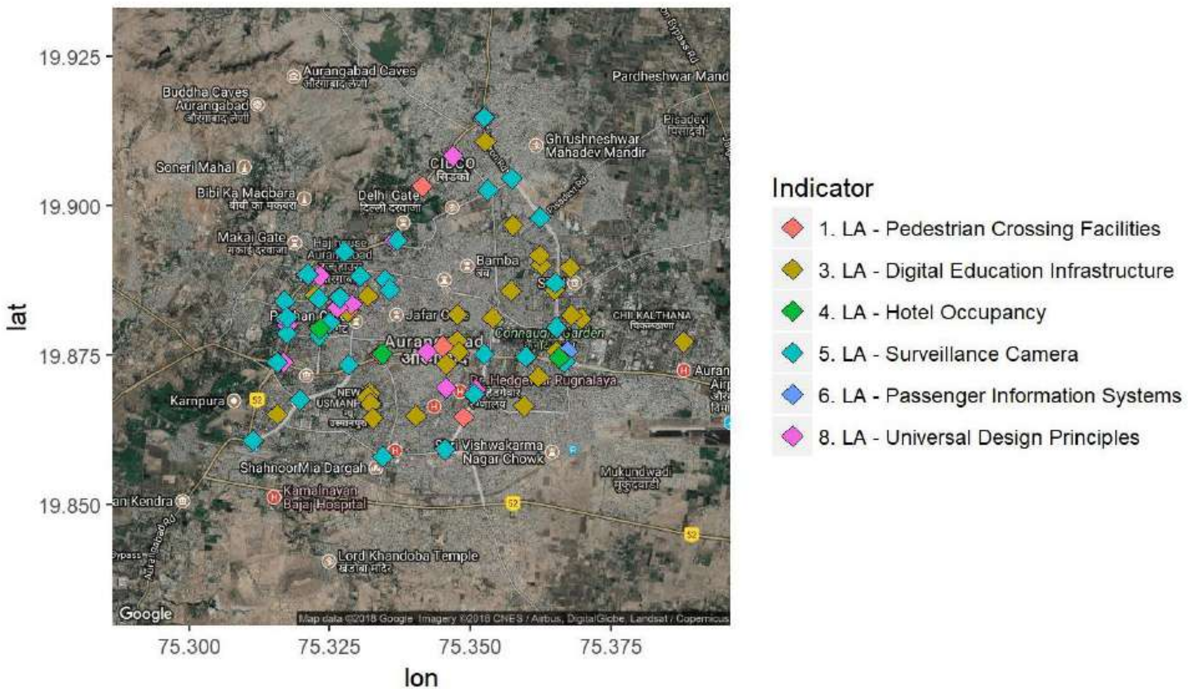
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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CIDCO
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Bamba
Jafar Gate
CHIKALTHANA
Connaught Garden
Karnpura
Dr. Hedgewar Rugnalaya
ShahnoorMia Dargah
Vishwakarma Nagar Chowk
Kamalnayan Bajaj Hospital
Mukundwadi
Lord Khandoba Temple
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	26.53%
Identity & Culture	19%
Education	93%
Health	93%
Safety & Security	38%
Economy & Employment	7%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	35%
Transport & Mobility	38%
Assured Water Supply	21%
Waste Water Management	22%
Solid Waste Management	0%
Reduced Pollution	59%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते
Ministry of Housing and Urban Affairs
Government of India

BANGALORE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

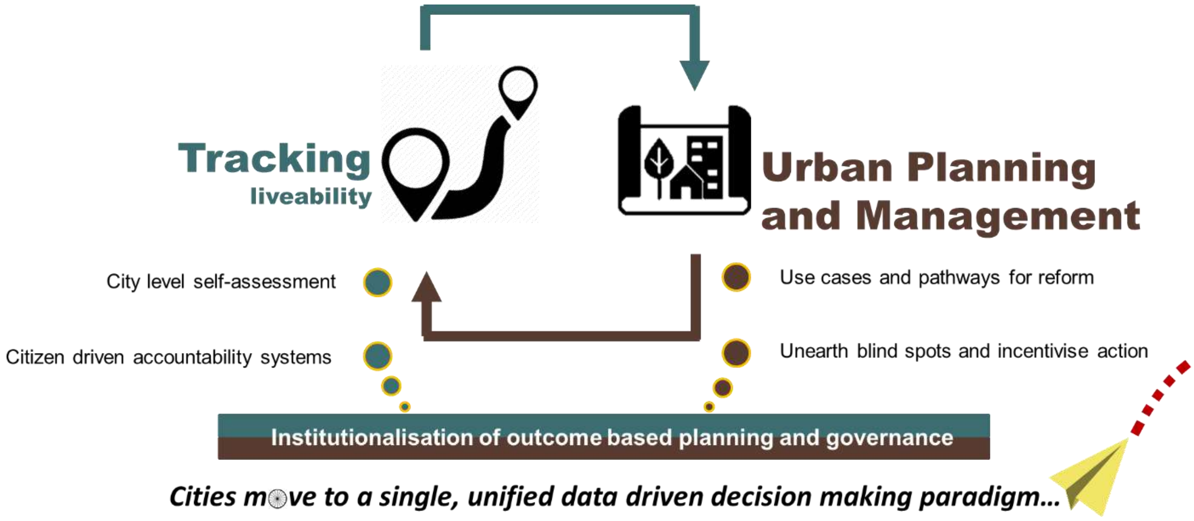
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

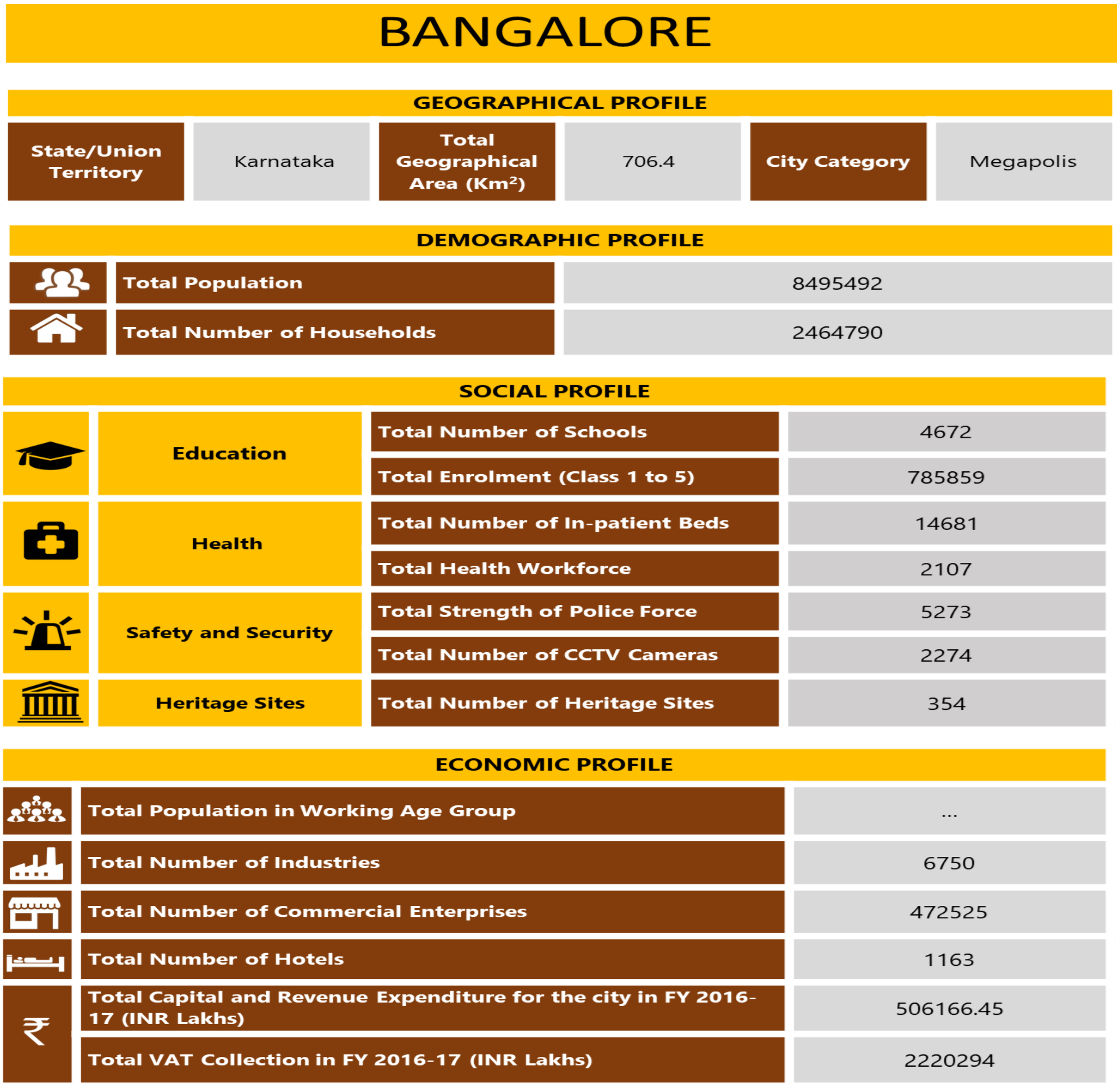
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BANGALORE

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km^2)**	706.4	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	8495492
Total Number of Households	2464790

SOCIAL PROFILE

Education	**Total Number of Schools**	4672
	Total Enrolment (Class 1 to 5)	785859
Health	**Total Number of In-patient Beds**	14681
	Total Health Workforce	2107
Safety and Security	**Total Strength of Police Force**	5273
	Total Number of CCTV Cameras	2274
Heritage Sites	**Total Number of Heritage Sites**	354

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	6750
Total Number of Commercial Enterprises	472525
Total Number of Hotels	1163
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	506166.45
Total VAT Collection in FY 2016-17 (INR Lakhs)	2220294

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	1366.4
	Total Number of Water Connections	903136
Sanitation Facilities	Total number of households with access to individual toilets in the city	951612
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	5383.8
	Total number of households covered through door-to-door collection of solid waste	2426700
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	1440
	Daily average quantum of waste water treated by STPs in the city (MLD)	721
Electricity	Total number of authorized electrical connections in the city	4940166
	Total electricity supplied to the city (kWh)	13133.16
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	100020000
Roads and Transport	Total Length of Road Network in the City (Km)	13500
	Total length of arterial and sub-arterial road network in the city (Km)	1400
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	895

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards

Pillars of Comprehensive Development	Category	Indicators
		cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

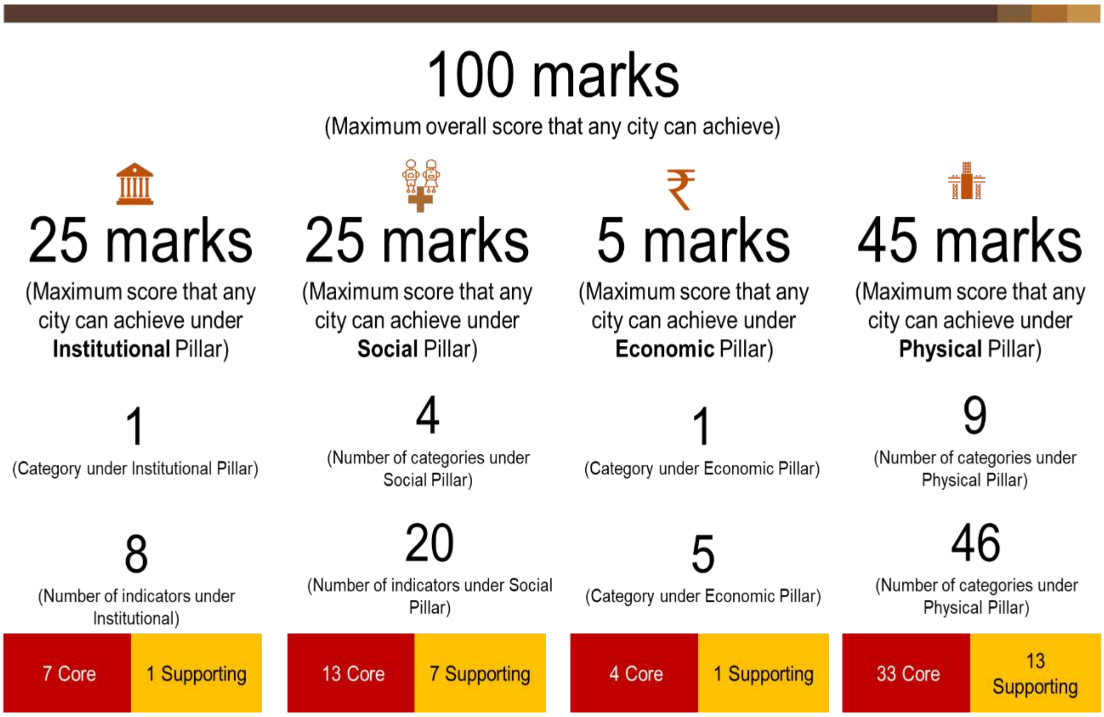
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core
1 Supporting
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core
7 Supporting
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core
1 Supporting
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring..

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Heritage sites related data	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Ecological sites related data	Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Housing related data	Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Building plan related data	Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Roads related data	Engineering Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Solid waste management related data	Solid waste management, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For IT services related data	IT Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
Urban Local Body	For Vendor committee	Bruhath Bengaluru Mahanagara Palike

Designated data owners	Subcategories	Data owners at city level
	related data	(BBMP)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, Bangalore Development Authority, Health Department, Pollution Department, Bangalore Water Supply & Sewerage Board, Police Department (BWSSB), Transport & Railway Department, Karnataka Slum Development Board (KSDB), Bangalore Electricity Supply Company Limited (BESCOM).
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Bangalore Development Authority (BDA) Bruhath Bengaluru Mahanagara Palike (BBMP)
	Construction planning	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Green Building	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Rain water harvesting	Town Planning Department, Bruhath Bengaluru Mahanagara Palike (BBMP)
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bangalore Electricity Supply Company Limited (BESCOM)
State Disaster management authority		Revenue Department (Disaster management & Services)
State Education Department		Deputy Director of Public Instructions, Bangalore
State Health Department	Health care professionals	District Health & Family Welfare Department, Bangalore
	Citizen Services	District Health & Family Welfare Department
	Disease Prevalence	District Health & Family Welfare Department

Designated data owners	Subcategories	Data owners at city level
	Health Infrastructure	District Health & Family Welfare Department
State Renewable Energy Development Agency	Renewable Energy	Bangalore Electricity Supply Company Limited (BESCOM)
State Sales / Commercial Taxes Department		Commercial Taxes Department
Town and Country Planning Department	Land Use	Bengaluru Development Authority
Traffic and Police Department		Police Commissioner's Office, Bengaluru
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

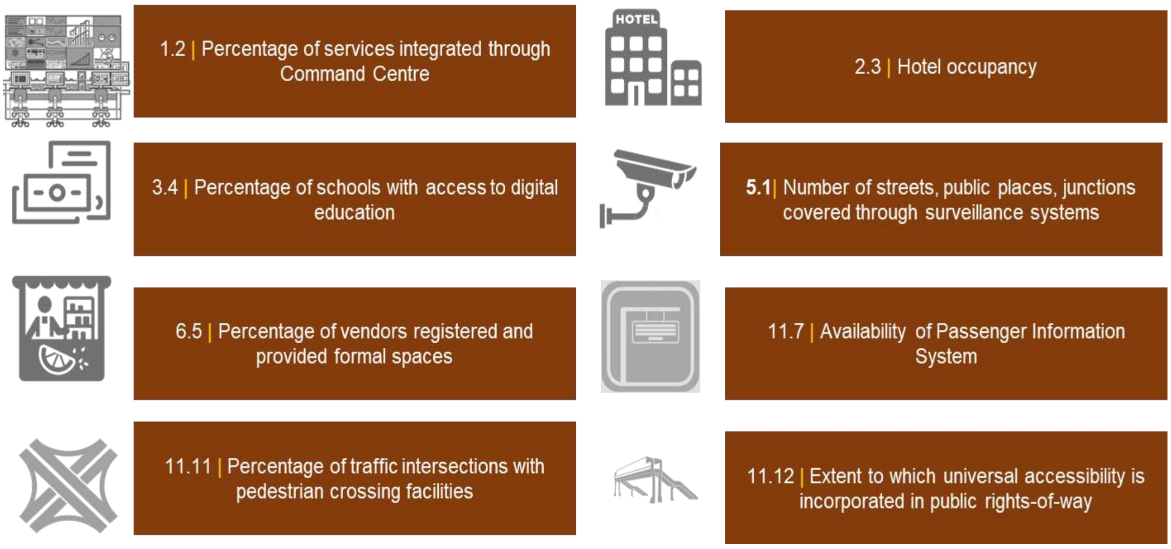
Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**0**
State Renewable Energy Department	**2**

Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**5**
Disaster Management	**1**
Urban Local Body	**15**
Total	**31**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

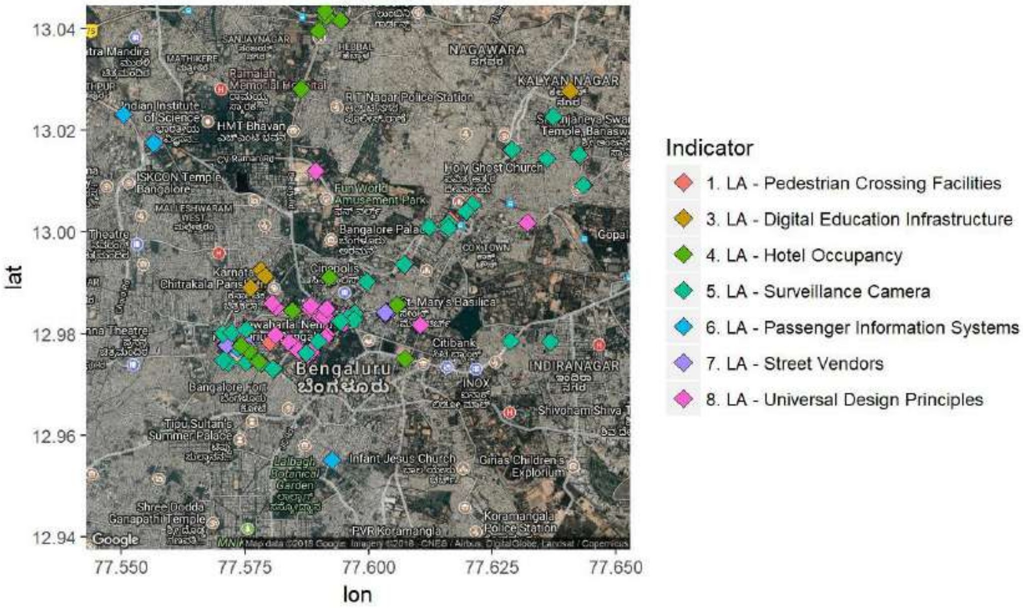
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.04
13.02
13.00
12.98
12.96
12.94
lat
77.550
77.575
77.600
77.625
77.650
lon
NAGAWARA
KALYAN NAGAR
R T Nagar Police Station
HMT Bhavan
Indian Institute of Science
ISKCON Temple Bangalore
MALLESHWARAM WEST
Fun World Amusement Park
Bangalore Palace
Holy Ghost Church
Chitrakala Parishath
St. Mary's Basilica
Citibank
Bengaluru
INDIRANAGAR
Bangalore Fort
Tipu Sultan's Summer Palace
Lalbagh Botanical Garden
Infant Jesus Church
Shree Dodda Ganapathi Temple
PVR Koramangala
Koramangala Police Station
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	77.59%
Identity & Culture	23%
Education	91%
Health	66%
Safety & Security	40%
Economy & Employment	46%
Housing & Inclusiveness	2%
Public Open Spaces	49%
Mixed Land Use & Compactness	27%
Power Supply	22%
Transport & Mobility	43%
Assured Water Supply	87%
Waste Water Management	62%
Solid Waste Management	74%
Reduced Pollution	67%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

BAREILLY

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	**Challenges**	**Proposed Solutions**
	some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

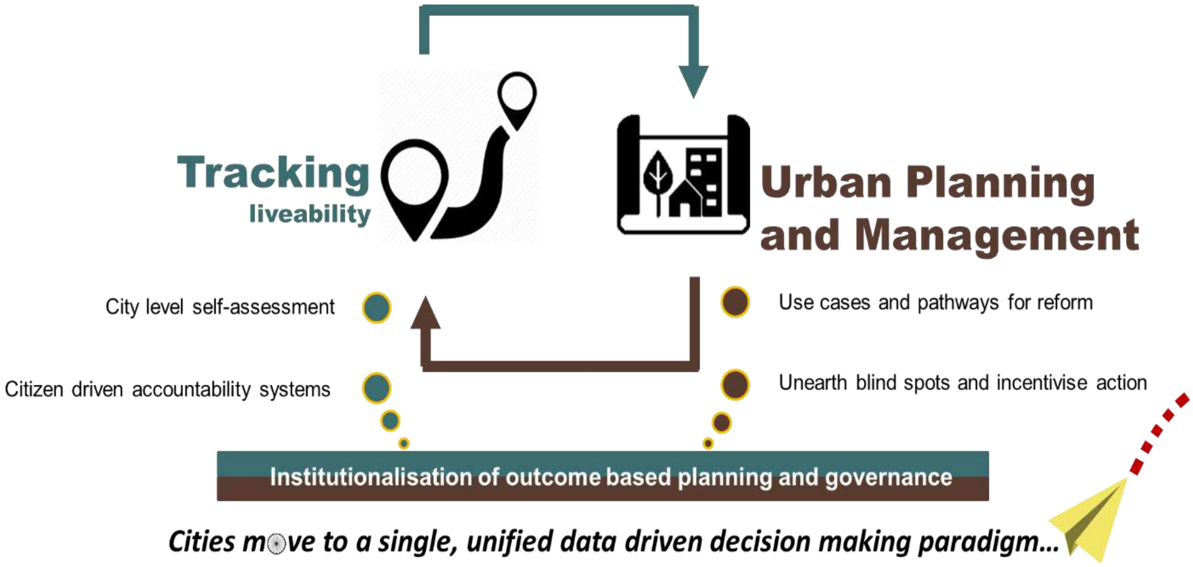
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

BAREILLY

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	106.43	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	904797
Total Number of Households	144034

SOCIAL PROFILE

Education	**Total Number of Schools**	547
	Total Enrolment (Class 1 to 5)	...
Health	**Total Number of In-patient Beds**	11283
	Total Health Workforce	2952
Safety and Security	**Total Strength of Police Force**	762
	Total Number of CCTV Cameras	71
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	509
Total Number of Industries	605
Total Number of Commercial Enterprises	10788
Total Number of Hotels	68
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	20692.18
Total VAT Collection in FY 2016-17 (INR Lakhs)	58390.45

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	146
	Total Number of Water Connection	97430
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	102268
	Total number of households in the city with access to community toilets in the city	207
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	3936.8
	Total number of households covered through door-to-door collection of solid waste	
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	146
	Daily average quantum of waste water treated by STPs in the city (MLD)	
Electricity	**Total number of authorized electrical connections in the city**	178341
	Total electricity supplied to the city (kWh)	15960000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	446319.36
Roads and Transport	**Total Length of Road Network in the City (Km)**	1162.93
	Total length of arterial and sub-arterial road network in the city (Km)	1162.93
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.95

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per

Pillars of Comprehensive Development	Category	Indicators
		10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters

Pillars of Comprehensive Development	Category	Indicators
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

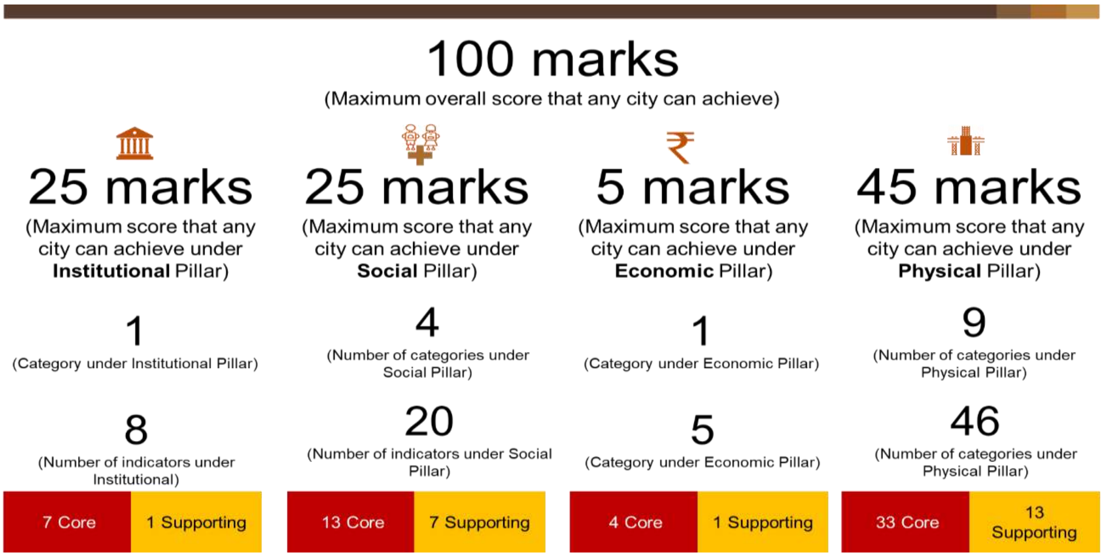
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core
1 Supporting
25 marks
(Maximum score that any city can achieve under Social Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core
7 Supporting
5 marks
(Maximum score that any city can achieve under Economic Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core
1 Supporting
45 marks
(Maximum score that any city can achieve under Physical Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Nagar Nigam Bareilly
Urban Local Body	For Park and Recreation Related Questions	Udhyan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/ Jalkal Vibhag Nagar Nigam Bareilly
Urban Local Body	For Heritage sites related data	Archeological survey of India
Urban Local Body	For Ecological sites related data	Forrest department
Urban Local Body	For Housing related data	Bareilly Development Authority /

Designated data owners	Subcategories	Data owners at city level
		Nirmaan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Building plan related data	Bareilly Development Authority
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Bareilly
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Bareilly
Urban Local Body	For IT services related data	Computer department of ulb
Urban Local Body	For Vendor committee related data	District Urban Development Agency Bareilly
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department, Bareilly Development Authority, District Urban Development Agency Bareilly, Employment Office Bareilly, Uttar Pradesh State Transport Bareilly
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh Pollution Control Board Bareilly
Development Authority	Building Infrastructure	Bareilly Development Authority
	Construction planning	Bareilly Development Authority
	Green Building	Bareilly Development Authority
	Rain water harvesting	Bareilly Development Authority
	Universal Design Principle	Bareilly Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Electricity Board Bareilly
State Disaster management authority		Central\state disaster management authority
State Education Department		Basic Education Department Bareilly
State Health Department	Health care professionals	District Hospital Bareilly
	Citizen Services	District Hospital Bareilly
	Disease Prevalence	District Hospital Bareilly
	Health Infrastructure	District Hospital Bareilly
State Renewable Energy Development Agency		UP NEDA Bareilly
State Sales / Commercial Taxes Department		Commercial tax department Bareilly
Town and Country	Land Use	Town and Country Planning

Designated data owners	Subcategories	Data owners at city level
Planning Department		Department Bareilly
Traffic and Police Department		Police Department (civil, Traffic ,GRP)
Transport Authorities	Buses	Uttar Pradesh State Transport Bareilly
	Registered Vehicles	Regional Transport Office Bareilly
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	11
Transport Authority	2
Disaster Management	2
Urban Local Body	19
Total	45

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

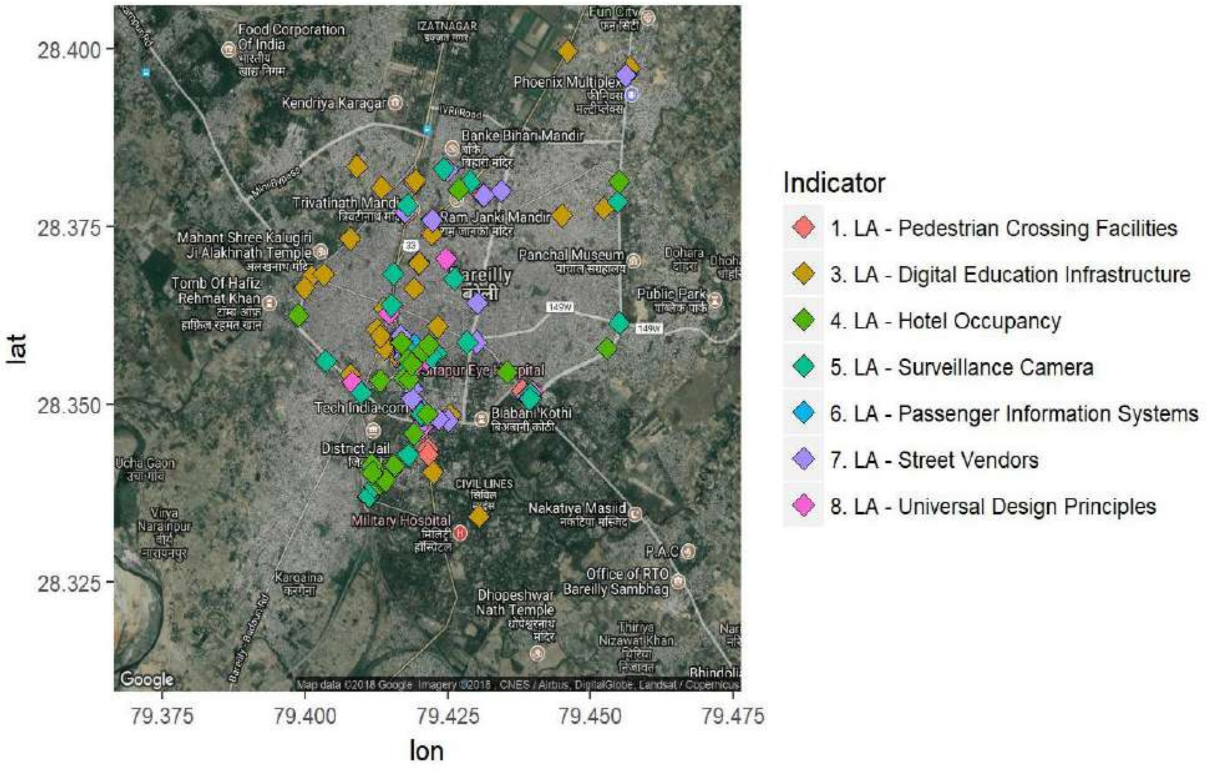
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.400
28.375
28.350
28.325
lat
79.375
79.400
79.425
79.450
79.475
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Bareilly
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	52.68%
Identity & Culture	0%
Education	53%

Health	94%
Safety & Security	55%
Economy & Employment	20%
Housing & Inclusiveness	46%
Public Open Spaces	3%
Mixed Land Use & Compactness	0%
Power Supply	60%
Transport & Mobility	24%
Assured Water Supply	70%
Waste Water Management	41%
Solid Waste Management	63%
Reduced Pollution	76%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

BELAGAVI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

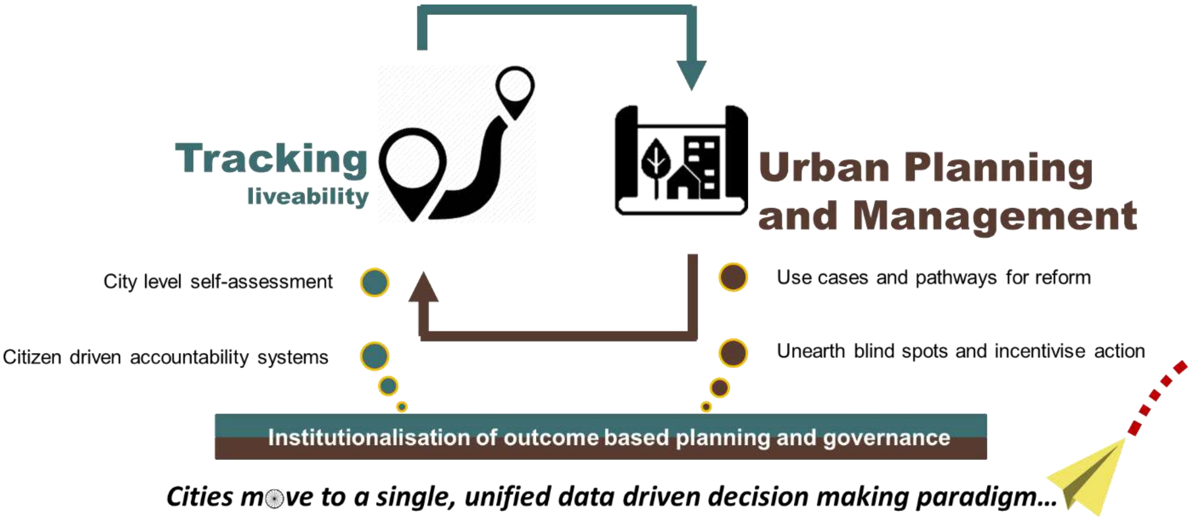
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

BELAGAVI

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km^2)**	94.08	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	490045
Total Number of Households	137022

SOCIAL PROFILE

Education	**Total Number of Schools**	403
	Total Enrolment (Class 1 to 5)	45021
Health	**Total Number of In-patients Beds**	5510
	Total Health Workforce	2623
Safety and Security	**Total Strength of Police Force**	1311
	Total Number of CCTV Cameras	155
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	54669
Total Number of Industries	665
Total Number of Commercial Enterprises	16603
Total Number of Hotels	214
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15765.61
Total VAT Collection in FY 2016-17 (INR Lakhs)	42219.83

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	75.5
		Total Number of Water Connections	63768
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	114437
		Total number of households in the city with access to community toilets in the city	810
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	240
		Total number of households covered through door-to-door collection of solid waste	118065
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	60.4
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	170970
		Total electricity supplied to the city (kWh)	41210
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	495132
	Roads and Transport	**Total Length of Road Network in the City (Km)**	804
		Total length of arterial and sub-arterial road network in the city (Km)	157.52
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	27.31

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

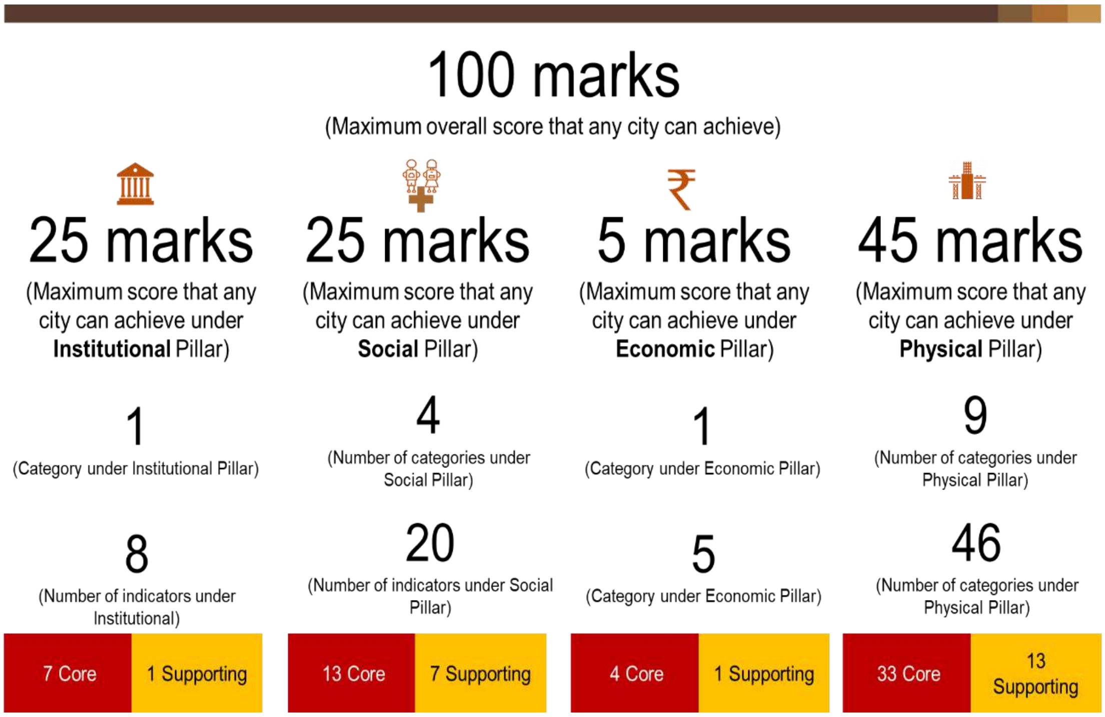
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Belagavi City Copn.
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department Belagavi City Copn.
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department Belagavi City Copn.
Urban Local Body	For Heritage sites related data	Town Planning Department Belagavi City Copn.
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv housing Yojana. Belagavi City Copn. Slum Board Dept.
Urban Local Body	For Building plan related data	Town Planning Department Belagavi City Copn. (Belagavi Urban Dev. Authority)
Urban Local Body	For Roads related data	Engineering Department Belagavi City Copn. & Publc Works Department
Urban Local Body	For Solid waste management related data	Health & Sanitation section, Belagavi City Copn
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Vender Reg. Cell . Belagavi City Copn., National Urban Livelihood Mission
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Belagavi Development Authority, (CMP related),

Designated data owners	Subcategories	Data owners at city level
		Health Department, State Pollution Control Board Health & Family Welfare Dept. Police Department (Crime & Accident information) Road Transport Dept. (Vehicles and road information)
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State / District Pollution control board, Belagavi Water Supply and Drainage Board Department of Health, Hygiene & Sanitation
Development Authority	Building Infrastructure	Belagavi Urban Development Authority & Engineering section BCC, Smart City Limited
	Construction planning	Development Authority and Town Planning Department, Belagavi City Corporation.
	Green Building	Town Planning Department,
	Rain water harvesting	Town Planning Department, Belagavi City Corporation.
	Universal Design Principle	Belagavi Urban Development Authority / Belagavi City Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Hubballi Electricity Supply Company Limited
State Disaster management authority		Disaster Management Cell, Deputy Commissioner Office
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy Development Agency	Renewable Energy	Hubballi Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country	Land Use	Belagavi Urban Development Authority/

Designated data owners	Subcategories	Data owners at city level
Planning Department		Town planning
Traffic and Police Department		Police Commissioner's Office Belagavi
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 81 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**4**
DISCOM/Electricity Department	**5**
Traffic and Police Department	**18**
Development Authority	**0**
Pollution Control Board	**8**
State Renewable Energy Department	**0**
Town and Country Planning	**4**
State Health Department	**0**
Transport Authority	**3**
Disaster Management	**1**
Urban Local Body	**38**
Total	**81**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

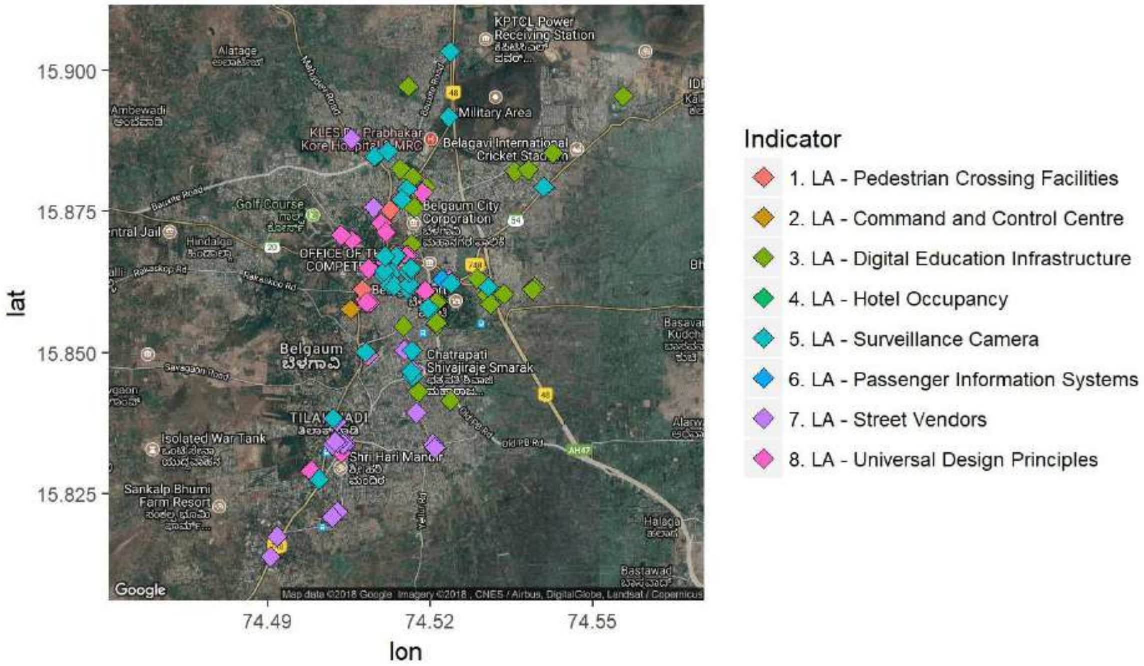
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


15.900
15.875
15.850
15.825
lat
74.49
74.52
74.55
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Belgaum
Military Area
Belagavi International Cricket Stadium
Belgaum City Corporation
Chatrapati Shivajiraje Smarak
Shri Hari Mandir
Sankalp Bhumi Farm Resort
Isolated War Tank
Golf Course
KPTCL Power Receiving Station
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	42.30%
Identity & Culture	26%
Education	91%
Health	64%
Safety & Security	56%
Economy & Employment	10%
Housing & Inclusiveness	0%

Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	46%
Transport & Mobility	18%
Assured Water Supply	41%
Waste Water Management	61%
Solid Waste Management	33%
Reduced Pollution	57%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

BHAGALPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

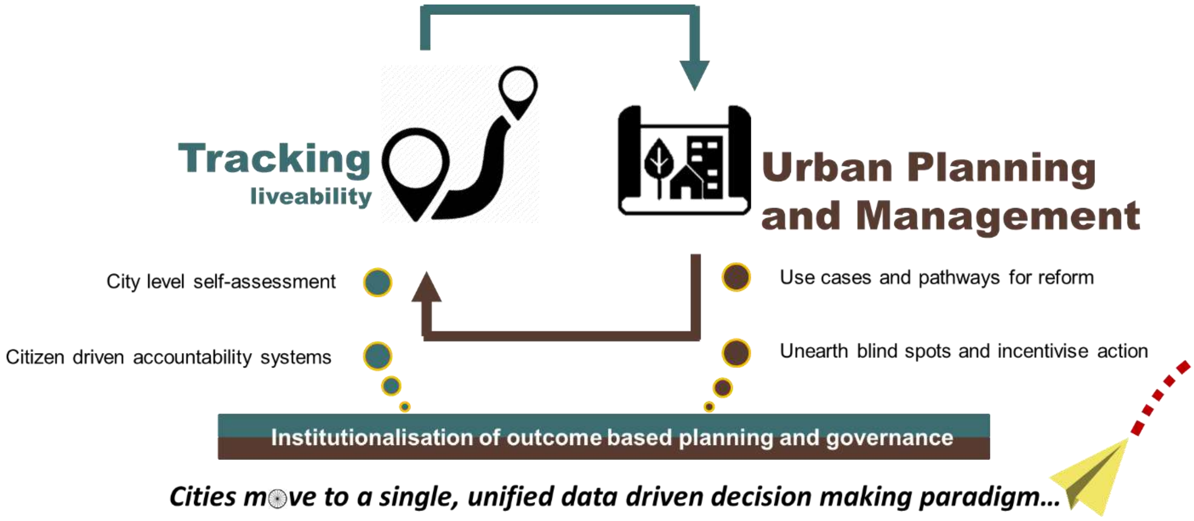
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

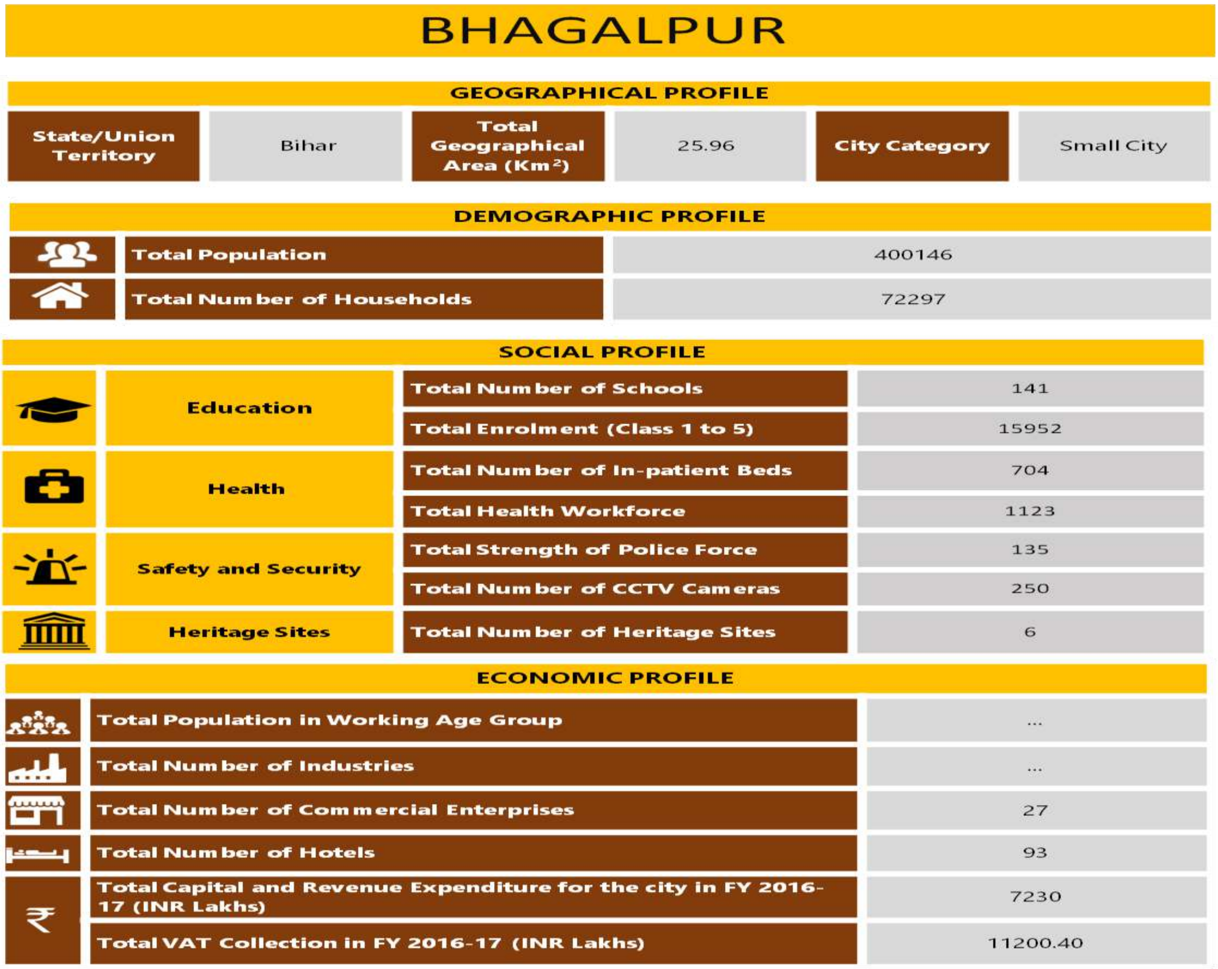
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BHAGALPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	Total Geographical Area (Km^2)	25.96	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	400146
Total Number of Households	72297

SOCIAL PROFILE

Education	Total Number of Schools	141
	Total Enrolment (Class 1 to 5)	15952
Health	Total Number of In-patient Beds	704
	Total Health Workforce	1123
Safety and Security	Total Strength of Police Force	135
	Total Number of CCTV Cameras	250
Heritage Sites	Total Number of Heritage Sites	6

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	27
Total Number of Hotels	93
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7230
Total VAT Collection in FY 2016-17 (INR Lakhs)	11200.40

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	16
		Total Number of Water Connection	42355
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	4213
		Total number of households in the city with access to community toilets in the city	8
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	255
		Total number of households covered through door-to-door collection of solid waste	72297
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	...
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	73567
		Total electricity supplied to the city (kWh)	371953
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
	Roads and Transport	**Total Length of Road Network in the City (Km)**	25.96
		Total length of arterial and sub-arterial road network in the city (Km)	25.96
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports

Pillars of Comprehensive Development	Category	Indicators
		activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate

Pillars of Comprehensive Development	Category	Indicators
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water

Pillars of Comprehensive Development	Category	Indicators
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

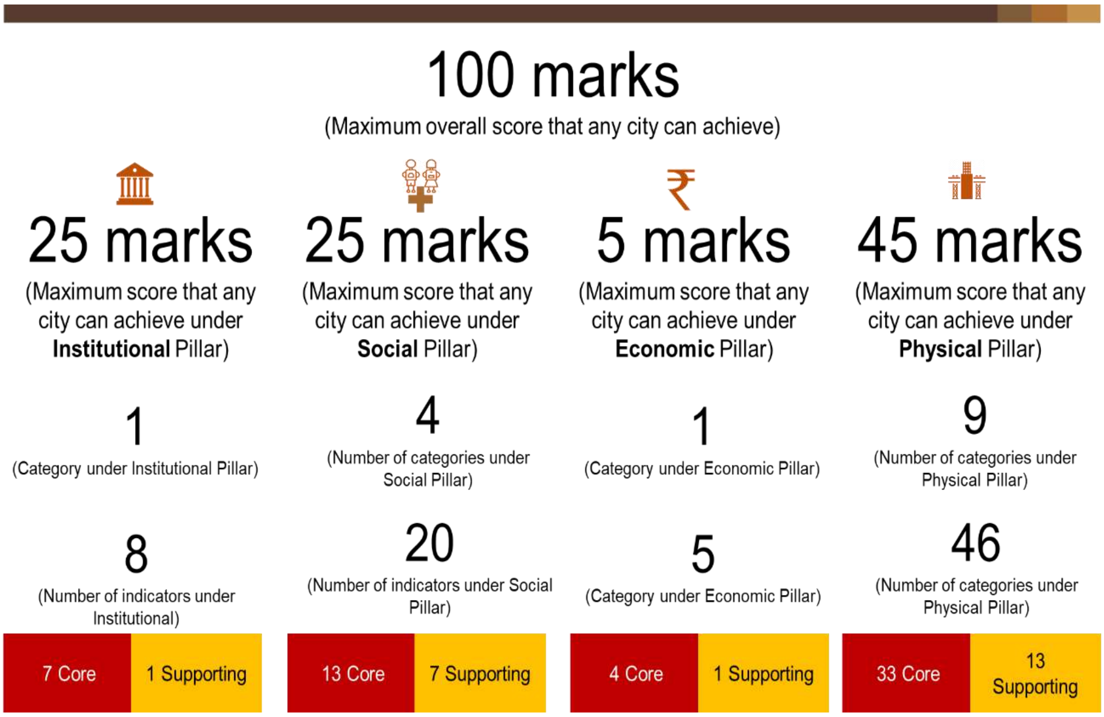
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Bhagalpur Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Heritage sites related data	Bhagalpur Municipal Corporation
Urban Local Body	For Ecological sites related data	Bhagalpur Municipal Corporation
Urban Local Body	For Housing related data	Social development SectionBhagalpur Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Bhagalpur Municipal Corporation
Urban Local Body	For Solid waste management related data	Bhagalpur Municipal Corporation
Urban Local Body	For IT services related data	IT section, Bhagalpur Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Bhagalpur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Engineering Department, Bhagalpur Municipal Corporation
	Construction planning	Engineering Department, Bhagalpur Municipal Corporation
	Green Building	Engineering Department, Bhagalpur Municipal Corporation
	Rain water harvesting	Engineering Department, Bhagalpur Municipal Corporation
	Universal Design Principle	Engineering Department, Bhagalpur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Bhagalpur Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 26 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**5**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**1**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**4**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**9**
Total	**26**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

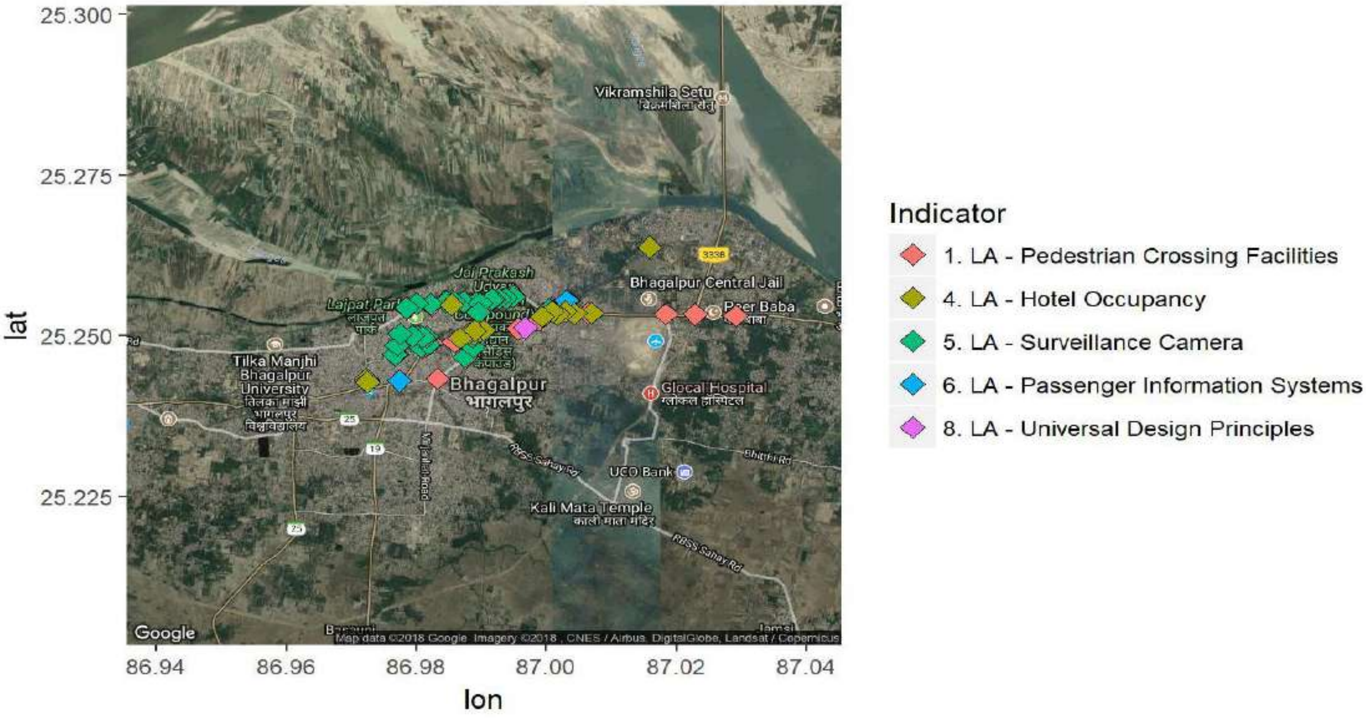
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


25.300
25.275
25.250
25.225
lat
86.94
86.96
86.98
87.00
87.02
87.04
lon
Vikramshila Setu
Jai Prakash Udyan
Lajpat Park
Bhagalpur Central Jail
Peer Baba
Tilka Manjhi Bhagalpur University
Bhagalpur
भागलपुर
Glocal Hospital
UCO Bank
Kali Mata Temple
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	49.82%
Identity & Culture	0%
Education	44%
Health	91%
Safety & Security	48%

Economy & Employment	13%
Housing & Inclusiveness	3%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	18%
Transport & Mobility	22%
Assured Water Supply	17%
Waste Water Management	2%
Solid Waste Management	67%
Reduced Pollution	21%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs
Government of India

BHOPAL

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

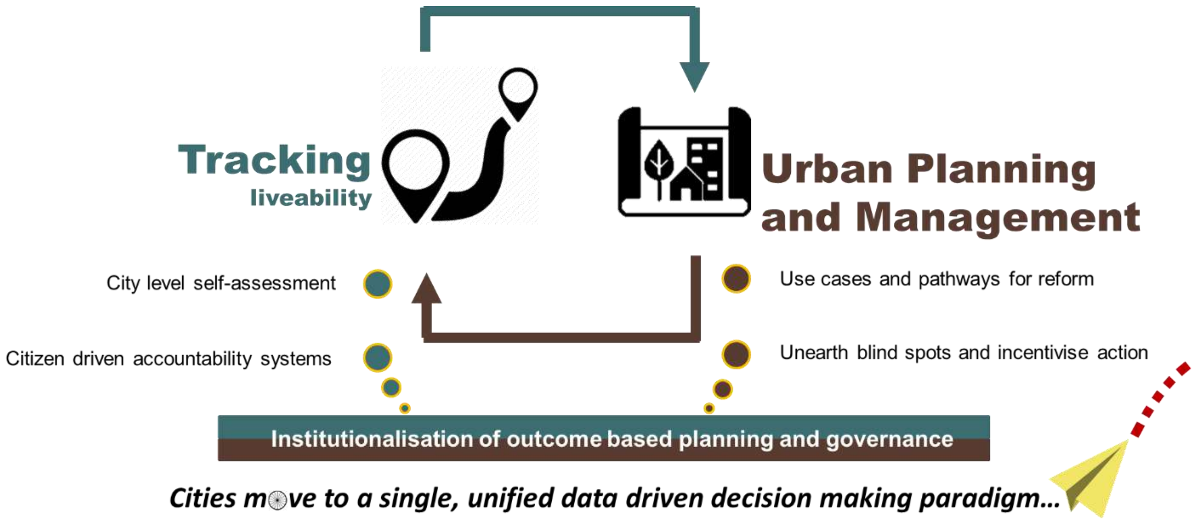
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

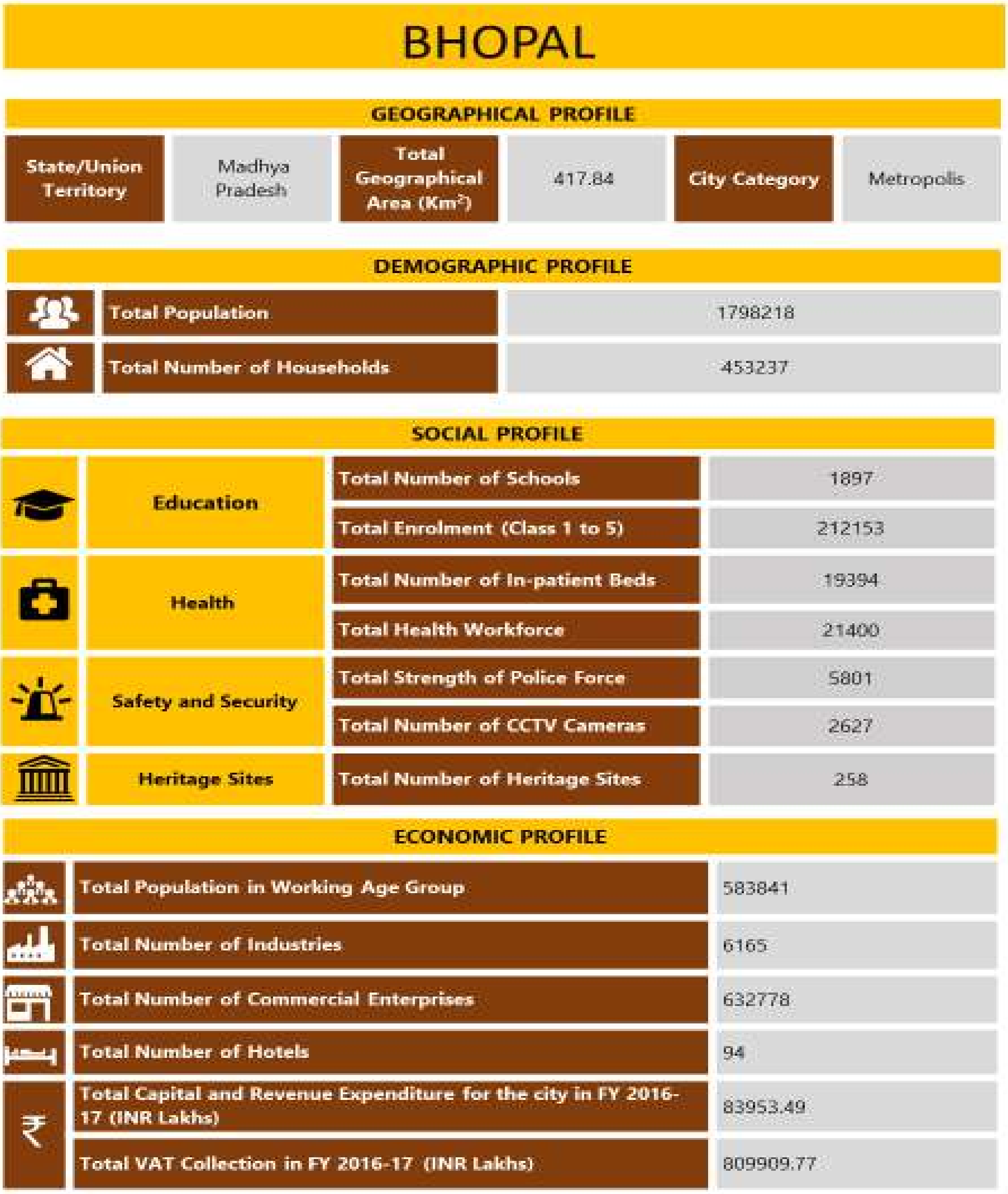
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BHOPAL

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	**Total Geographical Area (Km^2)**	417.84	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

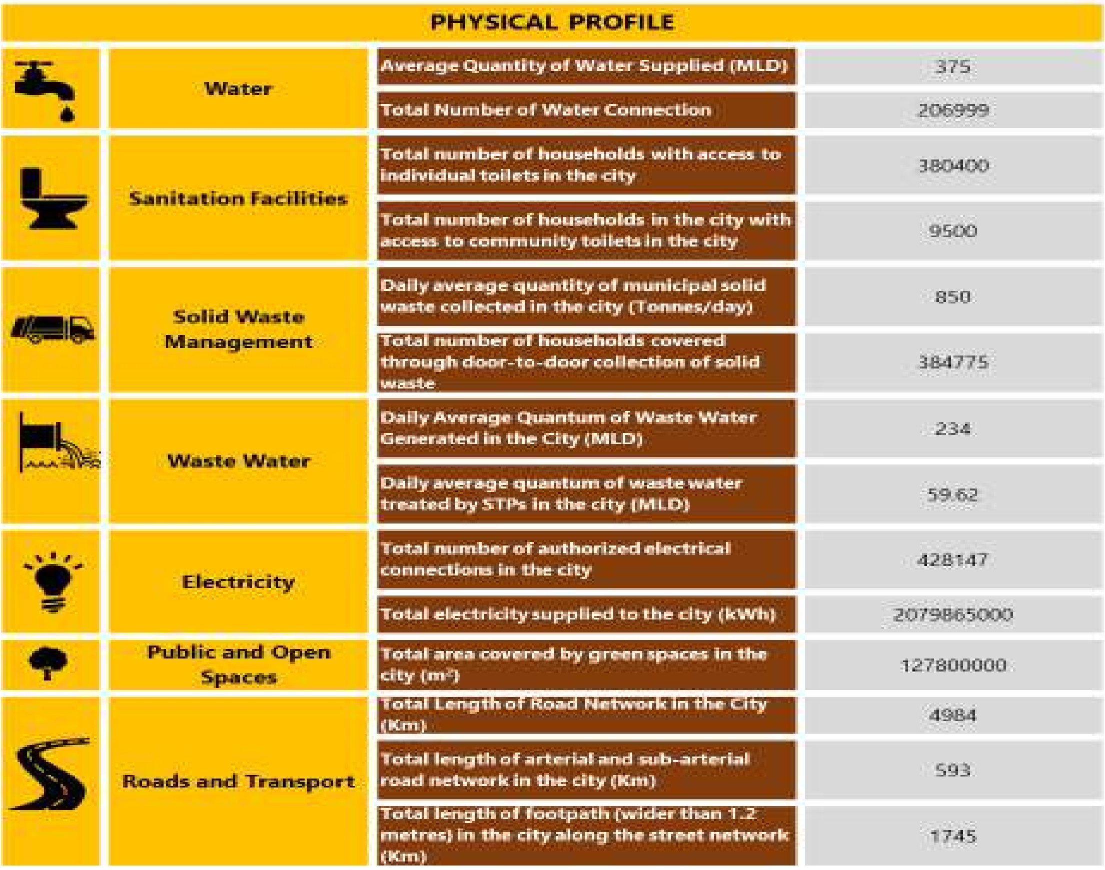
Total Population	1798218
Total Number of Households	453237

SOCIAL PROFILE

Education	**Total Number of Schools**	1897
	Total Enrolment (Class 1 to 5)	212153
Health	**Total Number of In-patient Beds**	19394
	Total Health Workforce	21400
Safety and Security	**Total Strength of Police Force**	5801
	Total Number of CCTV Cameras	2627
Heritage Sites	**Total Number of Heritage Sites**	258

ECONOMIC PROFILE

Total Population in Working Age Group	583841
Total Number of Industries	6165
Total Number of Commercial Enterprises	632778
Total Number of Hotels	94
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	83953.49
Total VAT Collection in FY 2016-17 (INR Lakhs)	809909.77



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	375
	Total Number of Water Connection	206999
Sanitation Facilities	Total number of households with access to individual toilets in the city	380400
	Total number of households in the city with access to community toilets in the city	9500
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	850
	Total number of households covered through door-to-door collection of solid waste	384775
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	234
	Daily average quantum of waste water treated by STPs in the city (MLD)	59.62
Electricity	Total number of authorized electrical connections in the city	428147
	Total electricity supplied to the city (kWh)	2079865000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	127800000
Roads and Transport	Total Length of Road Network in the City (Km)	4984
	Total length of arterial and sub-arterial road network in the city (Km)	593
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1745

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

Pillars of Comprehensive Development	Category	Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

Pillars of Comprehensive Development	Category	Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
	Accounts	Accounting Department, Bhopal Municipal Corporation
	Park and Recreation	Garden Department, Bhopal Municipal Corporation
	Water Supply and Drainage	Engineering Department, Bhopal Municipal Corporation

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Heritage sites	Bhopal Municipal Corporation
	Ecological sites	Bhopal Municipal Corporation
	Housing	Housing section, Bhopal Municipal Corporation
	Building plan	Building Permission Section, Bhopal Municipal Corporation
	Roads	Bhopal Municipal Corporation
	Solid waste management	Solid waste management, Bhopal Municipal Corporation
	IT services	IT Section, Bhopal Municipal Corporation
	Vendor committee	Bhopal Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Building Permission Section, Bhopal Municipal Corporation Bhopal Development Authority
	Construction planning	Building Permission Section, Bhopal Municipal Corporation Bhopal Development Authority
	Green Building	Bhopal Development Authority
	Rain water harvesting	Bhopal Development Authority
	Universal Design Principle	Bhopal Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Directorate of Health Services, Bhopal
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy		Madhya Pradesh New and Renewable Energy Department

Designated data owners	Sub categories	Data owners at city level
Development Agency		
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Bhopal
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 68 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	11
DISCOM/Electricity Department	3
Traffic and Police Department	8
Development Authority	0
Pollution Control Board	6
State Renewable Energy Department	3
Town and Country Planning	1
State Health Department	3

Transport Authority	1
Disaster Management	1
Urban Local Body	28
Total	68

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

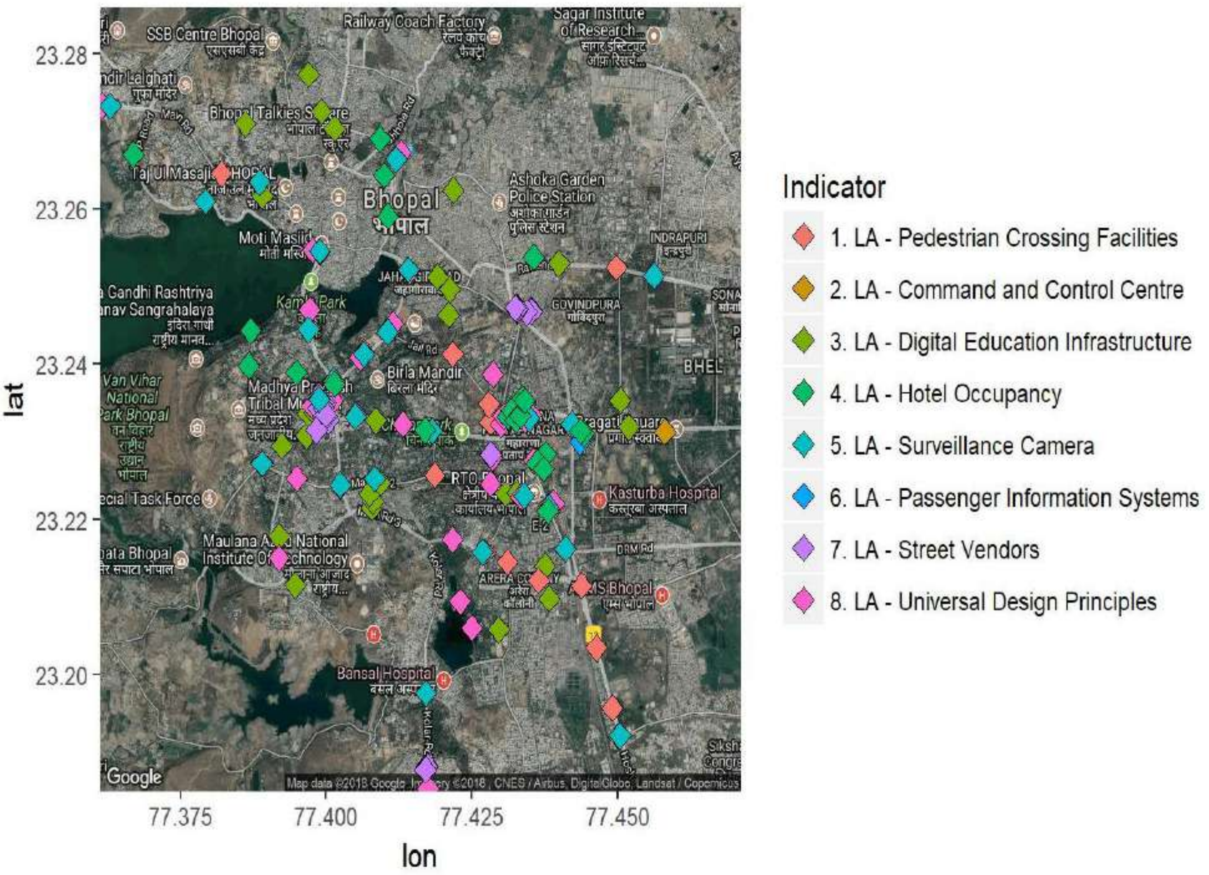
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.28
23.26
23.24
23.22
23.20
lat
77.375
77.400
77.425
77.450
lon
SSB Centre Bhopal
Railway Coach Factory
Sagar Institute of Research
Bhopal Talkies Square
Taj Ul Masajid
Bhopal
भोपाल
Moti Masjid
Ashoka Garden Police Station
INDRAPURI
GOVINDPURA
Kamla Park
Birla Mandir
BHEL
Van Vihar National Park Bhopal
Madhya Pradesh Tribal Museum
RTO Bhopal
Kasturba Hospital
Special Task Force
Maulana Azad National Institute Of Technology
AIIMS Bhopal
Bansal Hospital
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	64.80%
Identity & Culture	57%
Education	85%
Health	86%
Safety & Security	64%
Economy & Employment	14%
Housing & Inclusiveness	4%
Public Open Spaces	100%
Mixed Land Use & Compactness	2%
Power Supply	48%
Transport & Mobility	55%
Assured Water Supply	80%
Waste Water Management	64%
Solid Waste Management	82%
Reduced Pollution	40%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

BHUBANESWAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

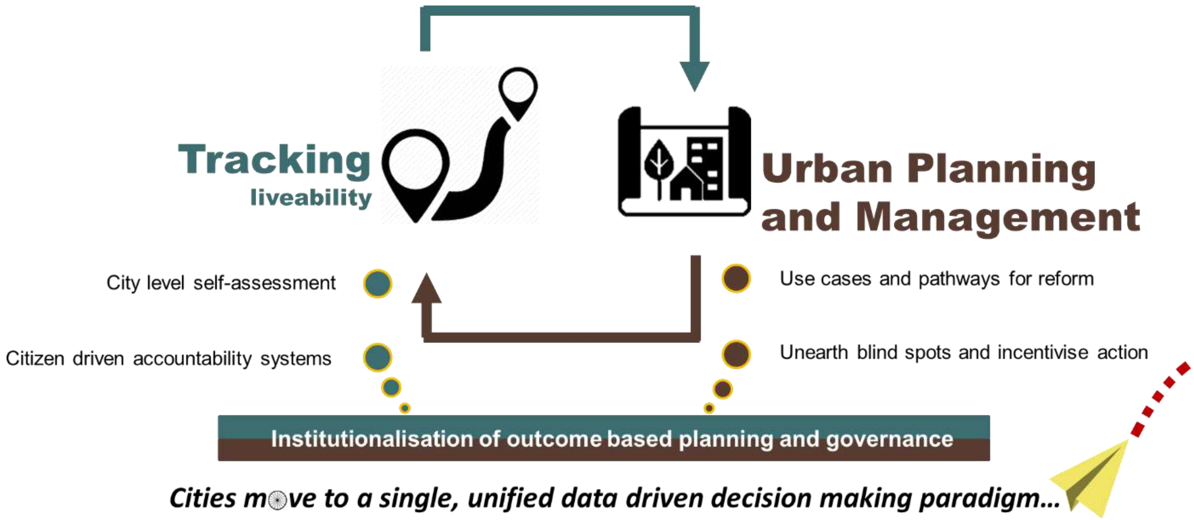
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

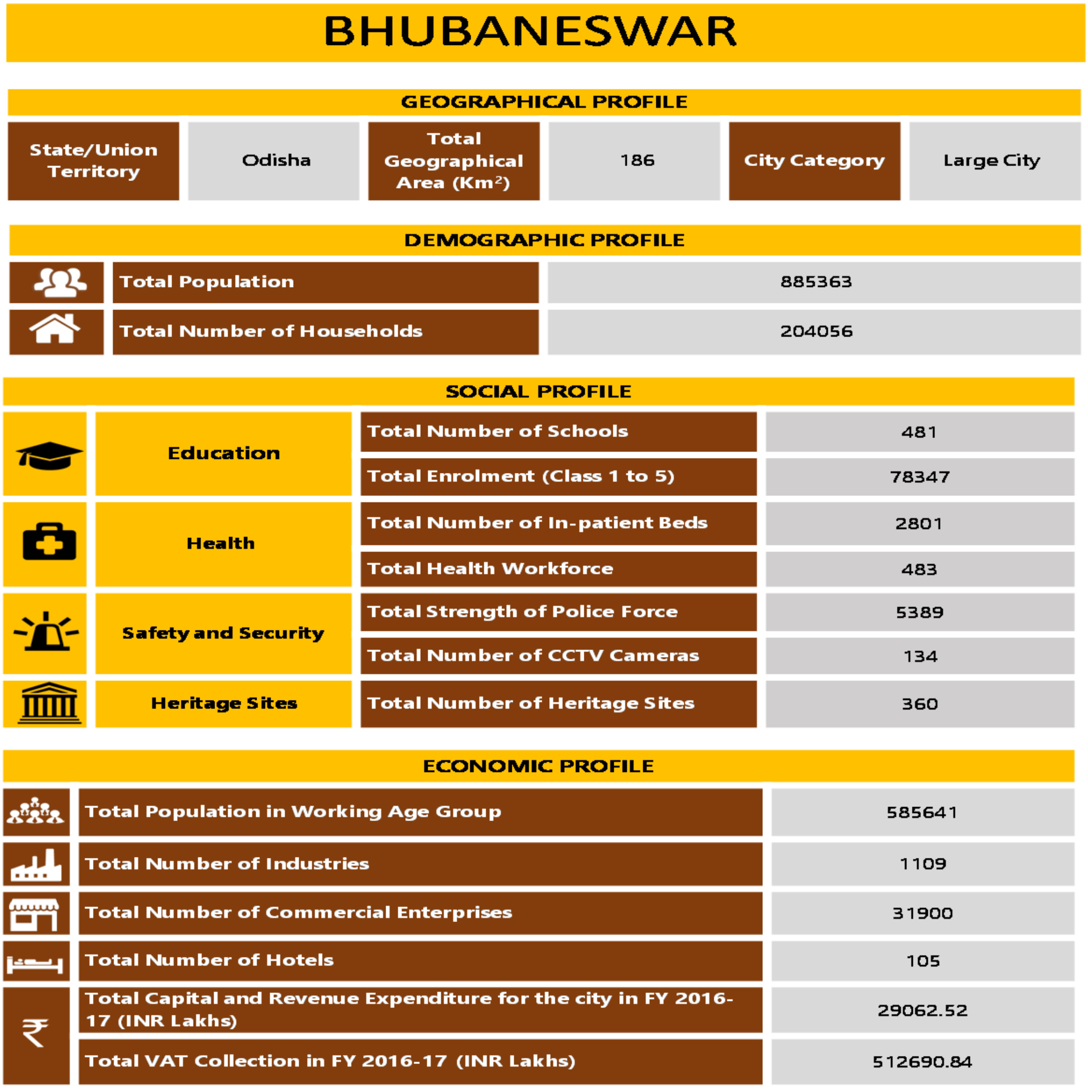
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health,



BHUBANESWAR

GEOGRAPHICAL PROFILE

State/Union Territory	Odisha	**Total Geographical Area (Km^2)**	186	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	885363
Total Number of Households	204056

SOCIAL PROFILE

Education	**Total Number of Schools**	481
	Total Enrolment (Class 1 to 5)	78347
Health	**Total Number of In-patient Beds**	2801
	Total Health Workforce	483
Safety and Security	**Total Strength of Police Force**	5389
	Total Number of CCTV Cameras	134
Heritage Sites	**Total Number of Heritage Sites**	360

ECONOMIC PROFILE

Total Population in Working Age Group	585641
Total Number of Industries	1109
Total Number of Commercial Enterprises	31900
Total Number of Hotels	105
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29062.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	512690.84

Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	276.45
	Total Number of Water Connections	98907
Sanitation Facilities	Total number of households with access to individual toilets in the city	147512
	Total number of households in the city with access to community toilets in the city	14851
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	520
	Total number of households covered through door-to-door collection of solid waste	104056
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	212.27
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.1
Electricity	Total number of authorized electrical connections in the city	195130
	Total electricity supplied to the city (kWh)	1708026000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	23904221
Roads and Transport	Total Length of Road Network in the City (Km)	1920
	Total length of arterial and sub-arterial road network in the city (Km)	142
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	43.08

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

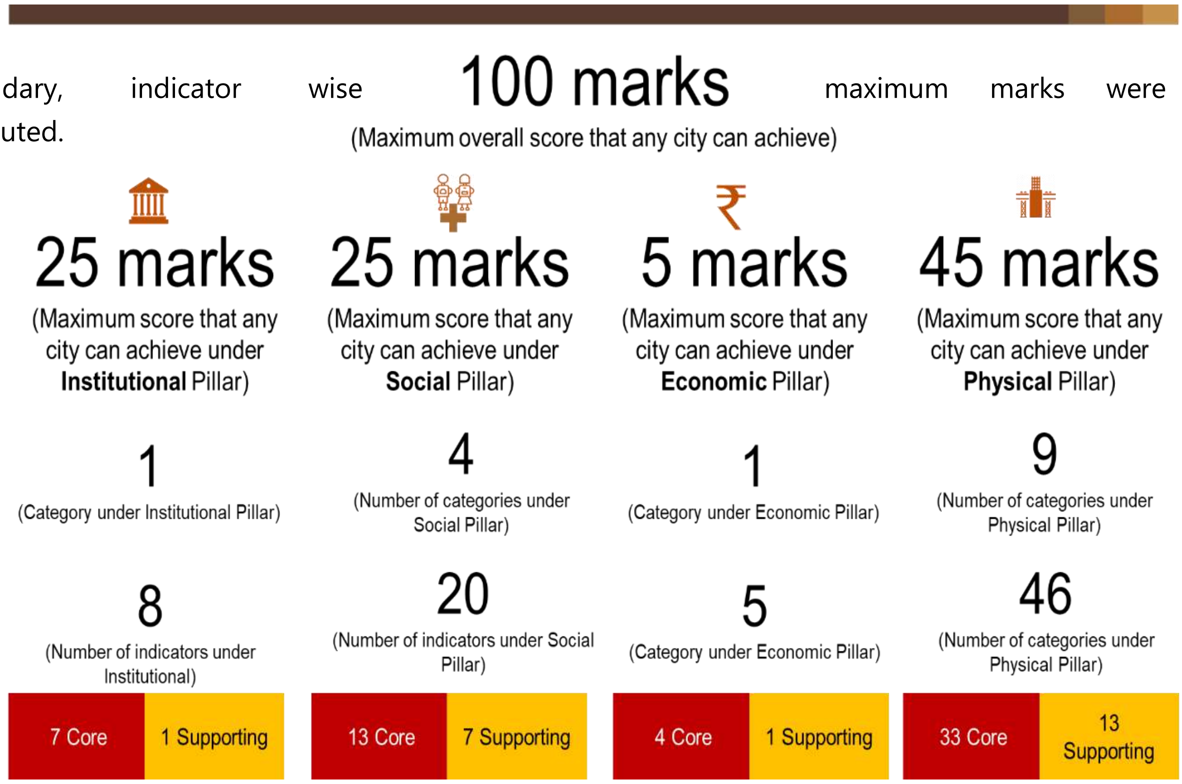
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Bhubaneswar Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Bhubaneswar Development Authority Bhubaneswar Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Bhubaneswar Municipal Corporation Public Health Office
Urban Local Body	For Heritage sites related data	Bhubaneswar Development Authority
Urban Local Body	For Ecological sites related data	Forest Department Bhubaneswar Development Authority
Urban Local Body	For Housing related data	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
Urban Local Body	For Building plan related data	Bhubaneswar Municipal Corporation
Urban Local Body	For Roads related data	Bhubaneswar Municipal Corporation Road & Building Superintendent Engineer
Urban Local Body	For Solid waste management related data	Bhubaneswar Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For IT services related data	Bhubaneswar Municipal Corporation
Urban Local Body	For Vendor committee related data	Bhubaneswar Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Public Health Officer, Odisha State Pollution Control Board
Development Authority	Building Infrastructure	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Construction planning	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Green Building	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
	Rain water harvesting	Department of Water Resources
	Universal Design Principle	Bhubaneswar Municipal Corporation Bhubaneswar Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Central Electricity Supply Corporation, Bhubaneswar Municipal Corporation
State Disaster management authority		Odisha State Disaster Management Authority
State Education Department		Odisha Primary Education Programme Authority
State Health Department	Health care professionals	National Urban Health Mission
	Citizen Services	National Urban Health Mission
	Disease Prevalence	National Urban Health Mission
	Health Infrastructure	National Urban Health Mission
State Renewable Energy Development Agency		Odisha Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country	Land Use	Bhubaneswar Development Authority

Designated data owners	Subcategories	Data owners at city level
Planning Department		
Traffic and Police Department		Commission rate of Police , Railway (GRPF)
Transport Authorities	Buses	Dream Sahara Transport Service, Road Transport Office
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 55 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	2
Traffic and Police Department	11
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	4
Transport Authority	2
Disaster Management	0
Urban Local Body	32
Total	55

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

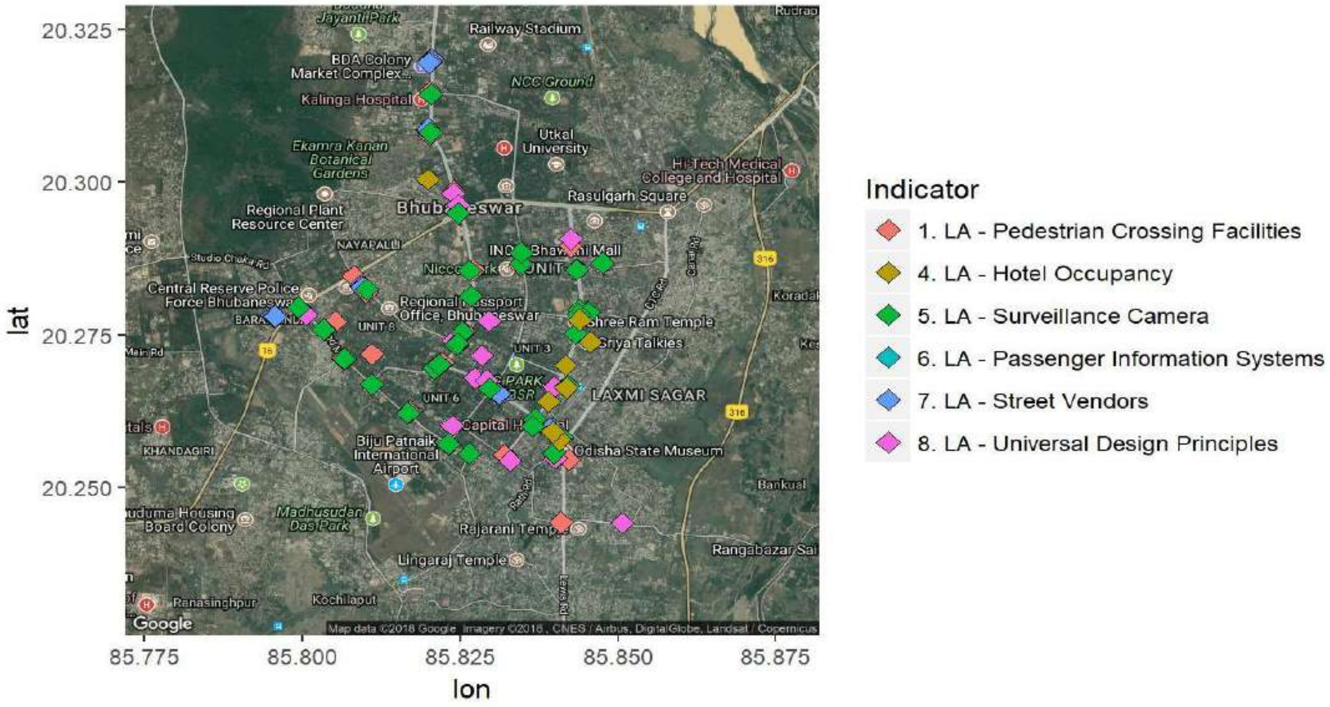
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


20.325
20.300
20.275
20.250
lat
85.775
85.800
85.825
85.850
85.875
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage

Governance	46.02%
Identity & Culture	41%
Education	86%
Health	86%
Safety & Security	64%
Economy & Employment	51%
Housing & Inclusiveness	2%
Public Open Spaces	66%
Mixed Land Use & Compactness	0%
Power Supply	52%
Transport & Mobility	48%
Assured Water Supply	70%
Waste Water Management	47%
Solid Waste Management	67%
Reduced Pollution	80%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

BIHARSHARIF

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Table 5: Category wise scores.......... 25

Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

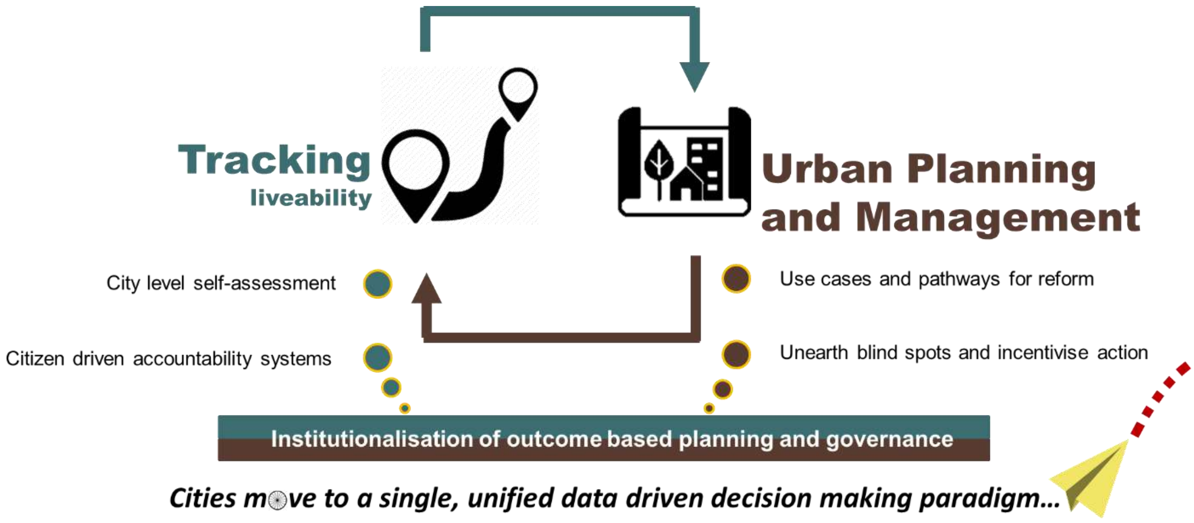
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

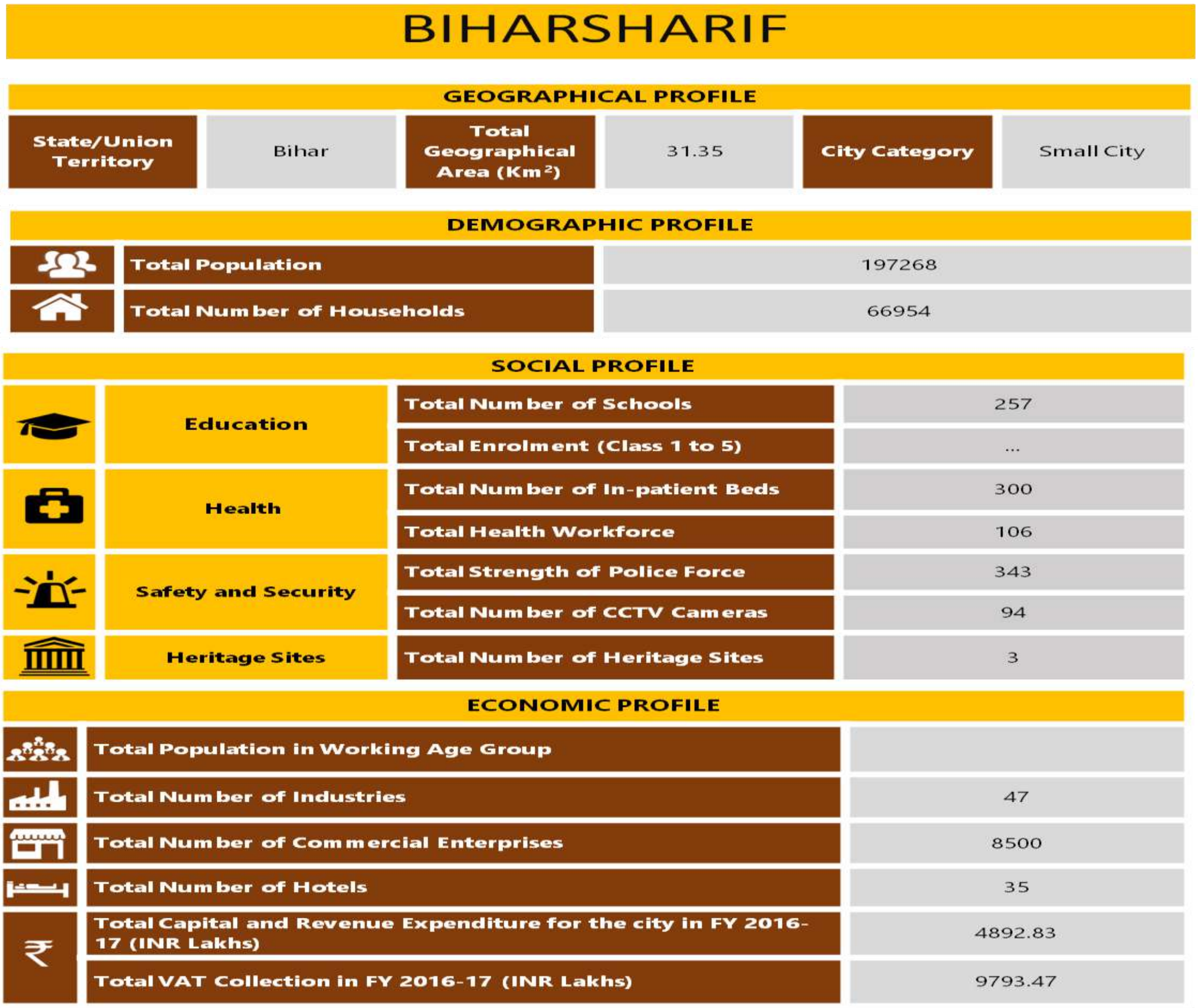
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BIHARSHARIF

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	Total Geographical Area (Km²)	31.35	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	197268
Total Number of Households	66954

SOCIAL PROFILE

Education	Total Number of Schools	257
	Total Enrolment (Class 1 to 5)	...
Health	Total Number of In-patient Beds	300
	Total Health Workforce	106
Safety and Security	Total Strength of Police Force	343
	Total Number of CCTV Cameras	94
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	47
Total Number of Commercial Enterprises	8500
Total Number of Hotels	35
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4892.83
Total VAT Collection in FY 2016-17 (INR Lakhs)	9793.47

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	11.5
	Total Number of Water Connection	28050
Sanitation Facilities	Total number of households with access to individual toilets in the city	34000
	Total number of households in the city with access to community toilets in the city	400
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	160
	Total number of households covered through door-to-door collection of solid waste	44465
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	9.2
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	50938
	Total electricity supplied to the city (kWh)	174204000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	3000
Roads and Transport	Total Length of Road Network in the City (Km)	404
	Total length of arterial and sub-arterial road network in the city (Km)	404
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

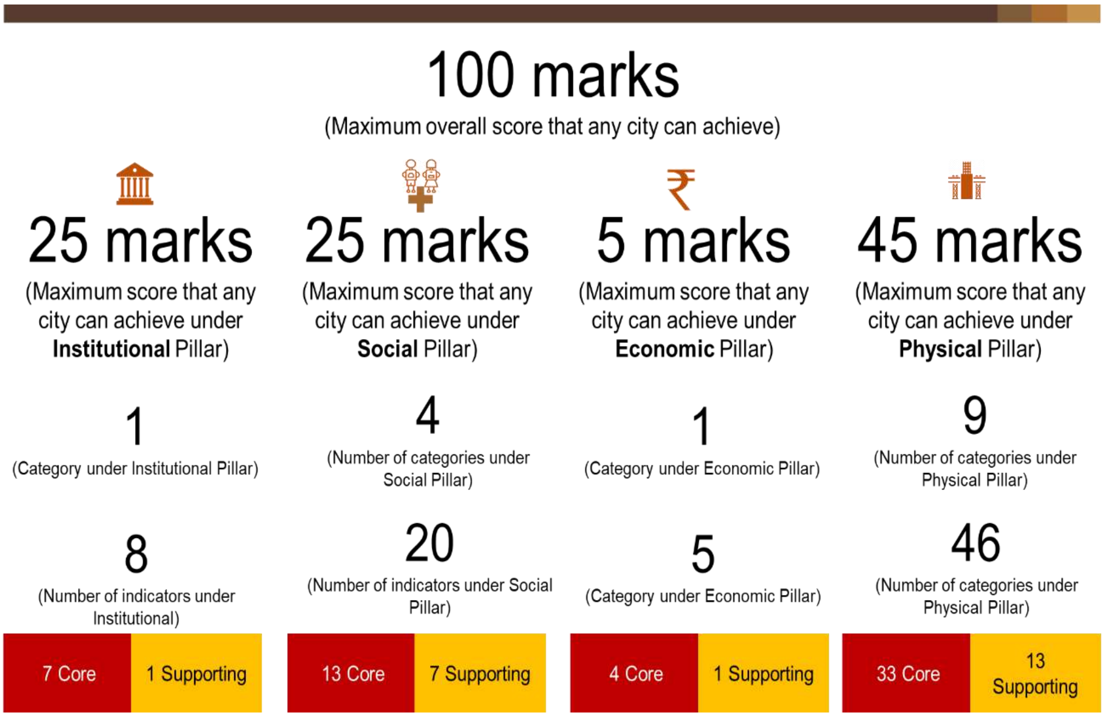
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Heritage sites related data	Bihar Sharif Municipal Corporation
Urban Local Body	For Ecological sites related data	Bihar Sharif Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Bihar Sharif Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Bihar Sharif Municipal Corporation
Urban Local Body	For Solid waste management related data	Bihar Sharif Municipal Corporation
Urban Local Body	For IT services related data	IT section, Bihar Sharif Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Bihar Sharif Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar
Development Authority	Building Infrastructure	Engineering Department, Bihar Sharif Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Engineering Department, Bihar Sharif Municipal Corporation
	Green Building	Engineering Department, Bihar Sharif Municipal Corporation
	Rain water harvesting	Engineering Department, Bihar Sharif Municipal Corporation
	Universal Design Principle	Engineering Department, Bihar Sharif Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Bihar Sharif Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 9 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**9***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

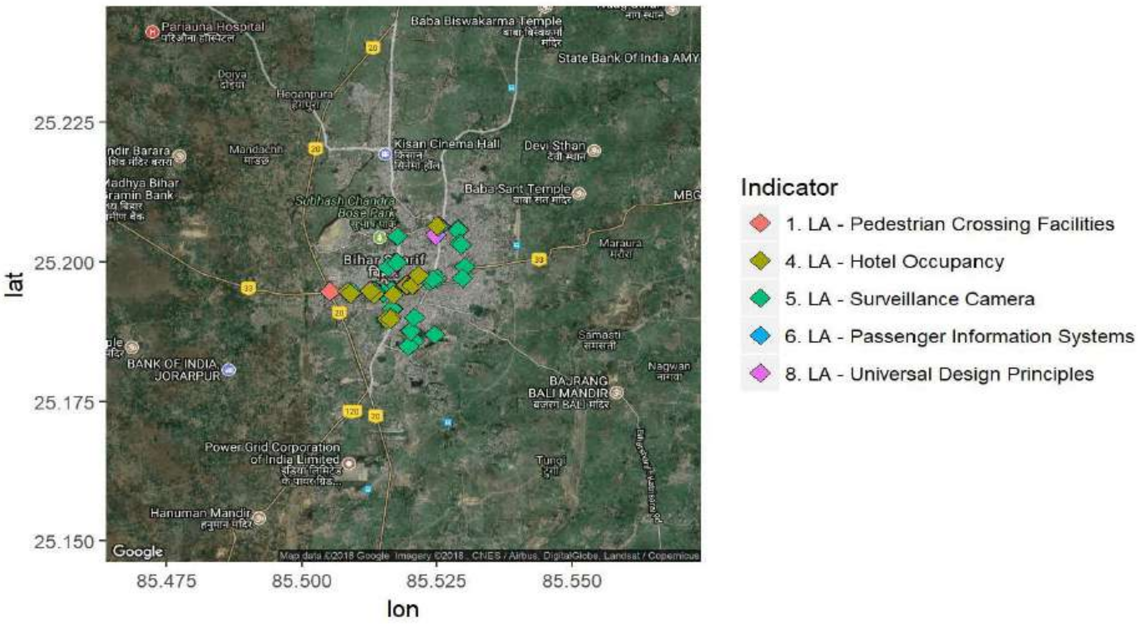
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
lat
25.225
25.200
25.175
25.150
lon
85.475
85.500
85.525
85.550
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	30.38%
Identity & Culture	60%
Education	2%
Health	63%
Safety & Security	63%
Economy & Employment	18%
Housing & Inclusiveness	10%

Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	40%
Transport & Mobility	8%
Assured Water Supply	35%
Waste Water Management	34%
Solid Waste Management	64%
Reduced Pollution	7%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

BILASPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

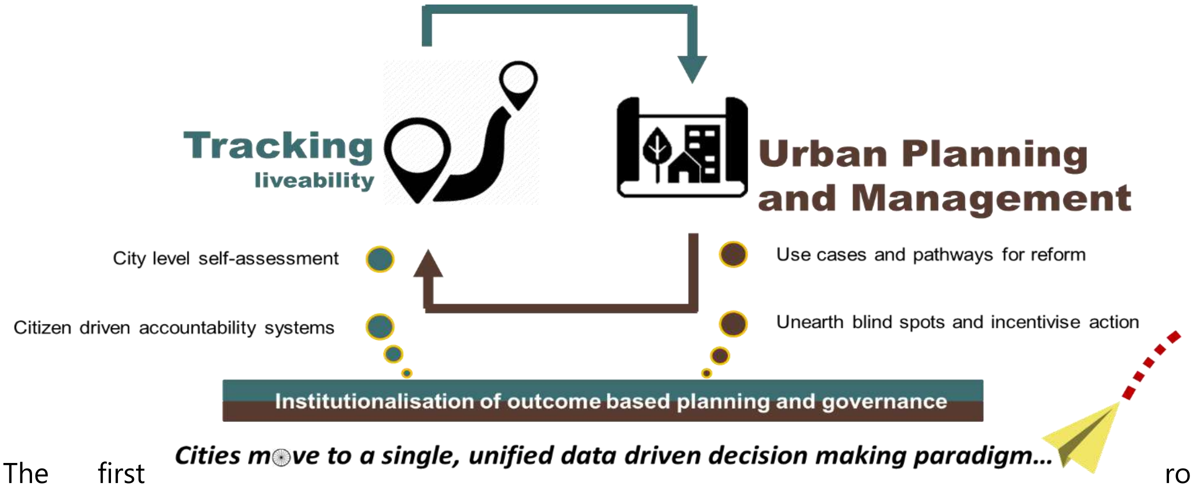
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

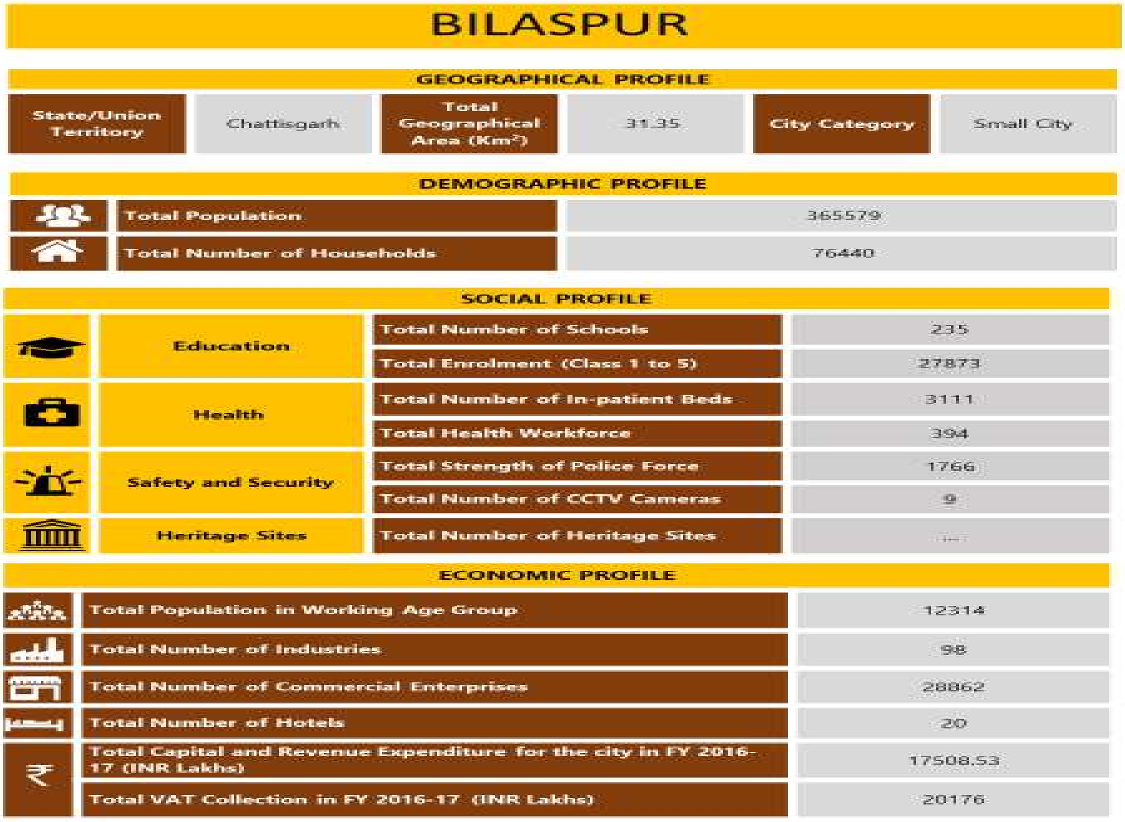
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities m⦿ve to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



BILASPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Chattisgarh	Total Geographical Area (Km²)	31.35	City Category	Small City

DEMOGRAPHIC PROFILE

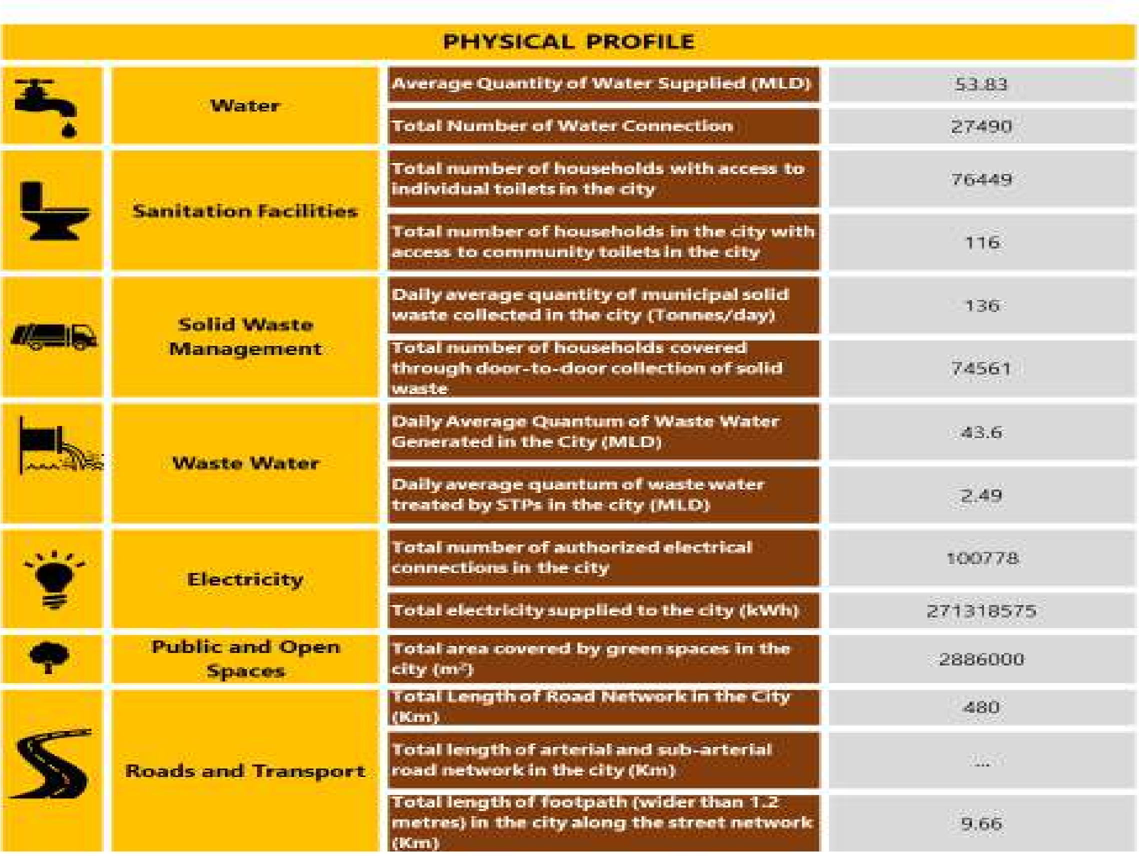
Total Population	365579
Total Number of Households	76440

SOCIAL PROFILE

Education	Total Number of Schools	235
	Total Enrolment (Class 1 to 5)	27873
Health	Total Number of In-patient Beds	3111
	Total Health Workforce	394
Safety and Security	Total Strength of Police Force	1766
	Total Number of CCTV Cameras	9
Heritage Sites	Total Number of Heritage Sites	----

ECONOMIC PROFILE

Total Population in Working Age Group	12314
Total Number of Industries	98
Total Number of Commercial Enterprises	28862
Total Number of Hotels	20
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	17508.53
Total VAT Collection in FY 2016-17 (INR Lakhs)	20176



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	53.83
	Total Number of Water Connection	27490
Sanitation Facilities	Total number of households with access to individual toilets in the city	76449
	Total number of households in the city with access to community toilets in the city	116
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	136
	Total number of households covered through door-to-door collection of solid waste	74561
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	43.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	2.49
Electricity	Total number of authorized electrical connections in the city	100778
	Total electricity supplied to the city (kWh)	271318575
Public and Open Spaces	Total area covered by green spaces in the city (m²)	2886000
Roads and Transport	Total Length of Road Network in the City (Km)	480
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9.66

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle

Pillars of Comprehensive Development	Category	Indicators
		tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, BMC
Urban Local Body	For Park and Recreation Related Questions	AMRUT, BMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, BMC
Urban Local Body	For Heritage sites related data	Indian National Trust for Art and Culture Heritage
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	Bilaspur Municipal Corporation
Urban Local Body	For Building plan related data	Bilaspur Development Authority
Urban Local Body	For Roads related data	Bilaspur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Bilaspur Municipal Corporation
Urban Local Body	For IT services related data	IT Section, BMC
Urban Local Body	For Vendor committee related data	Bazzar Bibhag, BMC
Urban Local Body	Any other departments involved in providing data for questions mentioned	Employment Exchange, Census Department

Designated data owners	Subcategories	Data owners at city level
	under Urban Local Body	
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Chhattisgarh Pollution Control Board
Development Authority	Building Infrastructure	Bilaspur Development Authority Bilaspur Municipal Corporation
	Construction planning	Bilaspur Development Authority Bilaspur Municipal Corporation
	Green Building	Bilaspur Development Authority Bilaspur Municipal Corporation
	Rain water harvesting	Bilaspur Development Authority Bilaspur Municipal Corporation
	Universal Design Principle	Bilaspur Development Authority Bilaspur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Chhattisgarh State Power Distribution Corporation Limited
State Disaster management authority		Bilaspur Smart city Limited
State Education Department		District Education Department
State Health Department	Health care professionals	Chhattisgarh Medical and Health organization
State Health Department	Citizen Services	Chhattisgarh Medical and Health organization
State Health Department	Disease Prevalence	Chhattisgarh Medical and Health organization
State Health Department	Health Infrastructure	Chhattisgarh Medical and Health organization
State Renewable Energy Development Agency		Chhattisgarh Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Sale Tax department
Town and Country Planning Department	Land Use	Town and country planning department, BMC
Traffic and Police		Police department, Bilaspur

Designated data owners	Subcategories	Data owners at city level
Department		
Transport Authorities	Buses	City Bus In charge, BMC
Transport Authorities	Registered Vehicles	Road and Transport organization, Bilaspur
Transport Authorities	Sub urban rail transport	
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 112 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	8
DISCOM/Electricity Department	11
Traffic and Police Department	9
Development Authority	1
Pollution Control Board	5
State Renewable Energy Department	3
Town and Country Planning	0
State Health Department	19
Transport Authority	1

Disaster Management	2
Urban Local Body	51
Total	112

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

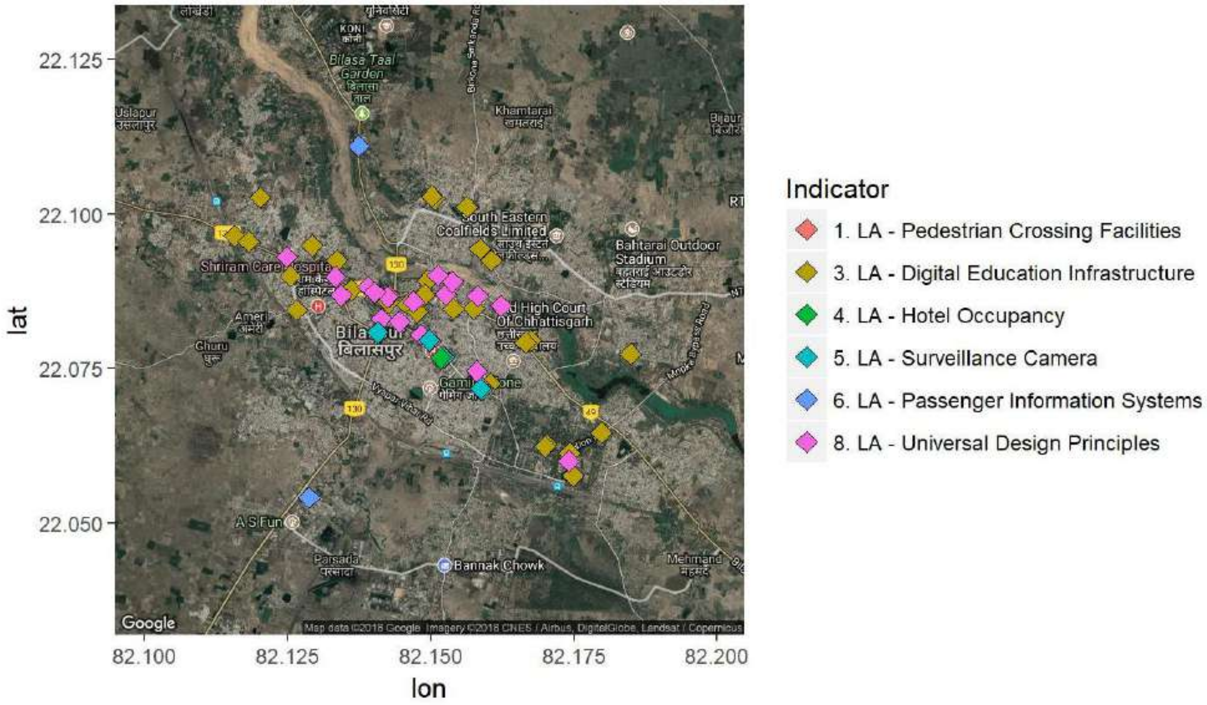
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
22.125
22.100
22.075
22.050
82.100
82.125
82.150
82.175
82.200
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles
Bilasa Taal Garden
Khamtarai
South Eastern Coalfields Limited
Bahtarai Outdoor Stadium
Shriram Care Hospital
High Court Of Chhattisgarh
Bilaspur
Uslapur
Ghuru
Parsada
Bannak Chowk
Mehmand
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use &

compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	72.68%
Identity & Culture	41%
Education	72%
Health	93%
Safety & Security	69%
Economy & Employment	31%
Housing & Inclusiveness	37%
Public Open Spaces	34%
Mixed Land Use & Compactness	6%
Power Supply	53%
Transport & Mobility	27%
Assured Water Supply	69%
Waste Water Management	54%
Solid Waste Management	99%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

सत्यमेव जयते
Ministry of Housing and Urban Affairs
Government of India

CHANDIGARH

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

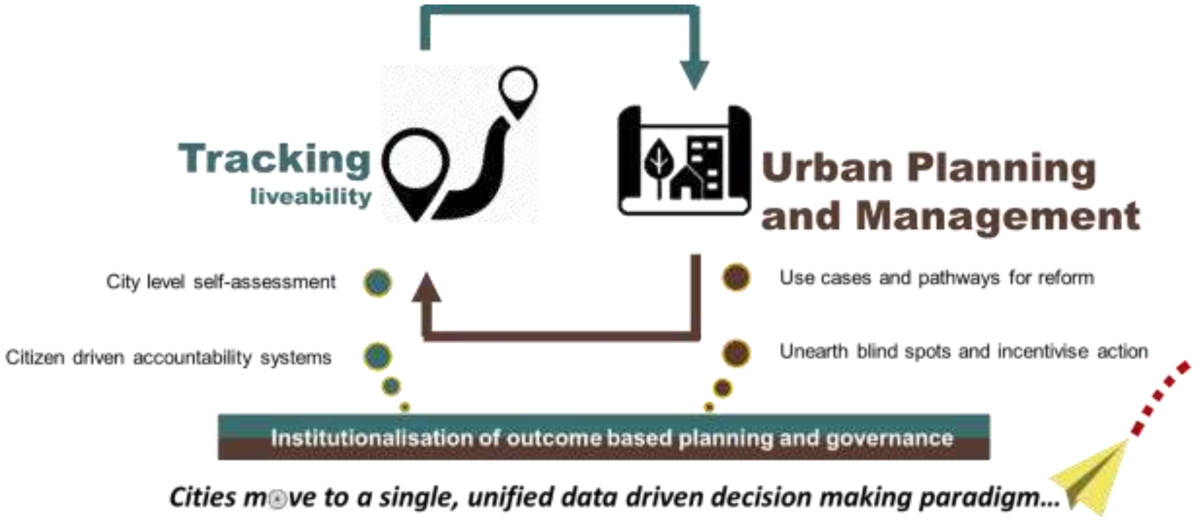
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

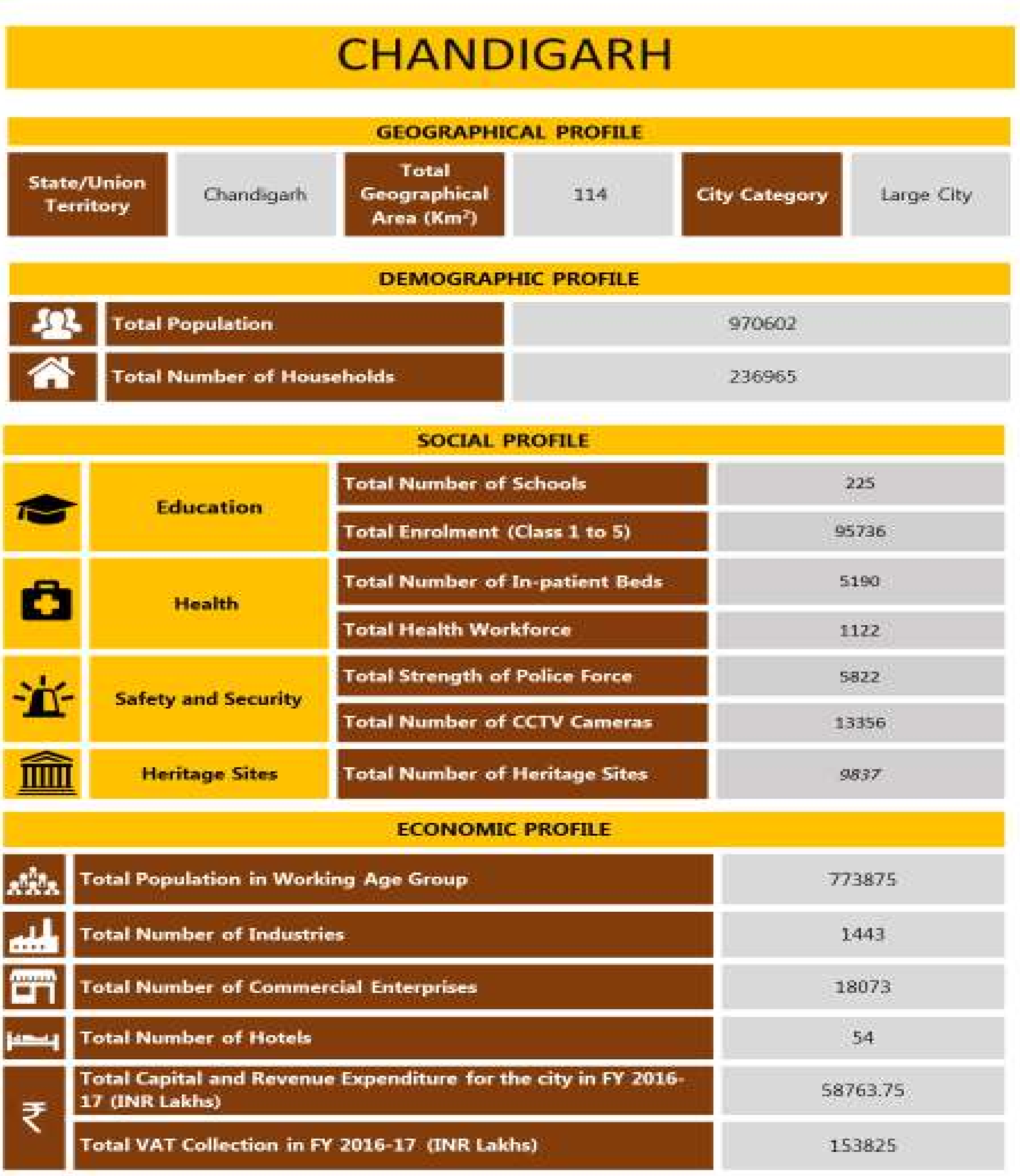
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



CHANDIGARH

GEOGRAPHICAL PROFILE

State/Union Territory	Chandigarh	Total Geographical Area (Km²)	114	City Category	Large City

DEMOGRAPHIC PROFILE

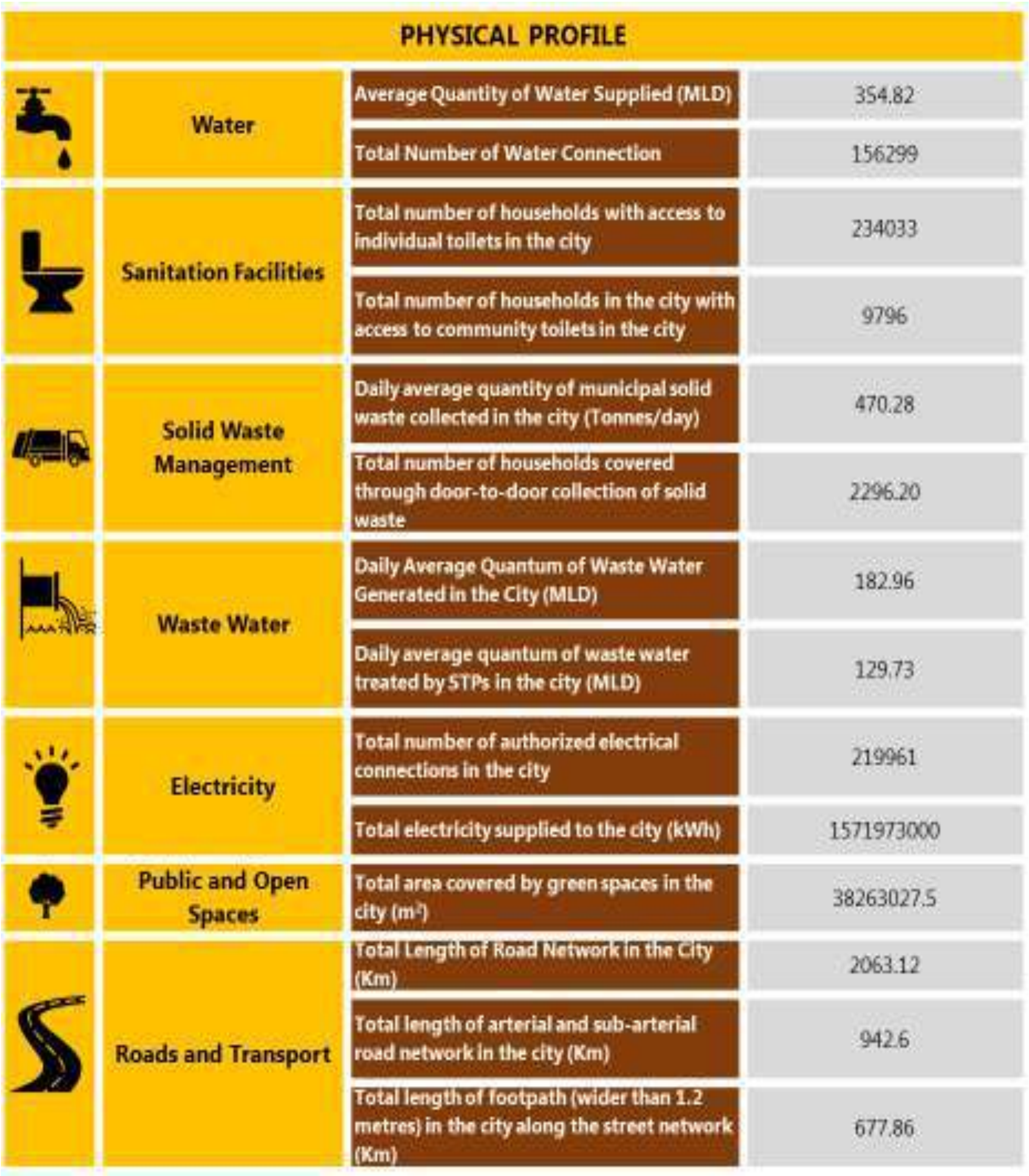
Total Population	970602
Total Number of Households	236965

SOCIAL PROFILE

Education	Total Number of Schools	225
	Total Enrolment (Class 1 to 5)	95736
Health	Total Number of In-patient Beds	5190
	Total Health Workforce	1122
Safety and Security	Total Strength of Police Force	5822
	Total Number of CCTV Cameras	13356
Heritage Sites	Total Number of Heritage Sites	9837

ECONOMIC PROFILE

Total Population in Working Age Group	773875
Total Number of Industries	1443
Total Number of Commercial Enterprises	18073
Total Number of Hotels	54
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	58763.75
Total VAT Collection in FY 2016-17 (INR Lakhs)	153825



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	354.82
	Total Number of Water Connection	156299
Sanitation Facilities	Total number of households with access to individual toilets in the city	234033
	Total number of households in the city with access to community toilets in the city	9796
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	470.28
	Total number of households covered through door-to-door collection of solid waste	2296.20
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	182.96
	Daily average quantum of waste water treated by STPs in the city (MLD)	129.73
Electricity	Total number of authorized electrical connections in the city	219961
	Total electricity supplied to the city (kWh)	1571973000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	38263027.5
Roads and Transport	Total Length of Road Network in the City (Km)	2063.12
	Total length of arterial and sub-arterial road network in the city (Km)	942.6
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	677.86

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources

Pillars of Comprehensive Development	Category	Indicators
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

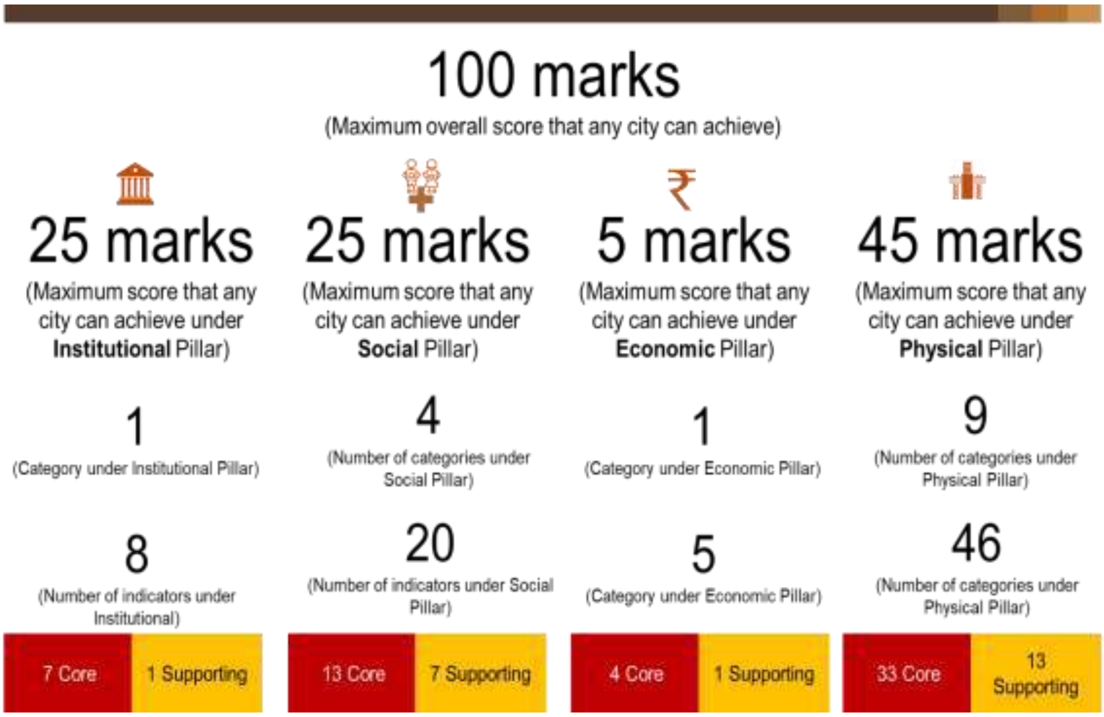
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department(ULB)
Urban Local Body	For Park and Recreation Related Questions	Sports , Horticulture department , ULB
Urban Local Body	For Water Supply and Drainage related questions	Water Supply department
Urban Local Body	For Heritage sites related data	Town and country planning department
Urban Local Body	For Ecological sites related data	Town and country planning department
Urban Local Body	For Housing related data	Housing Board
Urban Local Body	For Building plan related data	Building branch (Estate office)
Urban Local Body	For Roads related data	Roads and building department(ULB)
Urban Local Body	For Solid waste management related data	Health and sanitation department(ULB)
Urban Local Body	For IT services related data	IT department(ULB)
Urban Local Body	For Vendor committee related data	Vender cell(ULB)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism department, Excise and taxes department, architecture department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Chandigarh pollution control committee (CPCC)
Development Authority	Building Infrastructure	Building branch (Estate office)
	Construction planning	Building branch (Estate office)
	Green Building	Building branch (Estate office)
	Rain water harvesting	Building branch (Estate office)
	Universal Design Principle	Building branch (Estate office)
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board
State Disaster management authority		State Disaster Management Authority
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department

Designated data owners	Subcategories	Data owners at city level
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Chandigarh Renewable Energy and science & technology (CREST)
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department (UT Secretariat)
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	State transport Authority(STA) and Chandigarh Transport Undertaking (CTU)
	Registered Vehicles	Registering and licensing authority(RLA) and State transport Authority(STA)
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 77 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

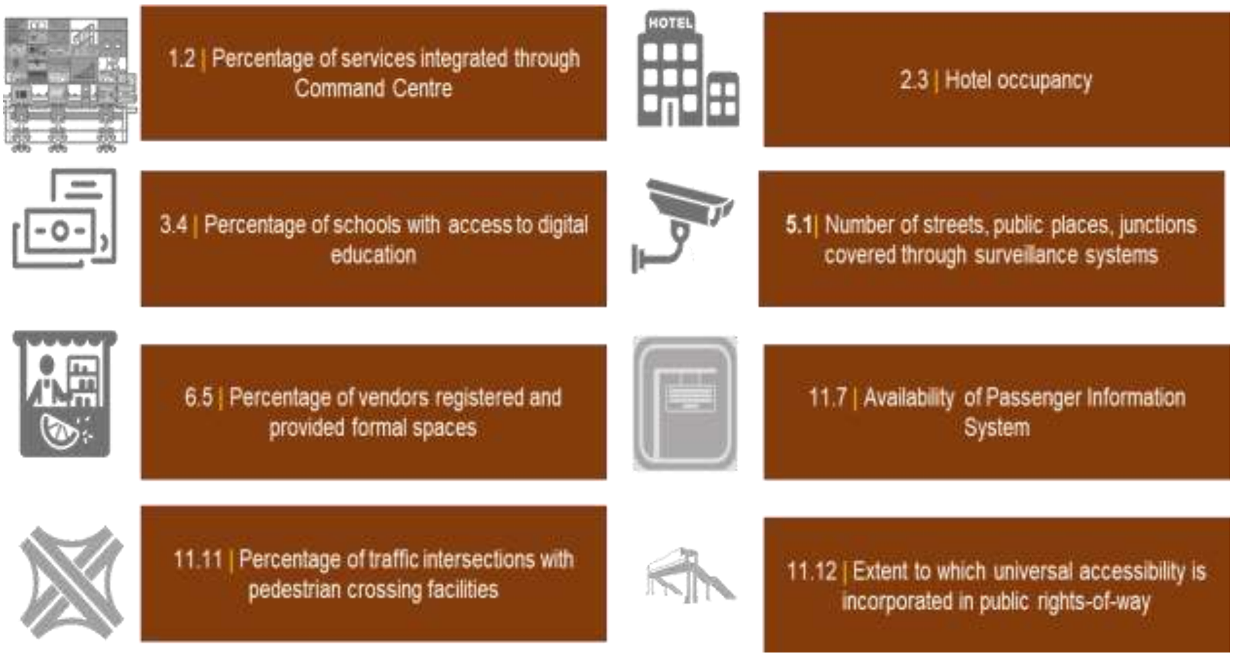
Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	5
Traffic and Police Department	17
Development Authority	1
Pollution Control Board	5

Data Owners	Number of Documents
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	6
Transport Authority	13
Disaster Management	1
Urban Local Body	22
Total	77

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

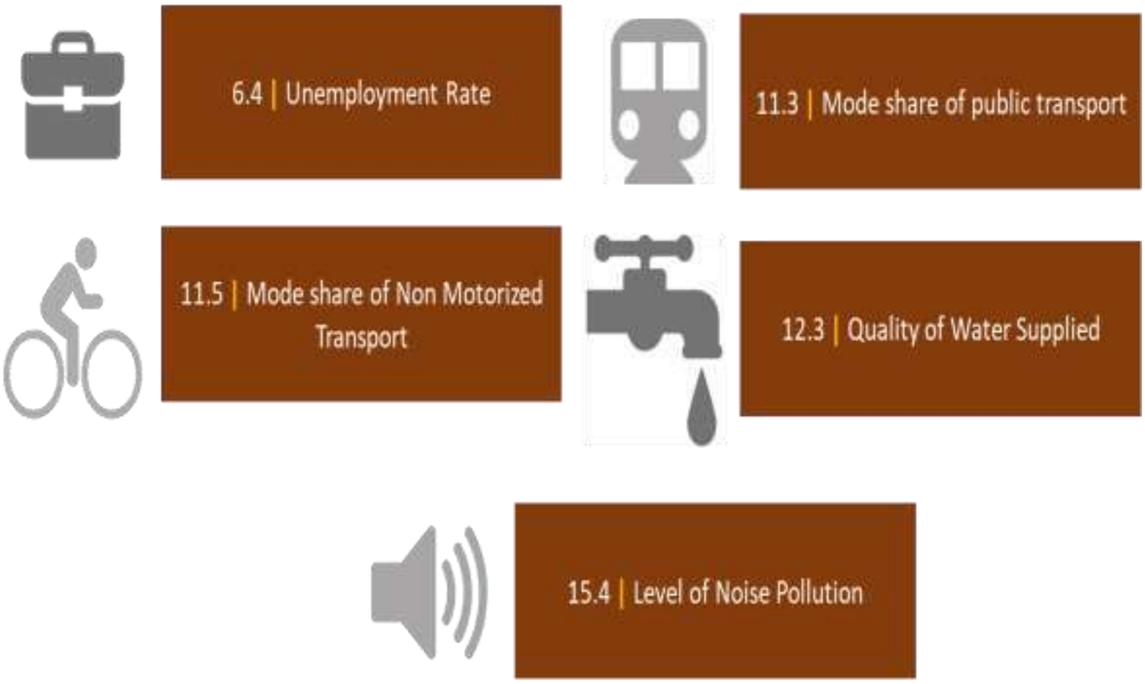
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

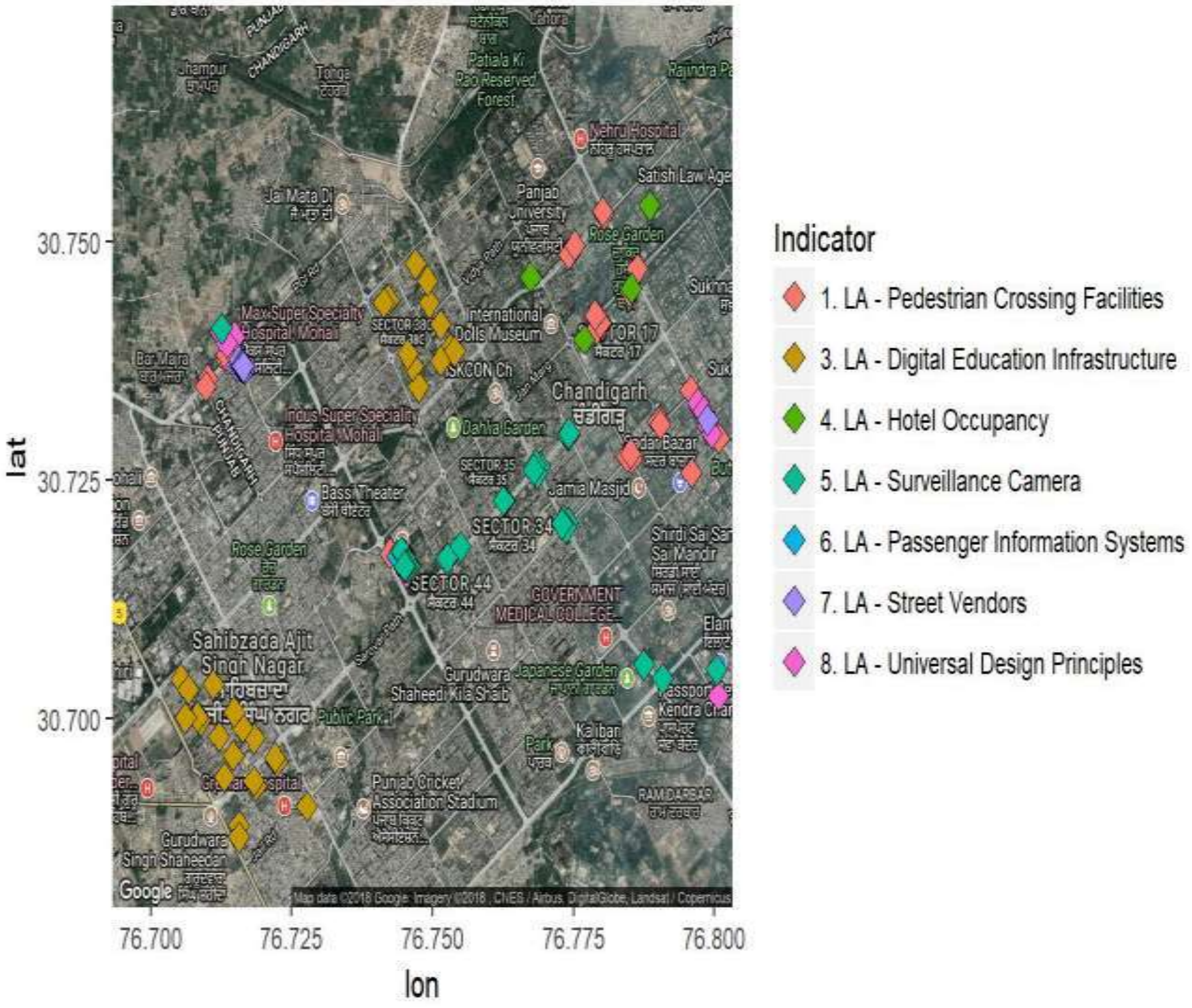
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
lat
30.750
30.725
30.700
lon
76.700
76.725
76.750
76.775
76.800
Chandigarh
Sahibzada Ajit Singh Nagar
Panjab University
Rose Garden
Nehru Hospital
SECTOR 34
SECTOR 44
SECTOR 35
GOVERNMENT MEDICAL COLLEGE
Punjab Cricket Association Stadium
International Dolls Museum
Max Super Speciality Hospital Mohali
Indus Super Speciality Hospital Mohali
Jamia Masjid
Japanese Garden
Patiala Ki Rao Reserved Forest
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	57.30%
Identity & Culture	80%
Education	97%
Health	96%
Safety & Security	76%
Economy & Employment	18%
Housing & Inclusiveness	34%
Public Open Spaces	100%
Mixed Land Use & Compactness	1%
Power Supply	25%
Transport & Mobility	59%
Assured Water Supply	84%
Waste Water Management	89%
Solid Waste Management	66%
Reduced Pollution	88%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

CHENNAI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

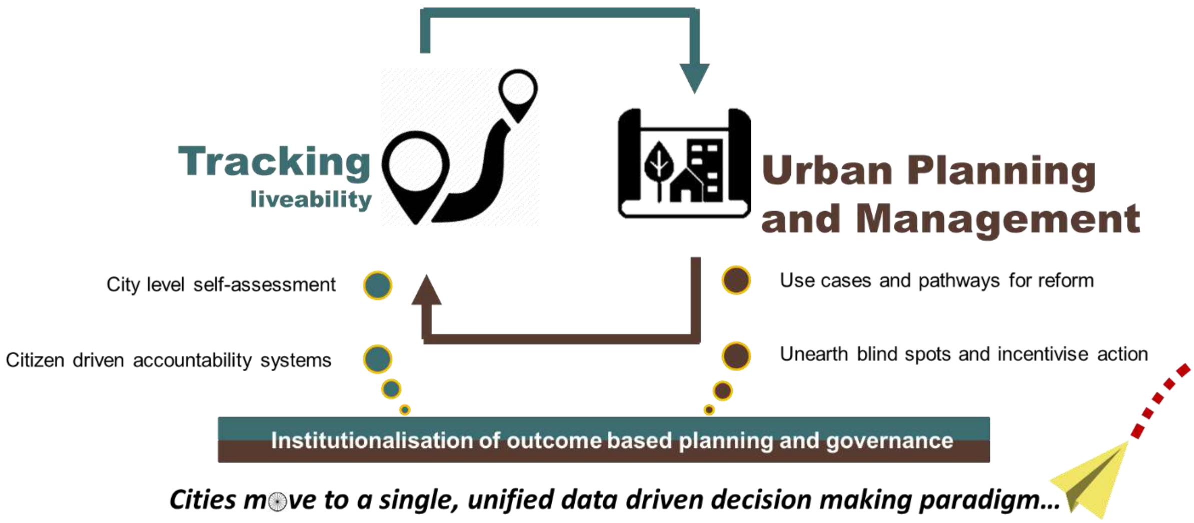
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

CHENNAI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km²)**	426	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	4646732
Total Number of Households	1211576

SOCIAL PROFILE

Education	**Total Number of Schools**	2207
	Total Enrolment (Class 1 to 5)	487622
Health	**Total Number of In-patients Beds**	32397
	Total Health Workforce	59562
Safety and Security	**Total Strength of Police Force**	22860
	Total Number of CCTV Cameras	51995
Heritage Sites	**Total Number of Heritage Sites**	41

ECONOMIC PROFILE

Total Population in Working Age Group	1906345
Total Number of Industries	24146
Total Number of Commercial Enterprises	119160
Total Number of Hotels	2827
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	455677.72
Total VAT Collection in FY 2016-17 (INR Lakhs)	5056100

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	1906345
		Total Number of Water Connections	24146
	Sanitation Facilities	Total number of households with access to individual toilets in the city	119160
		Total number of households in the city with access to community toilets in the city	2827
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	455677.72
		Total number of households covered through door-to-door collection of solid waste	5056100
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	1906345
		Daily average quantum of waste water treated by STPs in the city (MLD)	24146
	Electricity	Total number of authorized electrical connections in the city	119160
		Total electricity supplied to the city (kWh)	2827
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	455677.72
	Roads and Transport	Total Length of Road Network in the City (Km)	5056100
		Total length of arterial and sub-arterial road network in the city (Km)	1906345
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	24146

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Greater Chennai Corporation (GCC) – Accounts Department
Urban Local Body	For Park and Recreation Related Questions	GCC – Parks Department
Urban Local Body	For Water Supply and Drainage related questions	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
Urban Local Body	For Heritage sites related data	Archeological Survey Of India (ASI)
Urban Local Body	For Ecological sites related data	Forest Departments
Urban Local Body	For Housing related data	Tamilnadu Slum Clearance Board
Urban Local Body	For Building plan related data	Chennai Metropolitan Development Authority (CMDA)
Urban Local Body	For Roads related data	GCC – Bus Route Roads Department (BRR)
Urban Local Body	For Solid waste management related data	GCC – Solid Waste Management
Urban Local Body	For IT services related data	GCC – EDP Department
Urban Local Body	For Vendor committee related data	GCC – Revenue Department
Urban Local Body	Any other departments involved in providing data for questions	GCC – Departments of Education, Health, Works, Electrical Sports & Stadium, Storm Water Drain, Buildings

Designated data owners	Subcategories	Data owners at city level
	mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tamilnadu Pollution Control Board
Development Authority	Building Infrastructure	Chennai Metropolitan Development Authority (CMDA)
	Construction planning	Works Department
	Green Building	Chennai Metropolitan Development Authority (CMDA)
	Rain water harvesting	Chennai Metropolitan Development Authority (CMDA)
	Universal Design Principle	Building Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Generation and Distribution corporation Limited (TANGEDCO)
State Disaster management authority		Tamilnadu State Disaster Management
State Education Department		Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Tamilnadu Generation and Distribution corporation Limited (TANGEDCO)
State Sales / Commercial Taxes Department		Department of Commercial tax
Town and Country Planning Department	Land Use	Chennai Metropolitan Development Authority (CMDA)
Traffic and Police Department		
Transport Authorities	Buses	Metropolitan Transport Authority (MTC)
	Registered Vehicles	Transport Corporation
	Sub urban rail transport	Southern Railways

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 97 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	3
DISCOM/Electricity Department	6
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	10
Transport Authority	12
Disaster Management	1
Urban Local Body	48
Total	97*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

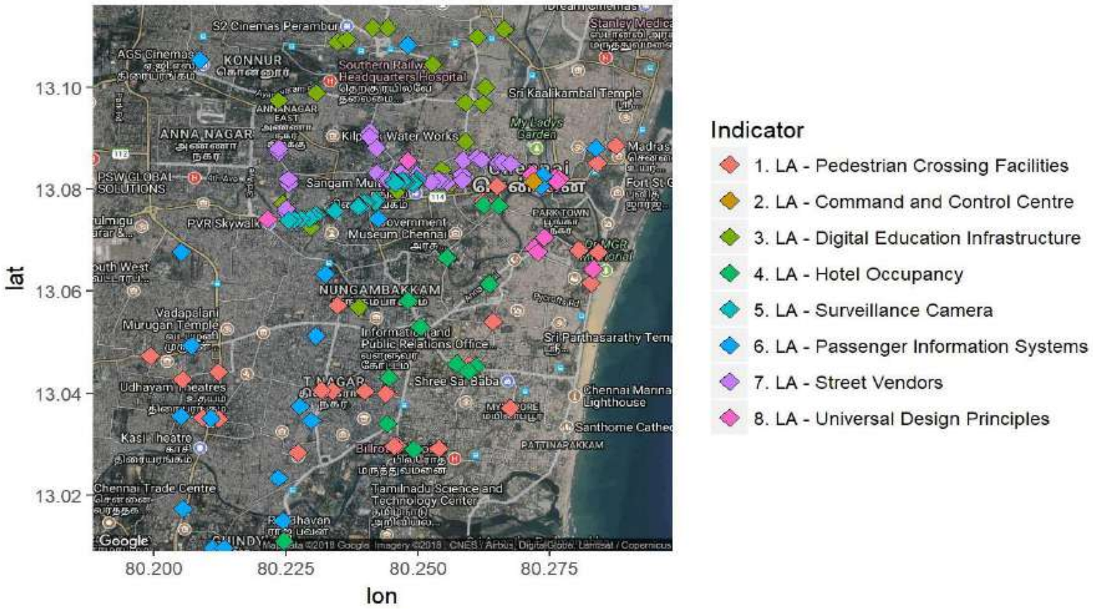
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.10
13.08
13.06
13.04
13.02
lat
80.200
80.225
80.250
80.275
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
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5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	60.70%
Identity & Culture	55%
Education	93%
Health	97%
Safety & Security	63%
Economy & Employment	50%
Housing & Inclusiveness	3%

Public Open Spaces	48%
Mixed Land Use & Compactness	5%
Power Supply	34%
Transport & Mobility	55%
Assured Water Supply	82%
Waste Water Management	72%
Solid Waste Management	69%
Reduced Pollution	81%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

COIMBATORE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

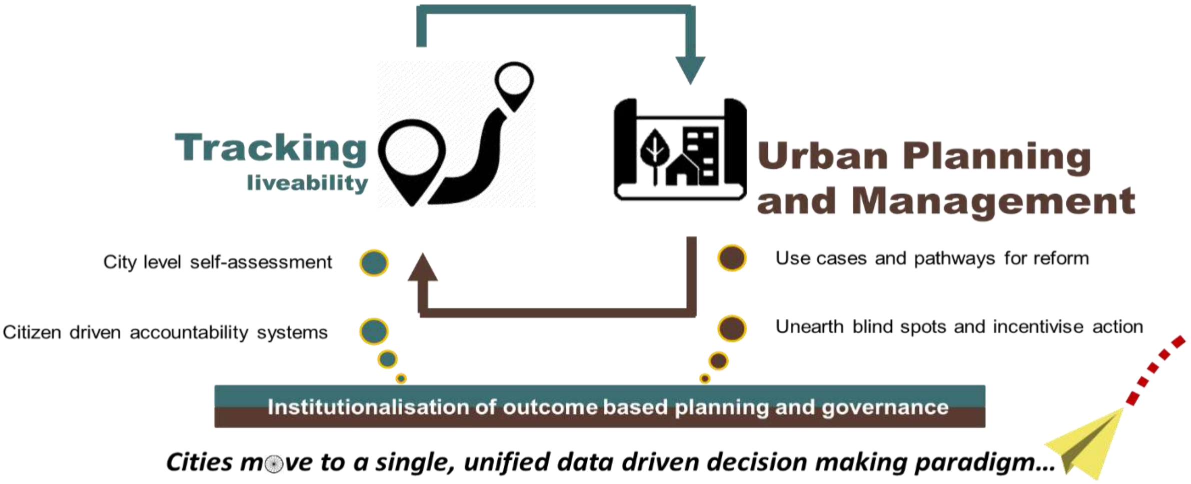
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

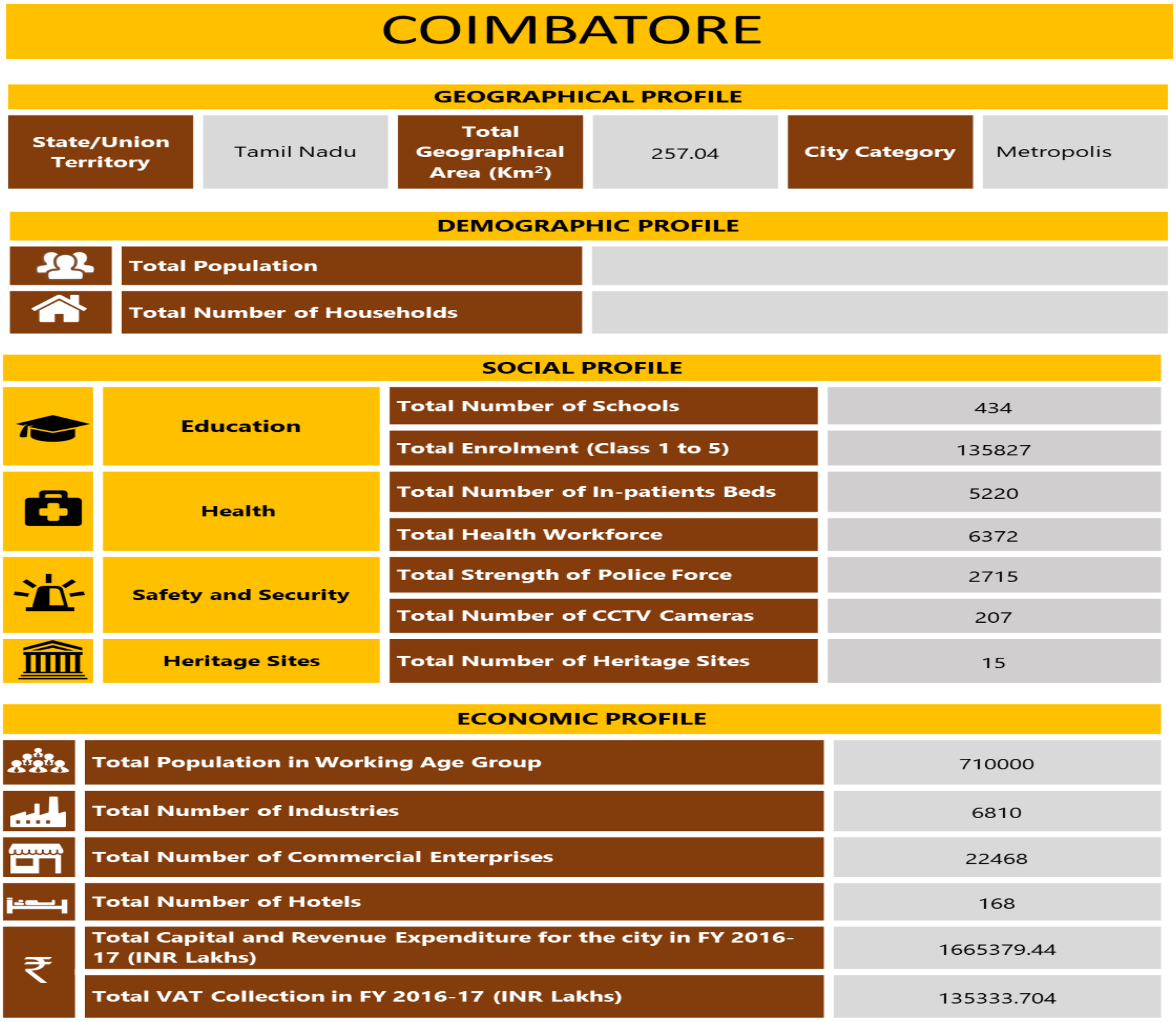

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health,



COIMBATORE

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	257.04	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	
Total Number of Households	

SOCIAL PROFILE

Education	**Total Number of Schools**	434
	Total Enrolment (Class 1 to 5)	135827
Health	**Total Number of In-patients Beds**	5220
	Total Health Workforce	6372
Safety and Security	**Total Strength of Police Force**	2715
	Total Number of CCTV Cameras	207
Heritage Sites	**Total Number of Heritage Sites**	15

ECONOMIC PROFILE

Total Population in Working Age Group	710000
Total Number of Industries	6810
Total Number of Commercial Enterprises	22468
Total Number of Hotels	168
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1665379.44
Total VAT Collection in FY 2016-17 (INR Lakhs)	135333.704

Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	220
		Total Number of Water Connections	277684
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	482222
		Total number of households in the city with access to community toilets in the city	6400
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	940
		Total number of households covered through door-to-door collection of solid waste	521605
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	190
		Daily average quantum of waste water treated by STPs in the city (MLD)	40
	Electricity	**Total number of authorized electrical connections in the city**	715466
		Total electricity supplied to the city (kWh)	1714109741
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	379819.54
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2888.07
		Total length of arterial and sub-arterial road network in the city (Km)	40.2
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	40

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators,

various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11.	11.1 Geographical coverage of public transport

Pillars of Comprehensive Development	Category	Indicators
	Transportation and Mobility	11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

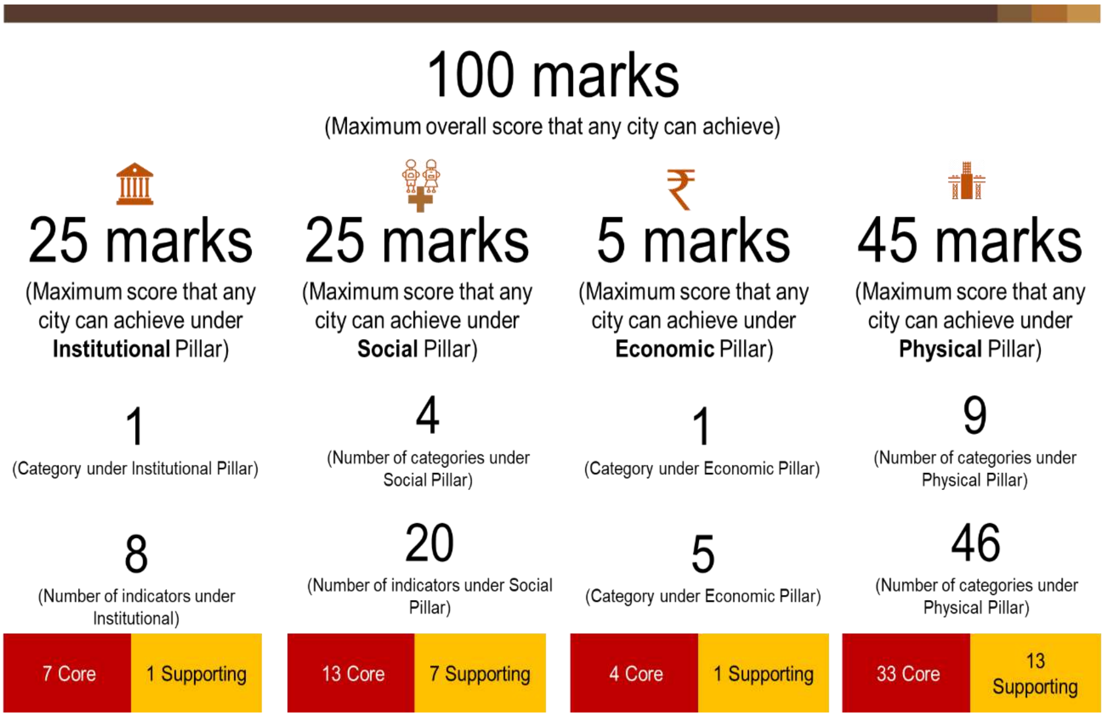
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board,
Development Authority	Building Infrastructure	Town planning
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 157 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	3
DISCOM/Electricity Department	8
Traffic and Police Department	3
Development Authority	12
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	21
Transport Authority	11
Disaster Management	1
Urban Local Body	90
Total	157

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

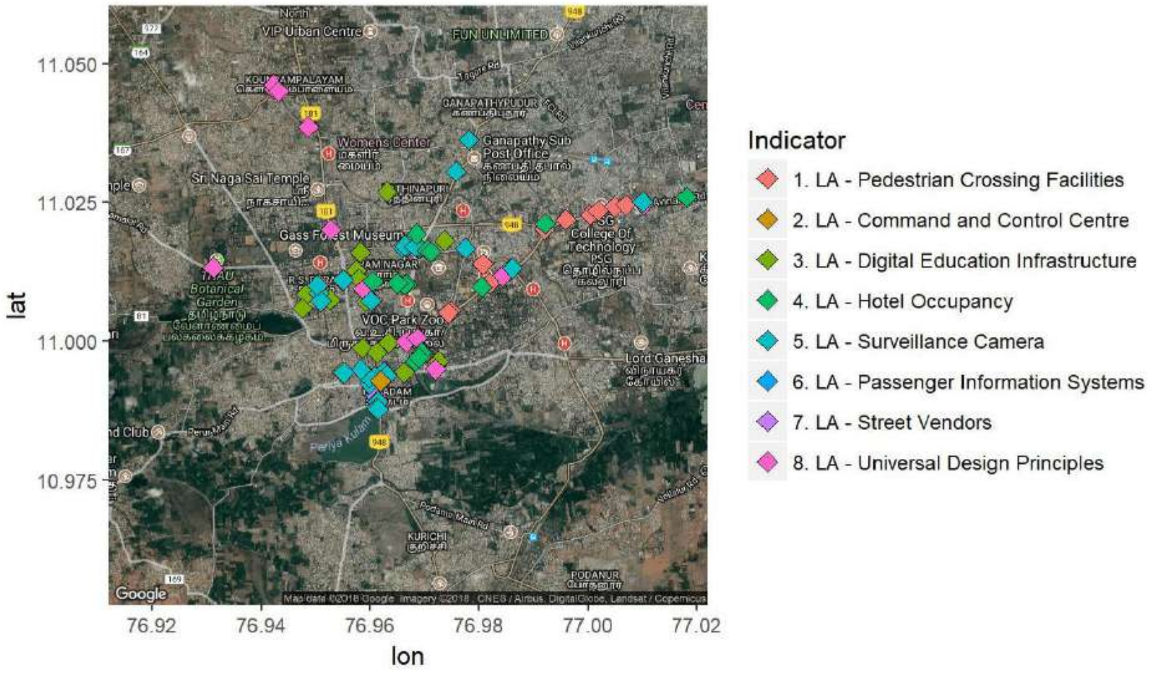
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


11.050
11.025
11.000
10.975
lat
76.92
76.94
76.96
76.98
77.00
77.02
lon
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	53.30%
Identity & Culture	48%
Education	95%
Health	98%
Safety & Security	64%
Economy & Employment	14%
Housing & Inclusiveness	11%

Public Open Spaces	2%
Mixed Land Use & Compactness	16%
Power Supply	57%
Transport & Mobility	26%
Assured Water Supply	85%
Waste Water Management	68%
Solid Waste Management	92%
Reduced Pollution	73%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DAHOD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

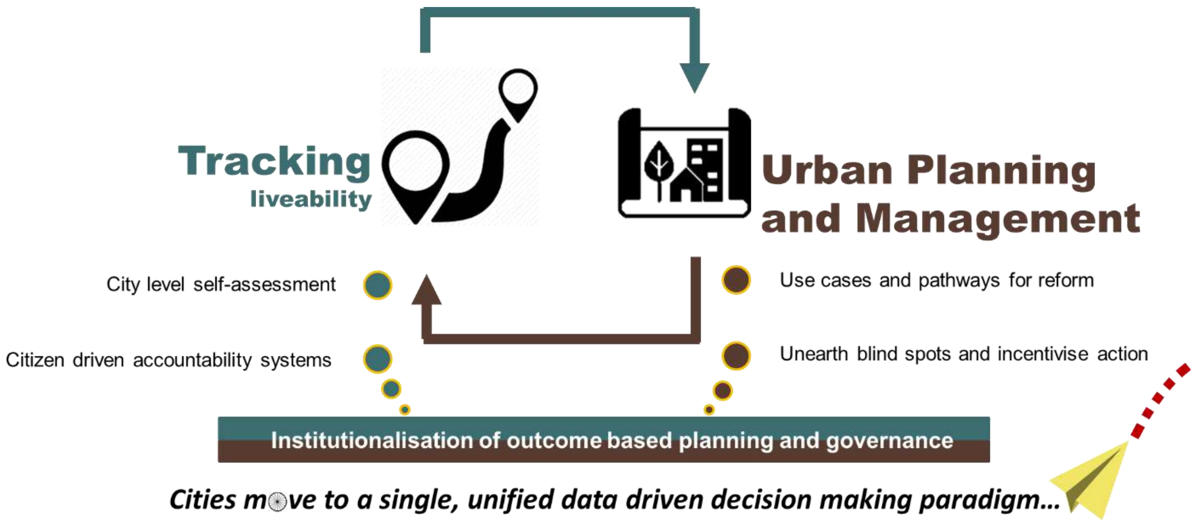
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	Total Geographical Area (Km²)	6.5	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	96000
Total Number of Households	25550

SOCIAL PROFILE

Education	Total Number of Schools	44
	Total Enrolment (Class 1 to 5)	3247
Health	Total Number of In-patient Beds	1323
	Total Health Workforce	1188
Safety and Security	Total Strength of Police Force	63
	Total Number of CCTV Cameras	19
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	44
Total Number of Commercial Enterprises	8330
Total Number of Hotels	5
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	3367.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	4452.36

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	10
	Total Number of Water Connection	13569
Sanitation Facilities	Total number of households with access to individual toilets in the city	25550
	Total number of households in the city with access to community toilets in the city	6952
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	35
	Total number of households covered through door-to-door collection of solid waste	25550
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	38337
	Total electricity supplied to the city (kWh)	103566836
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	57.32
Roads and Transport	Total Length of Road Network in the City (Km)	102
	Total length of arterial and sub-arterial road network in the city (Km)	14
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

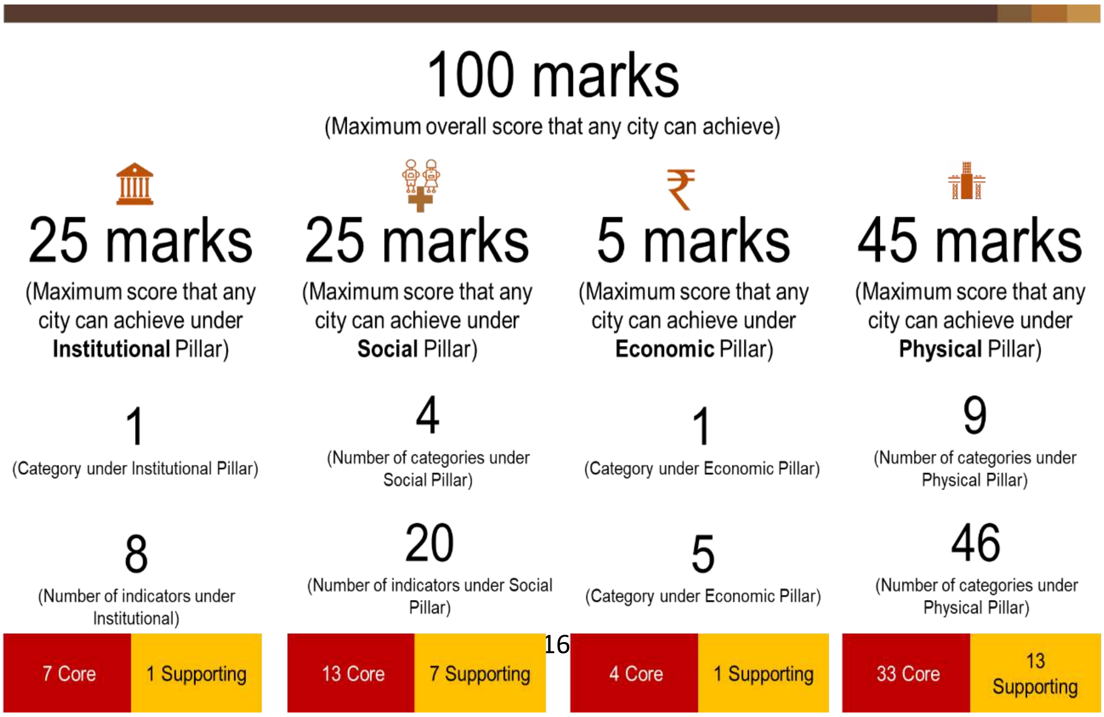
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning
Urban Local Body	For Water Supply and Drainage related questions	Water Management
Urban Local Body	For Heritage sites related data	…….
Urban Local Body	For Ecological sites related data	……..
Urban Local Body	For Housing related data	Twon and Country Planning Dev.
Urban Local Body	For Building plan related data	Unban local body.
Urban Local Body	For Roads related data	Transport AUTHORITIES .
Urban Local Body	For Solid waste management related data	STATe DISASTER Management
Urban Local Body	For IT services related data	…….
Urban Local Body	For Vendor committee related data	…
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	…
Central / state	Water Quality, Air Quality, Noise	Pollution control board

Designated data owners	Subcategories	Data owners at city level
Pollution control Board	Quality	
Development Authority	Building Infrastructure	Traffic and Police Department
	Construction planning	Bandhkam dep.
	Green Building	……
	Rain water harvesting	Bandhkam dep.
	Universal Design Principle	Town planing
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MGVCL
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	health Department
	Citizen Services	…
	Disease Prevalence	Fier dep.
	Health Infrastructure	State Health Dipart ment
State Renewable Energy Development Agency		MGVCL
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	Town planning
Traffic and Police Department		Traffic and police dep.
Transport Authorities	Buses	N.A.
	Registered Vehicles	R.T.O
	Sub urban rail transport	N.A.
	Mono Rail Authority	N.A.
	Tramways	N.A.
	Marine Transport Authority	N.A.

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**2**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**4**
State Health Department	**2**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**40**
Total	**60**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

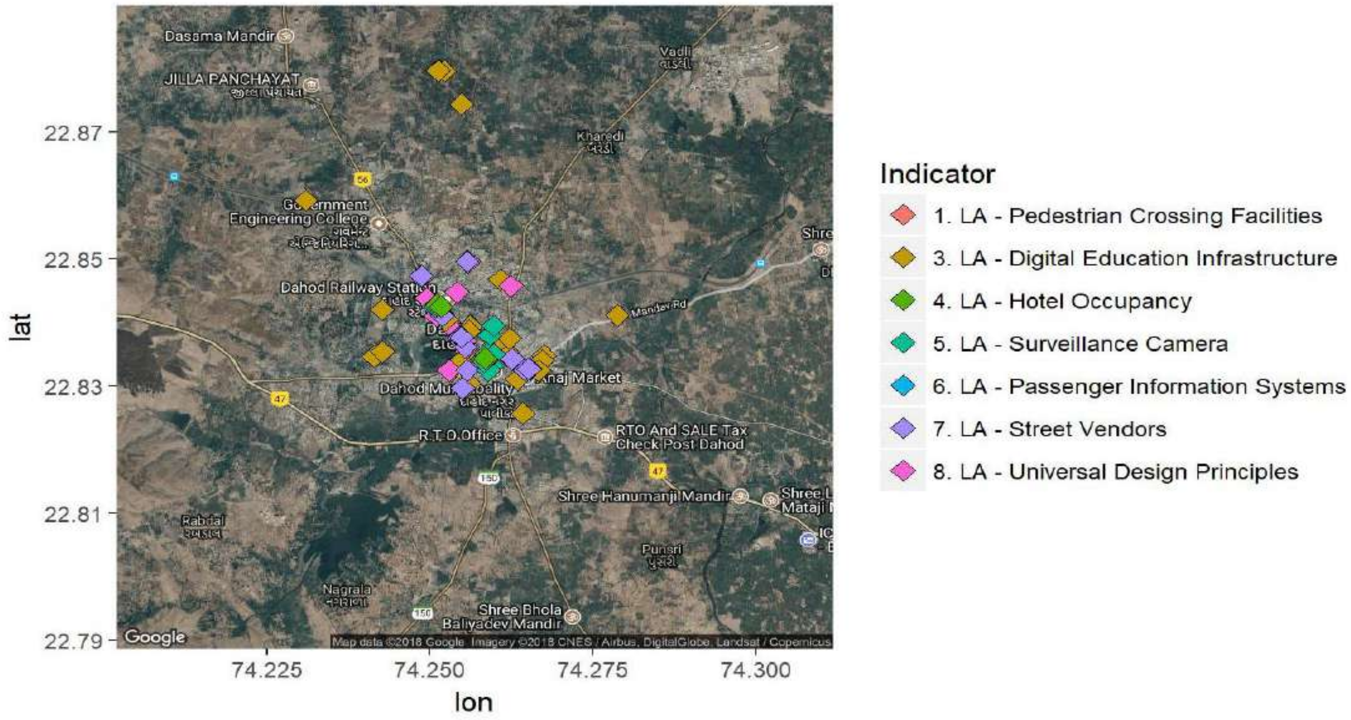
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Dasama Mandir
JILLA PANCHAYAT
Vadli
Kharedi
Government Engineering College
Dahod Railway Station
Mandav Rd
Dahod Municipality
R.T.O.Office
RTO And SALE Tax Check Post Dahod
Shree Hanumanji Mandir
Rabdal
Punsri
Nagrala
Shree Bhola Baliyadev Mandir
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
22.87
22.85
22.83
22.81
22.79
lon
74.225
74.250
74.275
74.300
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	40.42%
Identity & Culture	19%
Education	61%
Health	100%
Safety & Security	65%

Economy & Employment	34%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	50%
Power Supply	55%
Transport & Mobility	16%
Assured Water Supply	60%
Waste Water Management	42%
Solid Waste Management	79%
Reduced Pollution	1%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DAVANAGERE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

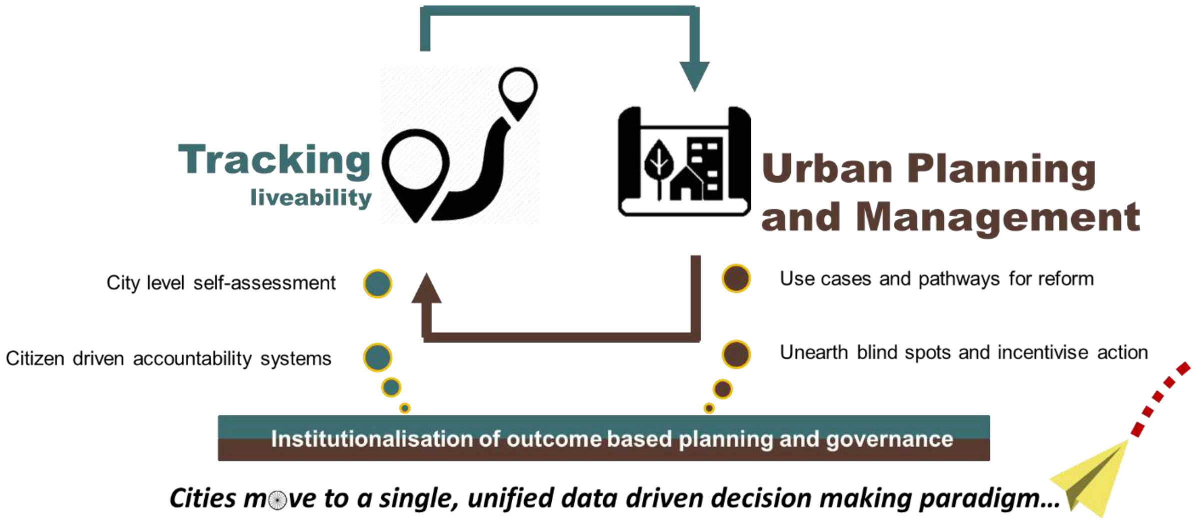
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

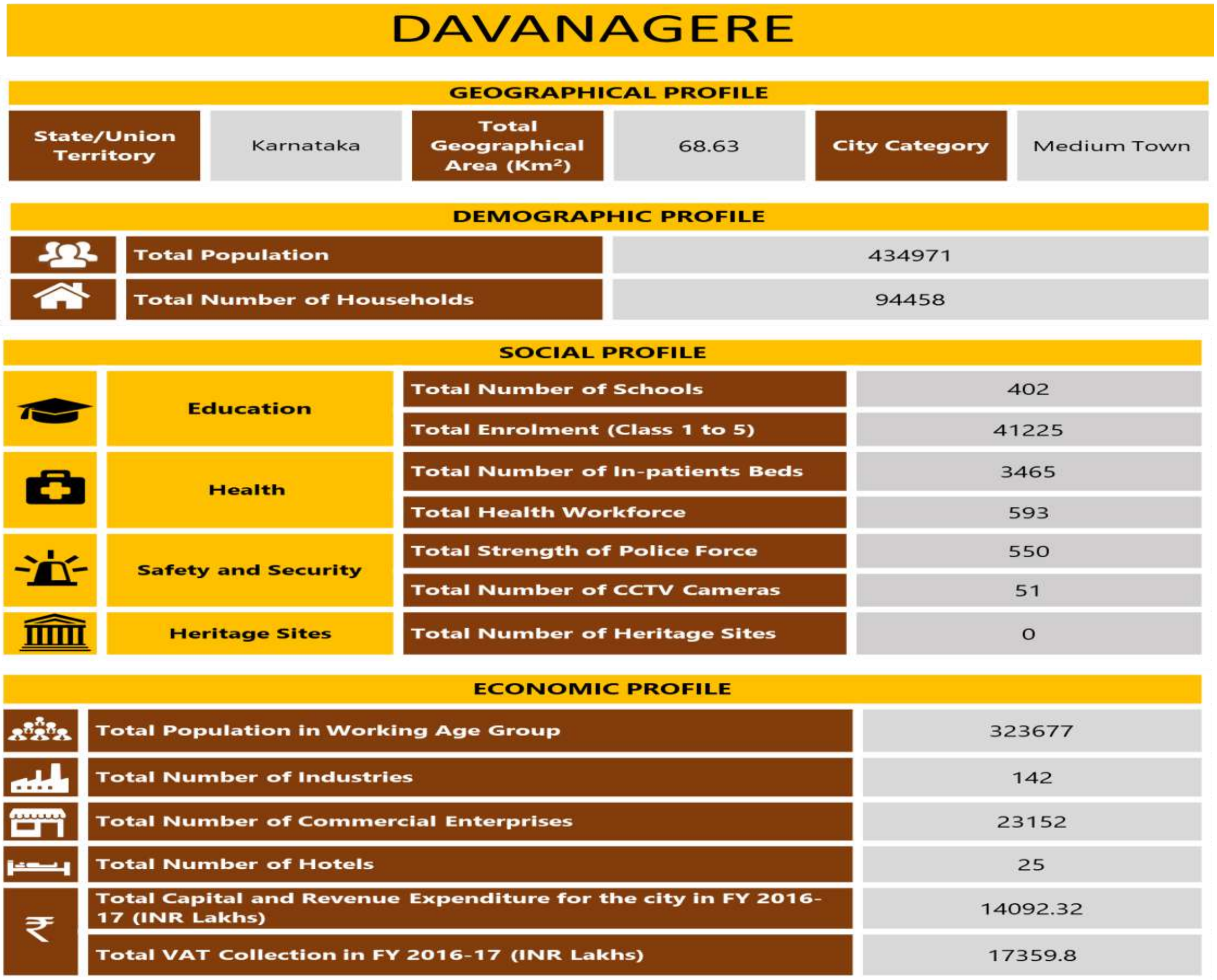

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DAVANAGERE

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km²)	68.63	City Category	Medium Town

DEMOGRAPHIC PROFILE

Total Population	434971
Total Number of Households	94458

SOCIAL PROFILE

Education	Total Number of Schools	402
	Total Enrolment (Class 1 to 5)	41225
Health	Total Number of In-patients Beds	3465
	Total Health Workforce	593
Safety and Security	Total Strength of Police Force	550
	Total Number of CCTV Cameras	51
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

	Total Population in Working Age Group	323677
	Total Number of Industries	142
	Total Number of Commercial Enterprises	23152
	Total Number of Hotels	25
₹	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	14092.32
	Total VAT Collection in FY 2016-17 (INR Lakhs)	17359.8

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	56
	Total Number of Water Connections	46349
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	88835
	Total number of households in the city with access to community toilets in the city	0
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	90
	Total number of households covered through door-to-door collection of solid waste	64000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	44.8
	Daily average quantum of waste water treated by STPs in the city (MLD)	10
Electricity	**Total number of authorized electrical connections in the city**	153065
	Total electricity supplied to the city (kWh)	1516467200
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	386080.4
Roads and Transport	**Total Length of Road Network in the City (Km)**	1227.7
	Total length of arterial and sub-arterial road network in the city (Km)	692.7
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	18

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

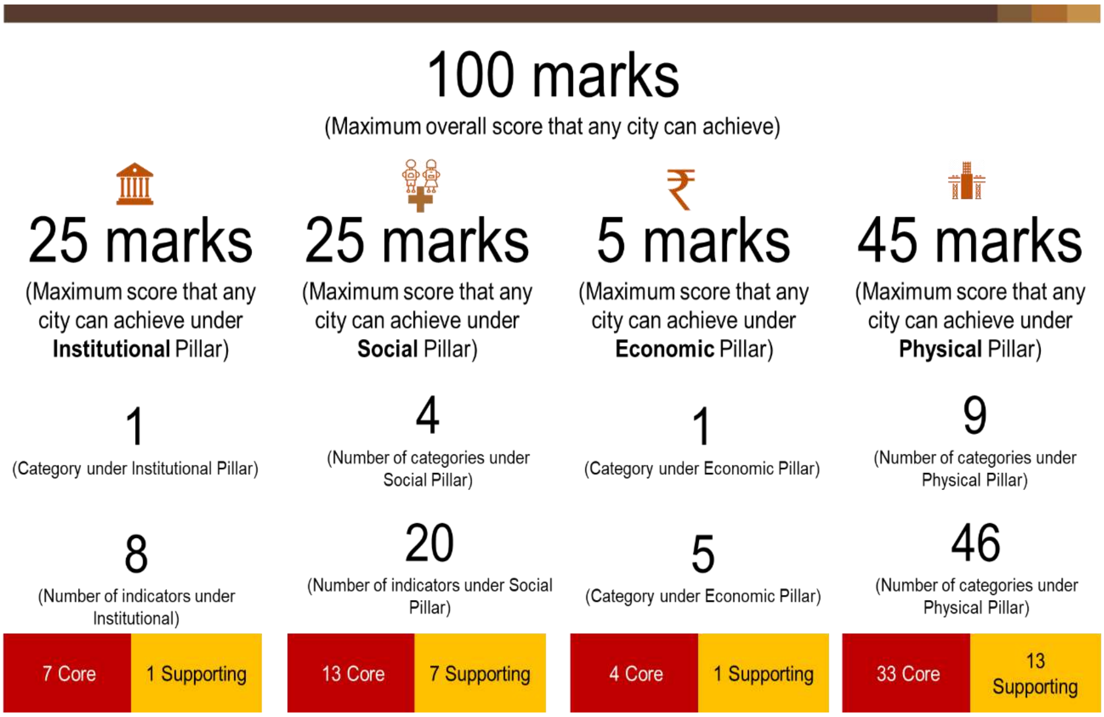
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department DCC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department DCC
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department DCC
Urban Local Body	For Heritage sites related data	Town Planning Department DCC
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. MCC
Urban Local Body	For Building plan related data	Town Planning Department DCC
Urban Local Body	For Roads related data	Engineering Department DCC
Urban Local Body	For Solid waste management related data	Environment Department DCC
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. DCC (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District

Designated data owners	Subcategories	Data owners at city level
	under Urban Local Body	Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, ,Karnataka Pollution Control Board, Slum Board, Hotel owners Association, Police, Road Transport
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Karnataka State Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, DCC
	Green Building	Town Planning Department, DCC
	Rain water harvesting	Town Planning Department, DCC
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bangalore Electricity Supply Company (BESCOM)
State Disaster management authority		Deputy Commissioner's Office (Office of District Collector)
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy Development Agency	Renewable Energy	Bangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Superintendent of Police
Transport Authorities	Buses	Regional Transport Officer's Office

Designated data owners	Subcategories	Data owners at city level
	Registered Vehicles	Regional Transport Officer's Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 66 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**7**
State Education Department	**3**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**2**
Pollution Control Board	**4**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**2**
Disaster Management	**2**
Urban Local Body	**40**
Total	**66**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

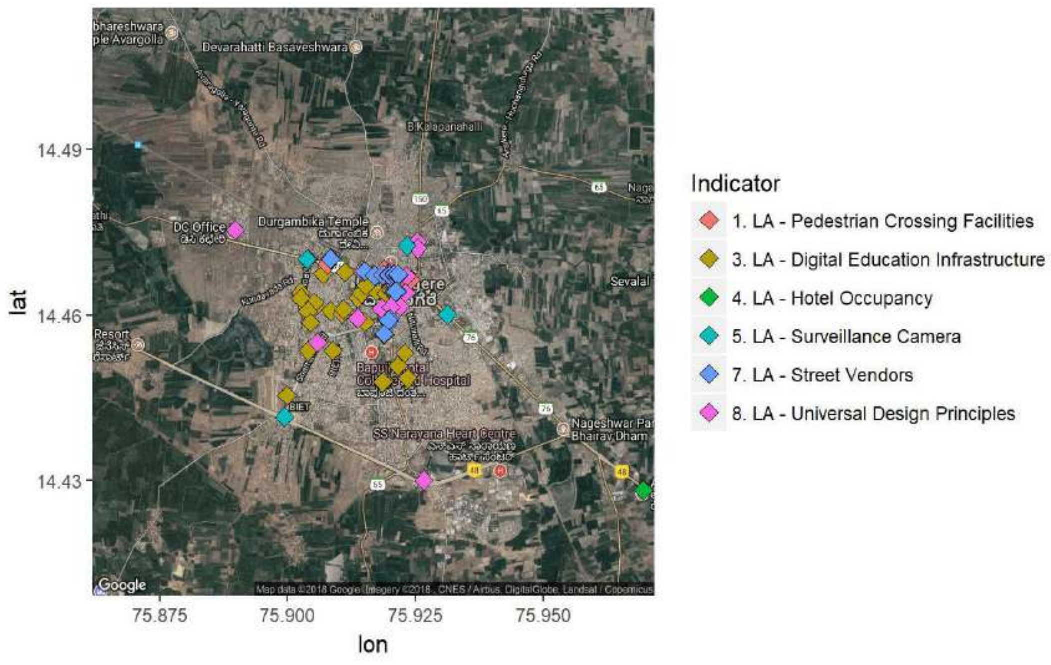
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Bapuji Hospital
SS Narayana Heart Centre
Nageshwar Bhairav Dham
Resort
BIET
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	47.17%
Identity & Culture	0%
Education	82%
Health	93%
Safety & Security	60%
Economy & Employment	28%
Housing & Inclusiveness	15%
Public Open Spaces	5%
Mixed Land Use & Compactness	0%
Power Supply	45%
Transport & Mobility	45%
Assured Water Supply	53%
Waste Water Management	36%
Solid Waste Management	47%
Reduced Pollution	95%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs

Government of India

DEHRADUN

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP

#	Challenges	Proposed Solutions
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

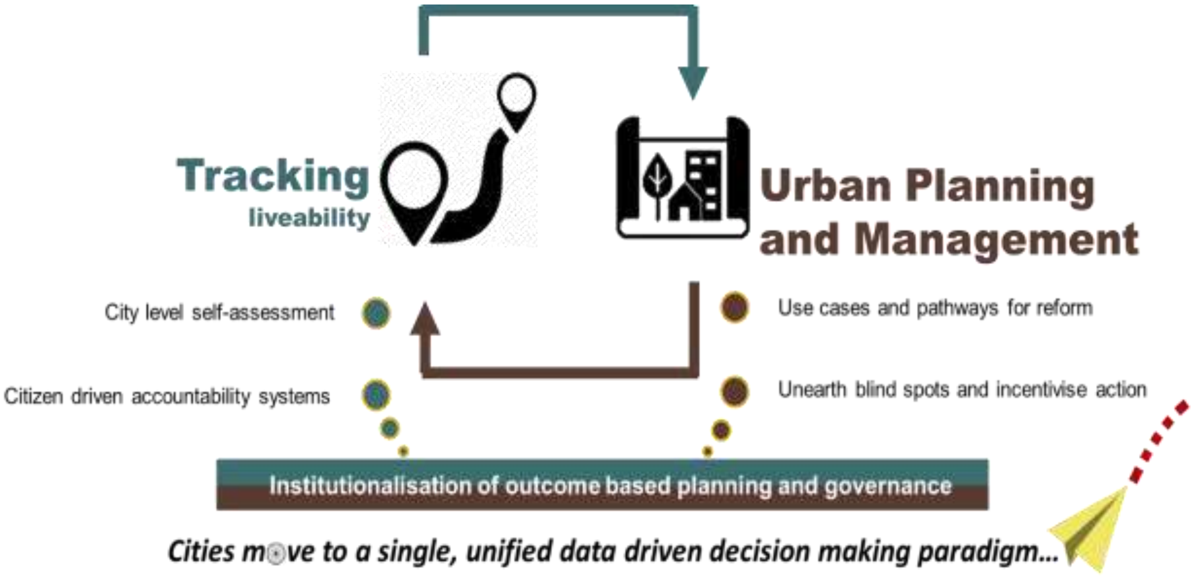
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

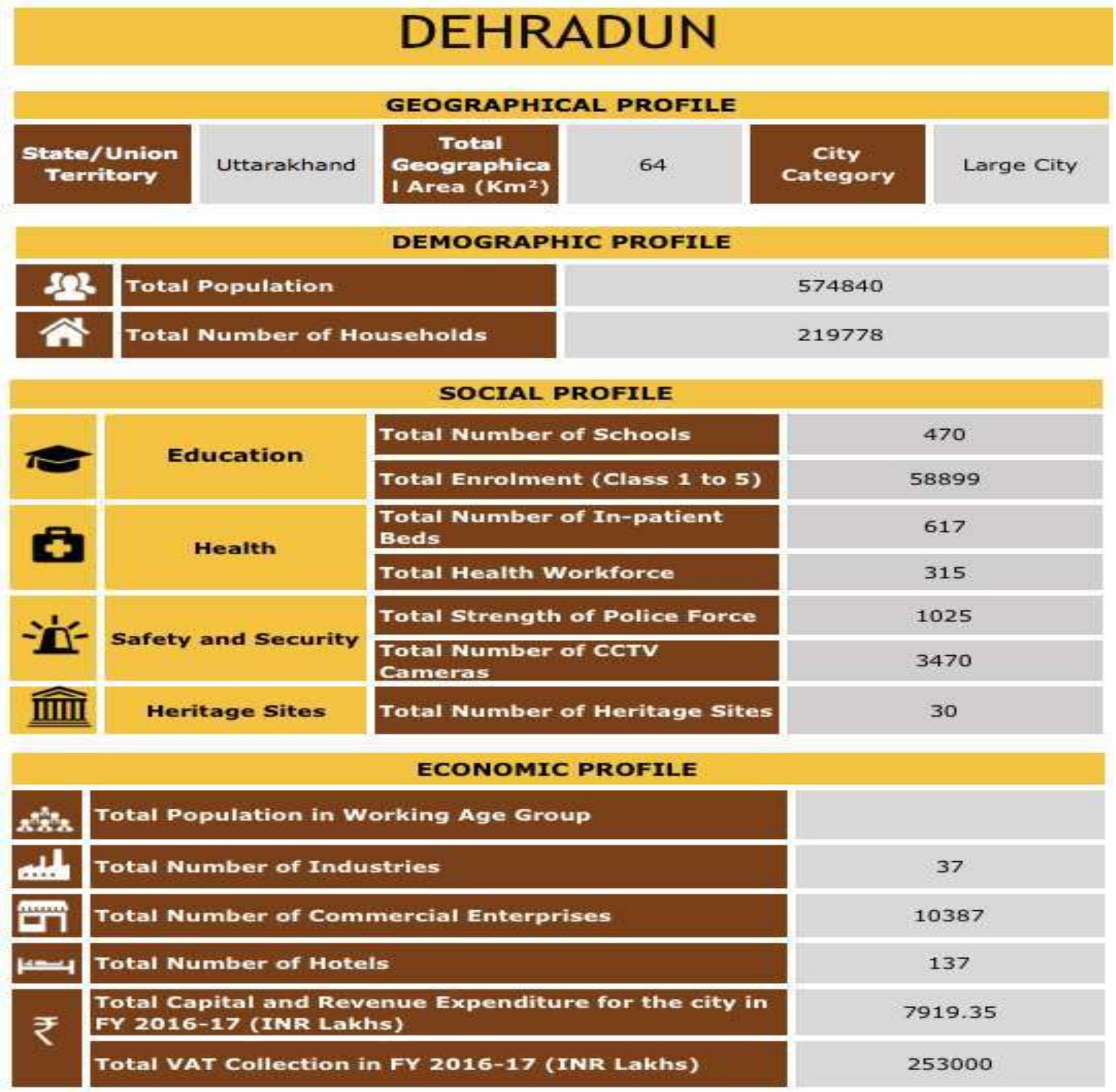
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DEHRADUN

GEOGRAPHICAL PROFILE

State/Union Territory	Uttarakhand	**Total Geographical Area (Km^2)**	64	**City Category**	Large City

DEMOGRAPHIC PROFILE

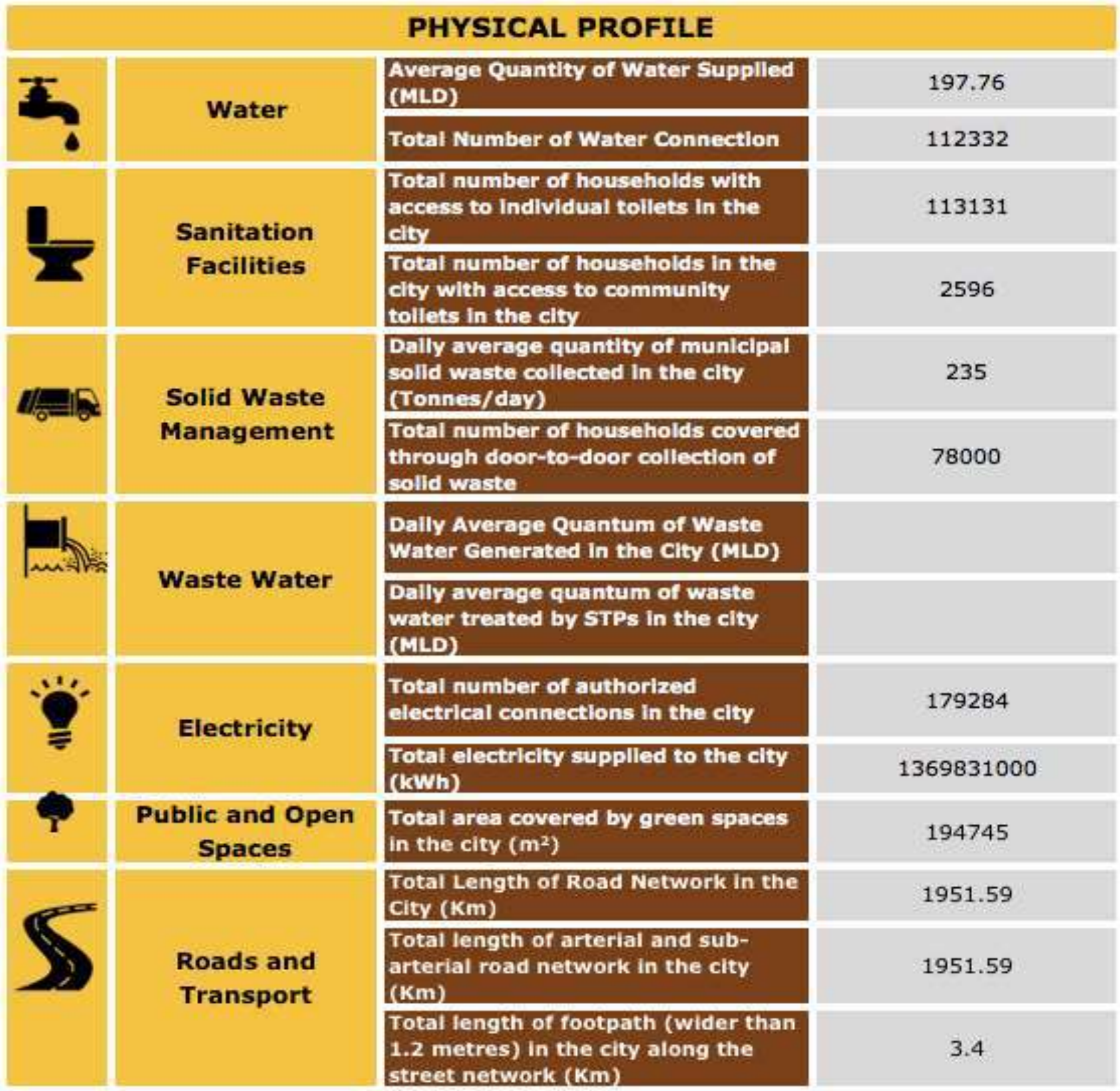
Total Population	574840
Total Number of Households	219778

SOCIAL PROFILE

Education	**Total Number of Schools**	470
	Total Enrolment (Class 1 to 5)	58899
Health	**Total Number of In-patient Beds**	617
	Total Health Workforce	315
Safety and Security	**Total Strength of Police Force**	1025
	Total Number of CCTV Cameras	3470
Heritage Sites	**Total Number of Heritage Sites**	30

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	37
Total Number of Commercial Enterprises	10387
Total Number of Hotels	137
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7919.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	253000



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	197.76
	Total Number of Water Connection	112332
Sanitation Facilities	Total number of households with access to individual toilets in the city	113131
	Total number of households in the city with access to community toilets in the city	2596
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	235
	Total number of households covered through door-to-door collection of solid waste	78000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	
	Daily average quantum of waste water treated by STPs in the city (MLD)	
Electricity	Total number of authorized electrical connections in the city	179284
	Total electricity supplied to the city (kWh)	1369831000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	194745
Roads and Transport	Total Length of Road Network in the City (Km)	1951.59
	Total length of arterial and sub-arterial road network in the city (Km)	1951.59
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3.4

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land	9.1 Share of mixed land use area in overall city land use

Pillars of Comprehensive Development	Category	Indicators
	Use and Compactness	9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces

Pillars of Comprehensive Development	Category	Indicators
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

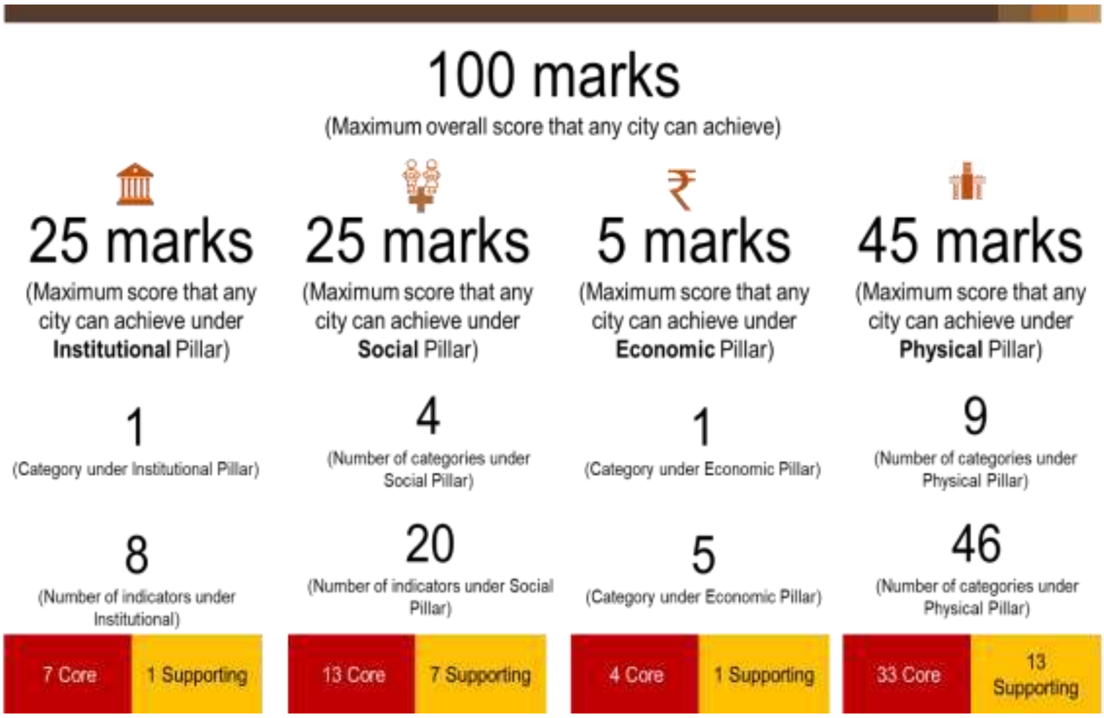
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and de-

velopment agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts section
Urban Local Body	For Park and Recreation Related Questions	Lok Nirman Anubhag, Nagar Nigam, MDDA
Urban Local Body	For Water Supply and Drainage related questions	Jal Sansthan
Urban Local Body	For Heritage sites related data	ASI website.
Urban Local Body	For Ecological sites related data	Website of forest department
Urban Local Body	For Housing related data	Project Cell, PMAY
Urban Local Body	For Building plan related data	MDDA
Urban Local Body	For Roads related data	Public Works Department, Nagar Nigam
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Land Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Statistics Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttarakhand Environment protection and pollution control board
Development Authority	Building Infrastructure	IT Department
	Construction planning	IT Department
	Green Building	IT Department

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	IT Department
	Universal Design Principle	IT Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttarakhand Power Corporation Limited
State Disaster management authority		Disaster management Authority
State Education Department		State Education Department
State Health Department	Health care professionals	CMO Office Dehradun
	Citizen Services	CMO Office Dehradun
	Disease Prevalence	NHM and IDSP
	Health Infrastructure	CMO Office Dehradun
State Renewable Energy Development Agency		Uttarakhand Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Tax Office, Uttarakhand
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffice Police Department
Transport Authorities	Buses	RTO Dehradun
	Registered Vehicles	RTO Dehradun
	Sub urban rail transport	N/A
	Mono Rail Authority	N/A
	Tramways	N/A
	Marine Transport Authority	N/A

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents.

Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	10
Transport Authority	0
Disaster Management	0
Urban Local Body	21
Total	32

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

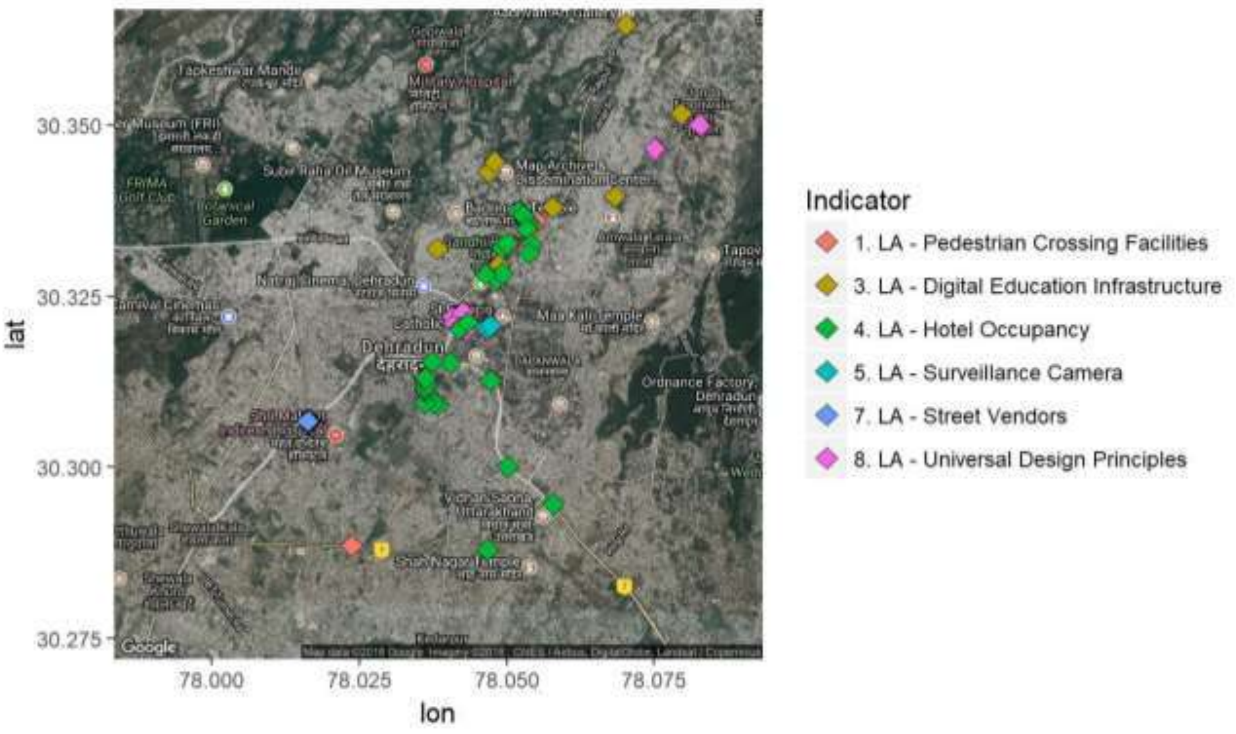
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


30.350
30.325
30.300
30.275
lat
78.000
78.025
78.050
78.075
lon
Dehradun
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	66.28%
Identity & Culture	31%
Education	89%
Health	45%
Safety & Security	60%
Economy & Employment	14%
Housing & Inclusiveness	15%
Public Open Spaces	3%
Mixed Land Use & Compactness	50%
Power Supply	47%
Transport & Mobility	43%
Assured Water Supply	39%
Waste Water Management	35%
Solid Waste Management	51%
Reduced Pollution	65%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

NCT DELHI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

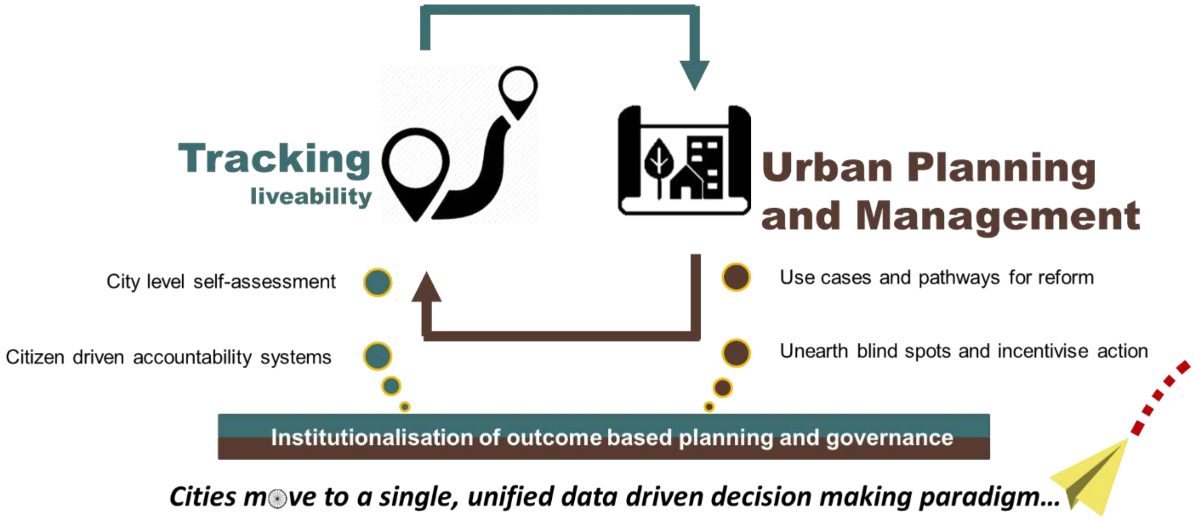
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

DELHI

GEOGRAPHICAL PROFILE

State/Union Territory	Delhi	**Total Geographical Area (Km^2)**	2293.71	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	11292358
Total Number of Households	4924559

SOCIAL PROFILE

Education	**Total Number of Schools**	6952
	Total Enrolment (Class 1 to 5)	2288144
Health	**Total Number of In-patient Beds**	30031
	Total Health Workforce	3485
Safety and Security	**Total Strength of Police Force**	84596
	Total Number of CCTV Cameras	221810
Heritage Sites	**Total Number of Heritage Sites**	391

ECONOMIC PROFILE

Total Population in Working Age Group	8194739
Total Number of Industries	35320
Total Number of Commercial Enterprises	145919
Total Number of Hotels	78
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1339332.89
Total VAT Collection in FY 2016-17 (INR Lakhs)	1889114.89

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	4157.52
	Total Number of Water Connections	2516154
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	3007680
	Total number of households in the city with access to community toilets in the city	641
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	9800
	Total number of households covered through door-to-door collection of solid waste	2065850
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	3380.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	2052.11
Electricity	**Total number of authorized electrical connections in the city**	3509320
	Total electricity supplied to the city (kWh)	8333123361
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	151441026
Roads and Transport	**Total Length of Road Network in the City (Km)**	11537.36
	Total length of arterial and sub-arterial road network in the city (Km)	2126.46
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2892

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000

Pillars of Comprehensive Development	Category	Indicators
		population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting

Pillars of Comprehensive Development	Category	Indicators
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

EAST DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned	Data shared by ULB's nodal officer

Designated data owners	Subcategories	Data owners at city level
	under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport	Not Applicable for Delhi

Designated data owners	Subcategories	Data owners at city level
	Authority	

NDMC

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity	Electrical Connection/	BSES Rajdhani Power Ltd / BSES Yamuna

Designated data owners	Subcategories	Data owners at city level
Board	Grievance Redressal/ Power supply	Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

NORTH DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare

Designated data owners	Subcategories	Data owners at city level
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

SOUTH DELHI

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Park and Recreation Related Questions	Data shared by ULB's nodal officer
Urban Local Body	For Water Supply and Drainage related questions	Delhi Jal Board
Urban Local Body	For Heritage sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Ecological sites related data	Data shared by ULB's nodal officer
Urban Local Body	For Housing related data	Data shared by ULB's nodal officer
Urban Local Body	For Building plan related data	Data shared by ULB's nodal officer
Urban Local Body	For Roads related data	Data shared by ULB's nodal officer
Urban Local Body	For Solid waste management related data	Data shared by ULB's nodal officer
Urban Local Body	For IT services related data	Data shared by ULB's nodal officer

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Vendor committee related data	Data shared by ULB's nodal officer
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Data shared by ULB's nodal officer
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Delhi Pollution Control Board
Development Authority	Building Infrastructure	Delhi Development Authority
	Construction planning	Delhi Development Authority
	Green Building	Delhi Development Authority
	Rain water harvesting	Delhi Development Authority
	Universal Design Principle	Delhi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	BSES Rajdhani Power Ltd / BSES Yamuna Power Ltd /Tata Power Distribution Delhi Ltd / Inhouse power distribution in NDMC area by NDMC.
State Disaster management authority		Delhi Disaster Management Authority
State Education Department		Department of Education, Delhi
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency	Renewable Energy	Department of Power. Govt of NCT of Delhi
State Sales / Commercial Taxes Department		Department of Trade and Taxes
Town and Country Planning Department	Land Use	Delhi Development Authority
Traffic and Police Department		Delhi Police
Transport Authorities	Buses	Department of Transport, Govt of NCT of Delhi
	Registered Vehicles	Department of Transport, Govt of NCT of

Designated data owners	Subcategories	Data owners at city level
		Delhi
	Sub urban rail transport	Indian Railway
	Mono Rail Authority	Not Applicable for Delhi
	Tramways	Not Applicable for Delhi
	Marine Transport Authority	Not Applicable for Delhi

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, North Delhi, South Delhi, East Delhi and NDMC have submitted 15,10,12, and 1 documents respectively. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city –

NORTH DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**13**
Total	**15**

SOUTH DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	0
Development Authority	2
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	2
Transport Authority	0
Disaster Management	0
Urban Local Body	3
Total	10

EAST DELHI

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	11
Total	12

NDMC

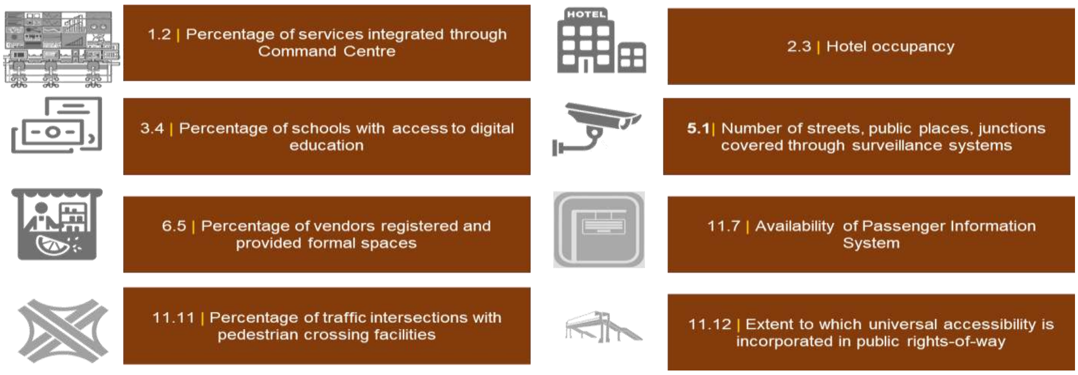
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0

Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**1**
Total	**1**

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

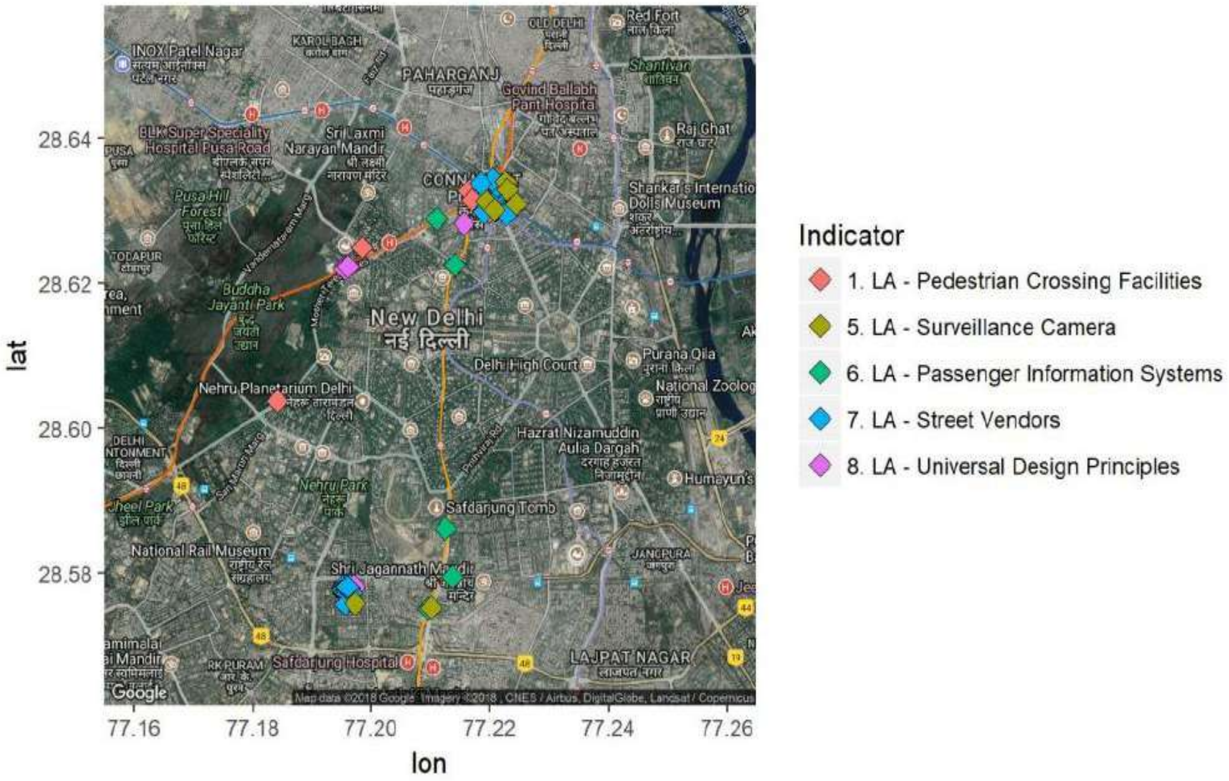
12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

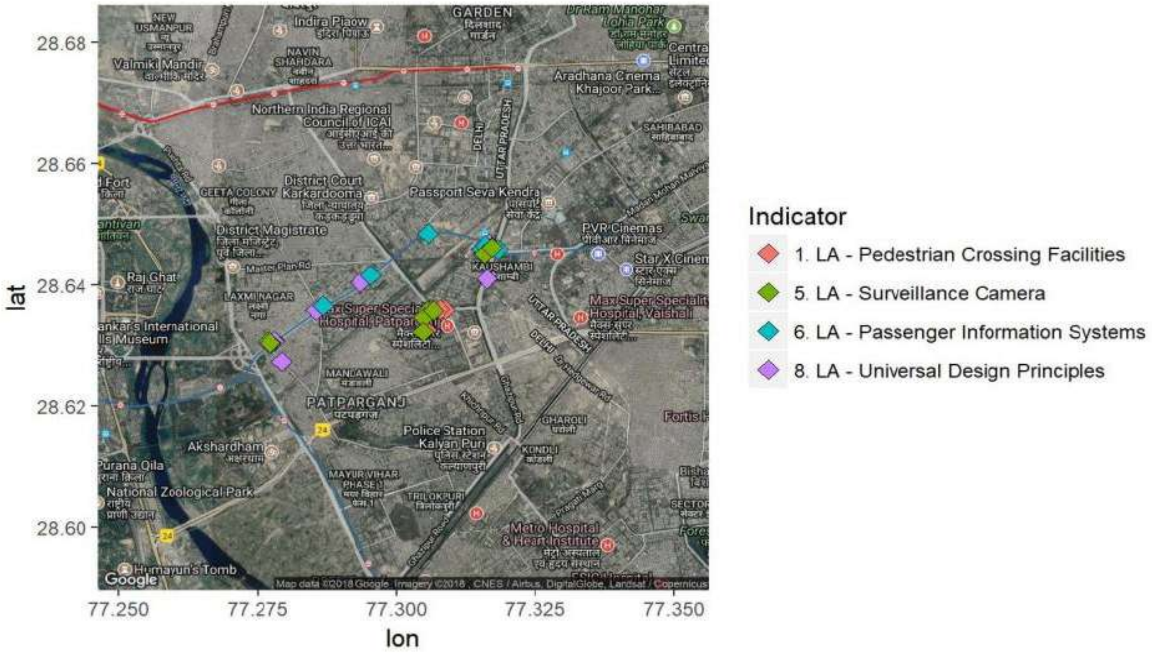
4.5-Physical Audit

The following map presents the indicators audited at city level.

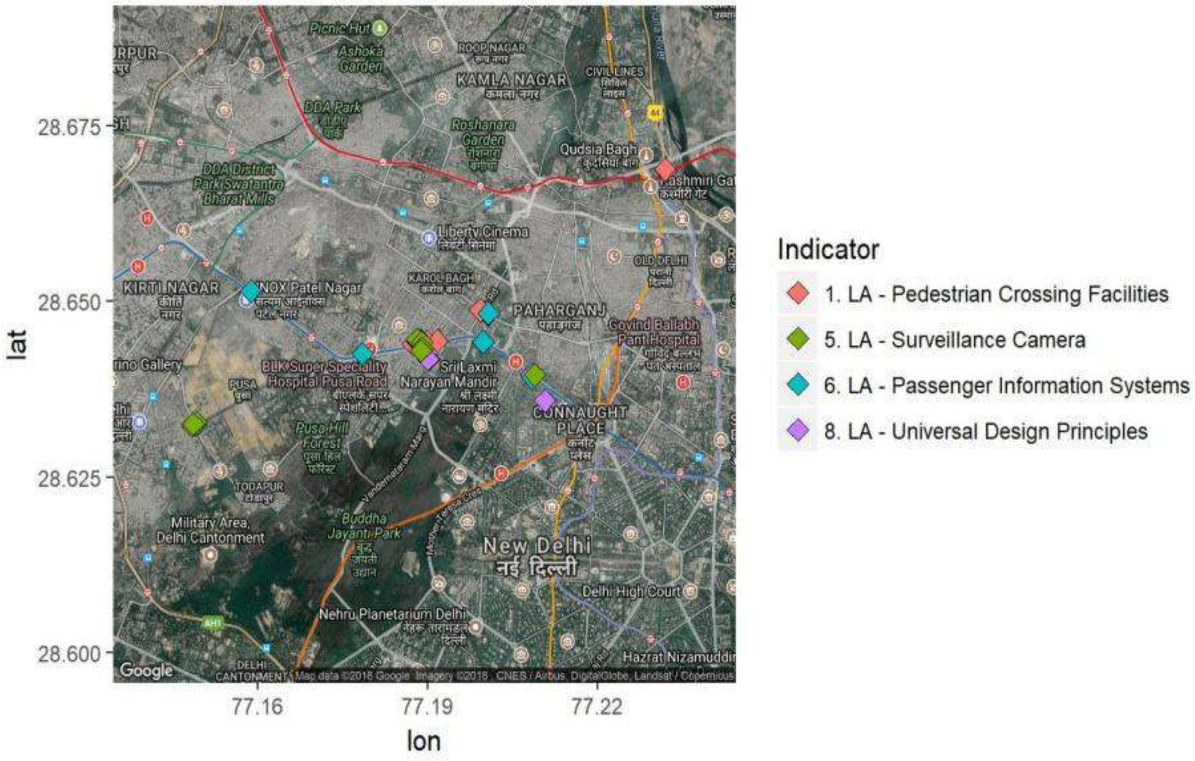
NEW DELHI


lat
28.64
28.62
28.60
28.58
lon
77.16
77.18
77.20
77.22
77.24
77.26
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
New Delhi
नई दिल्ली
PAHARGANJ
KAROL BAGH
Red Fort
Raj Ghat
Delhi High Court
Purana Qila
Hazrat Nizamuddin Aulia Dargah
Safdarjung Tomb
Nehru Park
National Rail Museum
Safdarjung Hospital
LAJPAT NAGAR
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

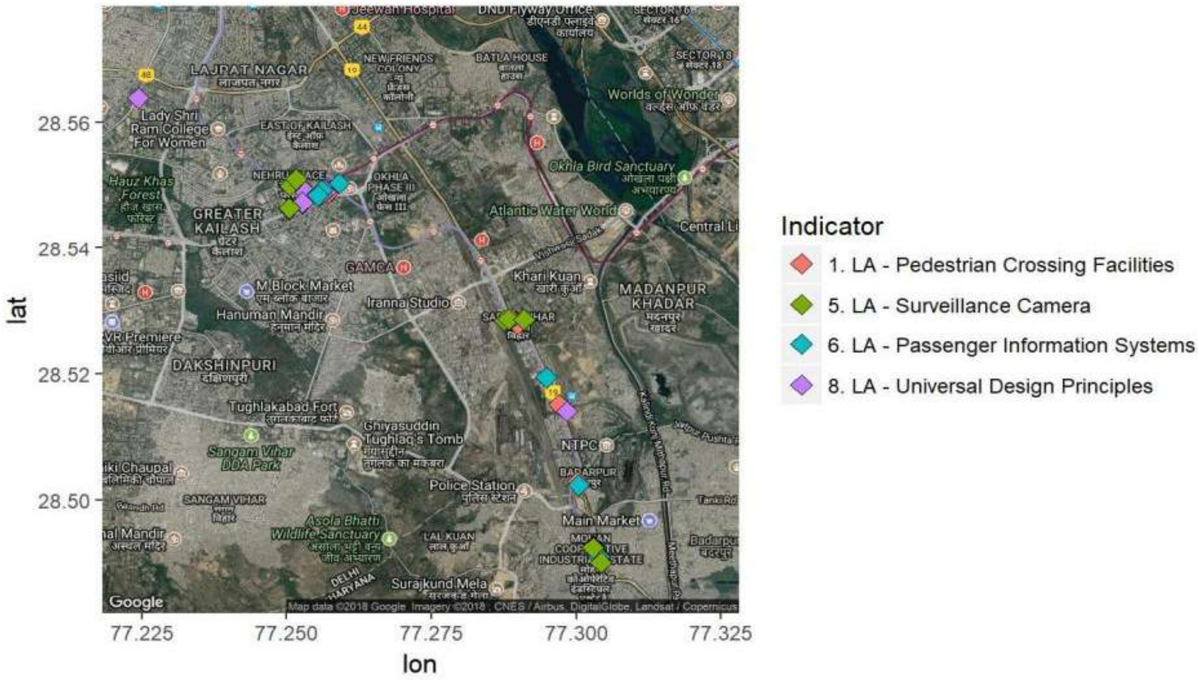
EAST DELHI


28.68
28.66
28.64
28.62
28.60
lat
77.250
77.275
77.300
77.325
77.350
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Patparganj
Kaushambi
Laxmi Nagar
Mandawali
Akshardham
Mayur Vihar Phase 1
Trilokpuri
Kalyan Puri
Karkardooma
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

NORTH DELHI


28.675
28.650
28.625
28.600
lat
77.16
77.19
77.22
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Kamla Nagar
Kirti Nagar
Karol Bagh
Paharganj
Connaught Place
New Delhi
Kashmiri Gate
Pusa
Delhi Cantonment
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

SOUTH DELHI


28.56
28.54
28.52
28.50
lat
77.225
77.250
77.275
77.300
77.325
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	71.81%
Identity & Culture	44%
Education	92%
Health	39%
Safety & Security	61%
Economy & Employment	41%
Housing & Inclusiveness	0%

Public Open Spaces	53%
Mixed Land Use & Compactness	0%
Power Supply	24%
Transport & Mobility	30%
Assured Water Supply	76%
Waste Water Management	78%
Solid Waste Management	79%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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Receipt No : 1182099/2018/O/o US (CBUD)

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DHANBAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

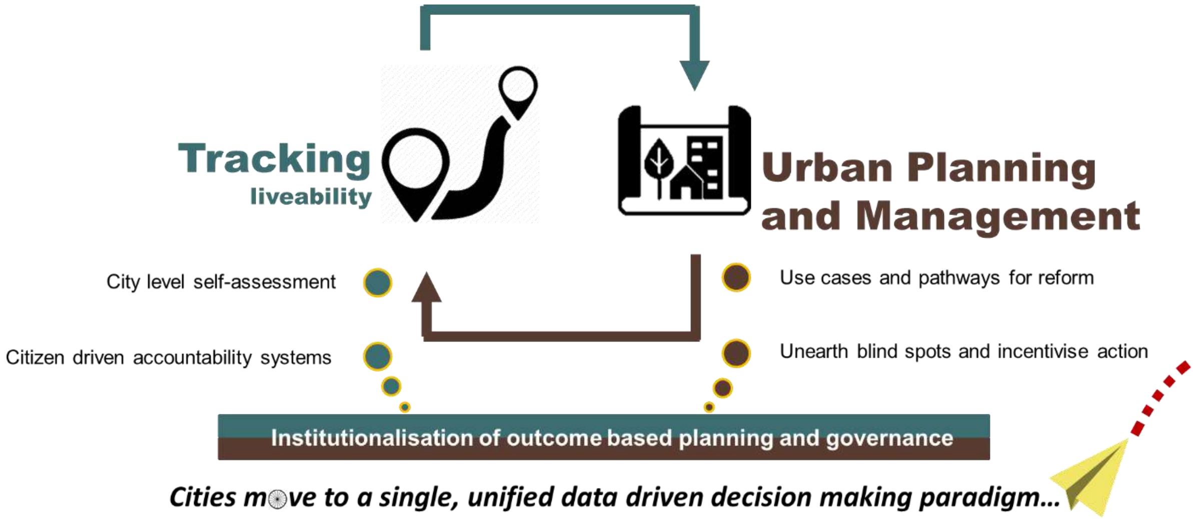
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

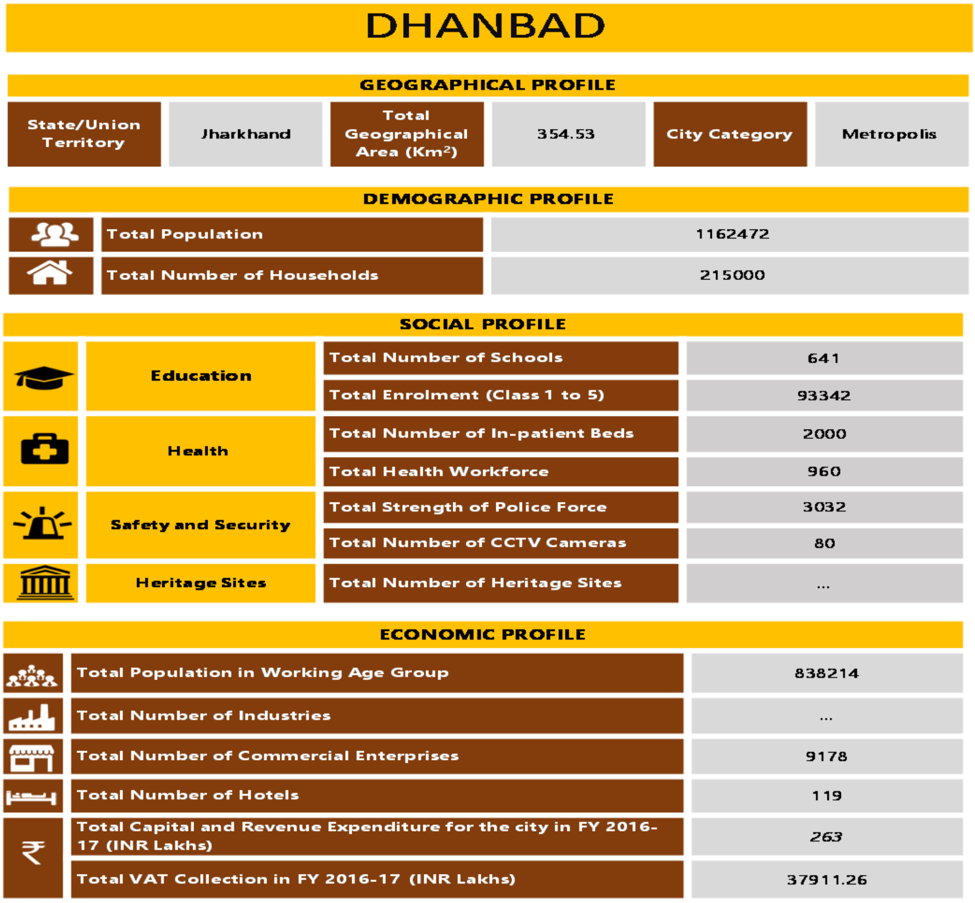

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DHANBAD

GEOGRAPHICAL PROFILE

State/Union Territory	Jharkhand	Total Geographical Area (Km²)	354.53	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1162472
Total Number of Households	215000

SOCIAL PROFILE

Education	Total Number of Schools	641
	Total Enrolment (Class 1 to 5)	93342
Health	Total Number of In-patient Beds	2000
	Total Health Workforce	960
Safety and Security	Total Strength of Police Force	3032
	Total Number of CCTV Cameras	80
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	838214
Total Number of Industries	...
Total Number of Commercial Enterprises	9178
Total Number of Hotels	119
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	*263*
Total VAT Collection in FY 2016-17 (INR Lakhs)	37911.26

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	119
	Total Number of Water Connection	131385
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	204000
	Total number of households in the city with access to community toilets in the city	11304
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	502
	Total number of households covered through door-to-door collection of solid waste	197000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.6
Electricity	**Total number of authorized electrical connections in the city**	212567
	Total electricity supplied to the city (kWh)	1776244000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	412531
Roads and Transport	**Total Length of Road Network in the City (Km)**	322
	Total length of arterial and sub-arterial road network in the city (Km)	150
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

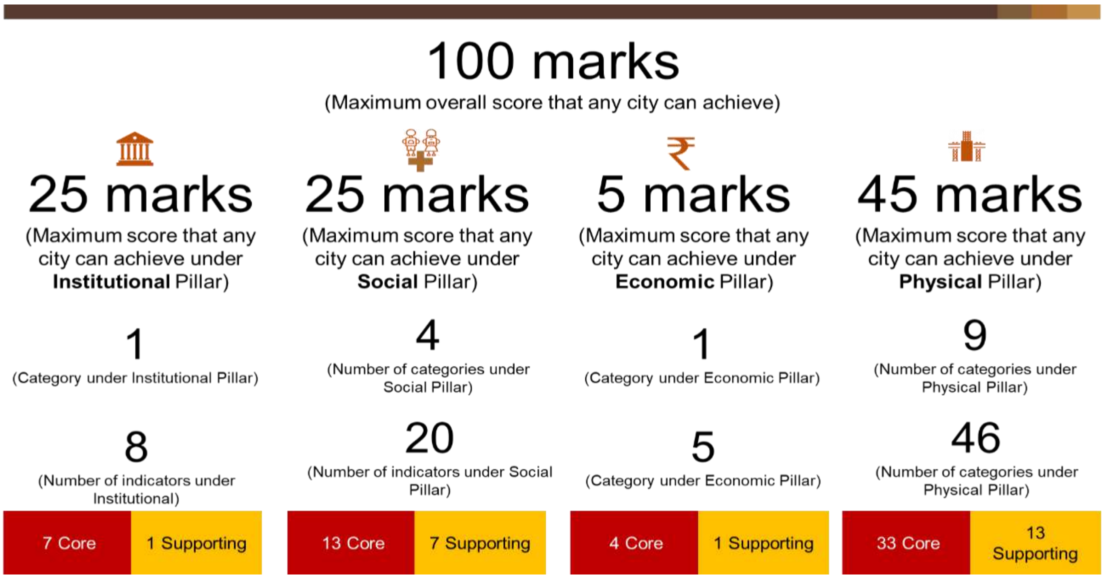
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Urban Local Body
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body
Urban Local Body	For Water Supply and Drainage related questions	Urban Local Body
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related data	Urban Local Body
Urban Local Body	For Housing related data	Urban Local Body
Urban Local Body	For Building plan related data	Building plan department
Urban Local Body	For Roads related data	ULB, Transport Authority
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Urban Local Body
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Regional Pollution Control Board, Dhanbad
Development Authority	Building Infrastructure	Urban Local Body
	Construction planning	Urban Local Body
	Green Building	Urban Local Body
	Rain water harvesting	Revenue Department
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jharkhand Vidut Vitran Nigam Limited
State Disaster management authority		District Disaster Management Authority
State Education Department		District Superintendent of Education, Dhanbad
State Health Department	Health care professionals	Civil Surgeon Office Dhanbad
	Citizen Services	Civil Surgeon Office Dhanbad

Designated data owners	Subcategories	Data owners at city level
	Disease Prevalence	Civil Surgeon Office Dhanbad
	Health Infrastructure	Civil Surgeon Office Dhanbad
State Renewable Energy Development Agency		Electricity Board
State Sales / Commercial Taxes Department		Divisional Sales and Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning Department
Traffic and Police Department		SP Office Dhanbad
Transport Authorities	Buses	District Transport Office
	Registered Vehicles	District Transport Office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 10 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	3

State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	1
Transport Authority	0
Disaster Management	0
Urban Local Body	2
Total	10

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

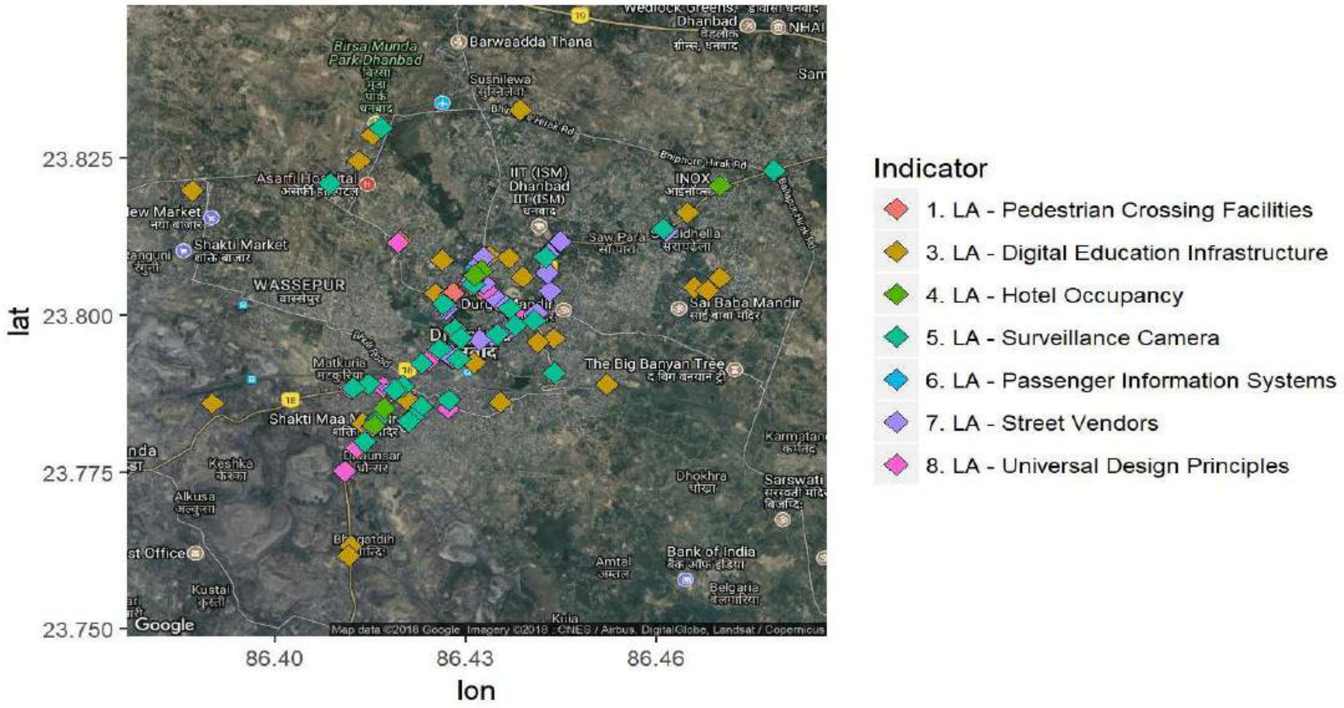
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
23.825
23.800
23.775
23.750
lon
86.40
86.43
86.46
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Birsa Munda Park Dhanbad
Barwaadda Thana
Susnilewa
IIT (ISM) Dhanbad
INOX
Asarfi Hospital
New Market
Shakti Market
WASSEPUR
Saw Para
Sidhella
Sai Baba Mandir
Matkuria
The Big Banyan Tree
Shakti Maa Mandir
Keshka
Dhokhra
Sarswati
Karmatand
Alkusa
Bank of India
Amtal
Belgaria
Kustai
Google
Map data ©2018 Google, Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	64.67%
Identity & Culture	31%
Education	75%
Health	63%
Safety & Security	70%
Economy & Employment	24%
Housing & Inclusiveness	13%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	56%
Transport & Mobility	29%
Assured Water Supply	65%
Waste Water Management	20%
Solid Waste Management	61%
Reduced Pollution	57%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DHARAMSHALA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts.

Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.

#	Challenges	Proposed Solutions
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

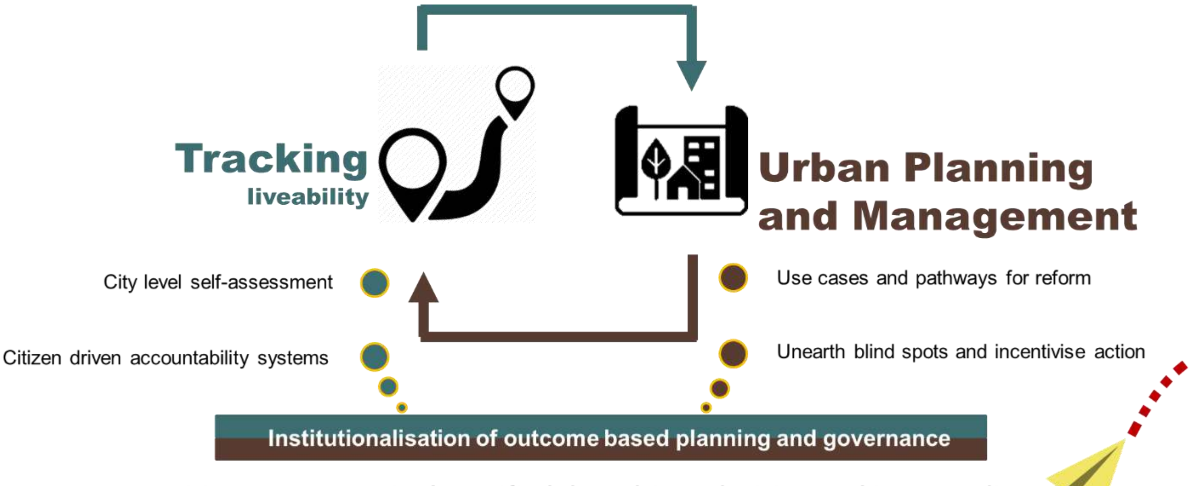
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

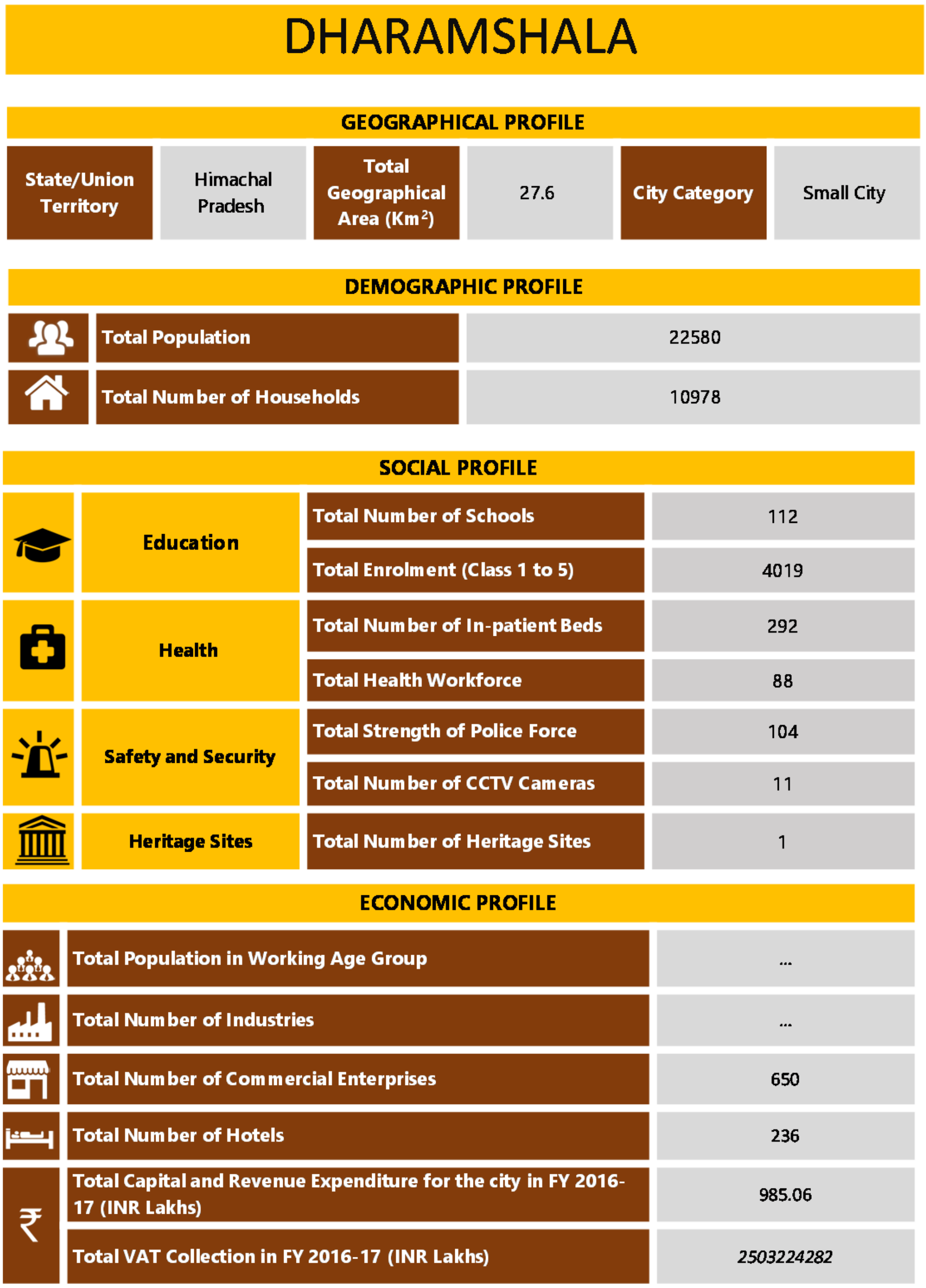

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



DHARAMSHALA

GEOGRAPHICAL PROFILE

State/Union Territory	Himachal Pradesh	**Total Geographical Area (Km^2)**	27.6	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	22580
Total Number of Households	10978

SOCIAL PROFILE

Education	**Total Number of Schools**	112
	Total Enrolment (Class 1 to 5)	4019
Health	**Total Number of In-patient Beds**	292
	Total Health Workforce	88
Safety and Security	**Total Strength of Police Force**	104
	Total Number of CCTV Cameras	11
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	650
Total Number of Hotels	236
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	985.06
Total VAT Collection in FY 2016-17 (INR Lakhs)	*2503224282*

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	3.42
	Total Number of Water Connection	5823
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	20
	Total number of households covered through door-to-door collection of solid waste	...
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	2.73
	Daily average quantum of waste water treated by STPs in the city (MLD)	2.7
Electricity	Total number of authorized electrical connections in the city	25631
	Total electricity supplied to the city (kWh)	27663300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	303400
Roads and Transport	Total Length of Road Network in the City (Km)	136.98
	Total length of arterial and sub-arterial road network in the city (Km)	20
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

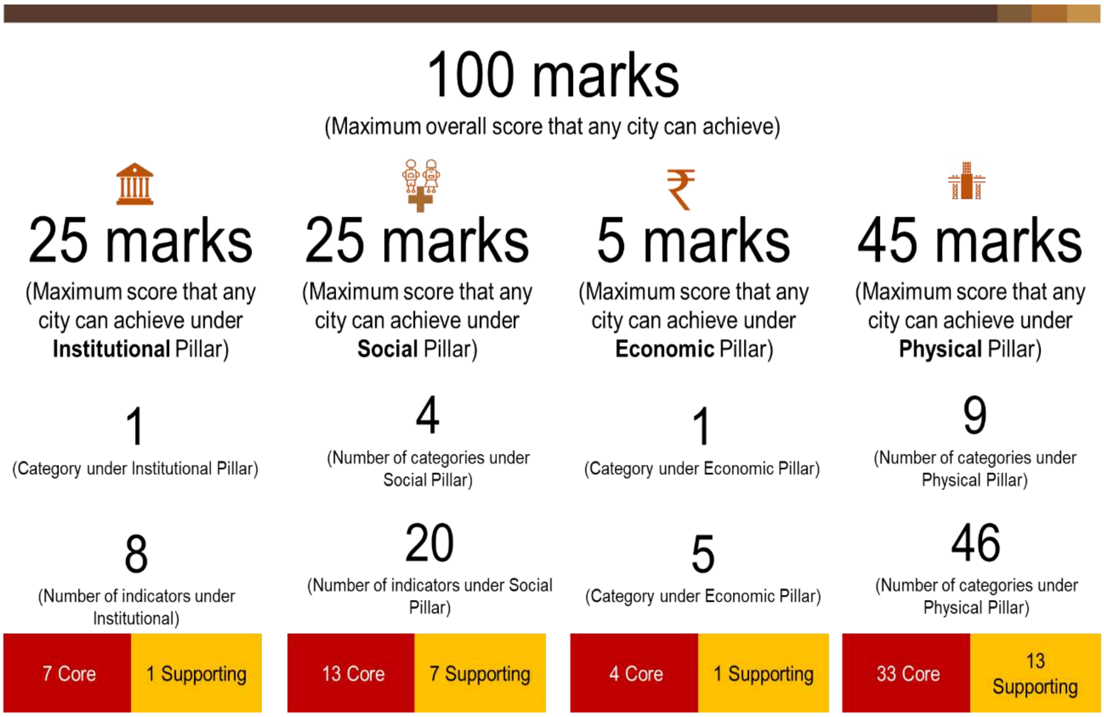
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MC Dharamshala
Urban Local Body	For Park and Recreation Related Questions	Town and Country Planning
Urban Local Body	For Water Supply and Drainage related questions	Irrigation and Public Health Department
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	MC Dharamshala
Urban Local Body	For Housing related data	MC Dharamshala
Urban Local Body	For Building plan related data	MC Dharamshala
Urban Local Body	For Roads related data	Public Work Department
Urban Local Body	For Solid waste management related data	MC Dharamshala
Urban Local Body	For IT services related data	MC Dharamshala
Urban Local Body	For Vendor committee related data	MC Dharamshala
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, PWD, Education, Irrigation & Public Health, RTO and electricity board.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board Department
Development Authority	Building Infrastructure	MC Dharamshala
	Construction planning	MC Dharamshala
	Green Building	MC Dharamshala

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	MC Dharamshala
	Universal Design Principle	MC Dharamshala
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	State Electricity Board Department
State Disaster management authority		DC office
State Education Department		Directory of state elementary & secondary
State Health Department	Health care professionals	Zonal Hospital – Chief Medical Officer
	Citizen Services	Zonal Hospital – CMO
	Disease Prevalence	Zonal Hospital – CMO
	Health Infrastructure	Zonal Hospital - CMO
State Renewable Energy Development Agency		State Renewable Energy Development department
State Sales / Commercial Taxes Department		State Taxation Department
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		Police Department – SP office
Transport Authorities	Buses	Regional transportation Office
	Registered Vehicles	RTO
	Sub urban rail transport	RTO
	Mono Rail Authority	RTO
	Tramways	RTO
	Marine Transport Authority	RTO

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	5
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	1
Transport Authority	9
Disaster Management	0
Urban Local Body	9
Total	31

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

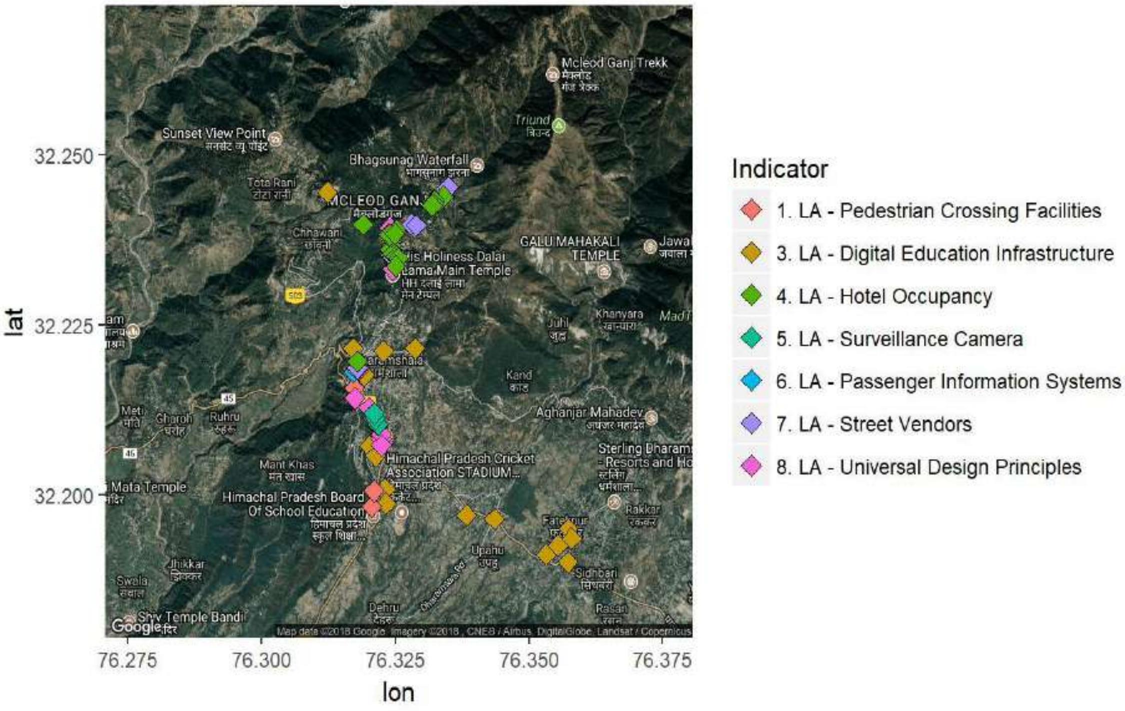
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Mcleod Ganj Trekk
Triund
Sunset View Point
Bhagsunag Waterfall
Tota Rani
MCLEOD GANJ
Chhawani
His Holiness Dalai Lama Main Temple
GALU MAHAKALI TEMPLE
Khanyara
Juhl
Kand
Dharamshala
Aghanjar Mahadev
Sterling Dharam Resorts and Ho
Himachal Pradesh Cricket Association STADIUM
Mant Khas
Mata Temple
Himachal Pradesh Board Of School Education
Rakkar
Fatehpur
Upahu
Sidhbari
Jhikkar
Swala
Shiv Temple Bandi
Dehru
Rasan
Meti
Gharoh
Ruhru
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
32.250
32.225
32.200
lat
76.275
76.300
76.325
76.350
76.375
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	48.33%
Identity & Culture	0%
Education	82%
Health	84%
Safety & Security	34%
Economy & Employment	41%

Housing & Inclusiveness	72%
Public Open Spaces	73%
Mixed Land Use & Compactness	1%
Power Supply	49%
Transport & Mobility	35%
Assured Water Supply	70%
Waste Water Management	45%
Solid Waste Management	27%
Reduced Pollution	95%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DINDIGUL

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

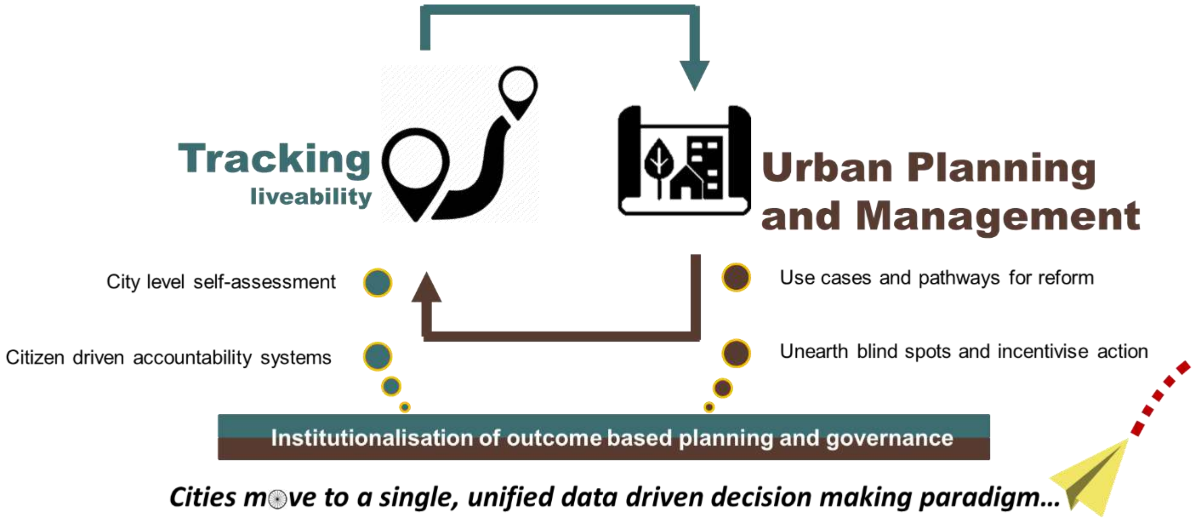
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

DINDIGUL

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	14.01	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	207327
Total Number of Households	58175

SOCIAL PROFILE

Education	**Total Number of Schools**	93
	Total Enrolment (Class 1 to 5)	17749
Health	**Total Number of In-patients Beds**	1560
	Total Health Workforce	456
Safety and Security	**Total Strength of Police Force**	214
	Total Number of CCTV Cameras	98
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	146783
Total Number of Industries	133
Total Number of Commercial Enterprises	6786
Total Number of Hotels	104
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	5787.78
Total VAT Collection in FY 2016-17 (INR Lakhs)	5792.7

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	15.5
		Total Number of Water Connections	27785
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	53113
		Total number of households in the city with access to community toilets in the city	1335
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	2.367
		Total number of households covered through door-to-door collection of solid waste	54448
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	13.65
		Daily average quantum of waste water treated by STPs in the city (MLD)	1.4
	Electricity	**Total number of authorized electrical connections in the city**	79435
		Total electricity supplied to the city (kWh)	139002590
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	0
	Roads and Transport	**Total Length of Road Network in the City (Km)**	210
		Total length of arterial and sub-arterial road network in the city (Km)	181.733
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

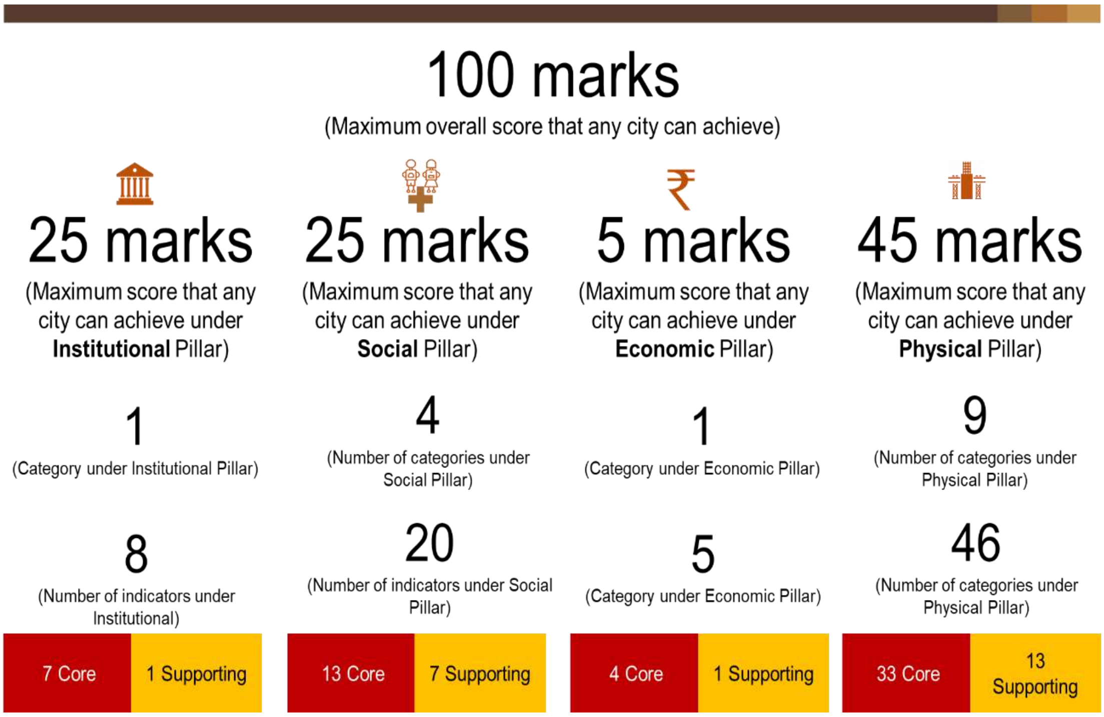
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Dindigul Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Section, Dindigul Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Dindigul Corporation
Urban Local Body	For Heritage sites related data	Town planning, Dindigul Corporation
Urban Local Body	For Ecological sites related data	Town planning, Dindigul Corporation
Urban Local Body	For Housing related data	Town planning, Dindigul Corporation
Urban Local Body	For Building plan related data	Town planning, Dindigul Corporation
Urban Local Body	For Roads related data	Engineering Section, Dindigul Corporation
Urban Local Body	For Solid waste management related data	Health Department , ULB , Dindigul corporation
Urban Local Body	For IT services related data	IT department, Dindigul Corporation
Urban Local Body	For Vendor committee related data	Town planning, Dindigul Corporation
Urban Local Body	Any other departments involved in providing data for questions	Revenue Section , Dindigul Corporation

Designated data owners	Subcategories	Data owners at city level
	mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning, Dindigul Corporation
	Construction planning	Town planning, Dindigul Corporation
	Green Building	Town planning, Dindigul Corporation
	Rain water harvesting	Town planning, Dindigul Corporation
	Universal Design Principle	Engineering Department, Dindigul Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board , Dindigul
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		District Education Department , Dindigul
State Health Department	Health care professionals	Joint Director, Health Services, Dindigul
	Citizen Services	Joint Director, Health Services, Dindigul
	Disease Prevalence	Joint Director, Health Services, Dindigul
	Health Infrastructure	Joint Director, Health Services, Dindigul
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department, Dindigul
Town and Country Planning Department	Land Use	Local Planning Authority & Town Planning Department
Traffic and Police Department		Police Department, Dindigul
Transport Authorities	Buses	Tamilnadu State Transport Corporation, Dindigul
	Registered Vehicles	Regional Transport Office, Dindigul
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 180 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	2
Traffic and Police Department	2
Development Authority	15
Pollution Control Board	7
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	12
Transport Authority	8
Disaster Management	1
Urban Local Body	123
Total	180

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

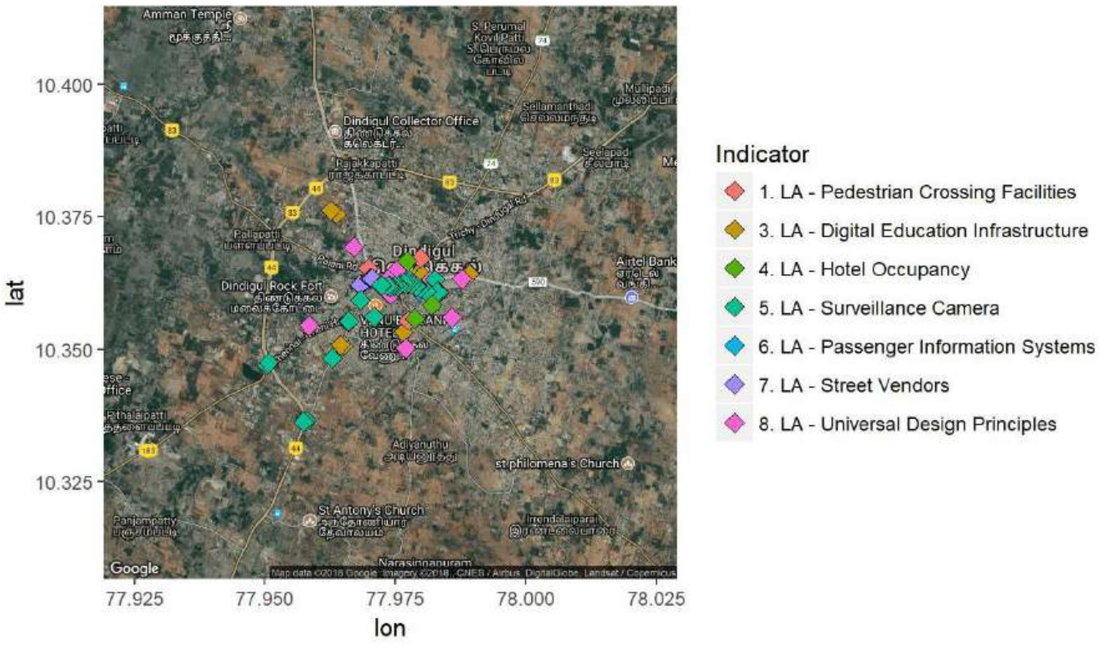
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
lon
10.400
10.375
10.350
10.325
77.925
77.950
77.975
78.000
78.025
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Amman Temple
Dindigul Collector Office
Rajakkapatti
Pallapatti
Dindigul
Dindigul Rock Fort
Airtel Bank
Seelapadi
Sellamanthadi
Multipadi
S.Perumal Kovil Patti
Adiyanuthu
st philomena's Church
St Antony's Church
Irendalaipparai
Panjampatty
Narasingapuram
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	33.10%
Identity & Culture	32%
Education	88%
Health	98%
Safety & Security	64%
Economy & Employment	23%

Housing & Inclusiveness	21%
Public Open Spaces	0%
Mixed Land Use & Compactness	6%
Power Supply	48%
Transport & Mobility	35%
Assured Water Supply	69%
Waste Water Management	63%
Solid Waste Management	76%
Reduced Pollution	67%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs

Government of India

DIU

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not	The indicator on unemployment will be excluded from scores. For final

#	Challenges	Proposed Solutions
	have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

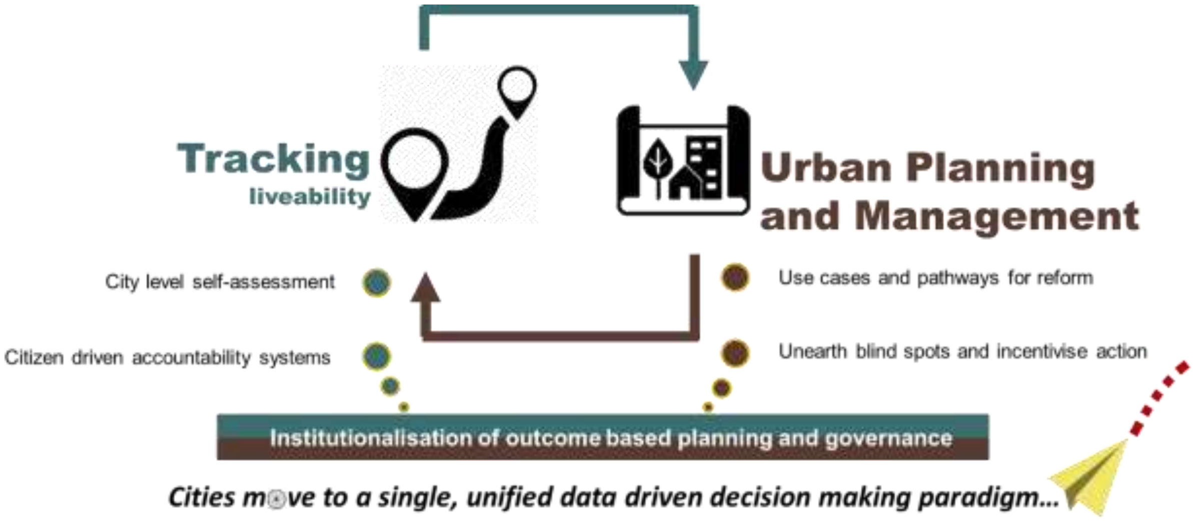
#	Challenges	Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

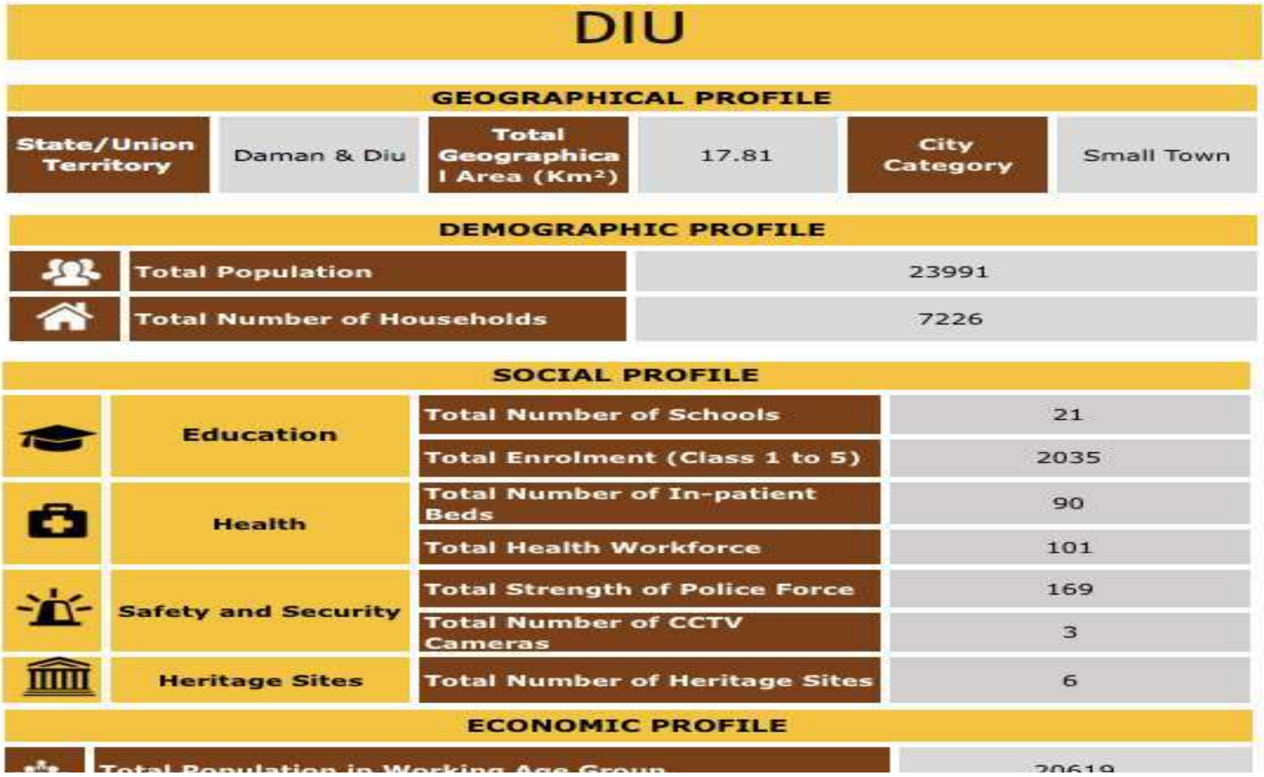

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity,

Open space and roads).



DIU

GEOGRAPHICAL PROFILE

State/Union Territory	Daman & Diu	Total Geographical Area (Km²)	17.81	City Category	Small Town

DEMOGRAPHIC PROFILE

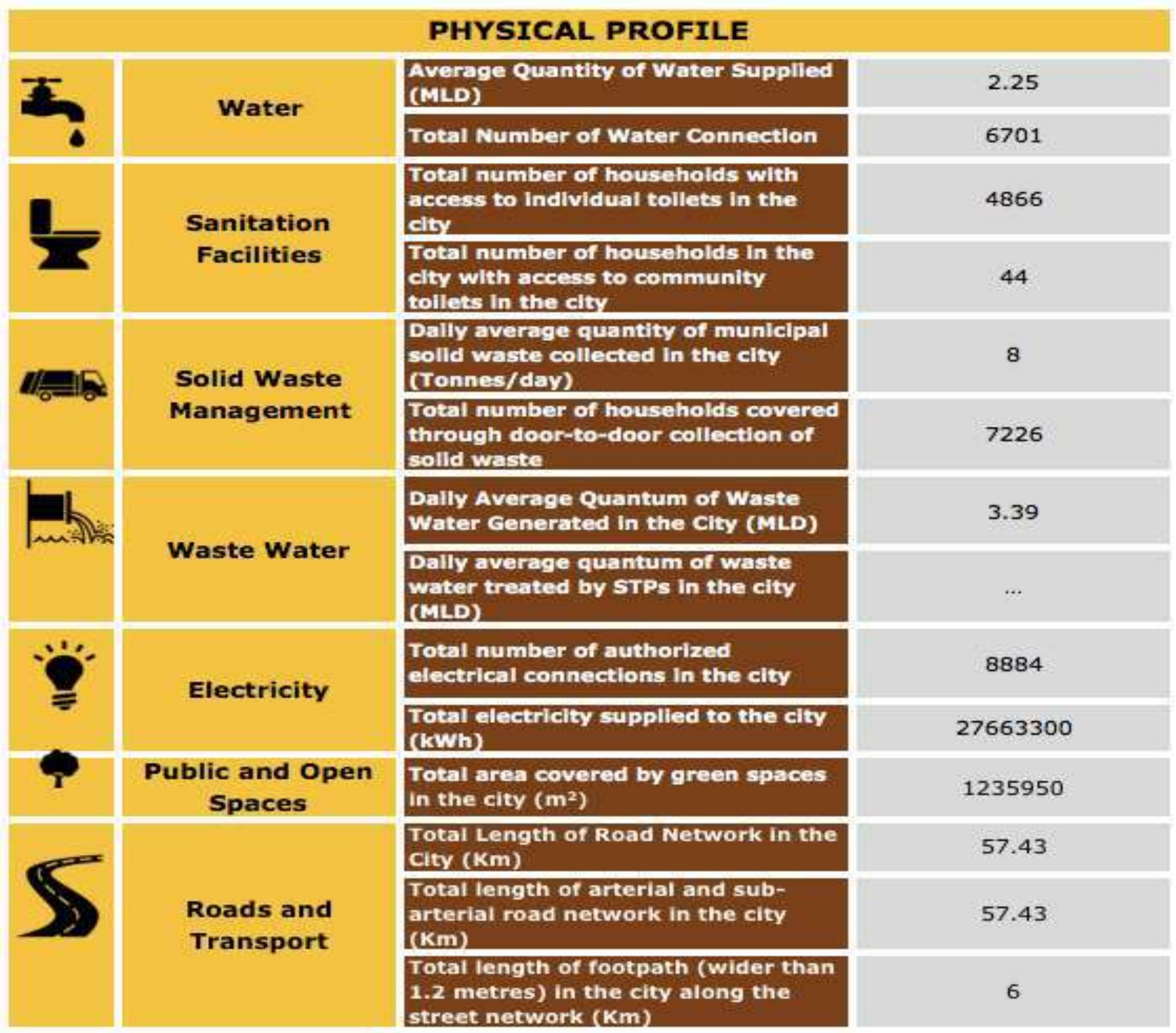
Total Population	23991
Total Number of Households	7226

SOCIAL PROFILE

Education	Total Number of Schools	21
	Total Enrolment (Class 1 to 5)	2035
Health	Total Number of In-patient Beds	90
	Total Health Workforce	101
Safety and Security	Total Strength of Police Force	169
	Total Number of CCTV Cameras	3
Heritage Sites	Total Number of Heritage Sites	6

ECONOMIC PROFILE

Total Population in Working Age Group	20619



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	2.25
	Total Number of Water Connection	6701
Sanitation Facilities	Total number of households with access to individual toilets in the city	4866
	Total number of households in the city with access to community toilets in the city	44
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	8
	Total number of households covered through door-to-door collection of solid waste	7226
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	3.39
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	8884
	Total electricity supplied to the city (kWh)	27663300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1235950
Roads and Transport	Total Length of Road Network in the City (Km)	57.43
	Total length of arterial and sub-arterial road network in the city (Km)	57.43
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic

Pillars of Comprehensive Development	Category	Indicators
		services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking

Pillars of Comprehensive Development	Category	Indicators
		facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

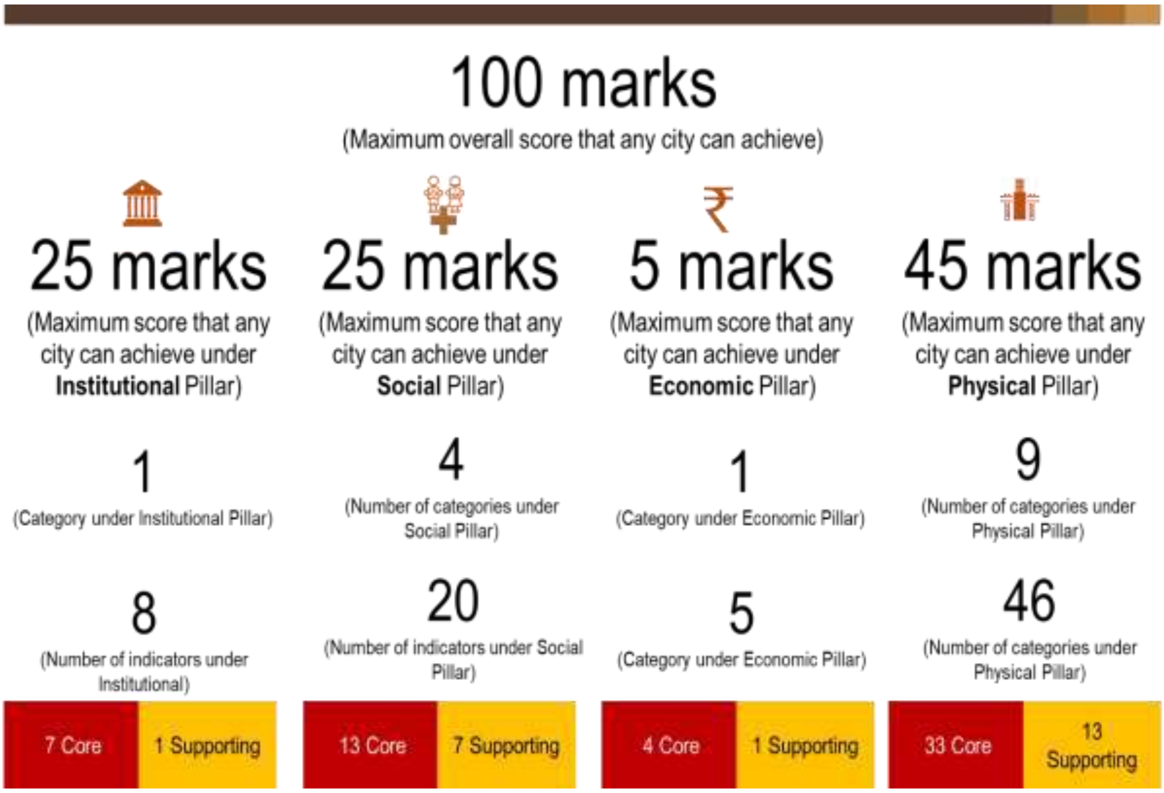
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department – ULB
Urban Local Body	For Park and Recreation Related Questions	Technical Department – ULB
Urban Local Body	For Water Supply and Drainage related questions	P.W.D
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	Forest
Urban Local Body	For Housing related data	Technical Department – ULB
Urban Local Body	For Building plan related data	Technical Department – ULB
Urban Local Body	For Roads related data	Technical Department – ULB
Urban Local Body	For Solid waste management related data	D.M.C. – ULB
Urban Local Body	For IT services related data	Computer Division- ULB
Urban Local Body	For Vendor committee related data	Tax Section- ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	PCC
Development Authority	Building Infrastructure	Technical Department- ULB
	Construction planning	Technical Department- ULB
	Green Building	Technical Department- ULB
	Rain water harvesting	Technical Department- ULB

	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electrical Department
State Disaster management authority		Department of Disaster Management
State Education Department		Asst. Director Education
State Health Department	Health care professionals	C.H.C & Hospital – Diu
	Citizen Services	C.H.C & Hospital – GAD
	Disease Prevalence	C.H.C & Hospita, NRHM AYUSH
	Health Infrastructure	GAD & Establishment CHC & Hospital
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		VAT & TAX Department
Town and Country Planning Department	Land Use	ATPO
Traffic and Police Department		Police Department
Transport Authorities	Buses	RTO
	Registered Vehicles	RTO
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

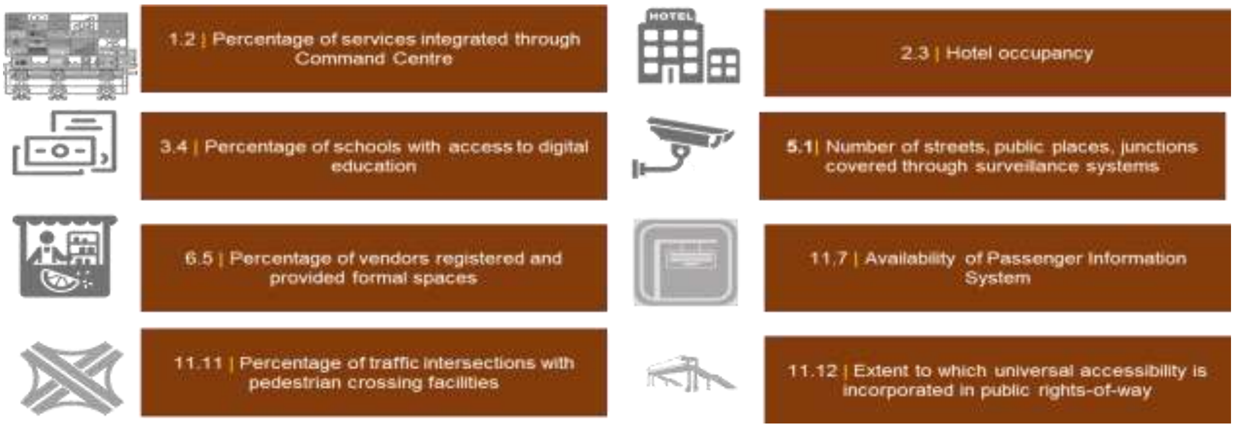
Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	7
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	16
Transport Authority	1
Disaster Management	0
Urban Local Body	24
Total	62

.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

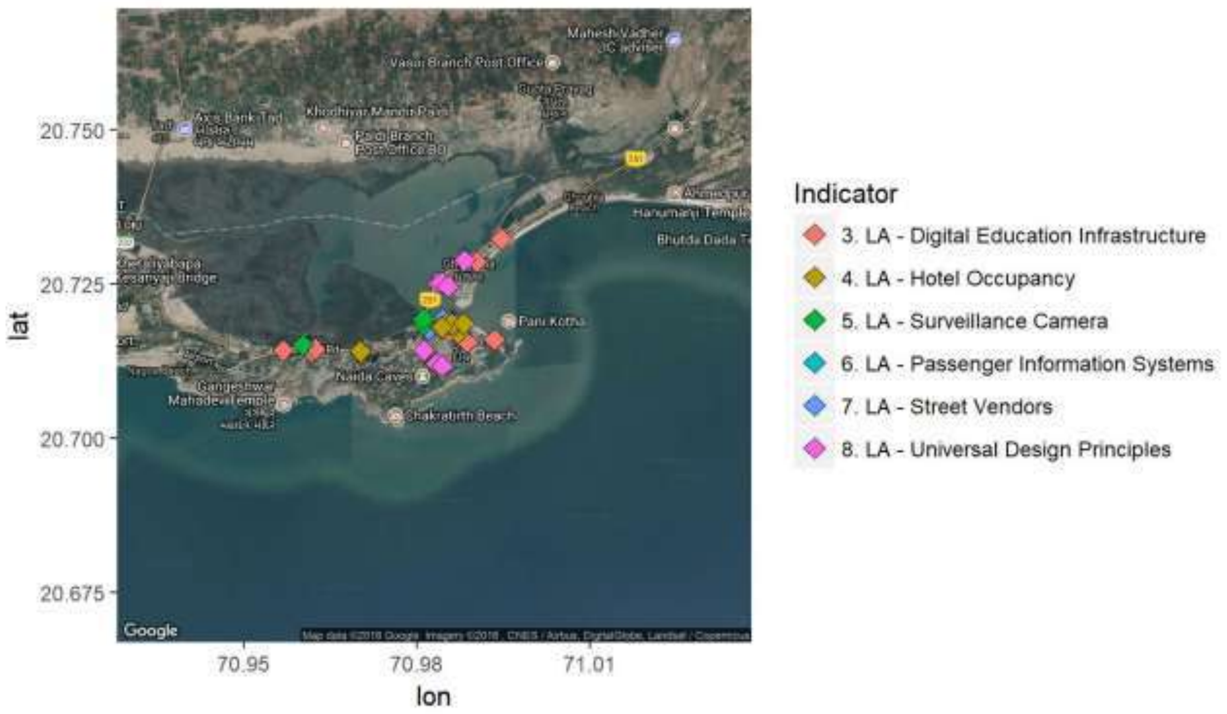
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
20.750
20.725
20.700
20.675
lon
70.95
70.98
71.01
Google
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Chakratirth Beach
Pani Kotha
Hanumanji Temple
Gangeshwar Mahadev Temple
Vasai Branch Post Office

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	**Scores in Percentage**
Governance	38.21%
Identity & Culture	52%
Education	79%
Health	97%
Safety & Security	57%
Economy & Employment	47%
Housing & Inclusiveness	0%
Public Open Spaces	89%
Mixed Land Use & Compactness	14%
Power Supply	54%
Transport & Mobility	23%
Assured Water Supply	84%
Waste Water Management	31%
Solid Waste Management	67%
Reduced Pollution	20%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

ERODE

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Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

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nducted at the state level. The objective of the workshop n liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

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sponsibility for providing noise pollution data as per the ased application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

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		Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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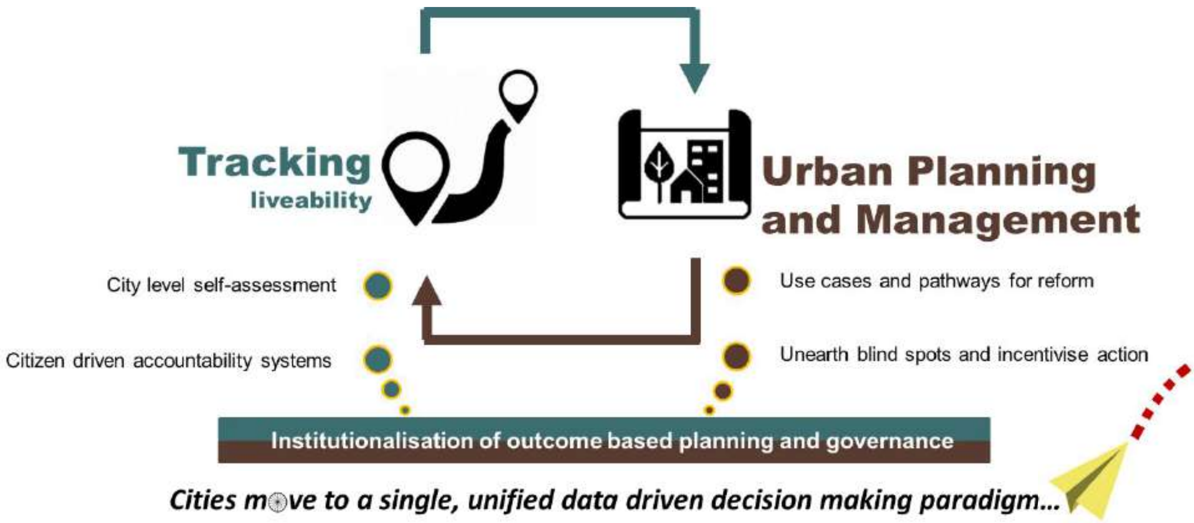
Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

ERODE

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km²)**	109.52	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	157101
Total Number of Households	133665

SOCIAL PROFILE

Education	**Total Number of Schools**	184
	Total Enrolment (Class 1 to 5)	34792
Health	**Total Number of In-patients Beds**	7206
	Total Health Workforce	1993
Safety and Security	**Total Strength of Police Force**	1637
	Total Number of CCTV Cameras	123
Heritage Sites	**Total Number of Heritage Sites**	3

ECONOMIC PROFILE

Total Population in Working Age Group	221010
Total Number of Industries	2461
Total Number of Commercial Enterprises	16890
Total Number of Hotels	114
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	21080.46
Total VAT Collection in FY 2016-17 (INR Lakhs)	24139.45

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PHYSICAL PROFILE

	Water	Average Quantity of Water Supplied (MLD)	54.09
		Total Number of Water Connections	72484
	Sanitation Facilities	Total number of households with access to individual toilets in the city	124430
		Total number of households in the city with access to community toilets in the city	11785
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	238
		Total number of households covered through door-to-door collection of solid waste	138226
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	43.27
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	Total number of authorized electrical connections in the city	478995
		Total electricity supplied to the city (kWh)	87684.005
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	217860.83
	Roads and Transport	Total Length of Road Network in the City (Km)	806.7
		Total length of arterial and sub-arterial road network in the city (Km)	806.7
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2

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tors

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools

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Development	Category	Indicators
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

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Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW

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Development	Category	Indicators
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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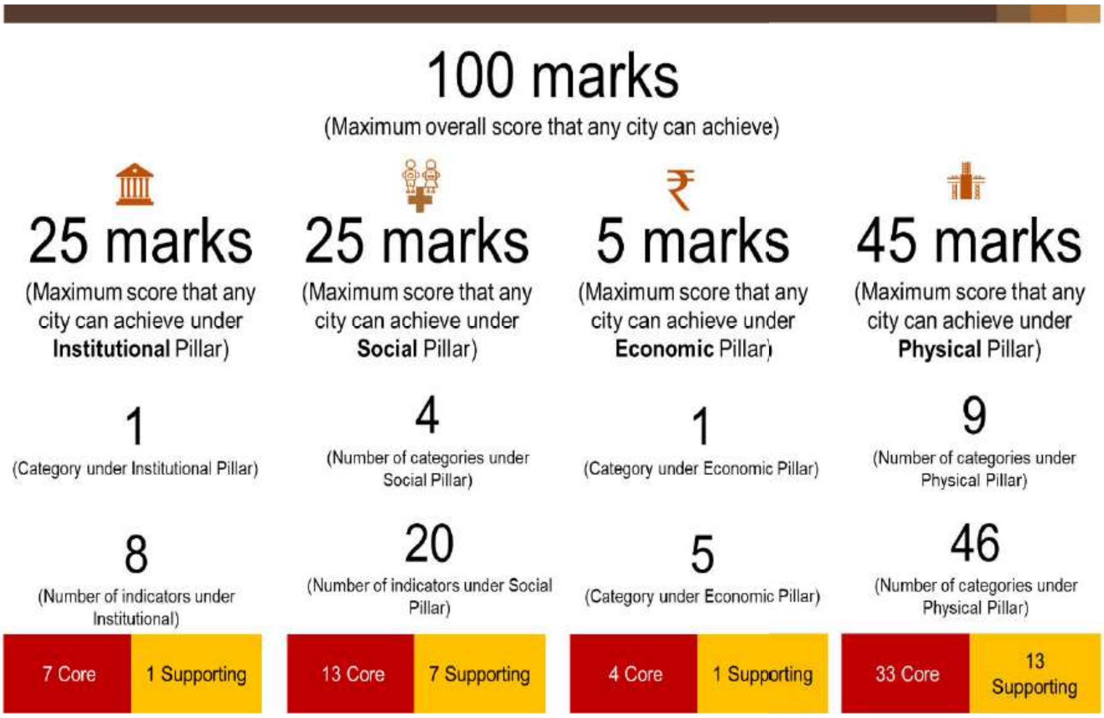
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Engineering department
Urban Local Body	For Water Supply and Drainage related questions	Engineering department
Urban Local Body	For Heritage sites related data	Not Applicable
Urban Local Body	For Ecological sites related data	Not Applicable
Urban Local Body	For Housing related data	Engineering department
Urban Local Body	For Building plan related data	Engineering department
Urban Local Body	For Roads related data	Engineering department
Urban Local Body	For Solid waste management related data	City Health Office
Urban Local Body	For IT services related data	Assistant Programmer
Urban Local Body	For Vendor committee related data	Not Applicable
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Not Applicable

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	egories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Engineering department
	Construction planning	Engineering department
	Green Building	Engineering department
	Rain water harvesting	Engineering department
	Universal Design Principle	Engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		District Disaster management authority
State Education Department		Department of school Education
State Health Department	Health care professionals	District Health Department
	Citizen Services	District Health Department
	Disease Prevalence	District Health Department
	Health Infrastructure	District Health Department
State Renewable Energy Development Agency		Tamilnadu Energy Development Agency
State Sales / Commercial Taxes Department		Department of sales / commercial tax
Town and Country Planning Department	Land Use	local planning authority
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

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available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 110 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	3
Traffic and Police Department	3
Development Authority	5
Pollution Control Board	10
State Renewable Energy Department	3
Town and Country Planning	3
State Health Department	5
Transport Authority	7
Disaster Management	1
Urban Local Body	63
Total	110

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

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reliability of data reported by the cities. The list of these

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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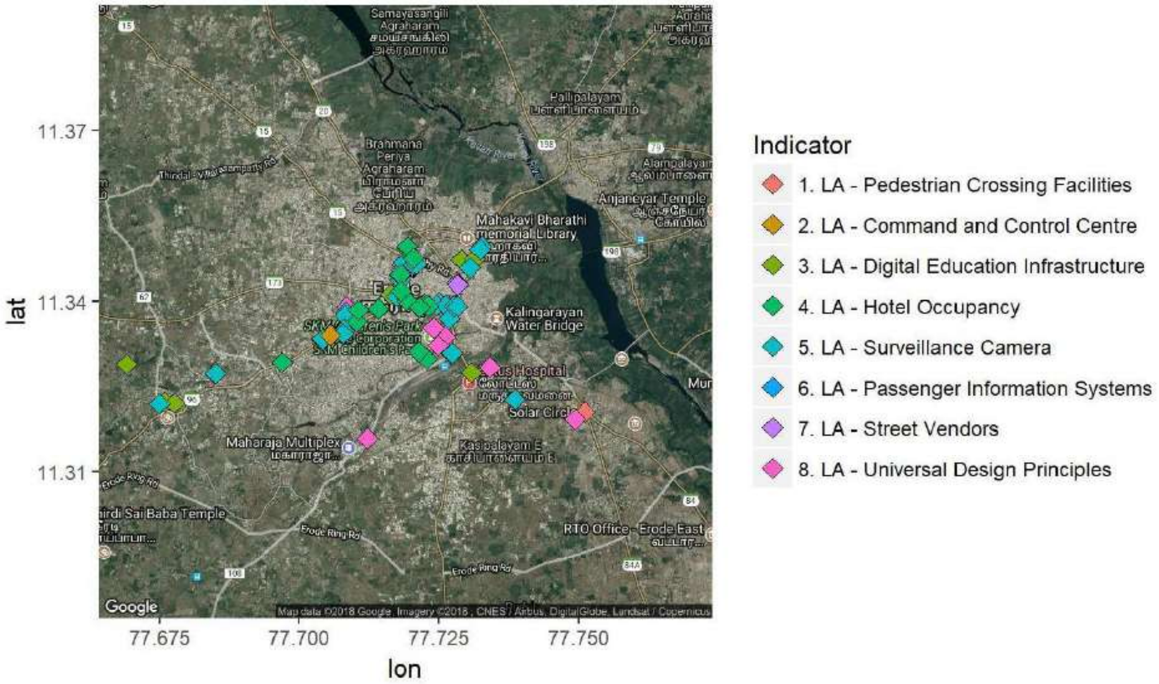
The following map presents the indicators audited at city level.


lat
11.37
11.34
11.31
lon
77.675
77.700
77.725
77.750
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Mahakavi Bharathi memorial Library
Kalingarayan Water Bridge
Maharaja Multiplex
RTO Office
Erode East
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	47.12%
Identity & Culture	43%
Education	93%
Health	100%
Safety & Security	70%

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yment	22%
eness	18%
Public Open Spaces	19%
Mixed Land Use & Compactness	11%
Power Supply	72%
Transport & Mobility	22%
Assured Water Supply	97%
Waste Water Management	53%
Solid Waste Management	89%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

FARIDABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

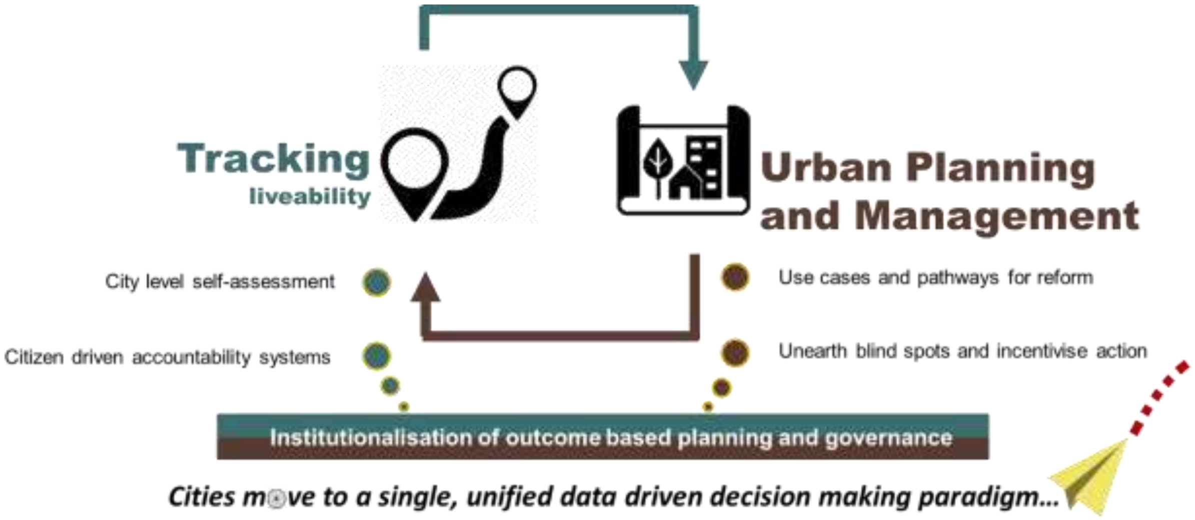
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

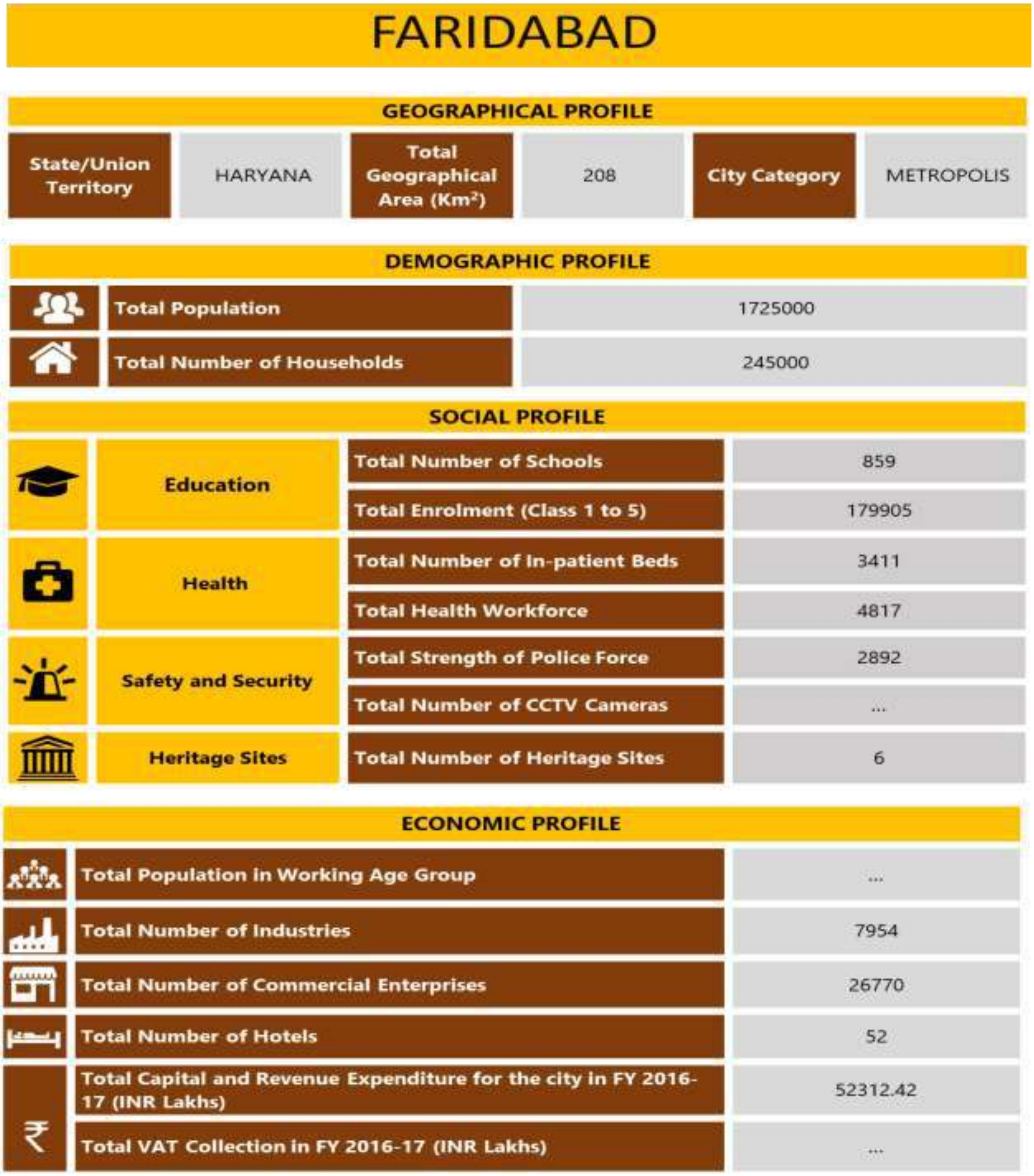

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



FARIDABAD

GEOGRAPHICAL PROFILE

State/Union Territory	HARYANA	Total Geographical Area (Km²)	208	City Category	METROPOLIS

DEMOGRAPHIC PROFILE

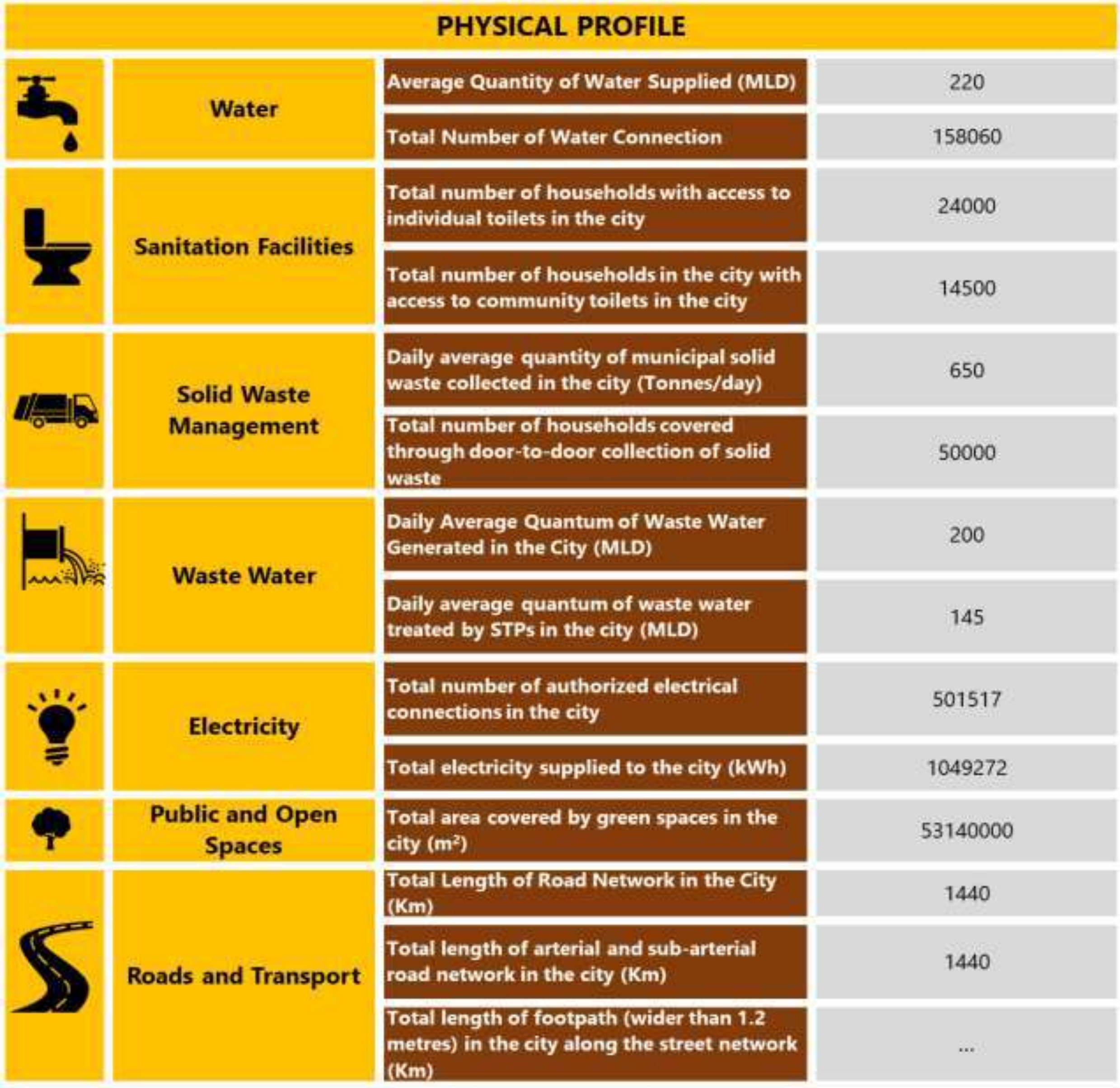
Total Population	1725000
Total Number of Households	245000

SOCIAL PROFILE

Education	Total Number of Schools	859
	Total Enrolment (Class 1 to 5)	179905
Health	Total Number of In-patient Beds	3411
	Total Health Workforce	4817
Safety and Security	Total Strength of Police Force	2892
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	6

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	7954
Total Number of Commercial Enterprises	26770
Total Number of Hotels	52
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	52312.42
Total VAT Collection in FY 2016-17 (INR Lakhs)	...



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	220
	Total Number of Water Connection	158060
Sanitation Facilities	Total number of households with access to individual toilets in the city	24000
	Total number of households in the city with access to community toilets in the city	14500
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
	Total number of households covered through door-to-door collection of solid waste	50000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	200
	Daily average quantum of waste water treated by STPs in the city (MLD)	145
Electricity	Total number of authorized electrical connections in the city	501517
	Total electricity supplied to the city (kWh)	1049272
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	53140000
Roads and Transport	Total Length of Road Network in the City (Km)	1440
	Total length of arterial and sub-arterial road network in the city (Km)	1440
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

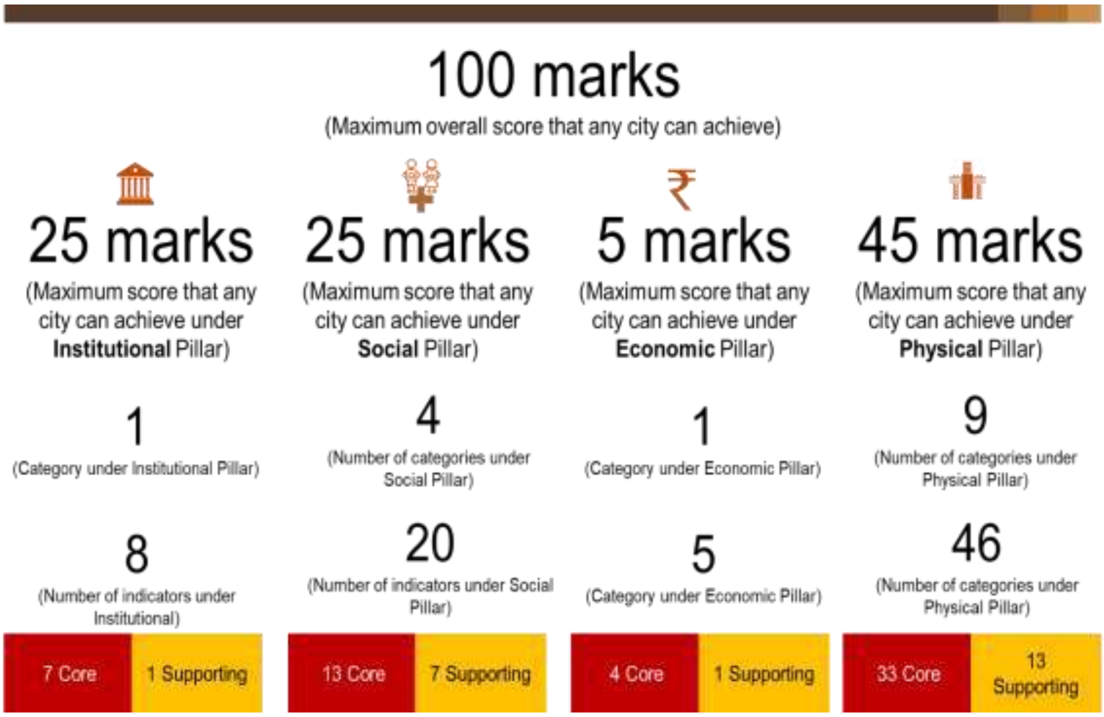
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Faridabad
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Faridabad
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Faridabad
Urban Local Body	For Heritage sites related data	Municipal Corporation Faridabad
Urban Local Body	For Ecological sites related data	Municipal Corporation Faridabad
Urban Local Body	For Housing related data	Municipal Corporation Faridabad
Urban Local Body	For Building plan related data	Municipal Corporation Faridabad
Urban Local Body	For Roads related data	Municipal Corporation Faridabad
Urban Local Body	For Solid waste management related data	Municipal Corporation Faridabad
Urban Local Body	For IT services related data	Municipal Corporation Faridabad
Urban Local Body	For Vendor committee related data	Municipal Corporation Faridabad
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Faridabad

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board - Faridabad Region
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Dakshin Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Faridabad
	Citizen Services	Civil Hospital Faridabad
	Disease Prevalence	Civil Hospital Faridabad
	Health Infrastructure	Civil Hospital Faridabad
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Agency Development Authority
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town & Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Faridabad Smart City Limited
	Sub urban rail transport	Data Unavailable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 17 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

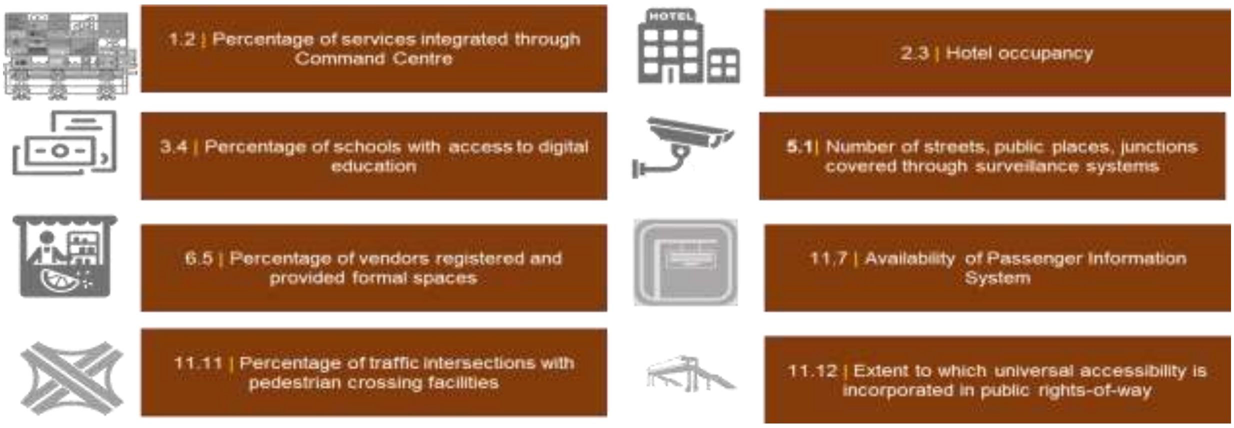
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**3**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**8**
Total	**17***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

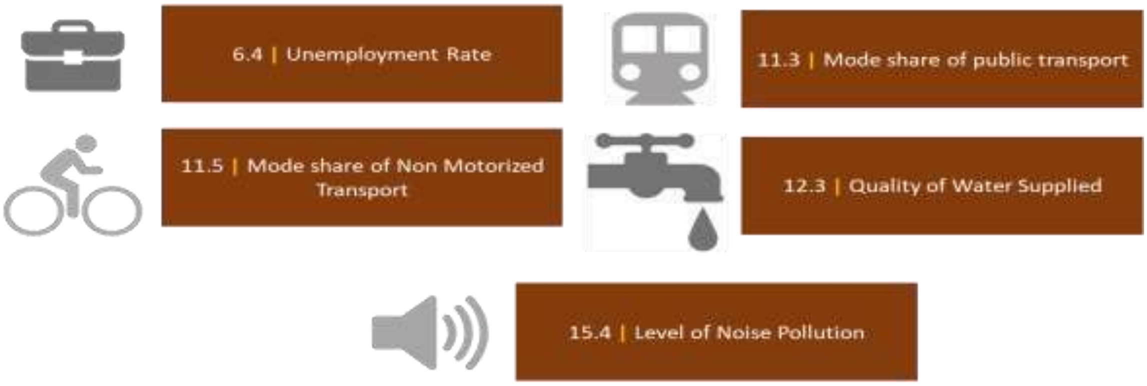
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

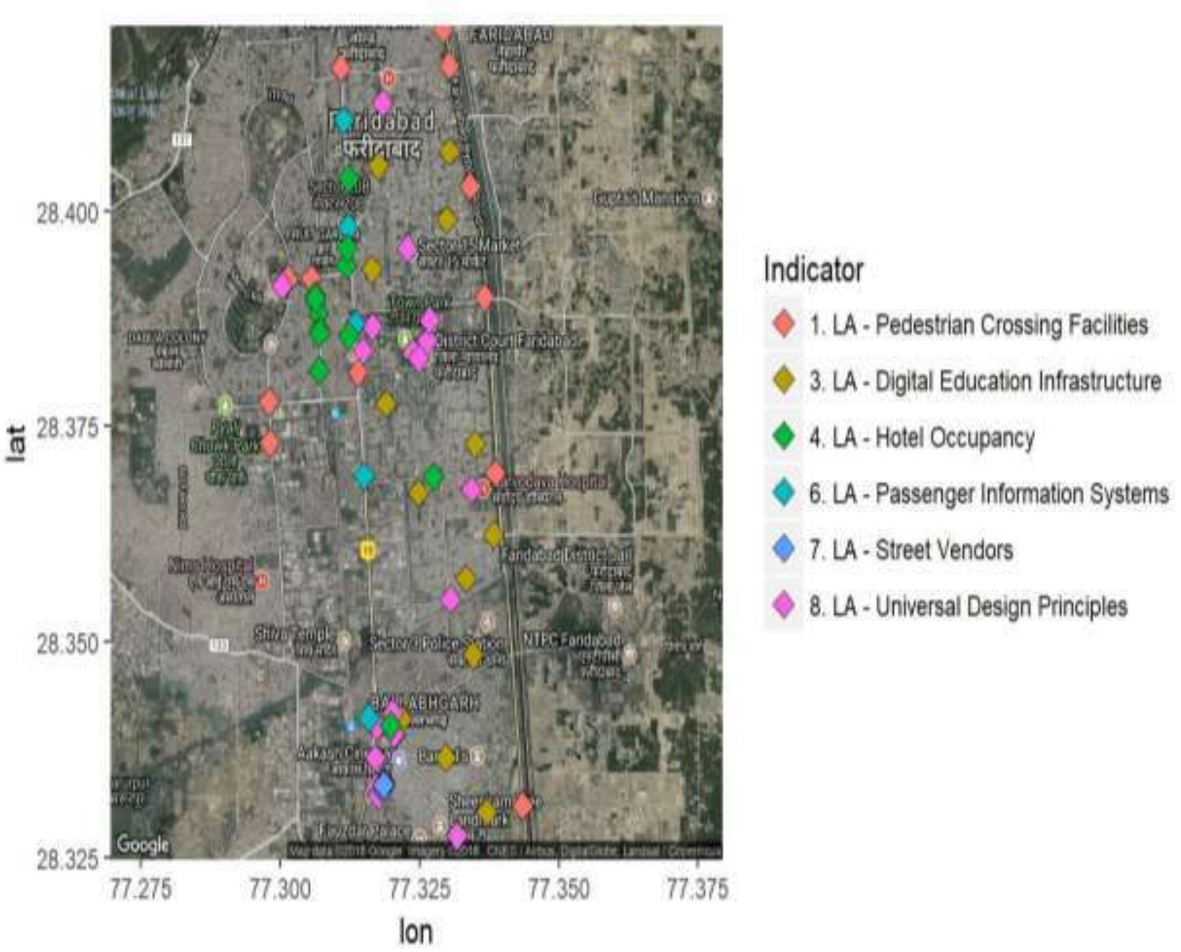
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Faridabad
फरीदाबाद
Sector 15 Market
District Court Faridabad
Town Park
Faridabad District Jail
NTPC Faridabad
BALLABHGARH
Sector 9 Police Station
Shiva Temple
Gupta's Mansion
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
28.400
28.375
28.350
28.325
lat
77.275
77.300
77.325
77.350
77.375
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	67.00%
Identity & Culture	13%
Education	96%
Health	96%
Safety & Security	27%
Economy & Employment	2%
Housing & Inclusiveness	14%
Public Open Spaces	50%
Mixed Land Use & Compactness	2%
Power Supply	77%
Transport & Mobility	35%
Assured Water Supply	74%
Waste Water Management	48%
Solid Waste Management	39%
Reduced Pollution	75%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

AMARAVATI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

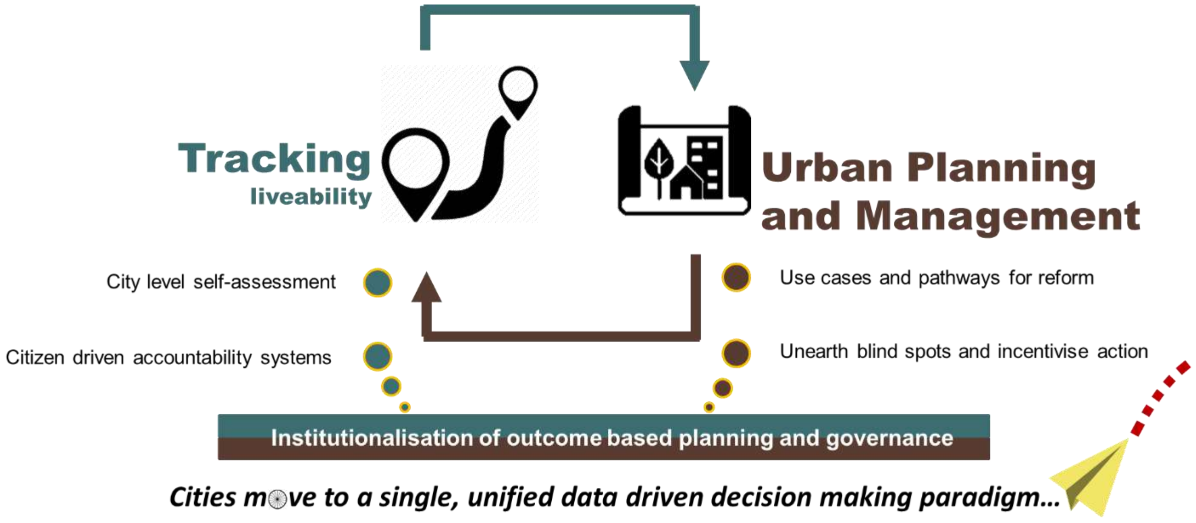
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

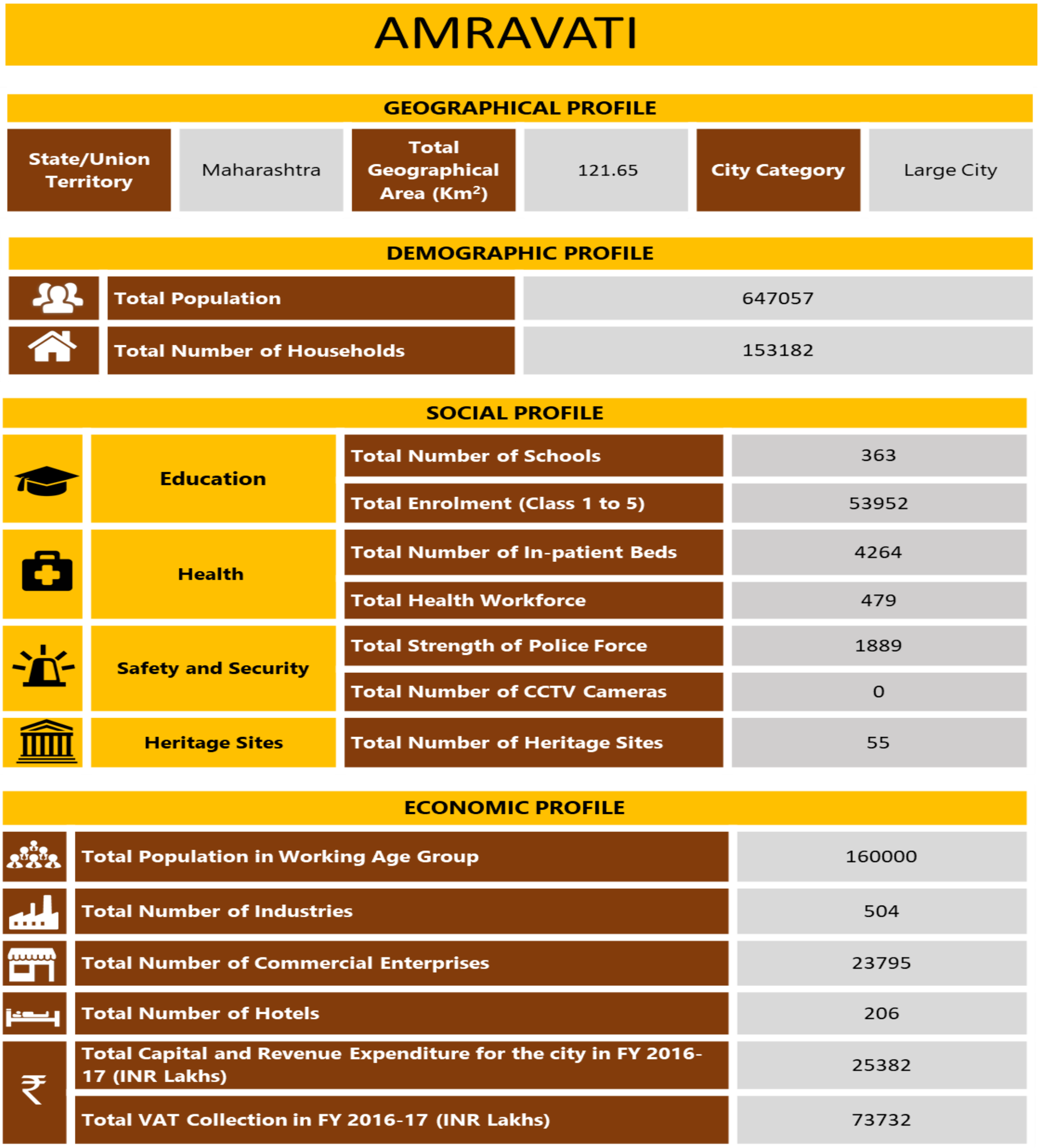

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



AMRAVATI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	121.65	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	647057
Total Number of Households	153182

SOCIAL PROFILE

Education	**Total Number of Schools**	363
	Total Enrolment (Class 1 to 5)	53952
Health	**Total Number of In-patient Beds**	4264
	Total Health Workforce	479
Safety and Security	**Total Strength of Police Force**	1889
	Total Number of CCTV Cameras	0
Heritage Sites	**Total Number of Heritage Sites**	55

ECONOMIC PROFILE

Total Population in Working Age Group	160000
Total Number of Industries	504
Total Number of Commercial Enterprises	23795
Total Number of Hotels	206
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25382
Total VAT Collection in FY 2016-17 (INR Lakhs)	73732

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	96.46
		Total Number of Water Connections	88612
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	121853
		Total number of households in the city with access to community toilets in the city	15000
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	230
		Total number of households covered through door-to-door collection of solid waste	153182
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	91.02
		Daily average quantum of waste water treated by STPs in the city (MLD)	7.5
	Electricity	**Total number of authorized electrical connections in the city**	159678
		Total electricity supplied to the city (kWh)	432000000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	438000
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1048.87
		Total length of arterial and sub-arterial road network in the city (Km)	66.8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	42.22

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

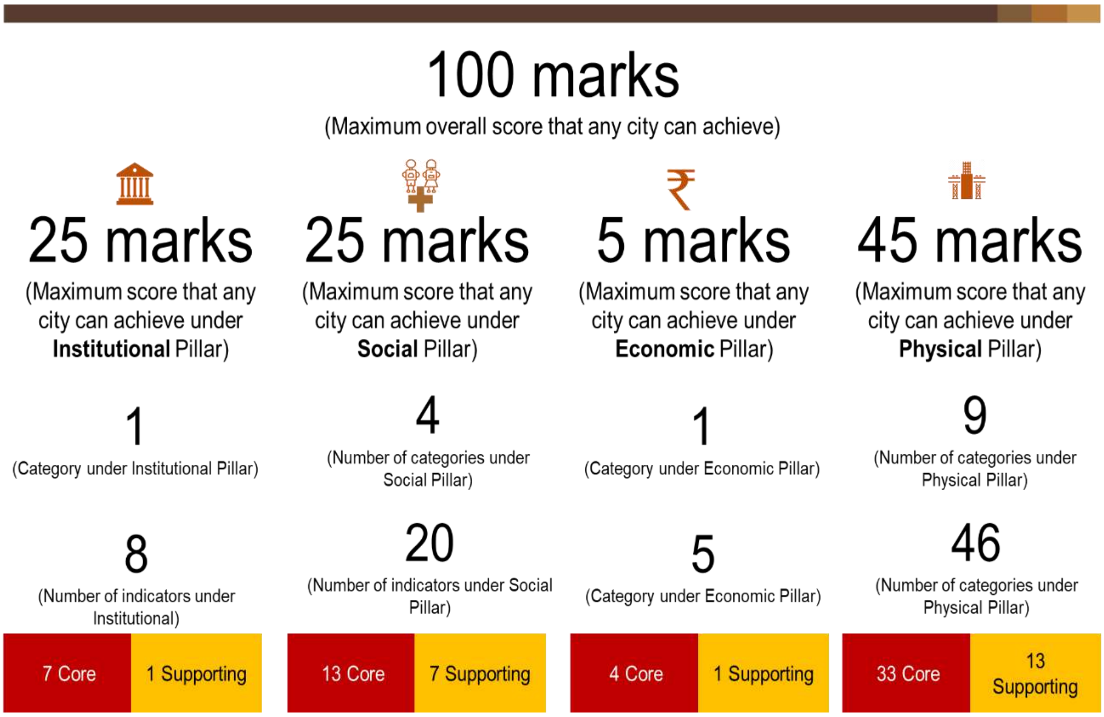
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts & Audit departments
Urban Local Body	For Park and Recreation Related Questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Water Supply and Drainage related questions	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Heritage sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Ecological sites related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Housing related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Building plan related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Roads related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For Solid waste management related data	Assistant Director, Planning Wing and Manager, IT Department
Urban Local Body	For IT services related data	Assistant Director, Planning Wing and

		Manager, IT Department
Urban Local Body	For Vendor committee related data	NA
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Assistant Director, Planning Wing and Manager, IT Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Andhra Pradesh- Capital Region Development Authority (AP- CRDA)
	Construction planning	Andhra Pradesh- Capital Region Development Authority
	Green Building	Andhra Pradesh- Capital Region Development Authority
	Rain water harvesting	Andhra Pradesh- Capital Region Development Authority
	Universal Design Principle	Andhra Pradesh- Capital Region Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL)
State Disaster management authority		Addition Commissioner (Projects) District DM Authority,
State Education Department		District Educational Officer
State Health Department	Health care professionals	District Medical & Health Department
	Citizen Services	District Medical & Health Department
	Disease Prevalence	District Medical & Health Department
	Health Infrastructure	District Medical & Health Department
State Renewable Energy Development Agency		National Renewable Energy Corporation Limited

State Sales / Commercial Taxes Department		Deputy Commissioner, Commercial tax Department
Town and Country Planning Department	Land Use	Town Planning Department.
Traffic and Police Department		Office of Superintendent of Police.
Transport Authorities	Buses	Road Transport Authority
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 2 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0

State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	2
Total	2*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

5. Indicator Values

In this chapter, indicator values for **74 indicators** excluding the five indicators for which primary data collection is currently underway is presented. The five indicators include:

Indicator number	Indicator title
Indicator No. 6.4	Unemployment rate
Indicator No. 11.3	Mode share of public transport
Indicator No. 11.5	Mode share of non-motorised transport
Indicator No. 12.3	Quality of drinking water
Indicator No. 15.4	Noise pollution

For each indicator, the corresponding definition, unit of expression i.e., number, percentage etc. indicator value based on the data provided for the numerator /denominator, subtrahend/minuend etc., and the corresponding benchmark values has been presented. The indicators are organized, pillar and category wise for easy reference.

Table 5: Details of Indicator Values

Pillar: Institutional

Category 1: Governance

Indicator No: 1.1	Percentage of citizen services available online	**30.77**
Description	Average citizen services available online	
Sub Indicators	1.1a birth certificate	0
	1.1b death certificate	0
	1.1c trade license	0
	1.1d solid waste management	0
	1.1e water supply	0
	1.1f sewerage/drainage	0
	1.1g fogging	0
	1.1h property tax	0
	1.1i professional tax	0
	1.1j information	1
	1.1k Grievance redressal	1
	1.1l electricity	1
	1.1m Building plan	1
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.2	Percentage of services integrated through Command Centre	**130.95**
Description	Services integrated through an integrated or a singular operations command centre	27.5
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.3	Percentage of citizens using online services	**109.35**
Description		
Sub Indicators	1.3a Building plan	0.24533616
	1.3b Birth/Death Certificate	NA

	1.3c water supply	NA
	1.3d solid waste management	NA
	1.3e property tax	NA
	1.3f professional tax (RC)	NA
	1.3g professional tax (EC)	NA
	1.3h complaints/ grievance redressal	NA
	1.3i information	1.941747573
	1.3j electricity	NA
Unit	Percentage	
Benchmark	100%	
Indicator No. 1.4	Average delay in grievance redressal	**2.33**
Description		
Sub Indicators	1.4a water supply	3
	1.4b solid waste	2
	1.4c street lights	3
	1.4d sewerage	3
	1.4e professional tax	NA
	1.4f parks and recreational spaces	3
	1.4g building plan	0
Unit	Days	
Benchmark	0	
Indicator No: 1.5	Tax collected as percentage of tax billed	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total tax collected in a year	Data Unavailable
Denominator	Total demand raised for the year	Data Unavailable
Unit	Percentage	
Benchmark	90%	
Indicator No: 1.6	Extent of cost recovery (O&M) in water supply services	**Non-Computable**
Formula:	*Numerator / Denominator*	

Numerator	Total collection of user charges in water supply in a year	Data Unavailable
Denominator	Total O&M cost for providing water supply services during the year	55
Unit	Percentage	
Benchmark	100%	
Indicator No: 1.7	Capital spending as percentage of total expenditure	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total capital expenditure during a year	Data Unavailable
Denominator	Total expenditure (revenue and capital accounts) in the same year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	
Indicator No: 1.8	Percentage of population covered under Ward Committees/ Area *Sabhas*	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of Wards with notified ward committees	NA
Denominator	Total number of wards	29
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification)	

Pillar: Social

Category 2: Identity and Culture

Indicator No: 2.1	Restoration and reuse of historic buildings	**66.67**
Formula:	*Numerator / Denominator*	
Numerator	Number of historic buildings/sites restored/preserved/brought under adaptive reuse	2
Denominator	Total number of historic buildings/sites identified	3
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.2	Percentage of ecologically important areas covered through projects for restoration	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Ecologically important sites covered through projects for restoration	0
Denominator	Total number of ecologically important sites identified in the city	0
Unit	Percentage	
Benchmark	100%	
Indicator No: 2.3	Hotel Occupancy	**0**
Description	Average Occupancy rate of Hotels	0
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.4	Percentage of budget allocated towards cultural/sports activities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Budget allocated for cultural/sports activities	Data Unavailable
Denominator	Total budget of the ULB (capital and revenue)	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest performance (amongst cities in the same city-size classification) will be treated as the benchmark	
Indicator No: 2.5	Number of cultural/sports events hosted by city	**7**
Description	Number of cultural/sports events hosted by the city authority in the preceding year	7

Unit		
Benchmark		

Category 3: School Education

Indicator No: 3.1	Percentage of school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total enrolment in primary and secondary schools (public and private)	6607
Denominator	Total population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.2	Percentage of female school-aged population enrolled in schools	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total female enrolment in primary and secondary schools (public and private	3487
Denominator	Total female population in the age group of 6-14 years	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.3	Primary education student-teacher ratio	**20.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of students in primary grades (public and private)	3988
Denominator	Total number of teachers available for primary grades (public and private schools)	197
Unit	Ratio	
Benchmark	1 teacher for every 30 students	
Indicator No: 3.4	Percentage of schools with access to digital education	**20.27**
Formula:	*Numerator / Denominator*	
Numerator	Number of schools (public and private) with facilities for using digital educational content (availability of necessary infrastructure and connection to digital resources such as NKN)	15
Denominator	Total number of schools	74
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.5	Percentage of students completing primary education	**128.69**

Formula:	*Product of ratios of students passing successive grades (between grades 1 to 5) in 2016-17*	128.6882456
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	
Indicator No: 3.6	Percentage of students completing secondary education	**103.46**
Formula:	*Product of ratios of students passing successive grades (between grades 6 to 8) in 2016-17*	737877
Numerator	Percentage	
Unit	Percentage	
Benchmark	100%	

Category 4: Health

Indicator No: 4.1	Number of in-patient hospital beds per 10,000 population	**3.3**
Formula:	*Numerator / Denominator*	
Numerator	Number of in-patient hospital beds in public and private hospitals	34
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	25 beds per 10000 population	
Indicator No: 4.2	Healthcare professionals per 10,000 population	**10.68**
Formula:	*Numerator / Denominator*	
Numerator	Total number of qualified healthcare professionals	110
Denominator	Total population of the city	103000
Unit	Number per 10,000 population	
Benchmark	23 beds per 10000 population	
Indicator No: 4.3	Average response time in case of health emergencies	**25**
Description	Total response time for health-related distress calls received in the city	25
Unit	Minutes and seconds	
Benchmark	8 minutes	
Indicator No: 4.4	Period prevalence of water borne diseases	**0.26**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by water borne diseases in a year	266

Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of water-borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 4.5	Period prevalence of vector borne diseases	**0.01**
Formula:	*Numerator / Denominator*	
Numerator	Number of cases of persons affected by vector borne diseases in a year	6
Denominator	Total population of the city	103000
Unit	Percentage	
Benchmark	City with the lowest prevalence of vector borne diseases (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 5: Safety and Security

Indicator No: 5.1	Total number of CCTV cameras installed in the city	**11.18**
Formula:	*Numerator / Denominator*	
Numerator	Total number of CCTV cameras installed	22
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	
Indicator No: 5.2	Number of recorded crimes per lakh population	**226.21**
Formula:	Numerator / Denominator	
Numerator	Total number of crimes recorded in a year	233
Denominator	Total population of the city	103000
Unit	Crimes per lakh	
Benchmark	City with the lowest crime rate (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.3	Extent of crimes recorded against women, children and elderly per year	**15.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of crimes recorded against vulnerable groups (women, children and elderly) in a year	35

Denominator	Total crimes recorded in the same year	233
Unit	Percentage	
Benchmark	City with the lowest proportion of crimes against vulnerable groups (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 5.4	Transport-related fatality per lakh population	**39.81**
Formula:	*Numerator / Denominator*	
Numerator	Total number of fatalities recorded in road accidents in a year	41
Denominator	Total population of the city	103000
Unit	Fatality per lakh	
Benchmark	<=2 persons per lakh	

Economic Pillar

Category 6: Economy and Employment

Indicator No: 6.1	Increase in VAT/GST collection	**-11.26**
Formula:	*Numerator / Denominator*	
Numerator	(Total VAT/GST collection during the year – Total VAT/GST collection during preceding year)	-59.63
Denominator	Total VAT/GST collection during preceding year	5.2979
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.2	Increase in collection of Professional Tax	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	(Total Professional Tax collection during the year – Total collection during preceding year)	Data Unavailable
Denominator	Total Professional Tax collection during preceding year	Data Unavailable
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.3	Increase in issuance of Construction Permits	**6300**
Formula:	*Numerator / Denominator*	

Numerator	(Number of permits issued during the year – Number of permits during preceding year)	126
Denominator	Number of construction permits during preceding year	0.02
Unit	Percentage	
Benchmark	City with the highest increase in collection (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 6.4	Unemployment Rate	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of unemployed persons (seeking or available for work)	Data Unavailable
Denominator	Total labour force in the city	Data Unavailable
Unit	Per 1000 persons	
Benchmark	City with the lowest unemployment rate (amongst cities in the same city-size classification as given in this document) will be treated as a benchmark	
Indicator No: 6.5	Percentage of vendors registered and provided formal spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of street vendors registered and provided formal spaces	NA
Denominator	Total number of vendors in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	

Physical Pillar

Category 7: Housing and Inclusiveness

Indicator No: 7.1	Percentage of Slum/EWS households covered through formal/ housing	**276.09**
Formula:	*Numerator / Denominator*	
Numerator	Total number of slum and EWS households covered through formal/affordable housing	23332
Denominator	Total number of slum and EWS households in the city	84.51
Unit	Percentage	
Benchmark	100%	

Indicator No: 7.2	Percentage of slum areas covered through basic services	**Non-Compuatble**
Formula:	*Numerator / Denominator*	
Description	Product of ratios of slum households with access to each of water supply, toilets and solid waste management	NA
Unit	Percentage	
Benchmark	100%	

Category 8: Public Open Spaces

Indicator No: 8.1	Per capita availability of green spaces	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area of green space (sq.m.)	63.93
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	10-12 sq.m. per capita	
Indicator No: 8.2	Per capita availability of public and recreational places	**621.33**
Formula:	*Numerator / Denominator*	
Numerator	Total area of public and recreational places (sq.m.)	63996740
Denominator	Total population of the city	103000
Unit	Square metres (sq.m.)	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 9: Mixed Land-use and Compactness

Indicator No: 9.1	Share of mixed land use area in overall city land use	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total area under mixed land use	1.187
Denominator	Total area of the city (total area of all land uses)	217000000
Unit	Percentage	
Benchmark	City with the highest percentage of mixed use (amongst cities in the same city-size classification) will	

	be treated as a benchmark	
Indicator No: 9.2	Net Density	**1481.78**
Formula:	*Numerator / Denominator*	
Numerator	Total population of the city	103000
Denominator	Area allocated for residential land use (in hectares)	69.511
Unit		
Benchmark	City with the highest net density (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 10: Power Supply

Indicator No: 10.1	Percentage of city population with authorized electrical service	**109.65**
Formula:	*Numerator / Denominator*	
Numerator	Number of authorized electrical connections at household level	41623
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	City with the highest per capita availability (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.2	Percentage of electrical connections covered through smart meters	**0.02**
Formula:	*Numerator / Denominator*	
Numerator	Number of electrical connections (residential and commercial) with smart meters	10
Denominator	Total number of electricity connections in the city	49838
Unit	Percentage	
Benchmark	100%	
Indicator No: 10.3	Average number of electrical interruptions per year	**Non-Computable**
Description	Total number of sustained electrical interruptions in a year	Data Unavailable
Unit	Number	

Benchmark	City with the lowest number of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.4	Average length of electrical interruptions per year	**NC**
Description	Sum of duration of all sustained electrical interruptions in a year (in hours)	Data Unavailable
Unit	Hours	
Benchmark	City with the lowest average length of outages (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.5	Percentage of total energy derived from renewable sources	**0**
Formula:	*Numerator / Denominator*	
Numerator	Total installed capacity for generation of renewable energy in the city	49
Denominator	Total energy consumption from all sources	61510253
Unit	Percentage	
Benchmark	10%	
Indicator No: 10.6	Energy consumption per unit - water supply and sewerage	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on water supply and sewerage services	0
Denominator	Total quantum of water and waste water handled during the period	Data Unavailable
Unit	kWh per million litres	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.7	Energy consumption per unit – street lighting	**NC**
Formula:	*Numerator / Denominator*	
Numerator	Energy consumption on street lighting	Data Unavailable
Denominator	Total number of street light installations	7105

Unit	kWh per light installation	
Benchmark	City with the lowest per unit consumption (amongst cities in the same city-size classification) will be treated as a benchmark	
Indicator No: 10.8	Percentage of new and redeveloped buildings following green building norms	**0**
Formula:	*Numerator / Denominator*	
Numerator	Built up area of new/redeveloped buildings completed that have received green ratings	0
Denominator	Total built up area of all new/redeveloped buildings completed during the same year	37055
Unit	Percentage	
Benchmark	80%	
Indicator No: 10.9	Total energy consumption per capita	**0.79**
Formula:	*Numerator / Denominator*	
Numerator	Total energy consumption (for all uses) in the city	61510253
Denominator	Total population of the city	103000
Unit	kWh per capita	
Benchmark	City with the lowest per capita consumption (amongst cities in the same city-size classification) will be treated as a benchmark	

Category 11: Transport and Mobility

Indicator No: 11.1	Geographical coverage of public transport	**0.06**
Formula:	*Numerator / Denominator*	
Numerator	Total length of public transport network (km)	20
Denominator	Total area of the city (sq.km)	217
Unit	Transport length (kms) per square km	
Benchmark	>=1	
Indicator No: 11.2	Availability of public transport	**8.39**
Formula:	*Numerator / Denominator*	
Numerator	Average number of public transport vehicles available per day	864
Denominator	Total population of the city	103000
Unit	Number per 1000 persons	
Benchmark	>=0.6	

Indicator No: 11.3	Mode share of public transport	**To be computed**
Description	Mode share of public transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.4	Percentage of road network with dedicated bicycle tracks	**15.24**
Formula:	*Numerator / Denominator*	
Numerator	Total length of bicycle network	30
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	>=50	
Indicator No: 11.5	Percentage of interchanges with bicycle parking facilities	**56.52**
Formula:	*Numerator / Denominator*	
Numerator	Total number of major transport interchanges with bicycle parking facility (within 250m radius)	13
Denominator	Total number of major transport interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.6	Mode share of non-motorised transport[1]	**To be computed**
Description	Mode share of non-motorised transport	Data Unavailable
Unit	Percentage	
Benchmark		
Indicator No: 11.7	Availability of Passenger Information System	**0.57**
Formula:	Numerator / Denominator	
Numerator	Total number of major interchanges with PIS	13
Denominator	Total number of major interchanges in the city	23
Unit	Percentage	
Benchmark	>=75	

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[1] The data for this indicator will be computed based on the primary data which is currently being collected

Indicator No: 11.8	Extent of signal synchronisation	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of signalised intersections that are synchronised	0
Denominator	Total number of signalised intersections in the city	0
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.9	Availability of paid parking spaces	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total available on-street paid parking spaces in the city	NA
Denominator	Total available on-street parking spaces in the city	NA
Unit		
Benchmark		
Indicator No: 11.10	Percentage coverage of footpaths – wider than 1.2m	**10.16**
Formula:	*Numerator / Denominator*	
Numerator	Total length of footpaths (wider than 1.2 m) available in the city	40
Denominator	Total length of road network in the city	393.62
Unit	Percentage	
Benchmark	>=75	
Indicator No: 11.11	Percentage of traffic intersections with pedestrian crossing facilities	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total number of intersections with pedestrian crossing facilities on major roads	Data Unavailable
Denominator	Total number of junctions/ intersections on major roads in the city	Data Unavailable
Unit	Percentage	
Benchmark	100%	
Indicator No: 11.12	Extent to which universal accessibility is incorporated in public rights-of-way	**10.29**
Formula:	*Numerator / Denominator*	
Numerator	Number of public right-of-way areas designed as per universal design principles	18

Denominator	Total number of public right-of-way areas in the city	175
Unit	Percentage	
Benchmark	100%	

Category 12: Assured Water Supply

Indicator No: 12.1	Household level coverage of direct water supply connections	**100**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households with direct water supply connection	37959
Denominator	Total number of households in the city	37959
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.2	Per capita supply of water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total quantity of water supplied into the distribution system	Data Unavailable
Denominator	Total population of the city	103000
Unit	Litres per capita per day (lpcd)	
Benchmark	135 lpcd	
Indicator No: 12.3	Quality of water supplied[2]	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of samples meeting or exceeding specified potable water standards	30
Denominator	Total number of samples tested for water quality	36
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.4	Level of non-revenue water – NRW	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of water put into distribution system (mld) - Quantum of water sold (mld)	Blank
Denominator	Quantum of water put into the distribution system (mld)	Data Unavailable

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[2] The data for this indicator will be computed based on the primary data which is currently being collected

Unit	Percentage	
Benchmark	Less than 15%	
Indicator No: 12.5	Percentage of water connections covered through meters	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Number of metered water connections	NA
Denominator	Total number of water connections in the city	38130
Unit	Percentage	
Benchmark	100%	
Indicator No: 12.6	Percentage of plots with rainwater harvesting facility	**18.03**
Formula:	*Numerator / Denominator*	
Numerator	Number of new developments/redevelopments (of designated plot size), commercial and public buildings with RWH facility	11
Denominator	Total number of new developments/redevelopments (of designated plot size), commercial and public buildings in the city	61
Unit	Percentage	
Benchmark	100% of all new developments/ redevelopments with minimum plot size of 300 sq. m., and all commercial and public buildings should have rainwater harvesting facilities	

Category 13: Waste Water Management

Indicator No: 13.1	Coverage of toilets	**112.24**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with access to individual and/or community toilets	38126
Denominator	Total number of properties in the city	33967
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.2	Coverage of sewerage network and/or septage	**39.64**
Formula:	*Numerator / Denominator*	
Numerator	Total number of properties with connection to waste water management systems	13466
Denominator	Total number of properties in the city	33967

Unit	Percentage	
Benchmark	100%	
Indicator No: 13.3	Collection efficiency of sewerage network	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total waste water collected per day	NA
Denominator	Total waste water generated in the city per day	NA
Unit	Percentage	
Benchmark	100%	
Indicator No: 13.4	Extent of reuse and recycling of waste water	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Quantum of waste water recycled or reused per day	NA
Denominator	Total waste water received at treatment plants per day	NA
Unit	Percentage	
Benchmark	20% or more	
Indicator No: 13.5	Coverage of storm water drains	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Total length of covered primary, secondary and tertiary drains (of pucca construction)	NA
Denominator	Total length of road network in the city	196.81
Unit	Percentage	
Benchmark	100%	

Category 14: Solid waste management

Indicator No: 14.1	Household level coverage of municipal solid waste collection	**99.79**
Formula:	*Numerator / Denominator*	
Numerator	Total number of households and establishments covered through doorstep collection	37959
Denominator	Total number of households and establishments in the city	38040
Unit	Percentage	
Benchmark	100% door to door collection	
Indicator No: 14.2	Efficiency of collection of municipal solid waste	**87.5**
Formula:	*Numerator / Denominator*	
Numerator	Total quantum of MSW collected by the ULB or private operator	14

Denominator	Total quantum of MSW generated in the city	16
Unit	Percentage	
Benchmark	100%	
Indicator No: 14.3	Extent of municipal solid waste recovered through reuse	**Non-Computable**
Formula:	*Numerator / Denominator*	
Numerator	Average quantum of MSW that is processed or recycled (tons per month)	NA
Denominator	Average MSW generated in the city (tons per month)	420
Unit	Percentage	
Benchmark	80% or more	

Category 15: Reduced Pollution

Indicator No: 15.1	**Concentration of SO2 - air pollution**	**8.5**
Description	Annual mean concentration OR Mean concentration over 24 hours of SO2	8.5
Unit	µg/m3	
Benchmark	Annual mean concentration of 50 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.2	**Concentration of NO2 - air pollution**	**28.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of NO2	28.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 40 µg/m3 OR Mean concentration over 24 hours of 80 µg/m3	
Indicator No: 15.3	**Concentration of PM10 - air pollution**	**74.6**
Description	Annual mean concentration OR Mean concentration over 24 hours of PM10	74.6
Unit	µg/m3	
Benchmark	Annual mean concentration of 60 µg/m3 OR Mean concentration over 24 hours of 100 µg/m3	
Indicator No: 15.4	**Level of noise pollution**	**To be computed**
Formula:	*Numerator / Denominator*	
Numerator	Number of noise samples meeting acceptable noise levels	30
Denominator	Total number of noise samples	33
Unit	Percentage	

Benchmark		
Indicator No: 15.5	**Quality of water in public surface water bodies**	**100**
Formula:	*Numerator / Denominator*	
Numerator	Number of tested samples meeting prescribed standards	30
Denominator	Total number of samples tested	30
Unit	Percentage	
Benchmark	100%	

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

DURGAPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

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Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

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The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
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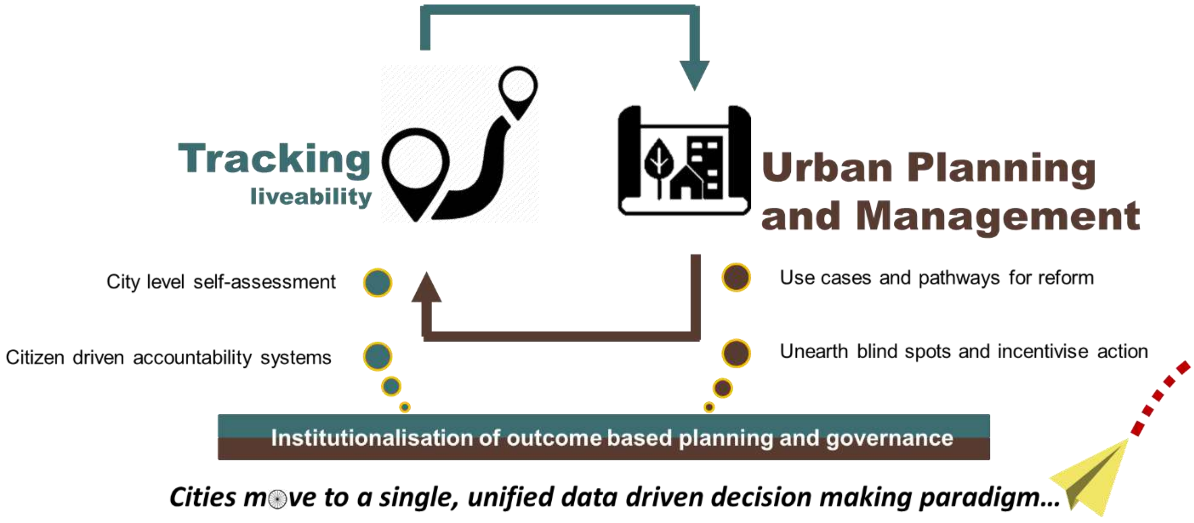
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to orient the cities and familairise them about the process of liveability assessment. City did not provide the data post log in on the online portal due to lack of directive at the state level. The team followed up at the state level beginning early March until end of April with senior team members travelling to the state and Ministry's intervention. Below is the summary of follow up meetings with Urban development department and SUDA at state level.

Municipal commissioner, Durgapur Municipal corporation was contacted and log in to smart net portal was done. However, without State level permissions and directive, city officials were not appreciative of follow up and expressed inability to cooperate.

Date	Departments	Key Discussions
07 March 2018 09 March 2018 12 March 2018 13 March 2018	PA to Principal secretary (UD) Joint Secretary Urban Development Department Government of West Bengal	State Workshop schedule
13 March 2018	Additional Director, State Urban Development Agency, West Bengal	State Workshop for liveability Assessment City login
15 March 2018 16 March 2018	PA to Chief Secretary, Office of Chief Secretary	Permission for state workshop Appointing SUDA as nodal agency for liveability assessment
19 March 2018	Director, SUDA, West Bengal	Discussion on whether SUDA has got any intimation from PS/CS office to act as nodal agency
21 March 2018	Principal Secretary (UD) office	Understand the scope of assessment process in WB
22 March 2018	Principal Secretary (UD) Director, SUDA Chief Manager, Planning and Monitoring (SUDA)	Schedule meeting to discuss the Workshop and subsequent requirements for the Liveability Assessment study

Date	Departments	Key Discussions
23 March 2018	Director, Additional Director and Chief Manager, SUDA	SUDA officials shared that March month was not convenient to organise workshop and 4th April 2018 was scheduled as attentive date for workshop. Files forwarded to Principal Secretary to approve list of participants
26 March 2018 27 March 2018 28 March 2018	Director, Additional Director and Chief Manager, SUDA	Follow up to know the Progress on workshop date and assessment process
29 March 2018	Director, SUDA	Inclusion of New Town Kolkata in assessment process
30 March 2018 31 March 2018 2 April 2018	SUDA office	Follow up to initiate assessment process
3 April 2018 (From Consortium Ms. Sujaya Rathi travelled to Kolkata to discuss on liveability assessment process)	Chief Manager, SUDA	Brief note on liveability index was faxed to CS office to expedite the process
4 April 2018 5 April 2018	CS Office , WB PS (UD) office, WB	Follow up to initiate assessment process
6 April 2018	PS Office, WB	SUDA file was marked to Minister of State, Mr Firhad Hakim
7 April 2018 to 15 April 2018	PS (UD) office and SUDA, West Bengal	Follow up to initiate assessment process

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

HOWRAH

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

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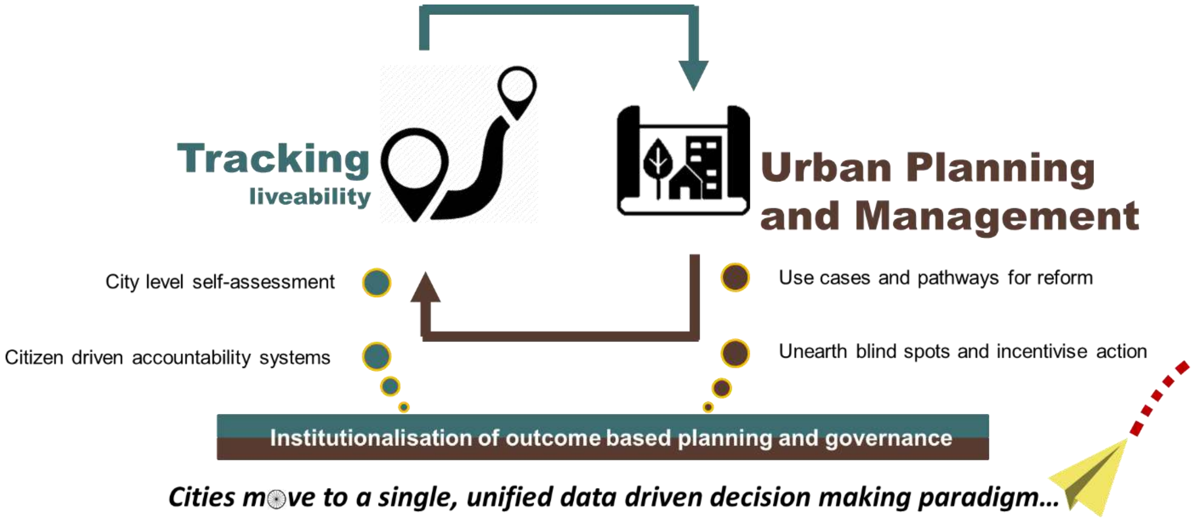
Tracking
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Use cases and pathways for reform
Unearth blind spots and incentivise action
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Cities move to a single, unified data driven decision making paradigm…

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The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
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		3.4 Percentage of schools with access to digital education
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		4.3 Average response time in case of health emergencies
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	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

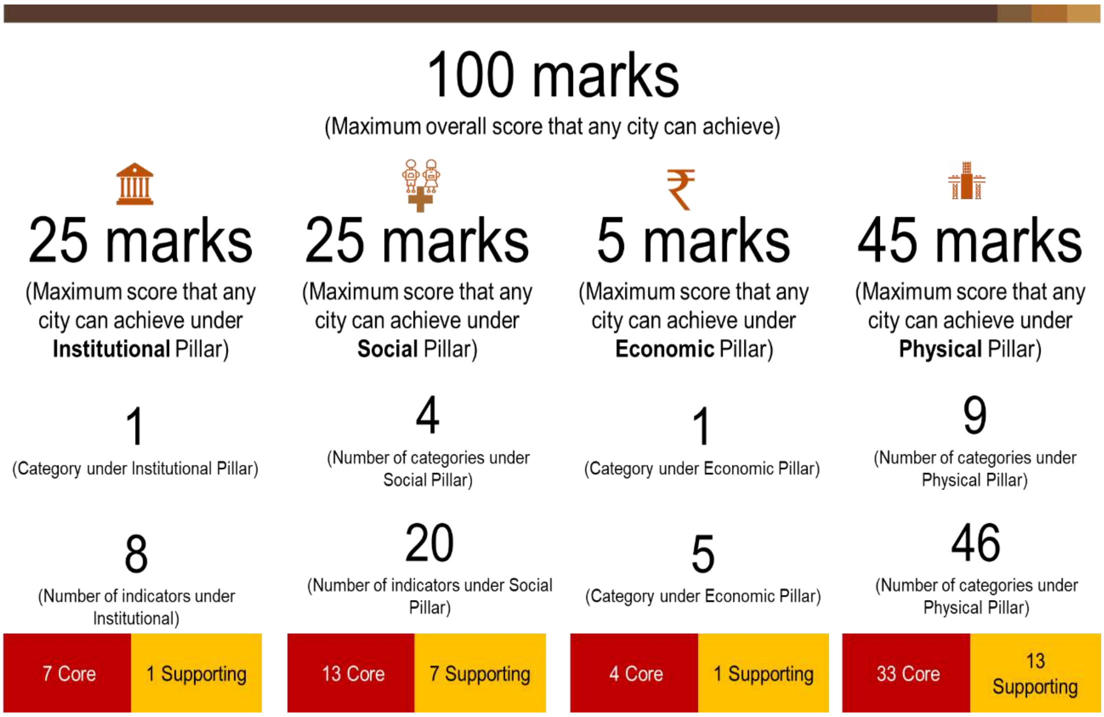
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to orient the cities and familairise them about the process of liveability assessment. City did not provide the data post log in on the online portal due to lack of directive at the state level. The team followed up at the state level beginning early March until end of April with senior team members travelling to the state and Ministry's intervention. Below is the summary of follow up meetings with Urban development department and SUDA at state level.

Without State level permissions and directive, city officials were not appreciative of follow up and expressed inability to cooperate.

Date	Departments	Key Discussions
07 March 2018 09 March 2018 12 March 2018 13 March 2018	PA to Principal secretary (UD) Joint Secretary Urban Development Department Government of West Bengal	State Workshop schedule
13 March 2018	Additional Director, State Urban Development Agency, West Bengal	State Workshop for liveability Assessment City login
15 March 2018 16 March 2018	PA to Chief Secretary, Office of Chief Secretary	Permission for state workshop Appointing SUDA as nodal agency for liveability assessment
19 March 2018	Director, SUDA, West Bengal	Discussion on whether SUDA has got any intimation from PS/CS office to act as nodal agency
21 March 2018	Principal Secretary (UD) office	Understand the scope of assessment process in WB
22 March 2018	Principal Secretary (UD) Director, SUDA Chief Manager, Planning and Monitoring (SUDA)	Schedule meeting to discuss the Workshop and subsequent requirements for the Liveability Assessment study
23 March 2018	Director, Additional Director	SUDA officials shared that March

Date	Departments	Key Discussions
	and Chief Manager, SUDA	month was not convenient to organise workshop and 4th April 2018 was scheduled as attentive date for workshop. Files forwarded to Principal Secretary to approve list of participants
26 March 2018 27 March 2018 28 March 2018	Director, Additional Director and Chief Manager, SUDA	Follow up to know the Progress on workshop date and assessment process
29 March 2018	Director, SUDA	Inclusion of New Town Kolkata in assessment process
30 March 2018 31 March 2018 2 April 2018	SUDA office	Follow up to initiate assessment process
3 April 2018 (From Consortium Ms. Sujaya Rathi travelled to Kolkata to discuss on liveability assessment process)	Chief Manager, SUDA	Brief note on liveability index was faxed to CS office to expedite the process
4 April 2018 5 April 2018	CS Office , WB PS (UD) office, WB	Follow up to initiate assessment process
6 April 2018	PS Office, WB	SUDA file was marked to Minister of State, Mr Firhad Hakim
7 April 2018 to 15 April 2018	PS (UD) office and SUDA, West Bengal	Follow up to initiate assessment process

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KOLKATA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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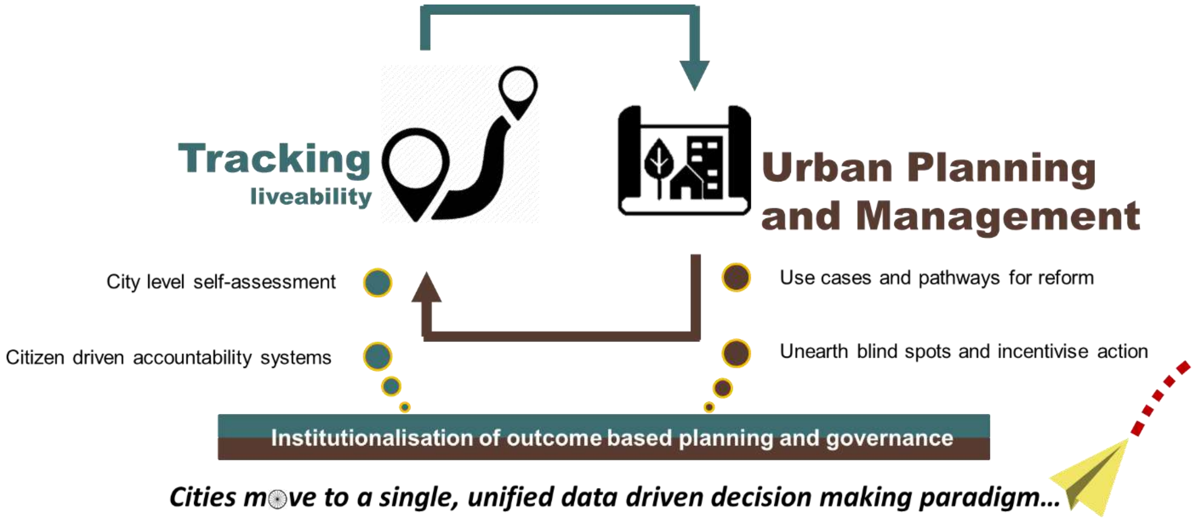
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Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

2.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
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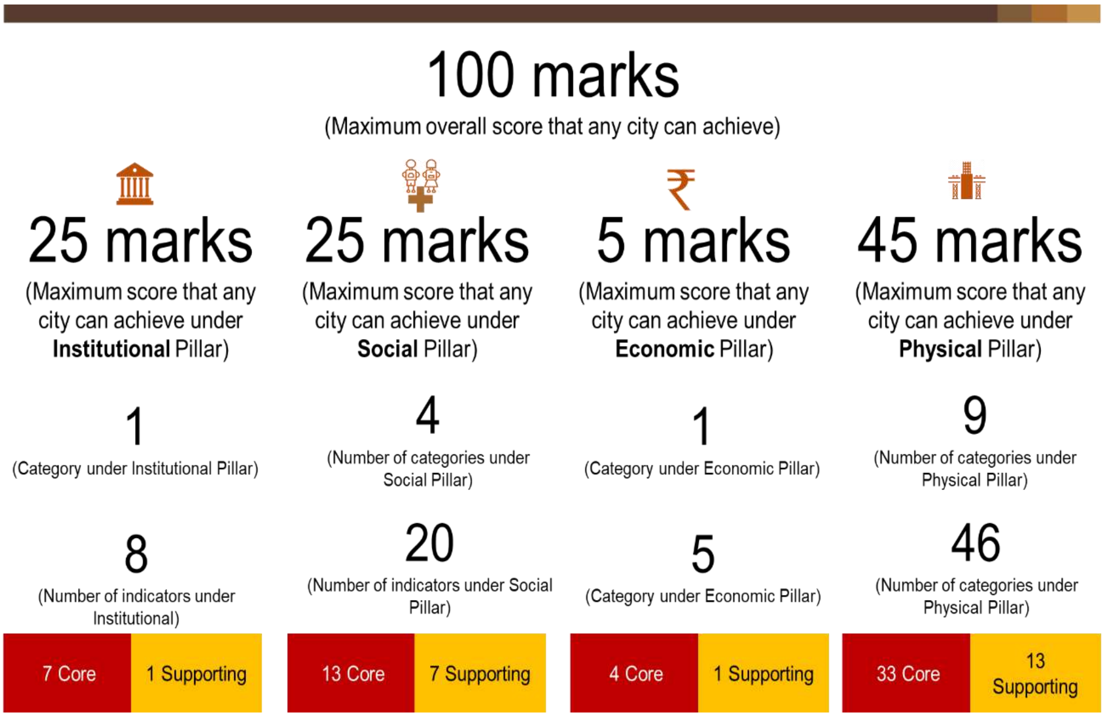
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

2.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

2.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to orient the cities and familairise them about the process of liveability assessment. City did not provide the data post log in on the online portal due to lack of directive at the state level. The team followed up at the state level beginning early March until end of April with senior team members travelling to the state and Ministry's intervention. Below is the summary of follow up meetings with Urban development department and SUDA at state level.

Date	Departments	Key Discussions
07 March 2018 09 March 2018 12 March 2018 13 March 2018	PA to Principal secretary (UD) Joint Secretary Urban Development Department Government of West Bengal	State Workshop schedule
13 March 2018	Additional Director, State Urban Development Agency, West Bengal	State Workshop for liveability Assessment City login
15 March 2018 16 March 2018	PA to Chief Secretary, Office of Chief Secretary	Permission for state workshop Appointing SUDA as nodal agency for liveability assessment
19 March 2018	Director, SUDA, West Bengal	Discussion on whether SUDA has got any intimation from PS/CS office to act as nodal agency
21 March 2018	Principal Secretary (UD) office	Understand the scope of assessment process in WB
22 March 2018	Principal Secretary (UD) Director, SUDA Chief Manager, Planning and Monitoring (SUDA)	Schedule meeting to discuss the Workshop and subsequent requirements for the Liveability Assessment study
23 March 2018	Director, Additional Director and Chief Manager, SUDA	SUDA officials shared that March month was not convenient to

Date	Departments	Key Discussions
		organise workshop and 4th April 2018 was scheduled as attentive date for workshop. Files forwarded to Principal Secretary to approve list of participants
26 March 2018 27 March 2018 28 March 2018	Director, Additional Director and Chief Manager, SUDA	Follow up to know the Progress on workshop date and assessment process
29 March 2018	Director, SUDA	Inclusion of New Town Kolkata in assessment process
30 March 2018 31 March 2018 2 April 2018	SUDA office	Follow up to initiate assessment process
3 April 2018 (From Consortium Ms. Sujaya Rathi travelled to Kolkata to discuss on liveability assessment process)	Chief Manager, SUDA	Brief note on liveability index was faxed to CS office to expedite the process
4 April 2018 5 April 2018	CS Office , WB PS (UD) office, WB	Follow up to initiate assessment process
6 April 2018	PS Office, WB	SUDA file was marked to Minister of State, Mr Firhad Hakim
7 April 2018 to 15 April 2018	PS (UD) office and SUDA, West Bengal	Follow up to initiate assessment process

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

NEW TOWN KOLKATA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

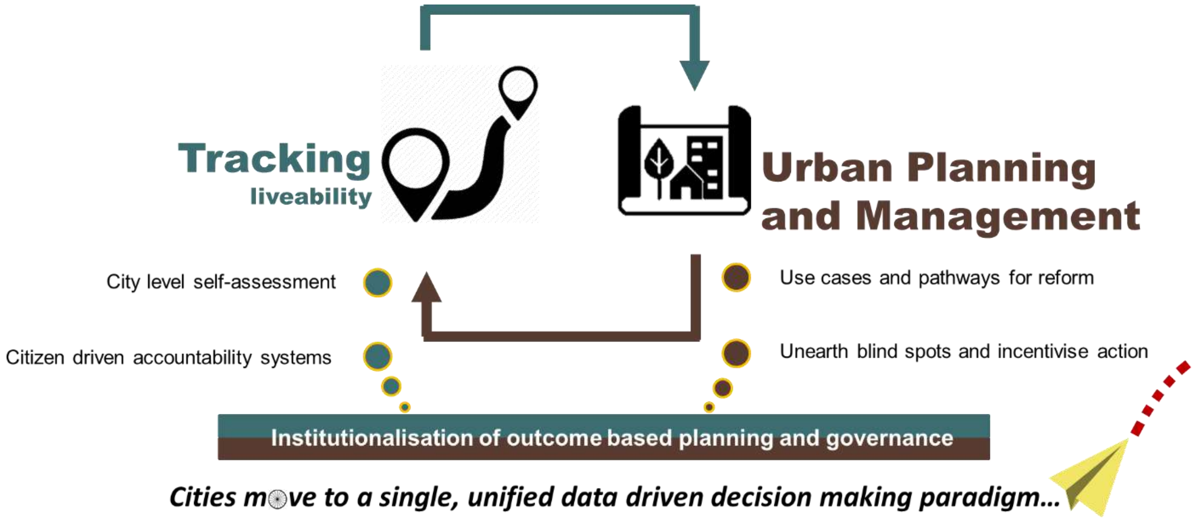
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

2.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
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	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
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	10. Power Supply	10.1 Percentage of city population with authorized electrical services
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Pillars of Comprehensive Development	Category	Indicators
		through smart meters
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		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
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Pillars of Comprehensive Development	Category	Indicators
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The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

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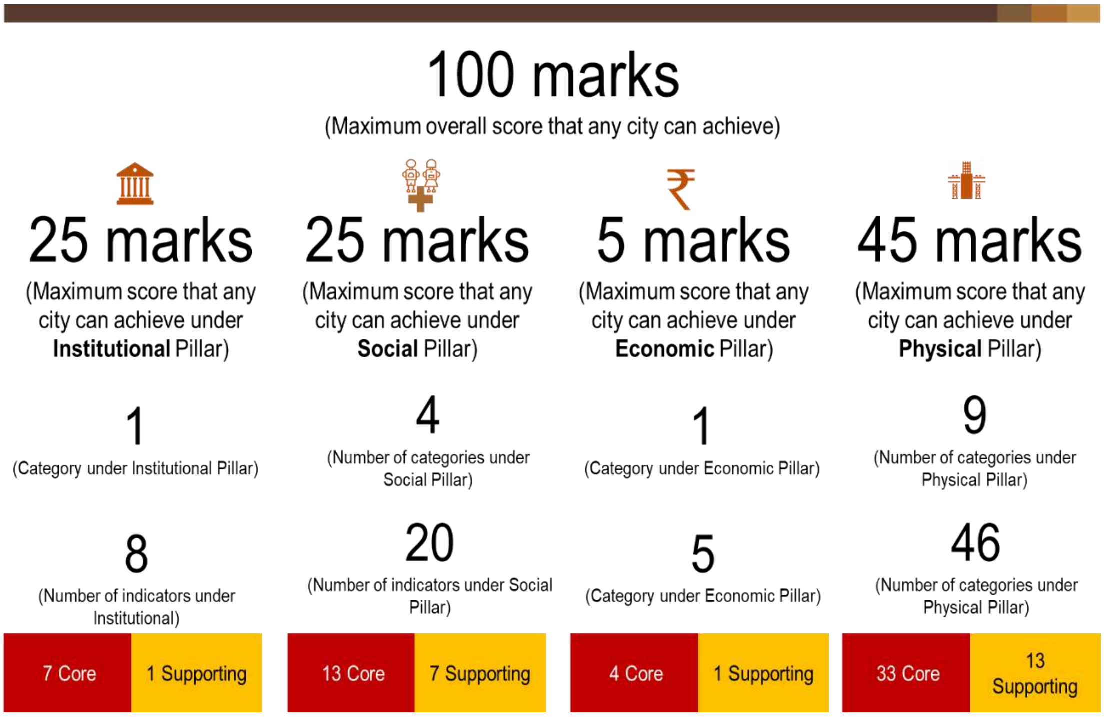

100 marks

(Maximum overall score that any city can achieve)

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

3. City Reconnaissance Meetings:

State level workshop was necessary to orient the cities and familairise them about the process of liveability assessment. City did not provide the data post log in on the online portal due to lack of directive at the state level. The team followed up at the state level beginning early March until end of April with senior team members travelling to the state and Ministry's intervention. Below is the summary of follow up meetings with Urban development department and SUDA at state level.

Without State level permissions and directive, city officials were not appreciative of follow up and expressed inability to cooperate.

Date	Departments	Key Discussions
07 March 2018 09 March 2018 12 March 2018 13 March 2018	PA to Principal secretary (UD) Joint Secretary Urban Development Department Government of West Bengal	State Workshop schedule
13 March 2018	Additional Director, State Urban Development Agency, West Bengal	State Workshop for liveability Assessment City login
15 March 2018 16 March 2018	PA to Chief Secretary, Office of Chief Secretary	Permission for state workshop Appointing SUDA as nodal agency for liveability assessment
19 March 2018	Director, SUDA, West Bengal	Discussion on whether SUDA has got any intimation from PS/CS office to act as nodal agency
21 March 2018	Principal Secretary (UD) office	Understand the scope of assessment process in WB
22 March 2018	Principal Secretary (UD) Director, SUDA Chief Manager, Planning and Monitoring (SUDA)	Schedule meeting to discuss the Workshop and subsequent requirements for the Liveability Assessment study

Date	Departments	Key Discussions
23 March 2018	Director, Additional Director and Chief Manager, SUDA	SUDA officials shared that March month was not convenient to organise workshop and 4th April 2018 was scheduled as attentive date for workshop. Files forwarded to Principal Secretary to approve list of participants
26 March 2018 27 March 2018 28 March 2018	Director, Additional Director and Chief Manager, SUDA	Follow up to know the Progress on workshop date and assessment process
29 March 2018	Director, SUDA	Inclusion of New Town Kolkata in assessment process
30 March 2018 31 March 2018 2 April 2018	SUDA office	Follow up to initiate assessment process
3 April 2018 (From Consortium Ms. Sujaya Rathi travelled to Kolkata to discuss on liveability assessment process)	Chief Manager, SUDA	Brief note on liveability index was faxed to CS office to expedite the process
4 April 2018 5 April 2018	CS Office , WB PS (UD) office, WB	Follow up to initiate assessment process
6 April 2018	PS Office, WB	SUDA file was marked to Minister of State, Mr Firhad Hakim
7 April 2018 to 15 April 2018	PS (UD) office and SUDA, West Bengal	Follow up to initiate assessment process

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs
Government of India

GANDHINAGAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

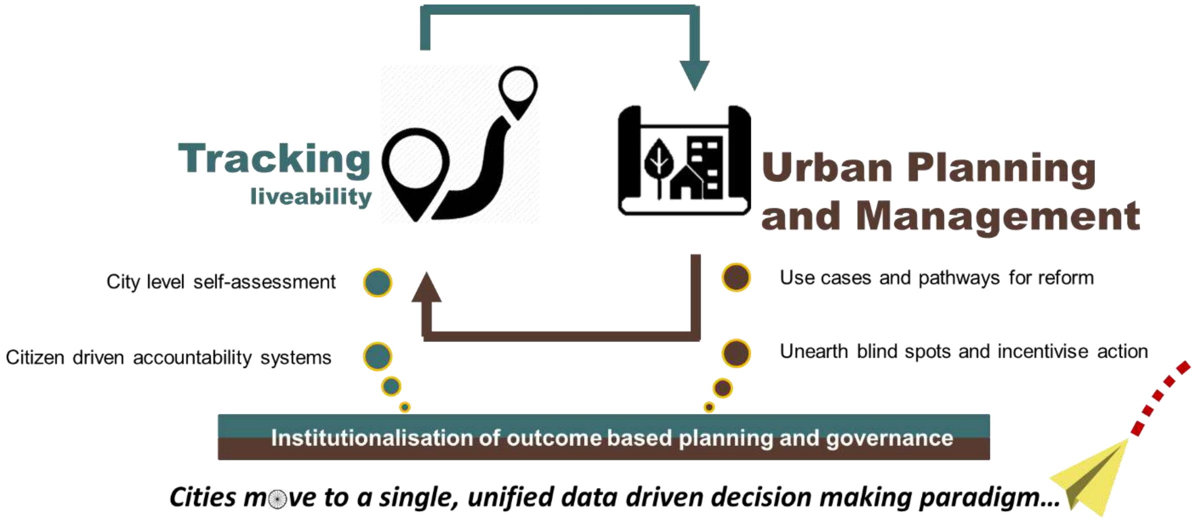
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

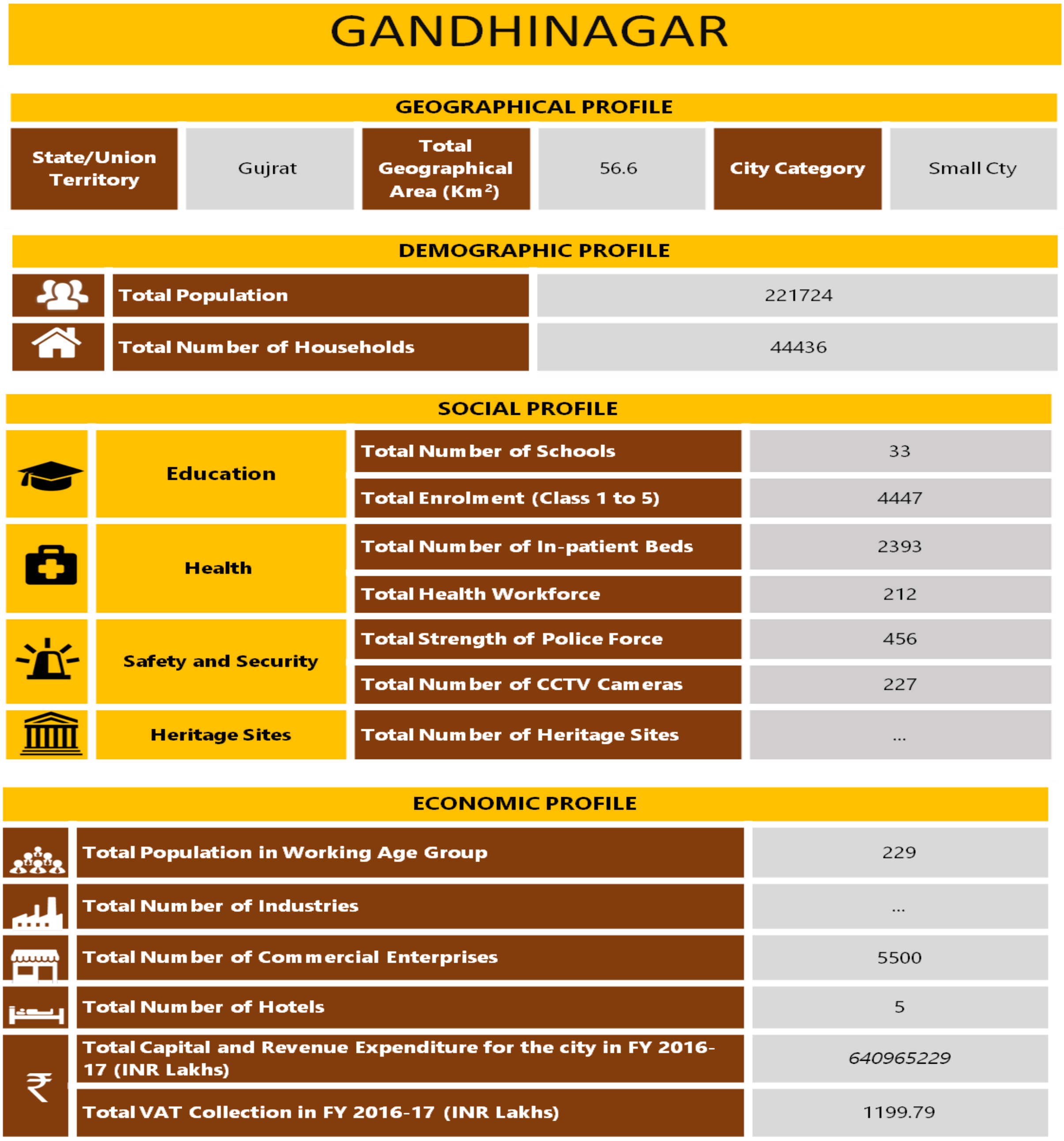
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GANDHINAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km²)**	56.6	**City Category**	Small Cty

DEMOGRAPHIC PROFILE

Total Population	221724
Total Number of Households	44436

SOCIAL PROFILE

Education	**Total Number of Schools**	33
	Total Enrolment (Class 1 to 5)	4447
Health	**Total Number of In-patient Beds**	2393
	Total Health Workforce	212
Safety and Security	**Total Strength of Police Force**	456
	Total Number of CCTV Cameras	227
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	229
Total Number of Industries	...
Total Number of Commercial Enterprises	5500
Total Number of Hotels	5
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	*640965229*
Total VAT Collection in FY 2016-17 (INR Lakhs)	1199.79

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	62
	Total Number of Water Connection	43464
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	42781
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	65
	Total number of households covered through door-to-door collection of solid waste	42000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	49
	Daily average quantum of waste water treated by STPs in the city (MLD)	49
Electricity	**Total number of authorized electrical connections in the city**	66574
	Total electricity supplied to the city (kWh)	304310000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	2142000
Roads and Transport	**Total Length of Road Network in the City (Km)**	515.59
	Total length of arterial and sub-arterial road network in the city (Km)	515.59
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	70

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water	13.1 Coverage of toilets

Pillars of Comprehensive Development	Category	Indicators
	Management	13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

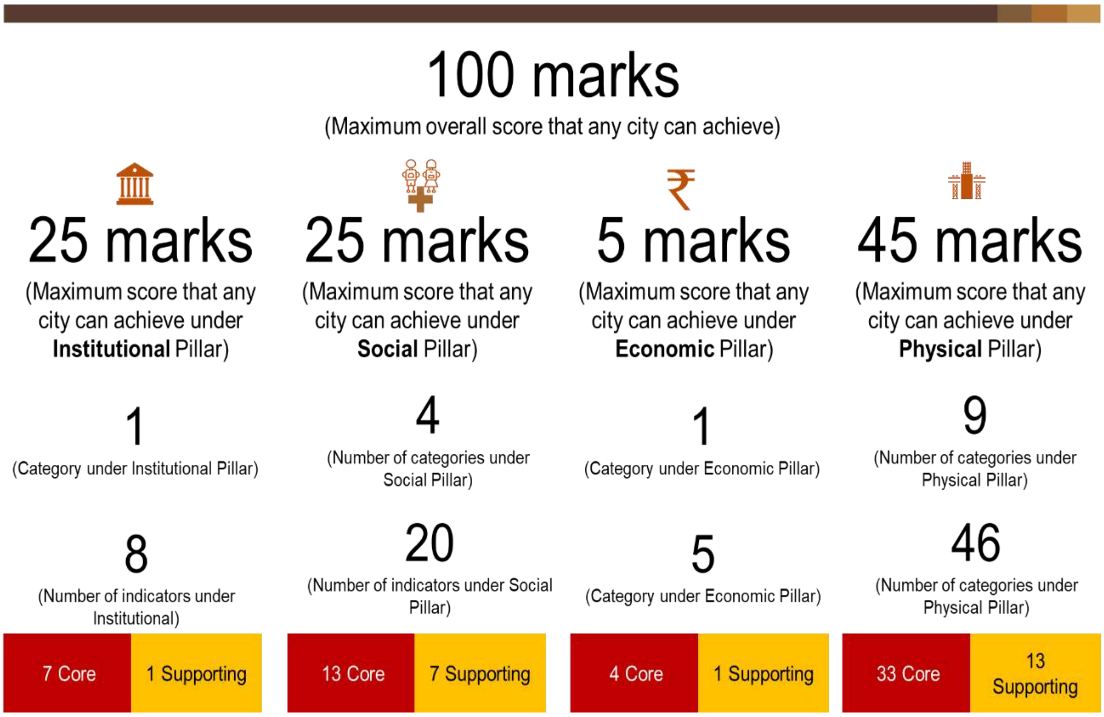
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Ass.Account
Urban Local Body	For Park and Recreation Related Questions	-
Urban Local Body	For Water Supply and Drainage related questions	City engineer
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	-
Urban Local Body	For Housing related data	-
Urban Local Body	For Building plan related data	Town planing
Urban Local Body	For Roads related data	City engineer
Urban Local Body	For Solid waste management related data	Solid waste department
Urban Local Body	For IT services related data	Tex department
Urban Local Body	For Vendor committee related data	-
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	-
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	-
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	
	Rain water harvesting	
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Ugvcl , torrent power

Designated data owners	Subcategories	Data owners at city level
State Disaster management authority		Fire department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	-
	Disease Prevalence	
	Health Infrastructure	
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Tex department
Town and Country Planning Department	Land Use	City engineer
Traffic and Police Department		Traffic and police department
Transport Authorities	Buses	Tex department
	Registered Vehicles	-
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 53 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	12
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	3
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	29
Total	53*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

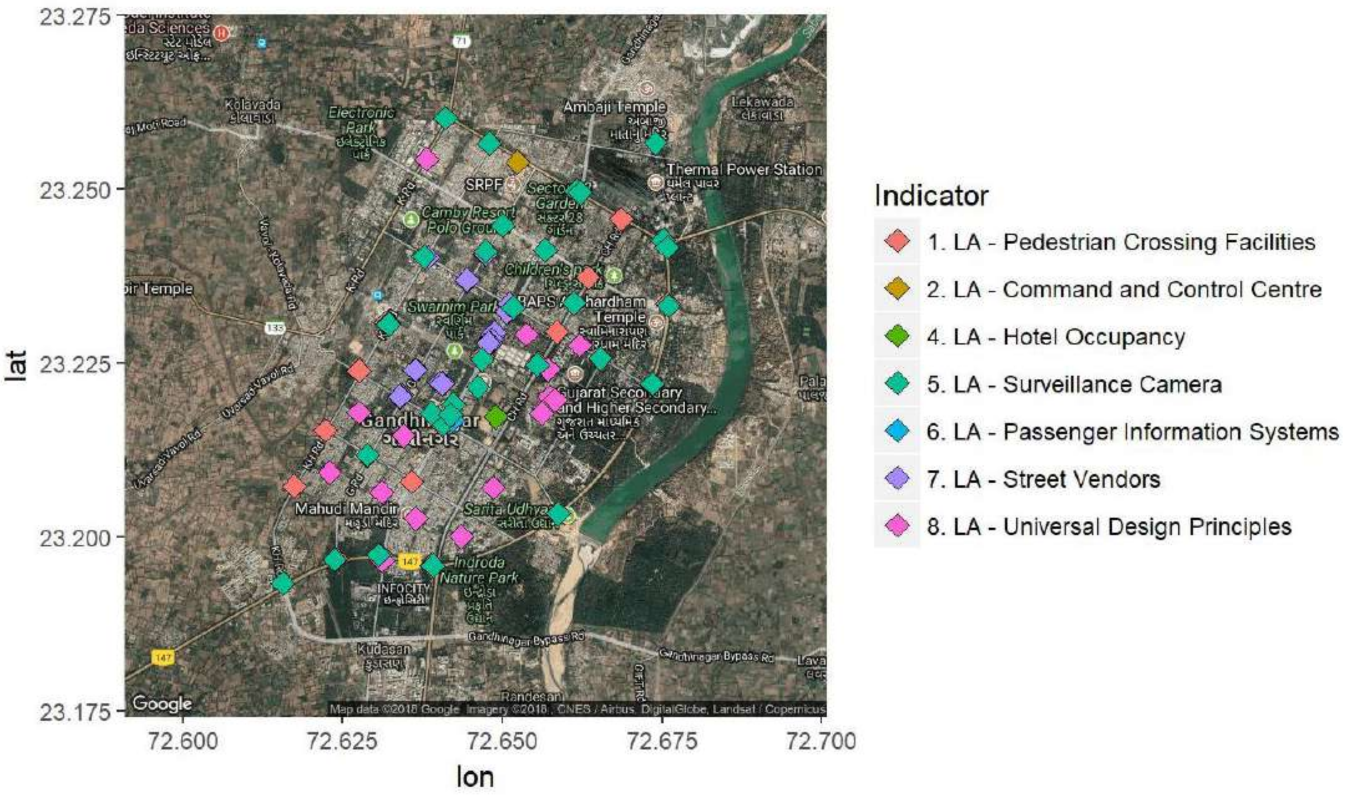
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.275
23.250
23.225
23.200
23.175
lat
72.600
72.625
72.650
72.675
72.700
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Electronic Park
Ambaji Temple
Thermal Power Station
SRPF
Sector 28 Garden
Children's park
Swarnim Park
Akshardham Temple
Gujarat Secondary and Higher Secondary...
Gandhinagar
Mahudi Mandir
Sarita Udhyan
Indroda Nature Park
INFOCITY
Kudasan
Randesan
Kolavada
Lekawada

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	71.46%
Identity & Culture	49%
Education	68%
Health	71%
Safety & Security	47%
Economy & Employment	16%
Housing & Inclusiveness	26%
Public Open Spaces	7%
Mixed Land Use & Compactness	11%
Power Supply	62%
Transport & Mobility	22%
Assured Water Supply	62%
Waste Water Management	40%
Solid Waste Management	30%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

GANGTOK

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in

public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.

#	Challenges	Proposed Solutions
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

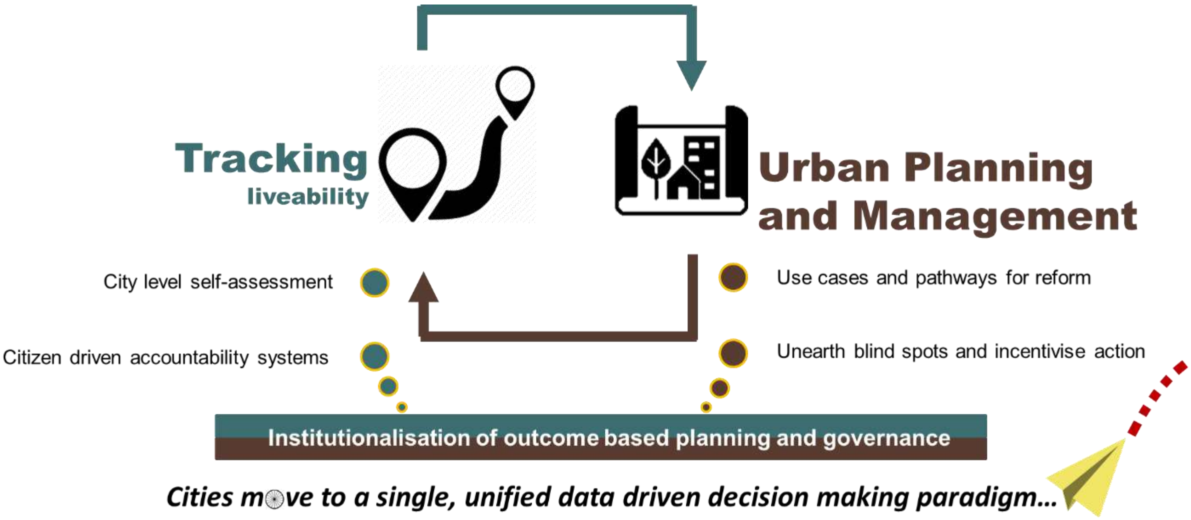
#	Challenges	Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

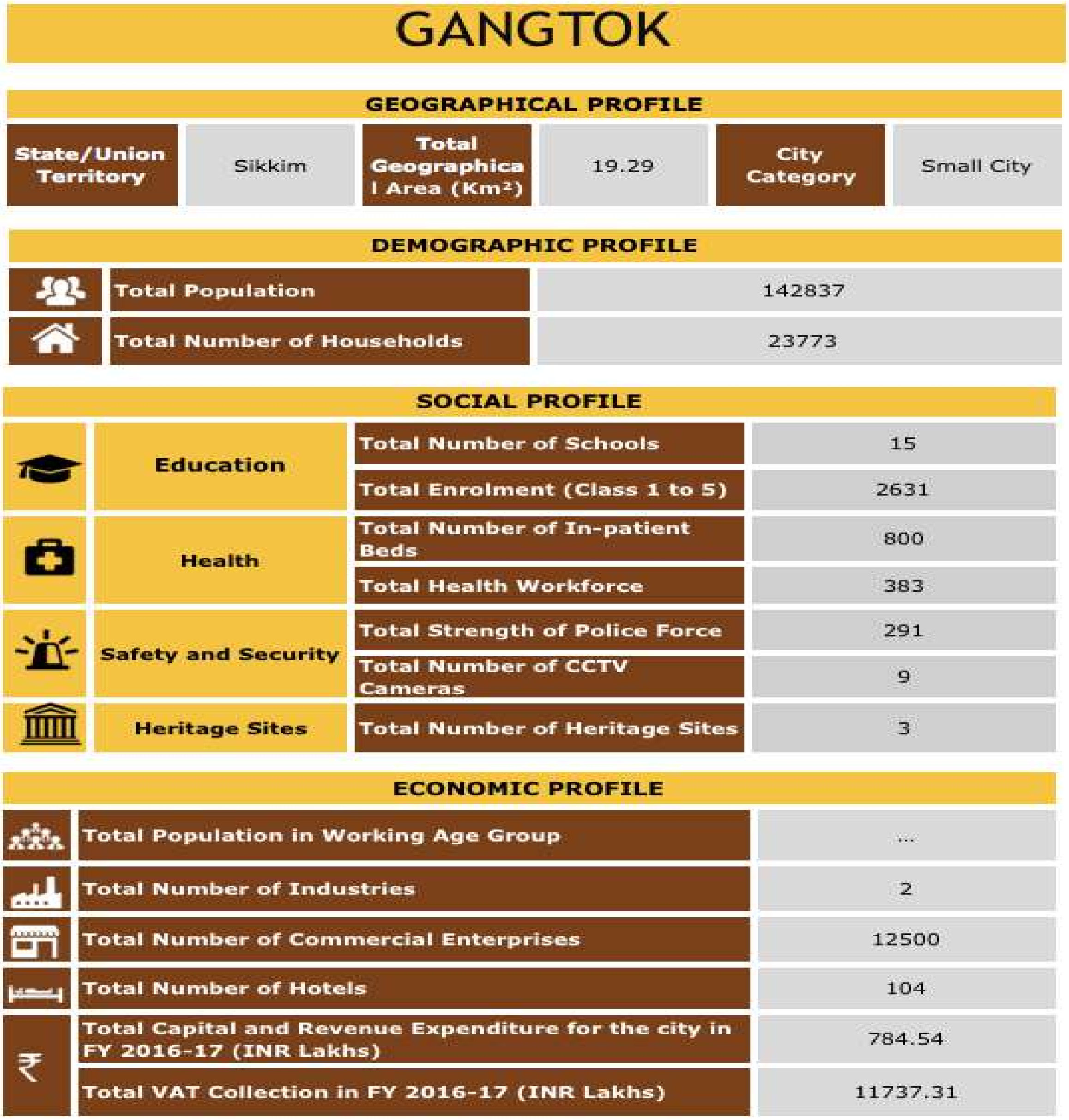

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GANGTOK

GEOGRAPHICAL PROFILE

State/Union Territory	Sikkim	Total Geographical Area (Km²)	19.29	City Category	Small City

DEMOGRAPHIC PROFILE

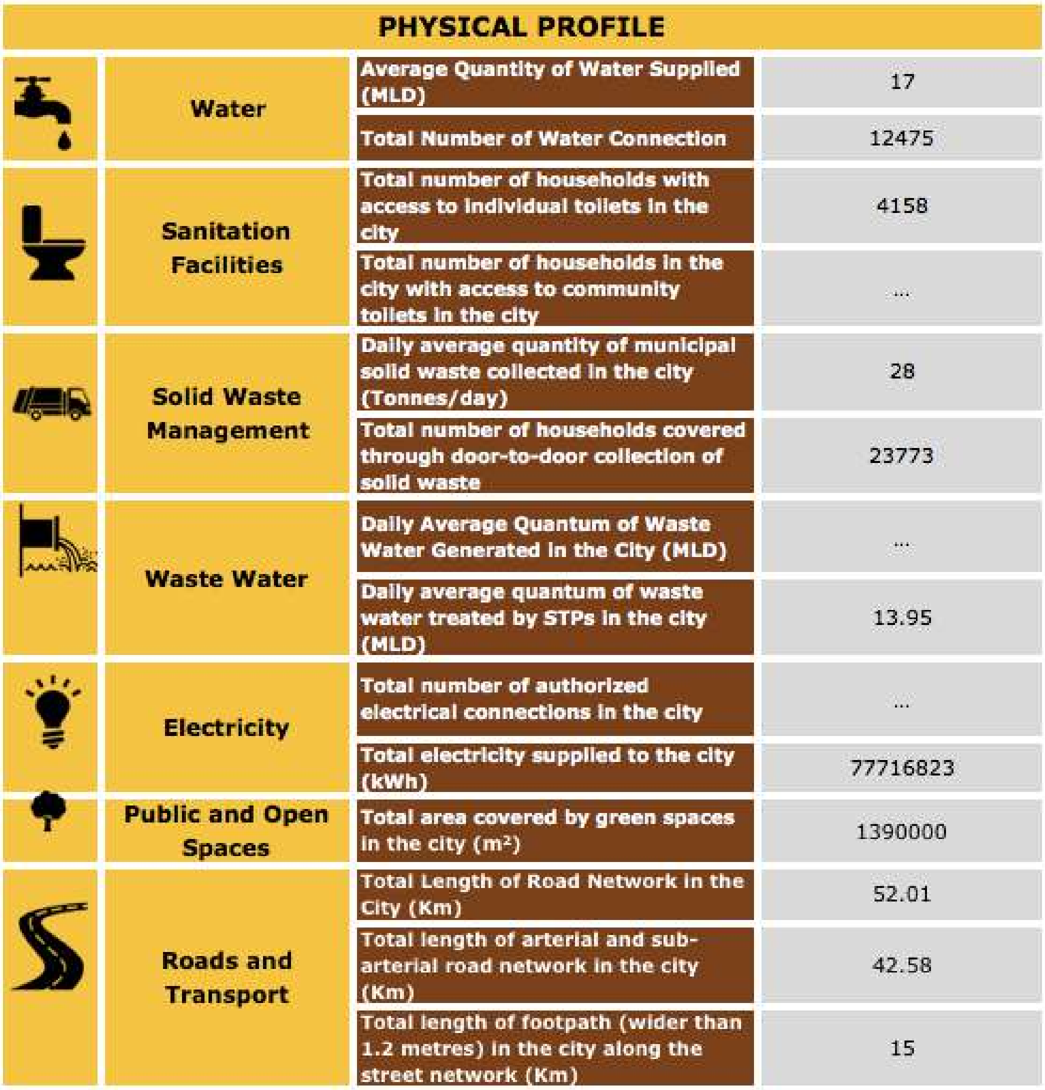
Total Population	142837
Total Number of Households	23773

SOCIAL PROFILE

Education	Total Number of Schools	15
	Total Enrolment (Class 1 to 5)	2631
Health	Total Number of In-patient Beds	800
	Total Health Workforce	383
Safety and Security	Total Strength of Police Force	291
	Total Number of CCTV Cameras	9
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	2
Total Number of Commercial Enterprises	12500
Total Number of Hotels	104
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	784.54
Total VAT Collection in FY 2016-17 (INR Lakhs)	11737.31



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	17
	Total Number of Water Connection	12475
Sanitation Facilities	Total number of households with access to individual toilets in the city	4158
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	28
	Total number of households covered through door-to-door collection of solid waste	23773
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	13.95
Electricity	Total number of authorized electrical connections in the city	...
	Total electricity supplied to the city (kWh)	77716823
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1390000
Roads and Transport	Total Length of Road Network in the City (Km)	52.01
	Total length of arterial and sub-arterial road network in the city (Km)	42.58
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	15

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital educa-

Pillars of Comprehensive Development	Category	Indicators
		tion
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

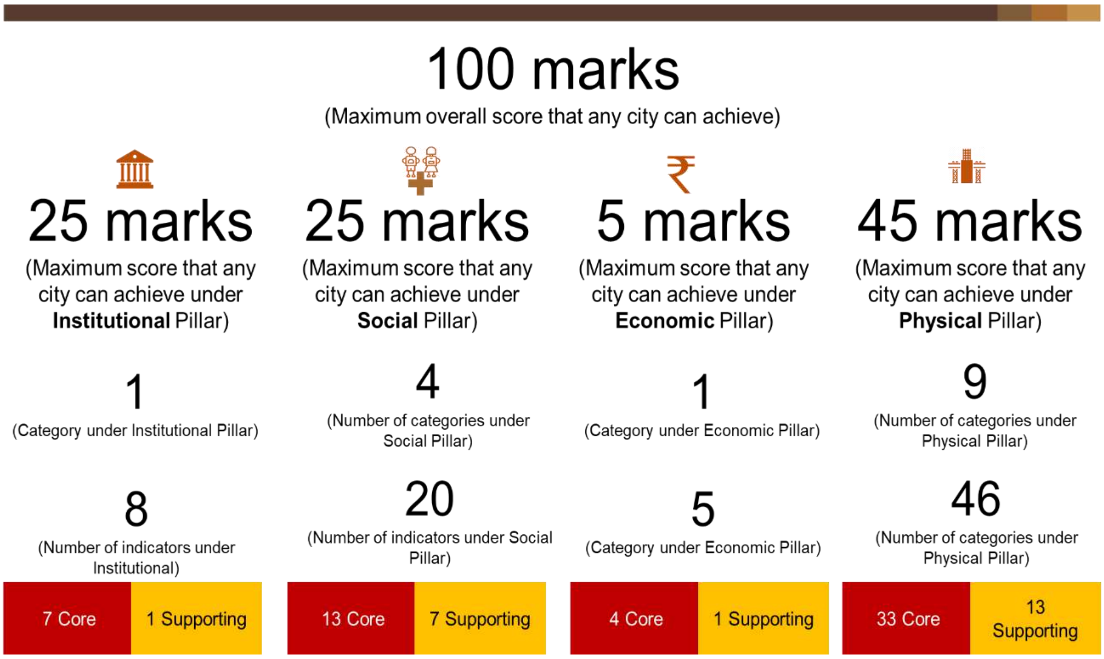
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3: Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Park and Recreation Related Questions	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Water Supply and Drainage related questions	WATER SECURITY & PUBLIC HEALTH ENGINEERING DEPARTMENT
Urban Local Body	For Heritage sites related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Ecological sites related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Housing related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Building plan related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Roads related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Solid waste management related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For IT services related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	For Vendor committee related data	GANGTOK MUNICIPAL CORPORATION
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	GANGTOK MUNICIPAL CORPORATION
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	STATE POLLUTION CONTROL BOARD
Development Authority	Building Infrastructure	URBAN DEVELOPMENT AND HOUSING DEPARTMENT

Designated data owners	Subcategories	Data owners at city level
	Construction planning	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Green Building	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Rain water harvesting	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
	Universal Design Principle	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ENERGY AND POWER DEPARTMENT
State Disaster management authority		LAND REVENUE DEPARTMENT
State Education Department		HUMAN RESOURCE DEVELOPMENT DEPARTMENT
State Health Department	Health care professionals	HEALTH DEPARTMENT
	Citizen Services	HEALTH DEPARTMENT
	Disease Prevalence	HEALTH DEPARTMENT
	Health Infrastructure	HEALTH DEPARTMENT
State Renewable Energy Development Agency		STATE RENEWABLE ENERGY DEVELOPMENT AGENCY
State Sales / Commercial Taxes Department		COMMERCIAL TAX AND FINANCE DEPARTMENT
Town and Country Planning Department	Land Use	URBAN DEVELOPMENT AND HOUSING DEPARTMENT
Traffic and Police Department		SIKKIM POLICE HEADQUARTER EAST SIKKIM
Transport Author-	Buses	SIKKIM NATIONALISED TRANSPORT

Designated data owners	Subcategories	Data owners at city level
ities	Registered Vehicles	SIKKIM NATIONALISED TRANSPORT
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

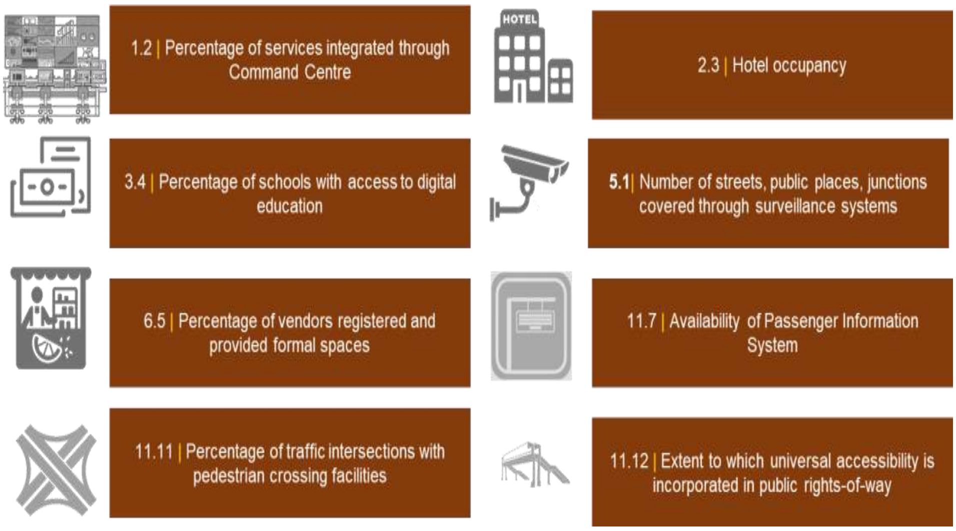
Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**7**
DISCOM/Electricity Department	**7**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**2**
State Renewable Energy Department	**2**
Town and Country Planning	**0**
State Health Department	**16**

Data Owners	Number of Documents
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**24**
Total	**62**

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

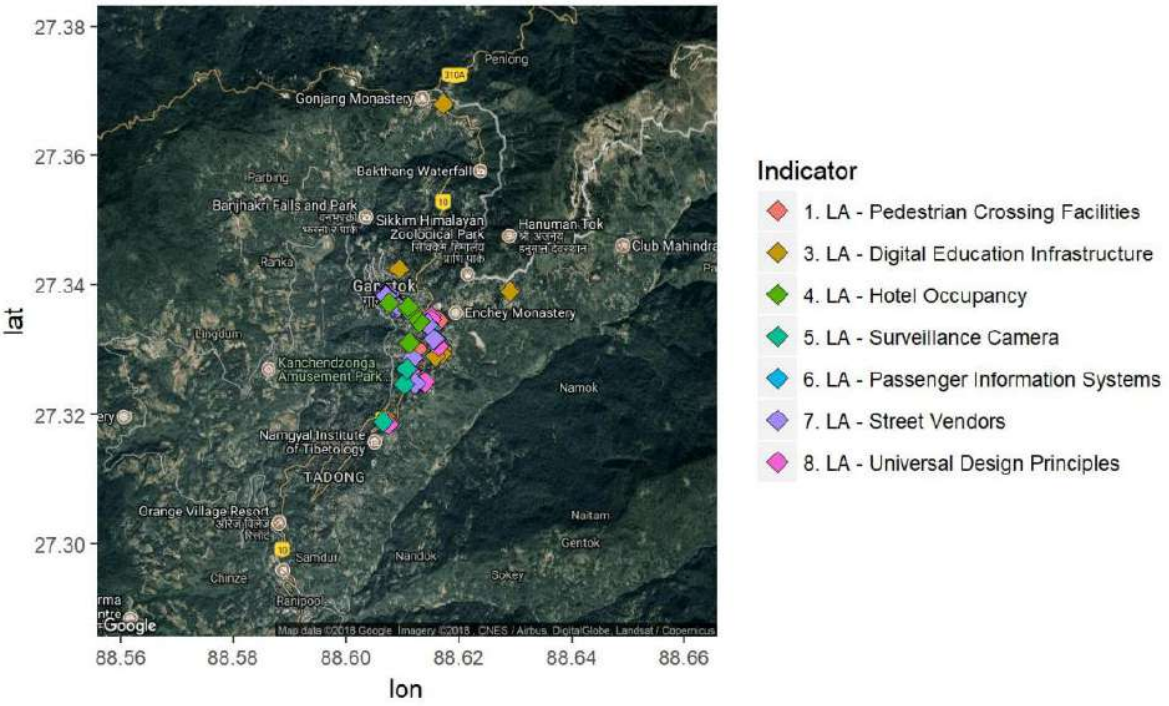
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level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Penlong
Gonjang Monastery
Bakthang Waterfall
Parbing
Banjhakri Falls and Park
Sikkim Himalayan Zoological Park
Hanuman Tok
Club Mahindra
Ranka
Gangtok
Enchey Monastery
Lingdum
Kanchendzonga Amusement Park
Namok
Namgyal Institute of Tibetology
TADONG
Orange Village Resort
Naitam
Gentok
Samdur
Nandok
Sokey
Chinze
Ranipool
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	32.66%
Identity & Culture	20%
Education	65%
Health	85%
Safety & Security	53%
Economy & Employment	23%
Housing & Inclusiveness	3%
Public Open Spaces	50%
Mixed Land Use & Compactness	0%
Power Supply	42%
Transport & Mobility	34%
Assured Water Supply	51%
Waste Water Management	8%
Solid Waste Management	41%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing and Urban Affairs

Government of India

GHAZIABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

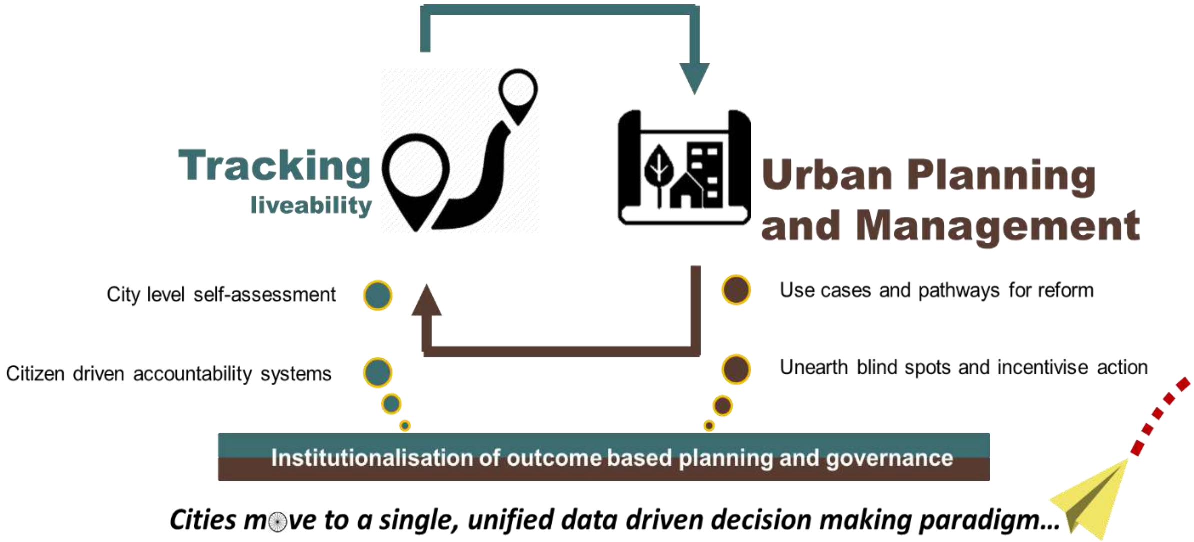
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

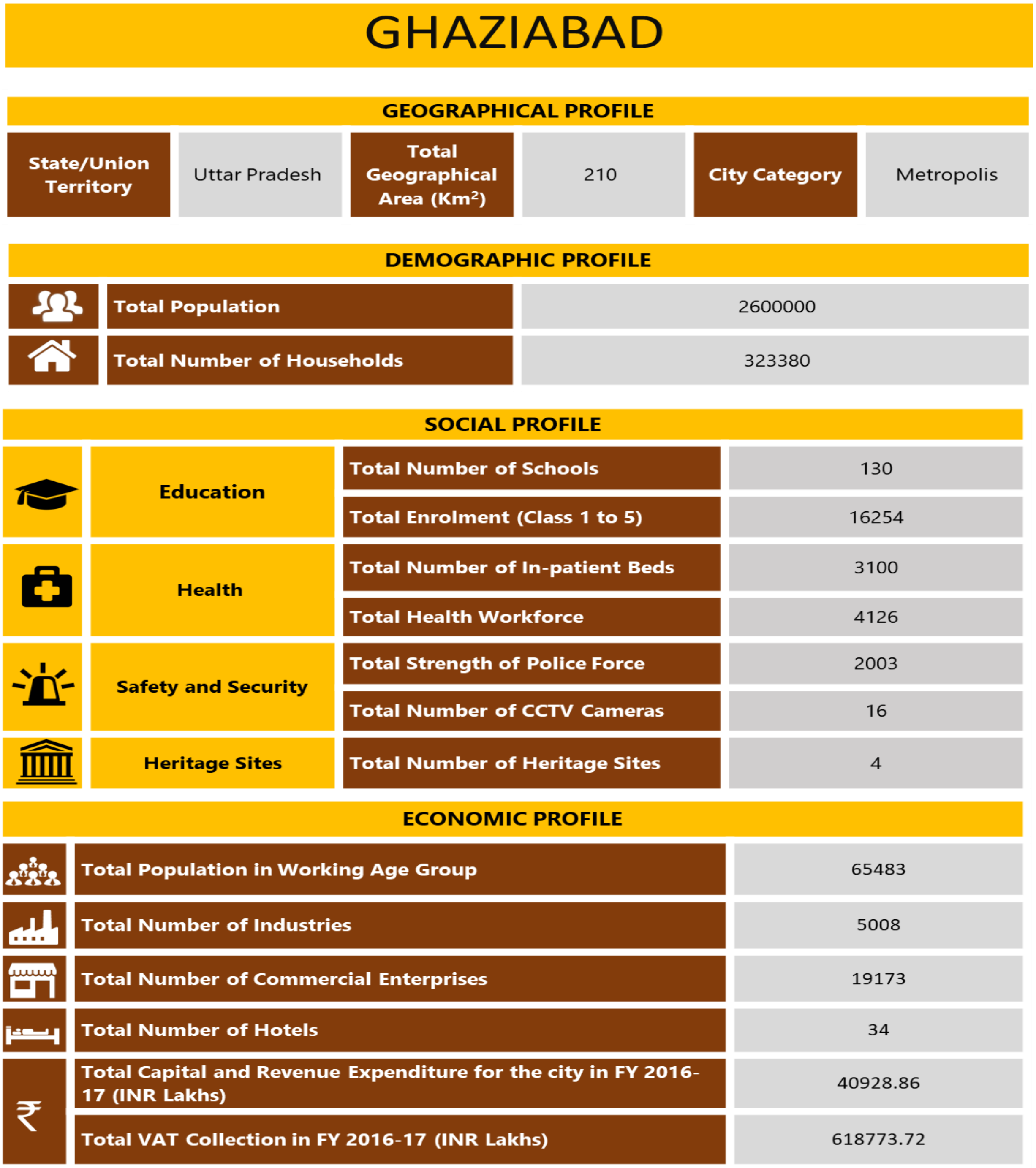

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GHAZIABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	210	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2600000
Total Number of Households	323380

SOCIAL PROFILE

Education	**Total Number of Schools**	130
	Total Enrolment (Class 1 to 5)	16254
Health	**Total Number of In-patient Beds**	3100
	Total Health Workforce	4126
Safety and Security	**Total Strength of Police Force**	2003
	Total Number of CCTV Cameras	16
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	65483
Total Number of Industries	5008
Total Number of Commercial Enterprises	19173
Total Number of Hotels	34
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40928.86
Total VAT Collection in FY 2016-17 (INR Lakhs)	618773.72

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	325
	Total Number of Water Connection	237552
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	292620
	Total number of households in the city with access to community toilets in the city	1990
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	850
	Total number of households covered through door-to-door collection of solid waste	265172
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	260
	Daily average quantum of waste water treated by STPs in the city (MLD)	227
Electricity	**Total number of authorized electrical connections in the city**	463641
	Total electricity supplied to the city (kWh)	3844000000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	…
Roads and Transport	**Total Length of Road Network in the City (Km)**	3258.97
	Total length of arterial and sub-arterial road network in the city (Km)	3076.7
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2466

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

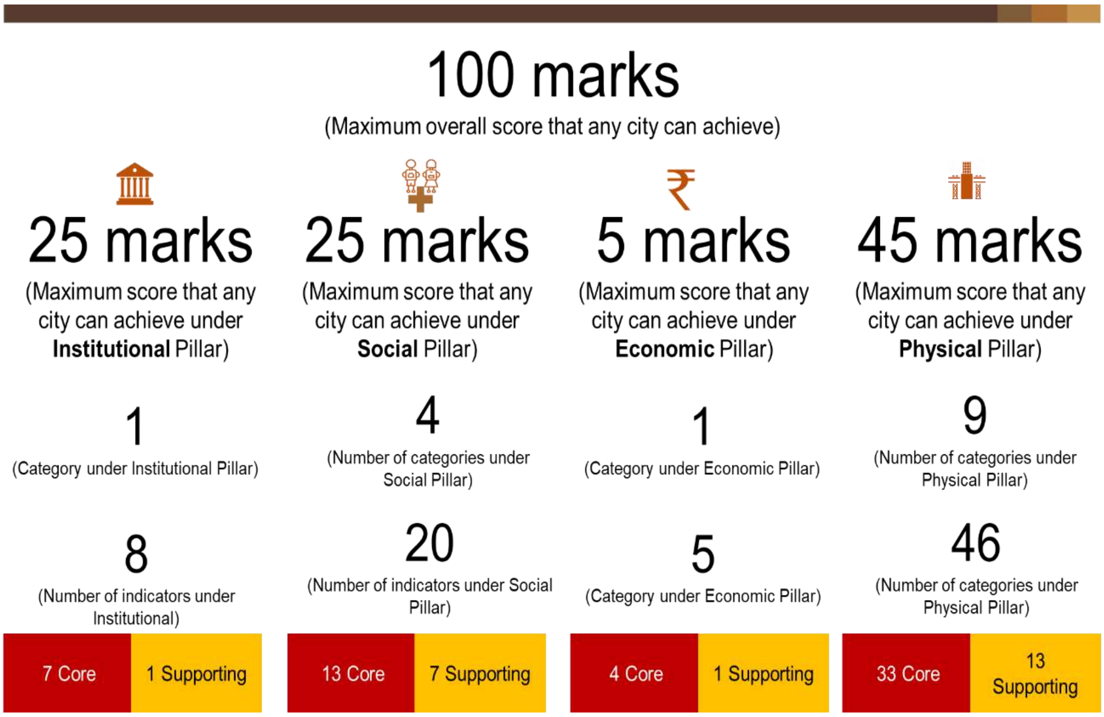
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Zonal officer (Ghaziabad Nagar Nigam)/ GDA website
Urban Local Body	For Water Supply and Drainage related questions	Jal-Kal
Urban Local Body	For Heritage sites related data	Sankhyaki
Urban Local Body	For Ecological sites related data	N/A
Urban Local Body	For Housing related data	Planning Department (Ghaziabad Development Authority) District Urban Development Authority
Urban Local Body	For Building plan related data	National Capital Planning
Urban Local Body	For Roads related data	
Urban Local Body	For Solid waste management related data	Swach Bharat Mission
Urban Local Body	For IT services related data	Information technology Cell
Urban Local Body	For Vendor committee related data	District Urban Development Authority
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Nirman, prakash, zonal head
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Zonal officer Ghaziabad Development Authority
	Construction planning	Town Planning Ghaziabad Development Authority

Designated data owners	Subcategories	Data owners at city level
	Green Building	Town Planning Ghaziabad Development Authority
	Rain water harvesting	Town Planning Ghaziabad Development Authority
	Universal Design Principle	Town Planning Ghaziabad Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Purvanchal Vidhut Vitran Nigam
State Disaster management authority		District disaster management authority
State Education Department		Basic Shiksha Adhikari
State Health Department	Health care professionals	Additional Medical Officer
	Citizen Services	Additional Medical Officer
	Disease Prevalence	Additional Medical Officer
	Health Infrastructure	Additional Medical Officer
State Renewable Energy Development Agency	Renewable Energy	Uttar Pradesh New & Renewable Energy Development Agency
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	National Capital Region Planning
Traffic and Police Department		Office of Superintendent of police
Transport Authorities	Buses	Uttar Pradesh State Road Transport corporation
	Registered Vehicles	Regional Transport office
	Sub urban rail transport	Delhi Metro Authority
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 54 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**3**
State Education Department	**5**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**4**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**1**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**37**
Total	**54***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

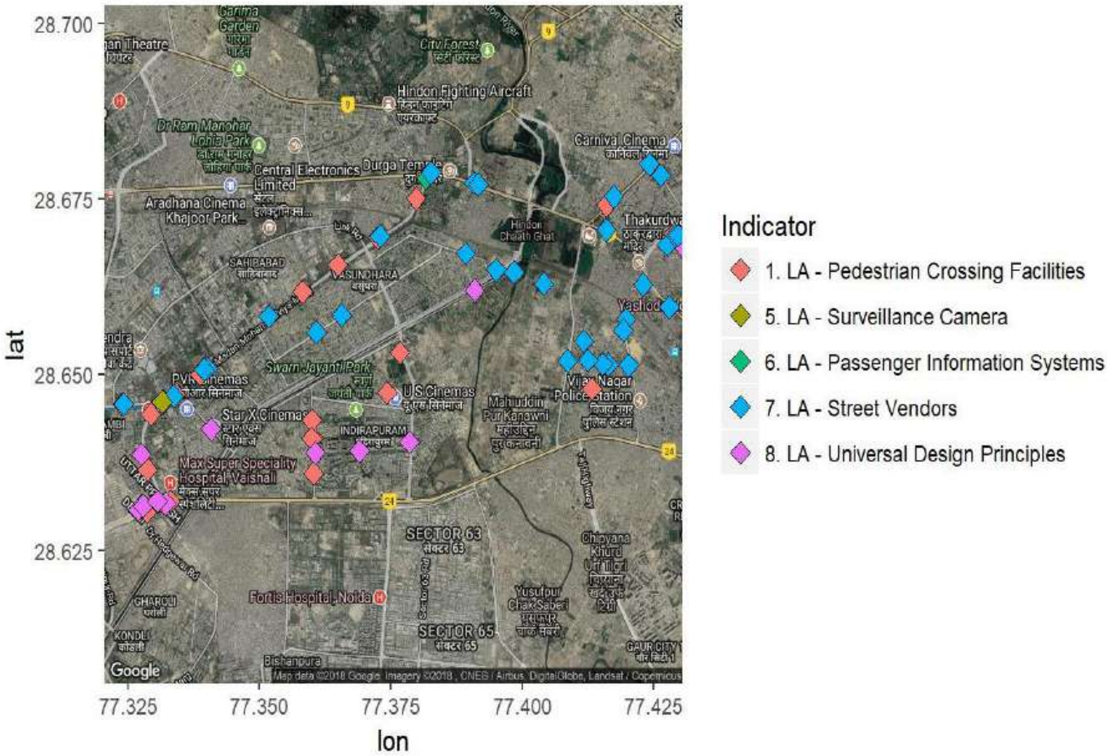
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.700
28.675
28.650
28.625
lat
77.325
77.350
77.375
77.400
77.425
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	62.83%
Identity & Culture	17%
Education	21%
Health	83%
Safety & Security	76%
Economy & Employment	11%
Housing & Inclusiveness	85%
Public Open Spaces	9%
Mixed Land Use & Compactness	0%
Power Supply	45%
Transport & Mobility	21%
Assured Water Supply	75%
Waste Water Management	67%
Solid Waste Management	65%
Reduced Pollution	74%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

GREATER MUMBAI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

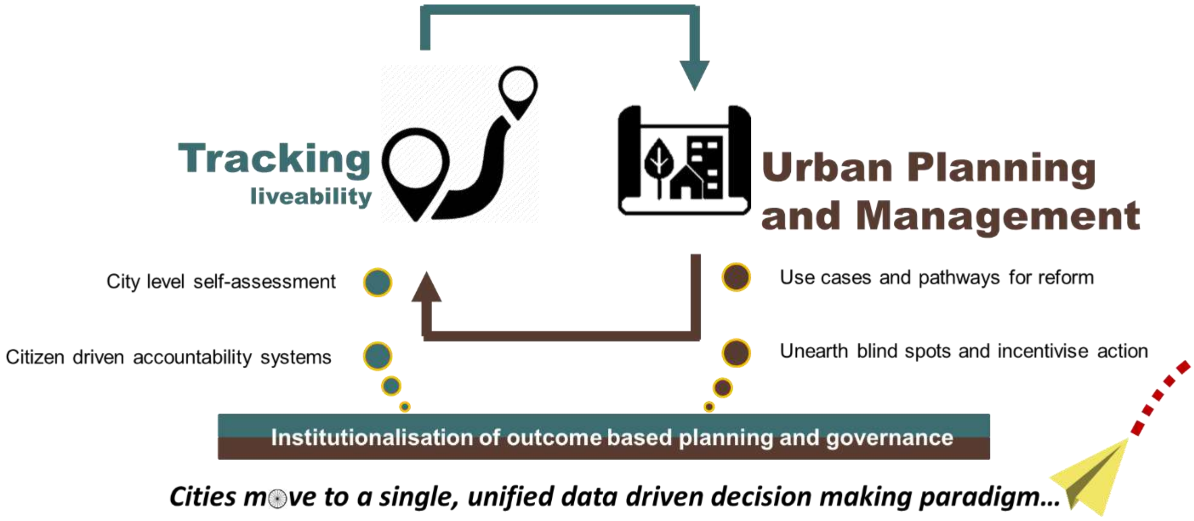
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

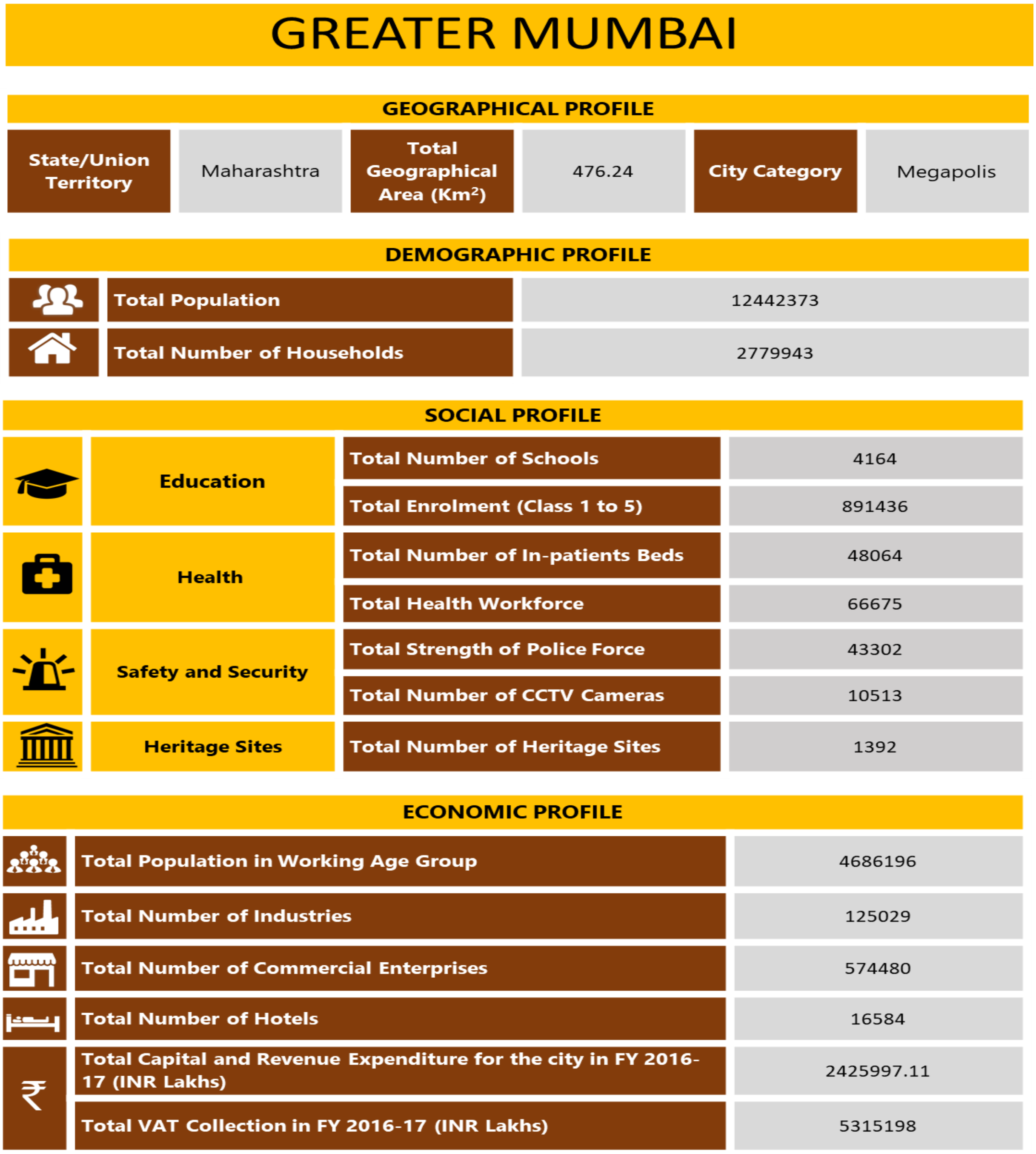
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GREATER MUMBAI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	476.24	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	12442373
Total Number of Households	2779943

SOCIAL PROFILE

Education	**Total Number of Schools**	4164
	Total Enrolment (Class 1 to 5)	891436
Health	**Total Number of In-patients Beds**	48064
	Total Health Workforce	66675
Safety and Security	**Total Strength of Police Force**	43302
	Total Number of CCTV Cameras	10513
Heritage Sites	**Total Number of Heritage Sites**	1392

ECONOMIC PROFILE

Total Population in Working Age Group	4686196
Total Number of Industries	125029
Total Number of Commercial Enterprises	574480
Total Number of Hotels	16584
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2425997.11
Total VAT Collection in FY 2016-17 (INR Lakhs)	5315198

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	3615
		Total Number of Water Connections	510559
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	1541000
		Total number of households in the city with access to community toilets in the city	1071417
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	7970.7
		Total number of households covered through door-to-door collection of solid waste	3484278
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	2290
		Daily average quantum of waste water treated by STPs in the city (MLD)	1769
	Electricity	**Total number of authorized electrical connections in the city**	4315021
		Total electricity supplied to the city (kWh)	17830049797
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	128416000
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2260.062
		Total length of arterial and sub-arterial road network in the city (Km)	1941
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2300

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water

Pillars of Comprehensive Development	Category	Indicators
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

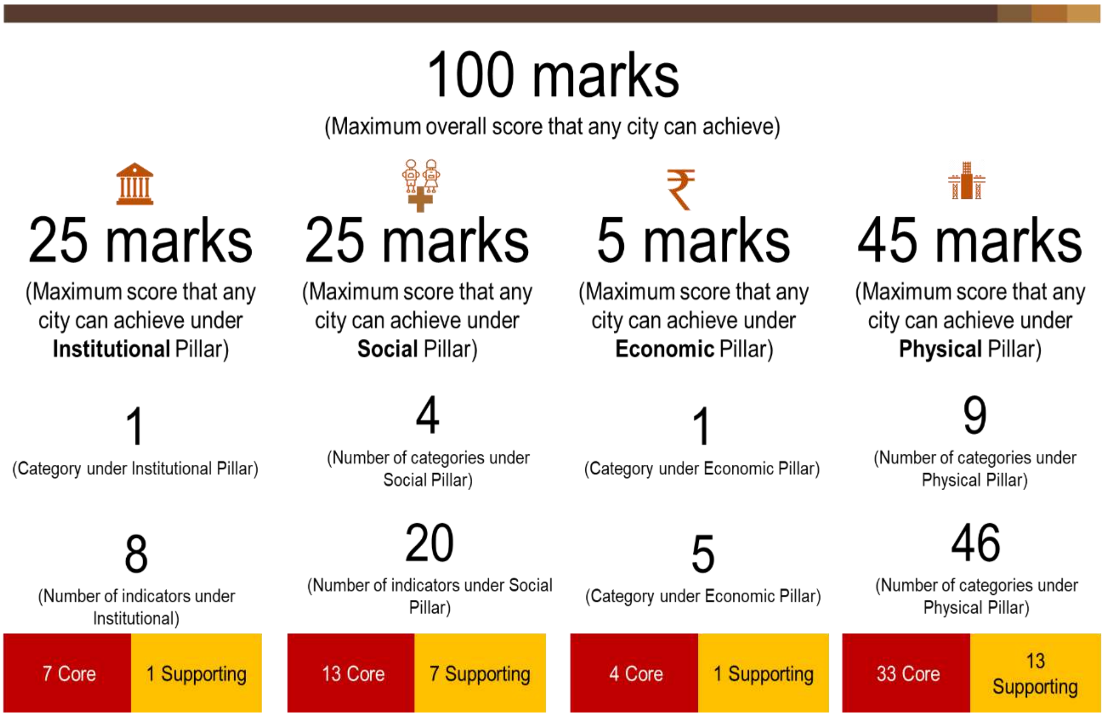
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, MCGM
Urban Local Body	For Park and Recreation Related Questions	Garden Department, MCGM Development and Planning Department, MCGM
Urban Local Body	For Water Supply and Drainage related questions	Hydraulic Department, MCGM
Urban Local Body	For Heritage sites related data	Development and Planning, MCGM Archaeological Survey of India
Urban Local Body	For Ecological sites related data	Environment and Forest Department
Urban Local Body	For Housing related data	Development and Planning, MCGM
Urban Local Body	For Building plan related data	Development and Planning, MCGM
Urban Local Body	For Roads related data	Department of Roads and Traffic, MCGM
Urban Local Body	For Solid waste management related data	Solid waste management Department, MCGM
Urban Local Body	For IT services related data	IT Department, MCGM
Urban Local Body	For Vendor committee related data	Licence and Establishment, MCGM
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board Environment Department, MCGM
Development Authority	Building Infrastructure	Development and Planning, MCGM
	Construction planning	Development and Planning, MCGM

Designated data owners	Subcategories	Data owners at city level
	Green Building	Development and Planning, MCGM
	Rain water harvesting	Development and Planning, MCGM
	Universal Design Principle	Development and Planning, MCGM
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bombay Electricity Supply and Transport, MCGM Maharashtra State Electricity Development Corporation
State Disaster management authority		District Disaster management Office
State Education Department		State Education Department Education Department, MCMG
State Health Department	Health care professionals	Health Department, MCMG
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Development and Planning, MCMG
Traffic and Police Department		State Police Department
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Bombay Electricity Supply and Transport
	Sub urban rail transport	Western Railways, central Railways and Harbour Railways
	Mono Rail Authority	MMRDA
	Tramways	NA
	Marine Transport Authority	Mumbai Maritime Board

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 97 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	12
State Education Department	1
DISCOM/Electricity Department	14
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	3
Town and Country Planning	0
State Health Department	0
Transport Authority	4
Disaster Management	0
Urban Local Body	59
Total	97*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

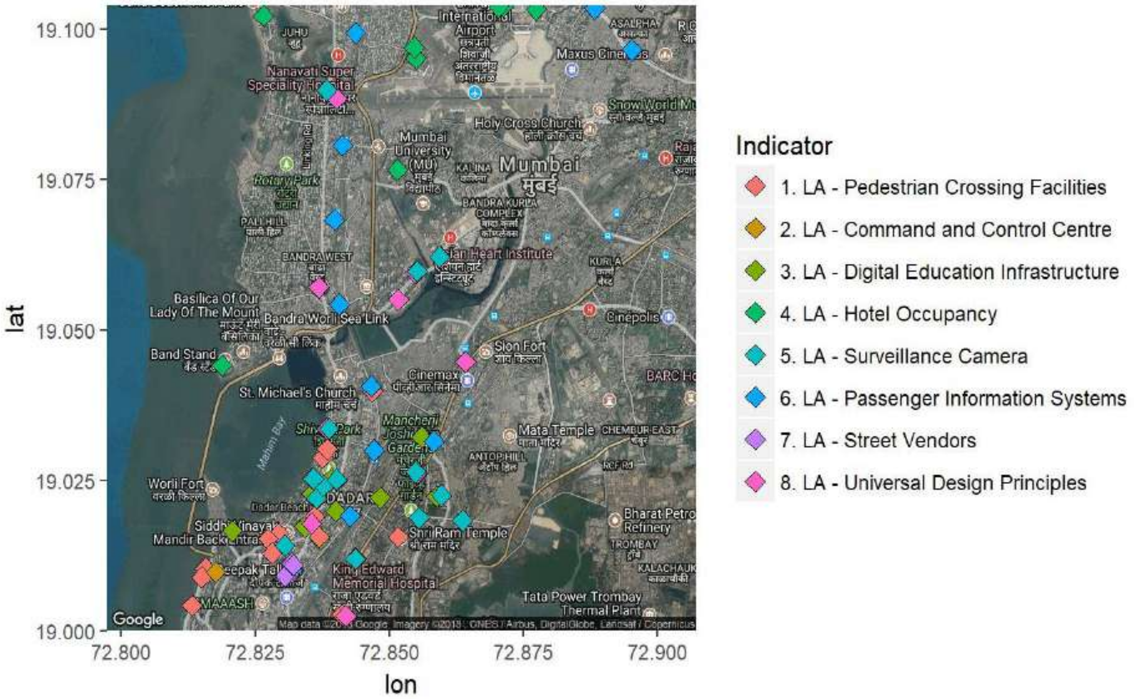
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.100
19.075
19.050
19.025
19.000
lat
72.800
72.825
72.850
72.875
72.900
lon
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Mumbai
Bandra Worli Sea Link
Dadar
Sion Fort
Worli Fort
Band Stand
Mahim Bay
Mumbai University
International Airport
King Edward Memorial Hospital
Tata Power Trombay Thermal Plant
Bharat Petro Refinery

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	55.47%
Identity & Culture	69%
Education	82%
Health	90%
Safety & Security	64%
Economy & Employment	54%
Housing & Inclusiveness	47%
Public Open Spaces	93%
Mixed Land Use & Compactness	50%
Power Supply	44%
Transport & Mobility	59%
Assured Water Supply	83%
Waste Water Management	74%
Solid Waste Management	68%
Reduced Pollution	85%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

GURGAON

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

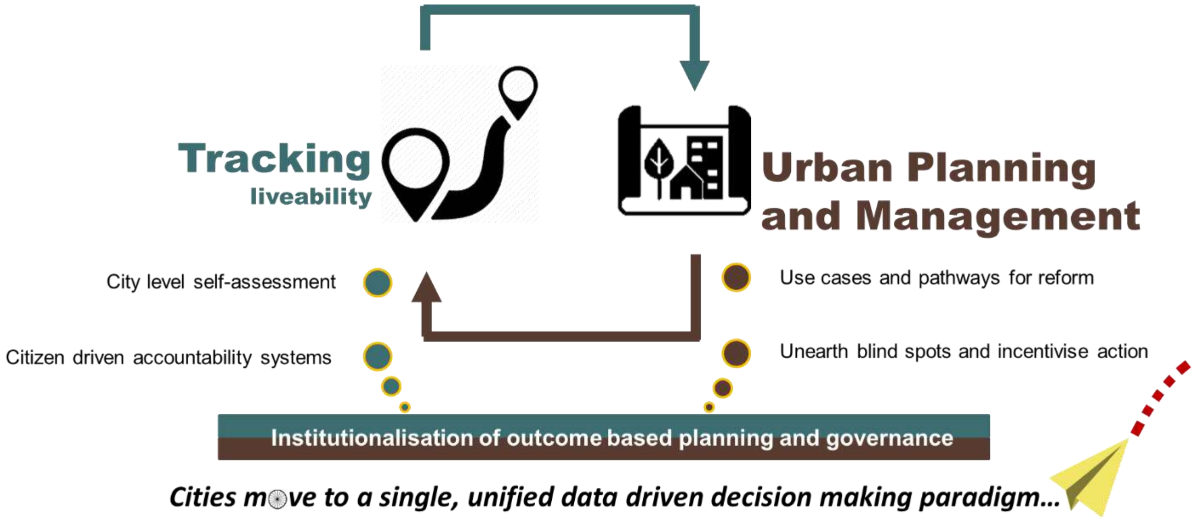
#	**Challenges**	**Proposed Solutions**
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

GURGAON

GEOGRAPHICAL PROFILE

State/Union Territory	Haryana	Total Geographical Area (Km²)	232	City Category	Large City

DEMOGRAPHIC PROFILE

Total Population	876000
Total Number of Households	380000

SOCIAL PROFILE

Education	Total Number of Schools	1067
	Total Enrolment (Class 1 to 5)	178809
Health	Total Number of In-patient Beds	5744
	Total Health Workforce	870
Safety and Security	Total Strength of Police Force	4777
	Total Number of CCTV Cameras	56911
Heritage Sites	Total Number of Heritage Sites	12

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	3957
Total Number of Commercial Enterprises	49779
Total Number of Hotels	5474
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	34533.18
Total VAT Collection in FY 2016-17 (INR Lakhs)	569842

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	181.6
	Total Number of Water Connection	268241
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	30826
	Total number of households in the city with access to community toilets in the city	3187
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	784
	Total number of households covered through door-to-door collection of solid waste	312589
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	40
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	**Total number of authorized electrical connections in the city**	259086
	Total electricity supplied to the city (kWh)	4129224000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	10.04
Roads and Transport	**Total Length of Road Network in the City (Km)**	3400
	Total length of arterial and sub-arterial road network in the city (Km)	28.04
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	500

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

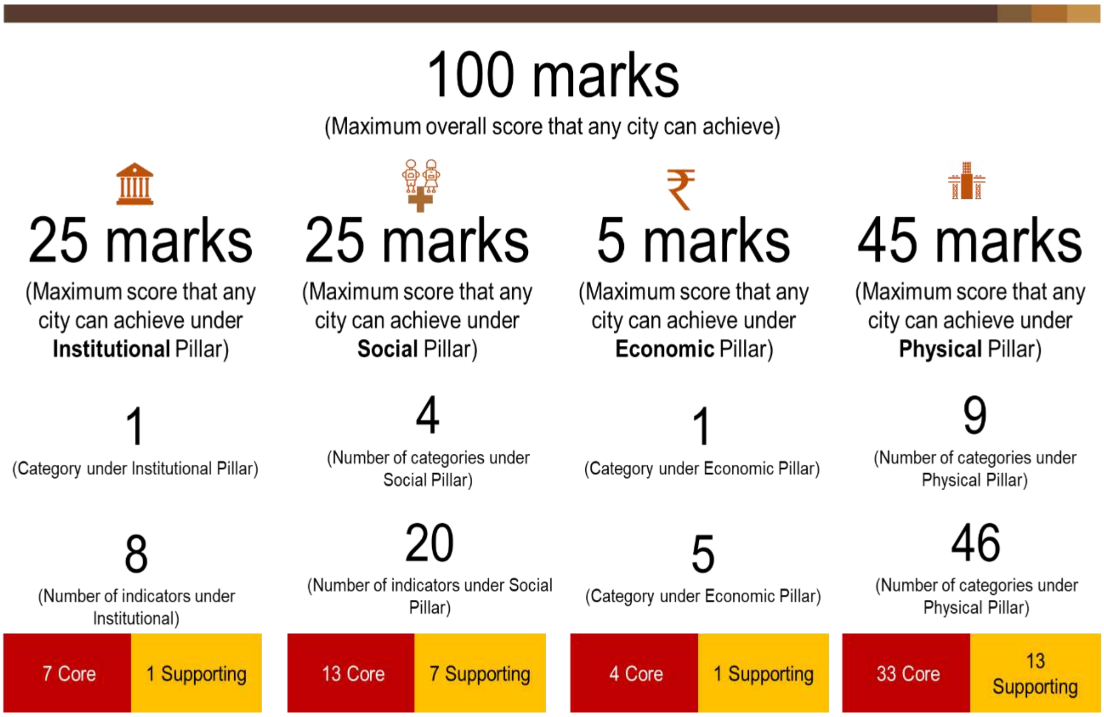
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Gurgaon
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Gurgaon
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Gurgaon
Urban Local Body	For Heritage sites related data	Municipal Corporation Gurgaon
Urban Local Body	For Ecological sites related data	Municipal Corporation Gurgaon
Urban Local Body	For Housing related data	Municipal Corporation Gurgaon
Urban Local Body	For Building plan related data	Municipal Corporation Gurgaon
Urban Local Body	For Roads related data	Municipal Corporation Gurgaon
Urban Local Body	For Solid waste management related data	Municipal Corporation Gurgaon
Urban Local Body	For IT services related data	Municipal Corporation Gurgaon
Urban Local Body	For Vendor committee related data	Municipal Corporation Gurgaon
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Gurgaon

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Dakshin Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Gurgaon
	Citizen Services	Civil Hospital Gurgaon
	Disease Prevalence	Civil Hospital Gurgaon
	Health Infrastructure	Civil Hospital Gurgaon
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town and Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Transport Authority
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**3**
Total	**7***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

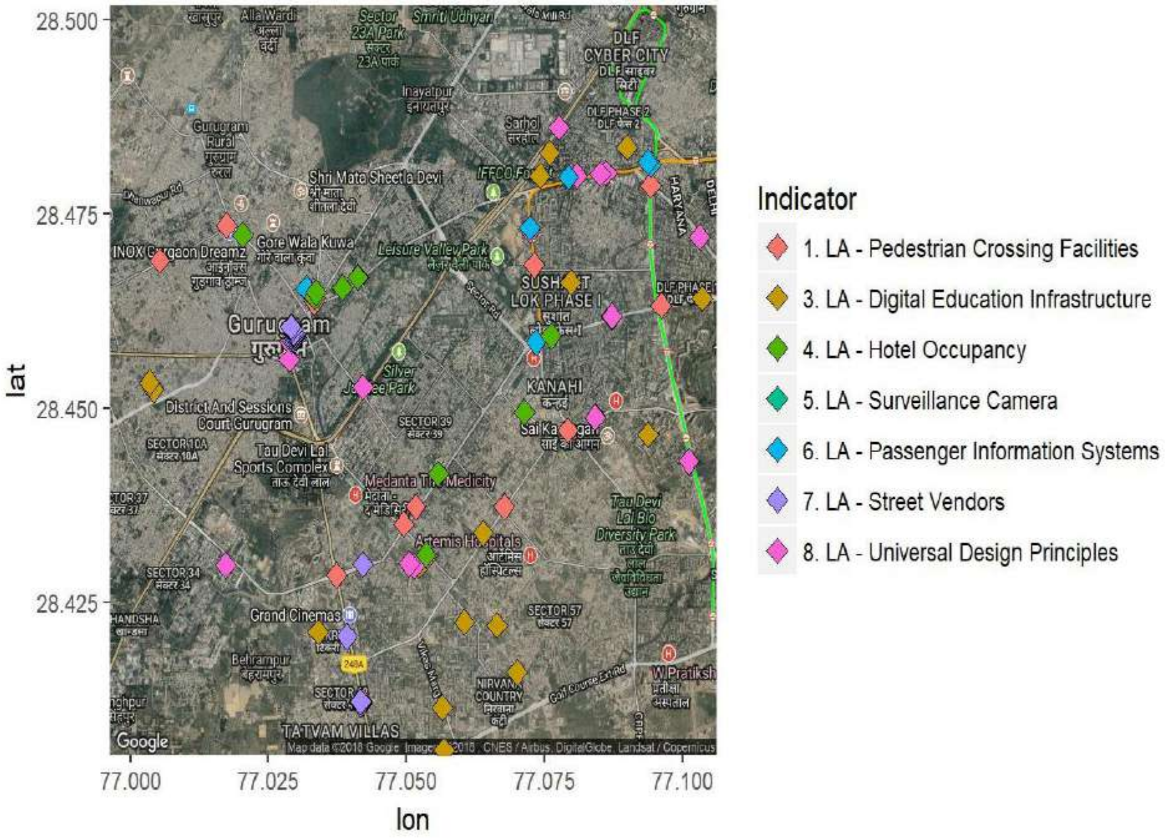
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.500
28.475
28.450
28.425
lat
77.000
77.025
77.050
77.075
77.100
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
DLF CYBER CITY
Gurugram Rural
Shri Mata Sheetla Devi
Gore Wala Kuwa
INOX Gurgaon Dreamz
Leisure Valley Park
SUSHANT LOK PHASE I
Gurugram
District And Sessions Court Gurugram
Silver Jubilee Park
KANAHI
SECTOR 39
Tau Devi Lal Sports Complex
Medanta The Medicity
Artemis Hospitals
Tau Devi Lal Bio Diversity Park
SECTOR 34
Grand Cinemas
Behrampur
SECTOR 57
NIRVANA COUNTRY
TATVAM VILLAS
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	51.00%
Identity & Culture	9%
Education	90%
Health	79%
Safety & Security	62%
Economy & Employment	19%
Housing & Inclusiveness	50%
Public Open Spaces	5%
Mixed Land Use & Compactness	0%
Power Supply	40%
Transport & Mobility	34%
Assured Water Supply	54%
Waste Water Management	49%
Solid Waste Management	81%
Reduced Pollution	82%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
DRAFT REPORT

सत्यमेव जयते

Ministry of Urban Development
Government of India

GUWAHATI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP

#	Challenges	Proposed Solutions
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

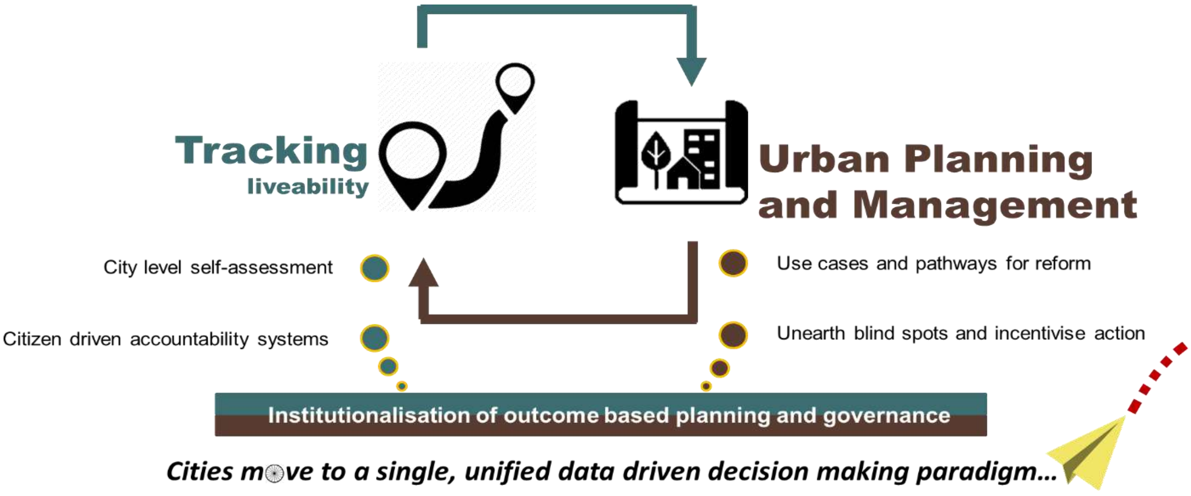
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

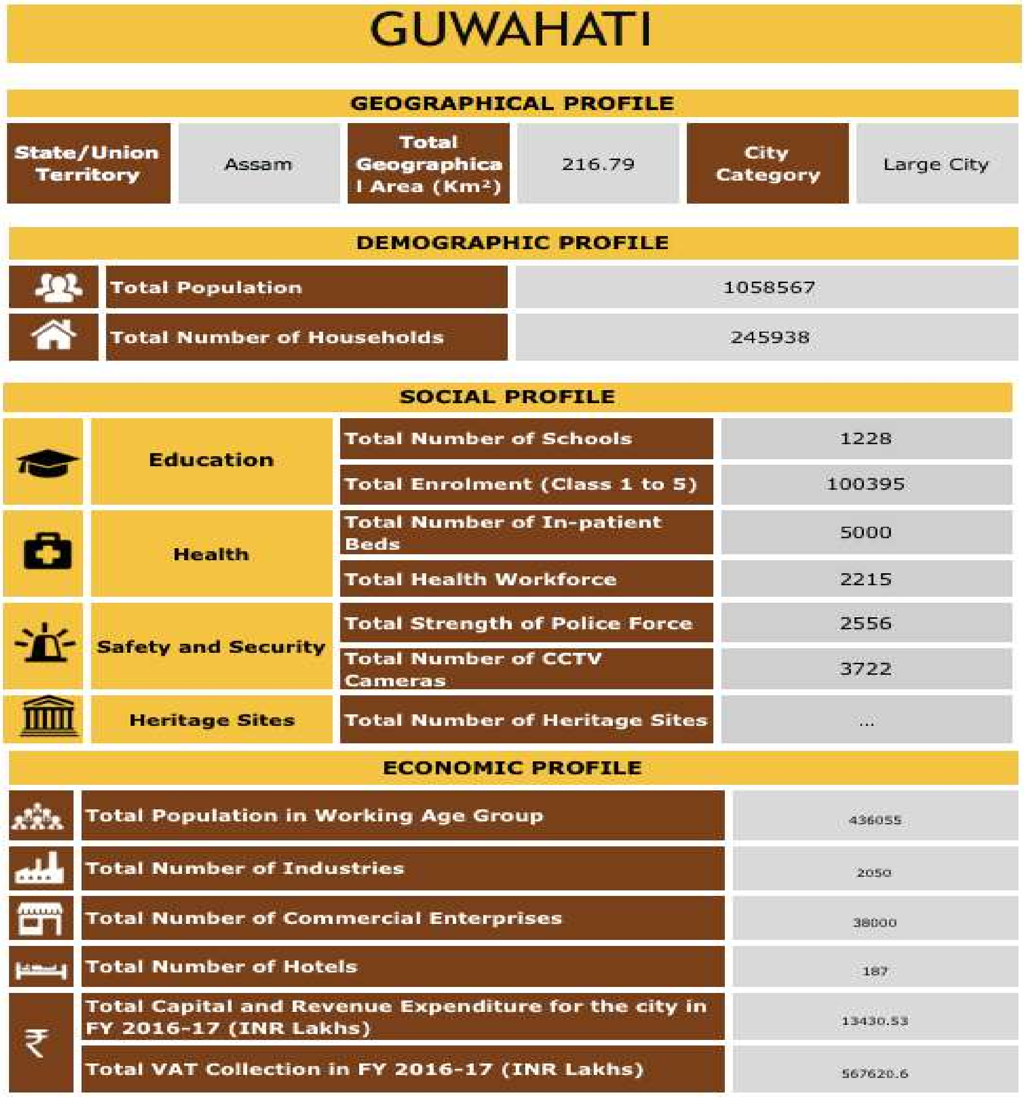
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GUWAHATI

GEOGRAPHICAL PROFILE

State/Union Territory	Assam	Total Geographical Area (Km^2)	216.79	City Category	Large City

DEMOGRAPHIC PROFILE

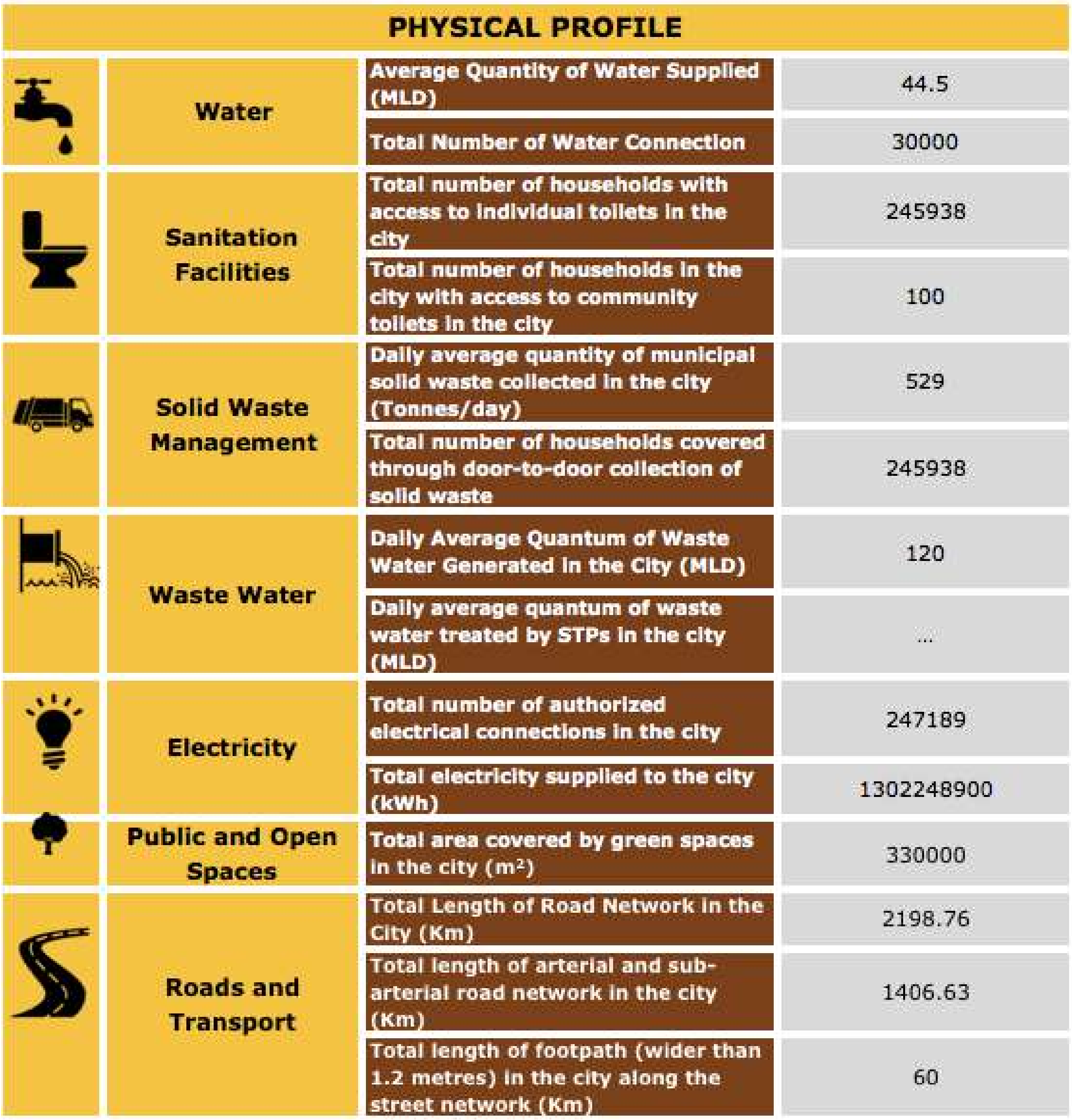
Total Population	1058567
Total Number of Households	245938

SOCIAL PROFILE

Education	Total Number of Schools	1228
	Total Enrolment (Class 1 to 5)	100395
Health	Total Number of In-patient Beds	5000
	Total Health Workforce	2215
Safety and Security	Total Strength of Police Force	2556
	Total Number of CCTV Cameras	3722
Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

Total Population in Working Age Group	436055
Total Number of Industries	2050
Total Number of Commercial Enterprises	38000
Total Number of Hotels	187
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13430.53
Total VAT Collection in FY 2016-17 (INR Lakhs)	567620.6



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	44.5
	Total Number of Water Connection	30000
Sanitation Facilities	Total number of households with access to individual toilets in the city	245938
	Total number of households in the city with access to community toilets in the city	100
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	529
	Total number of households covered through door-to-door collection of solid waste	245938
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	247189
	Total electricity supplied to the city (kWh)	1302248900
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	330000
Roads and Transport	Total Length of Road Network in the City (Km)	2198.76
	Total length of arterial and sub-arterial road network in the city (Km)	1406.63
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	60

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollu-	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	tion	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

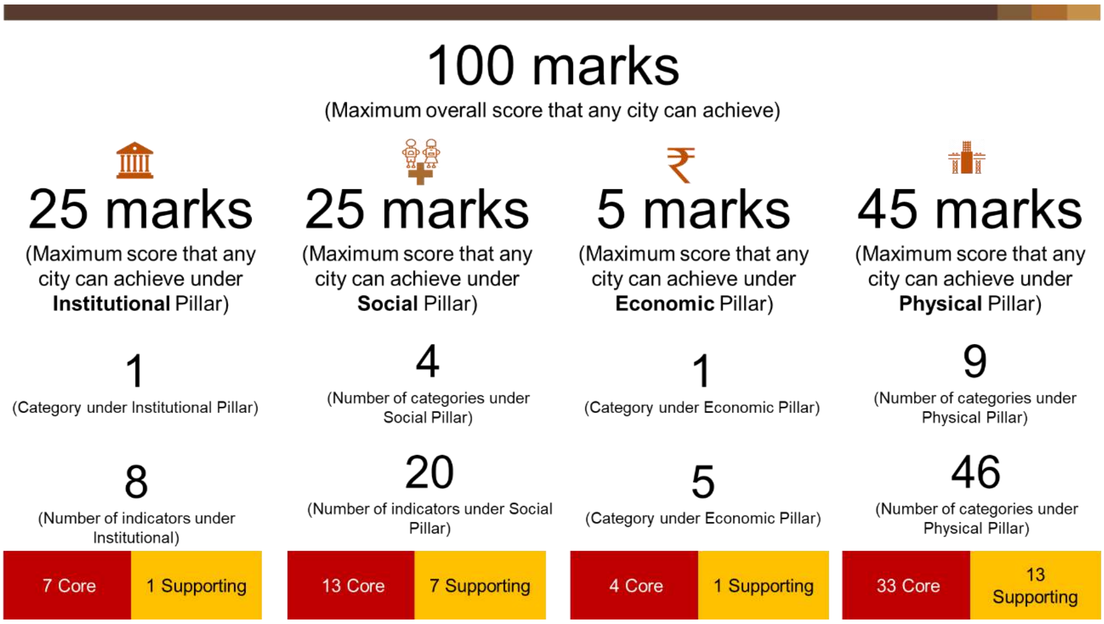
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by

the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Guwahati Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Guwahati Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Water Division, Guwahati Municipal Corporation

Urban Local Body	For Heritage sites related data	Department of Culture, Guwahati
Urban Local Body	For Ecological sites related data	Department of Environment and Forest, Guwahati
Urban Local Body	For Housing related data	Guwahati Metropolitan Development authority, Guwahati
Urban Local Body	For Building plan related data	Guwahati Metropolitan Development authority, Guwahati
Urban Local Body	For Roads related data	Guwahati Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Guwahati Municipal Corporation
Urban Local Body	For IT services related data	Directorate of Information and Technology IT section, Guwahati Municipal Corporation
Urban Local Body	For Vendor committee related data	Guwahati Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Assam Pollution Control Board
Development Authority	Building Infrastructure	Guwahati Metropolitan Development authority, Guwahati
	Construction planning	Guwahati Metropolitan Development authority, Guwahati
	Green Building	Guwahati Metropolitan Development authority, Guwahati
	Rain water harvesting	Guwahati Metropolitan Development authority, Guwahati
	Universal Design Principle	Guwahati Metropolitan Development authority, Guwahati
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Assam Power Distribution
State Disaster management authority		District Disaster management Office

State Education Department		Office of Inspector of School, Guwahati
State Health Department	Health care professionals	State Health Department
	Citizen Services	State Health Department
	Disease Prevalence	State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Assam Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Guwahati Metropolitan Development authority, Guwahati
Traffic and Police Department		Office of Commissioner of Police, Guwahati Department of Home Affaires
Transport Authorities	Buses	District Transport Office
	Registered Vehicles	District Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	State transport authority

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 39 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	1
DISCOM/Electricity Department	11
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	6
State Renewable Energy Department	4
Town and Country Planning	0
State Health Department	1
Transport Authority	5
Disaster Management	1
Urban Local Body	0
Total	39

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

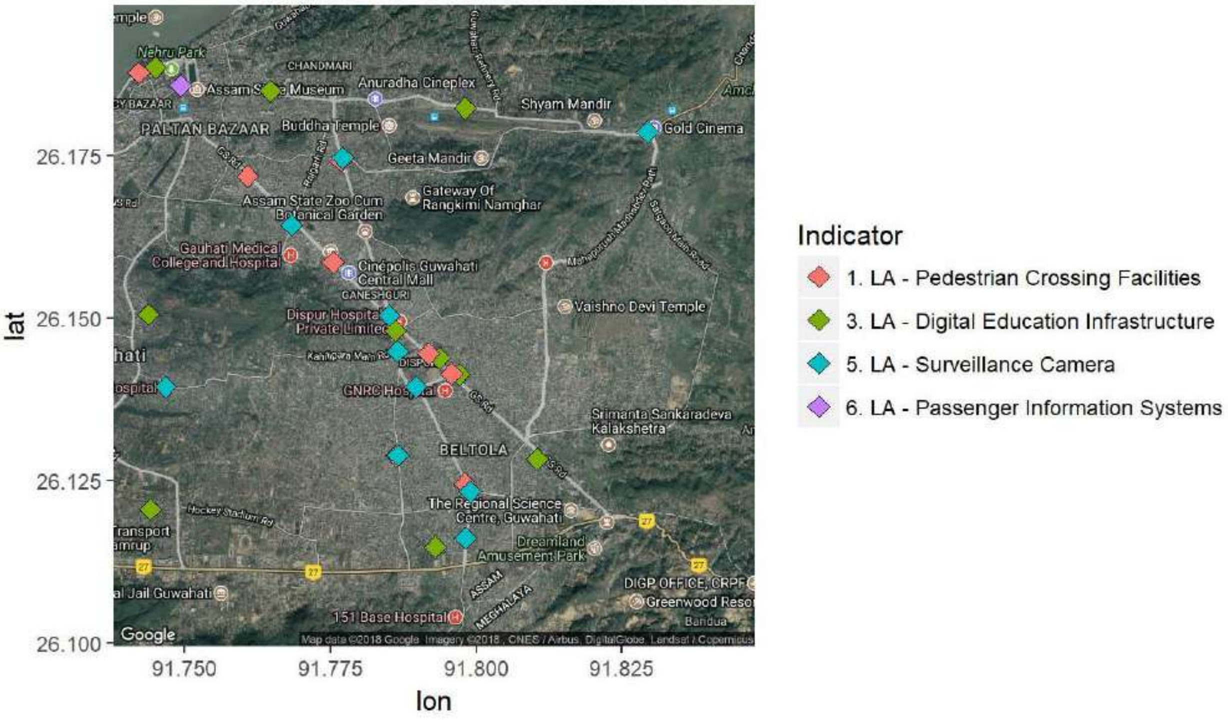
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Nehru Park
CHANDMARI
Assam State Museum
Anuradha Cineplex
Shyam Mandir
PALTAN BAZAAR
Buddha Temple
Gold Cinema
Geeta Mandir
Gateway Of Rangkimi Namghar
Assam State Zoo Cum Botanical Garden
Gauhati Medical College and Hospital
Cinépolis Guwahati Central Mall
GANESHGURI
Vaishno Devi Temple
Dispur Hospital Private Limited
GNRC Hospital
Srimanta Sankaradeva Kalakshetra
BELTOLA
The Regional Science Centre, Guwahati
Dreamland Amusement Park
DIGP OFFICE, CRPF
Greenwood Resort
151 Base Hospital
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
26.175
26.150
26.125
26.100
91.750
91.775
91.800
91.825
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
5. LA - Surveillance Camera
6. LA - Passenger Information Systems

5. City score on 15 categories of assessment:

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	58.19%
Identity & Culture	17%
Education	83%
Health	89%
Safety & Security	65%
Economy & Employment	23%
Housing & Inclusiveness	4%
Public Open Spaces	8%
Mixed Land Use & Compactness	3%
Power Supply	48%
Transport & Mobility	53%
Assured Water Supply	18%
Waste Water Management	41%
Solid Waste Management	71%
Reduced Pollution	75%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते
Ministry of Housing
and Urban Affairs
Government of India

GWALIOR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

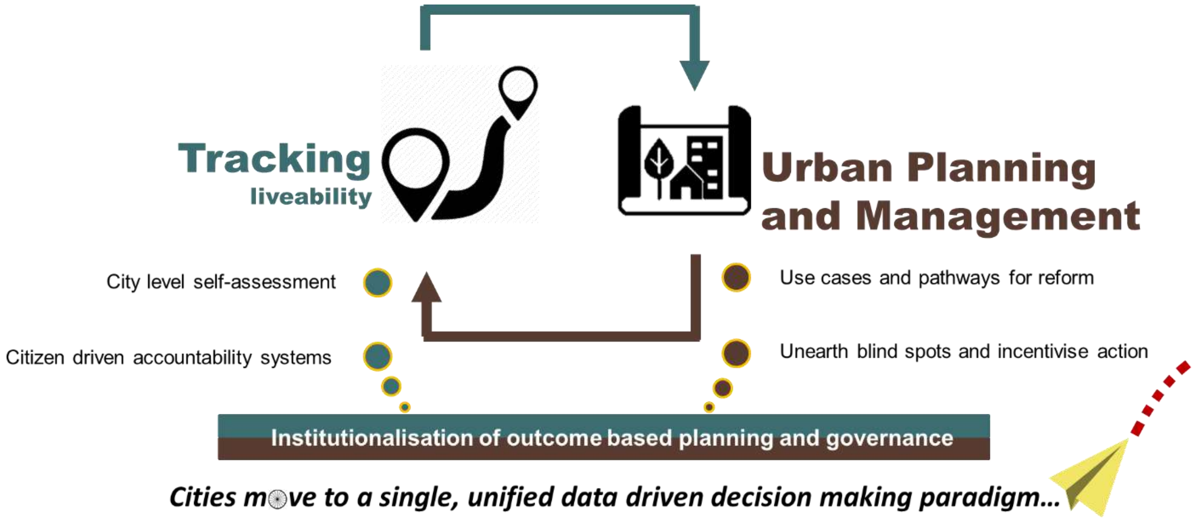
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

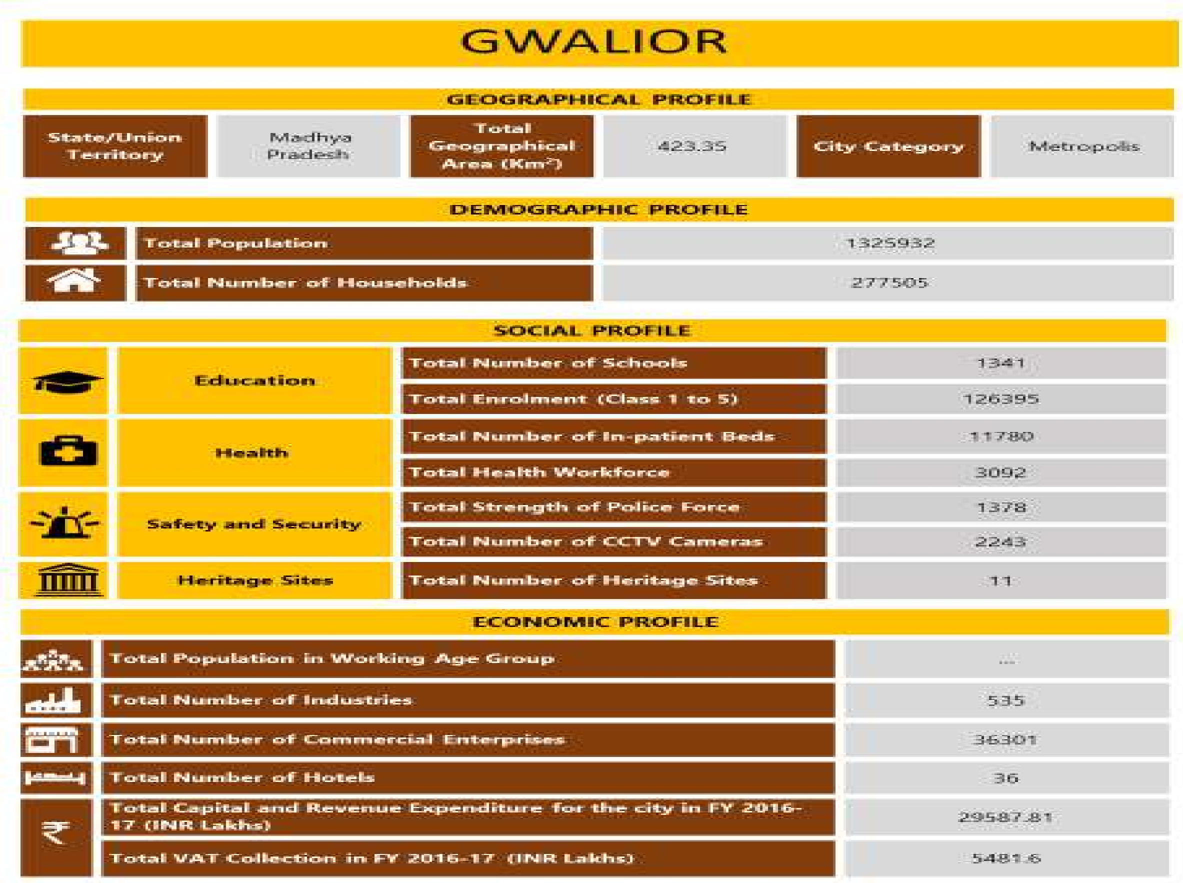
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



GWALIOR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km^2)	423.35	City Category	Metropolis

DEMOGRAPHIC PROFILE

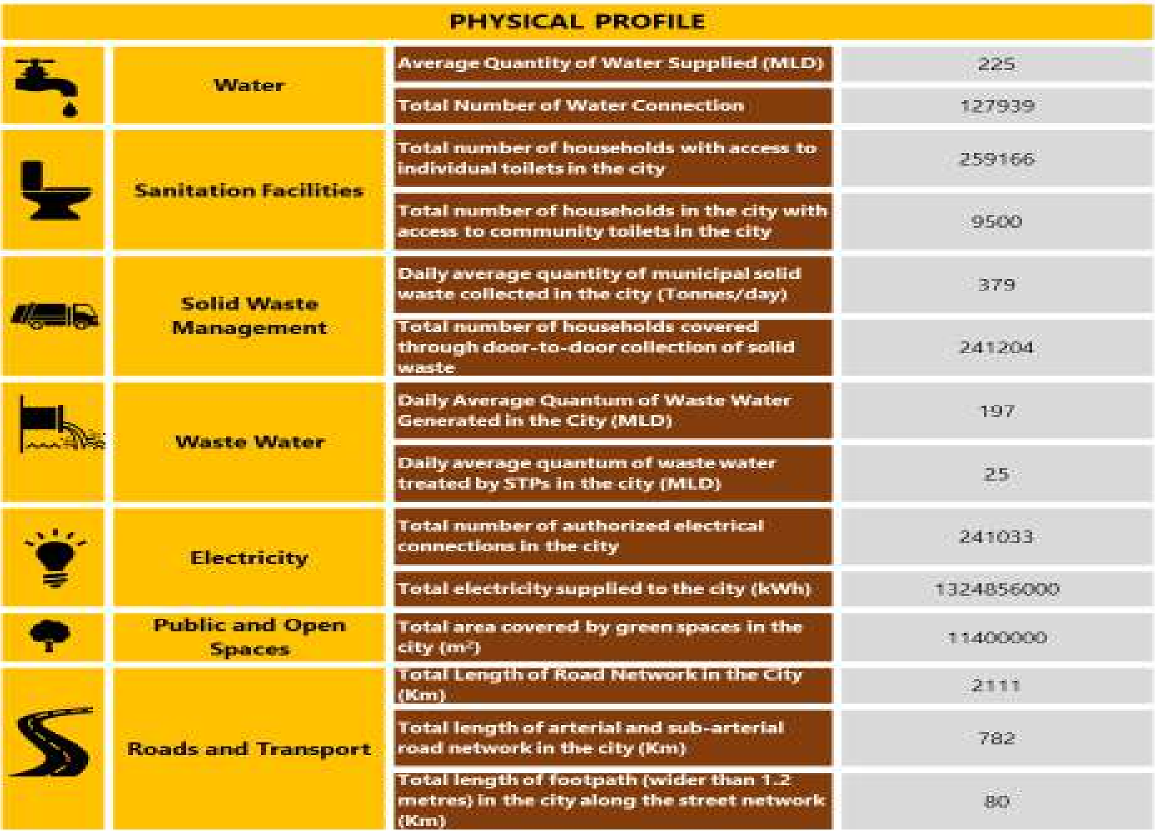
Total Population	1325932
Total Number of Households	277505

SOCIAL PROFILE

Education	Total Number of Schools	1341
	Total Enrolment (Class 1 to 5)	126395
Health	Total Number of In-patient Beds	11780
	Total Health Workforce	3092
Safety and Security	Total Strength of Police Force	1378
	Total Number of CCTV Cameras	2243
Heritage Sites	Total Number of Heritage Sites	11

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	535
Total Number of Commercial Enterprises	36301
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29587.81
Total VAT Collection in FY 2016-17 (INR Lakhs)	5481.6



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	225
	Total Number of Water Connection	127939
Sanitation Facilities	Total number of households with access to individual toilets in the city	259166
	Total number of households in the city with access to community toilets in the city	9500
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	379
	Total number of households covered through door-to-door collection of solid waste	241204
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	197
	Daily average quantum of waste water treated by STPs in the city (MLD)	25
Electricity	Total number of authorized electrical connections in the city	241033
	Total electricity supplied to the city (kWh)	1324856000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	11400000
Roads and Transport	Total Length of Road Network in the City (Km)	2111
	Total length of arterial and sub-arterial road network in the city (Km)	782
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	80

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle

Pillars of Comprehensive Development	Category	Indicators
		tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

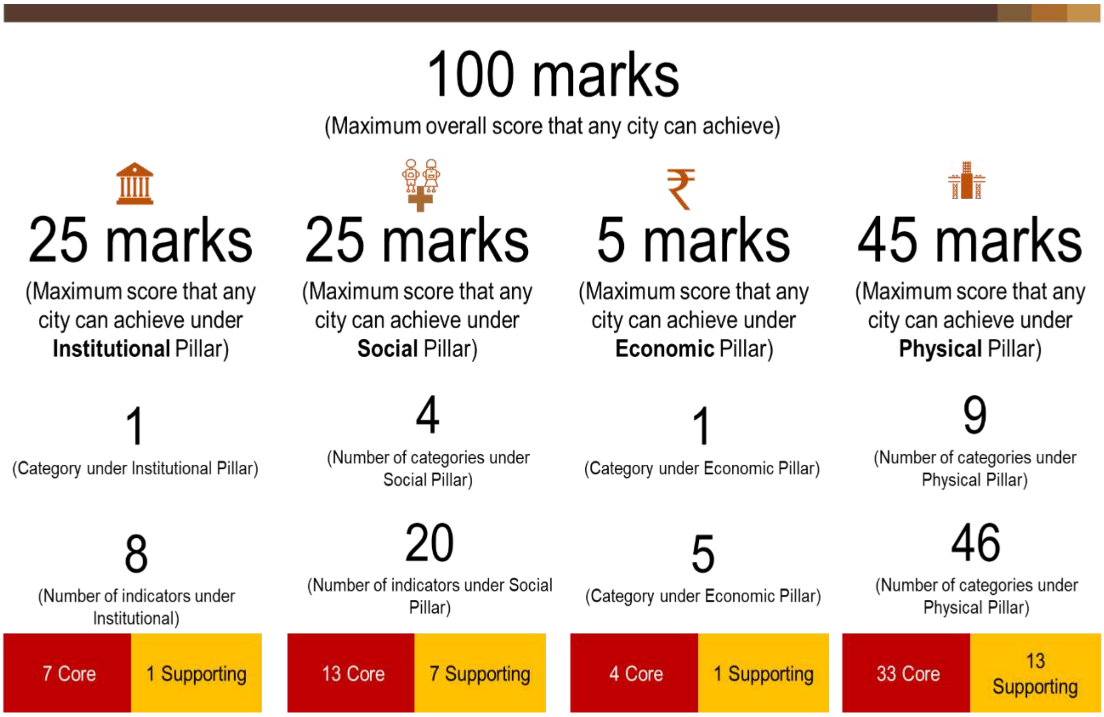
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core | 1 Supporting	13 Core | 7 Supporting	4 Core | 1 Supporting	33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Section, Gwalior Municipal Corporation
	Park and Recreation	Garden Section, Gwalior Municipal Corporation
	Water Supply and Drainage	Public Health and Engineering Department
	Heritage sites	Gwalior Municipal Corporation
	Ecological sites	Zoo section, Gwalior Municipal Corporation
	Housing	Gwalior Municipal Corporation
	Building plan	Building Permission Section, Gwalior Municipal Corporation
	Roads	Roads section, Gwalior Municipal Corporation
	Solid waste management	Gwalior Municipal Corporation
	IT services	IT Section, Satna Municipal Corporation
	Vendor committee	Dukan Sansthan, Gwalior Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board

Designated data owners	Sub categories	Data owners at city level
Development Authority	Building Infrastructure	Gwalior Development Authority
	Construction planning	Gwalior Development Authority
	Green Building	Gwalior Development Authority
	Rain water harvesting	Gwalior Development Authority
	Universal Design Principle	Gwalior Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Gwalior
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 117 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	4
DISCOM/Electricity Department	7
Traffic and Police Department	8
Development Authority	8
Pollution Control Board	10
State Renewable Energy Department	1
Town and Country Planning	4
State Health Department	4
Transport Authority	7
Disaster Management	0
Urban Local Body	57
Total	117

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

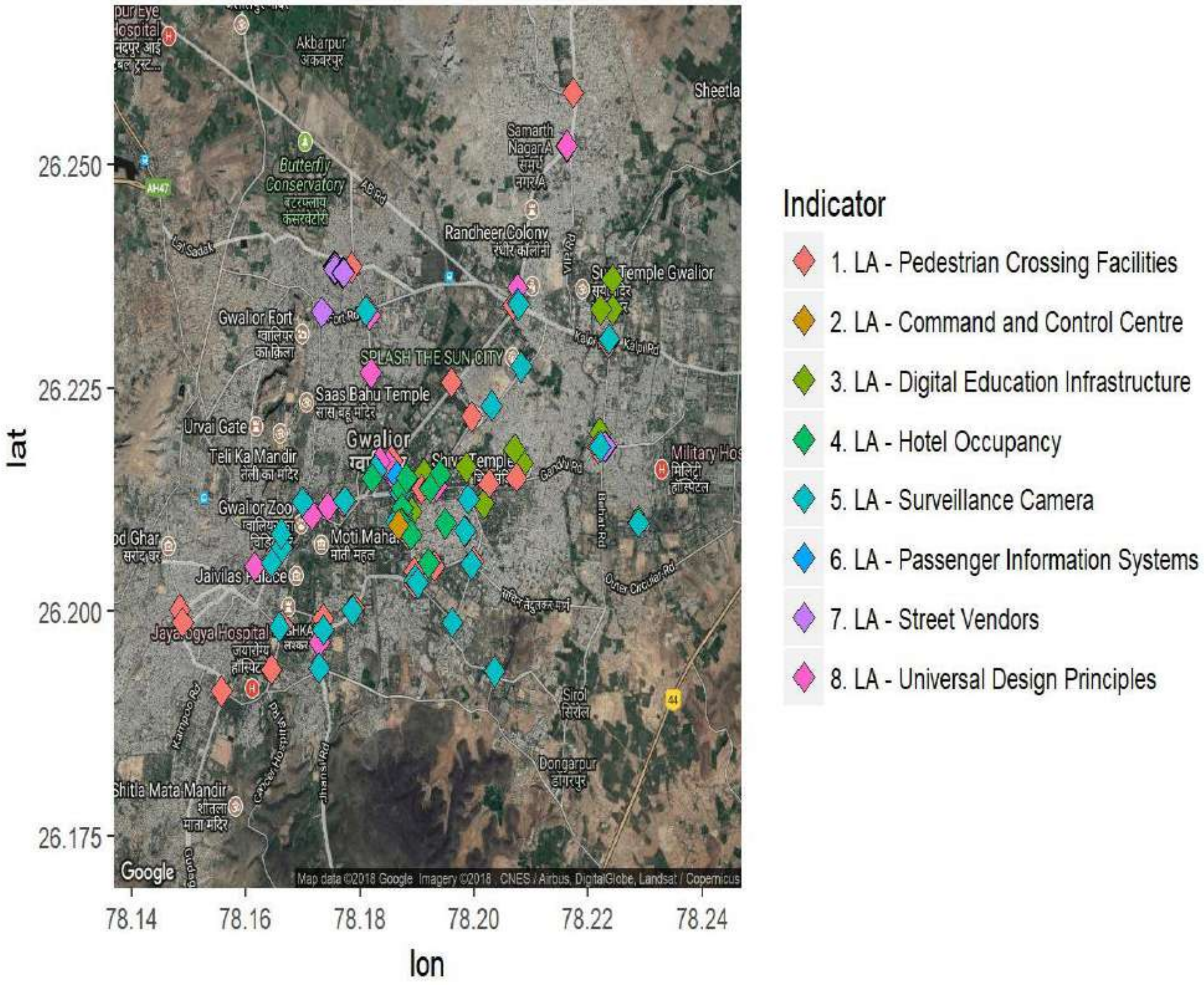
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.250
26.225
26.200
26.175
lat
78.14
78.16
78.18
78.20
78.22
78.24
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Gwalior
Gwalior Fort
Saas Bahu Temple
Moti Mahal
Jaivilas Palace
Gwalior Zoo
Urvai Gate
Teli Ka Mandir
Randheer Colony
Akbarpur
Butterfly Conservatory
SPLASH THE SUN CITY
Sun Temple Gwalior
Military Hos
Sirol
Dongarpur
Shitla Mata Mandir
Jayarogya Hospital
Samarth Nagar A
Sheetla
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	54.36%
Identity & Culture	31%
Education	86%
Health	87%
Safety & Security	63%
Economy & Employment	18%
Housing & Inclusiveness	2%
Public Open Spaces	46%
Mixed Land Use & Compactness	0%
Power Supply	46%
Transport & Mobility	34%
Assured Water Supply	74%
Waste Water Management	65%
Solid Waste Management	73%
Reduced Pollution	78%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

HUBLI-DHARWAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

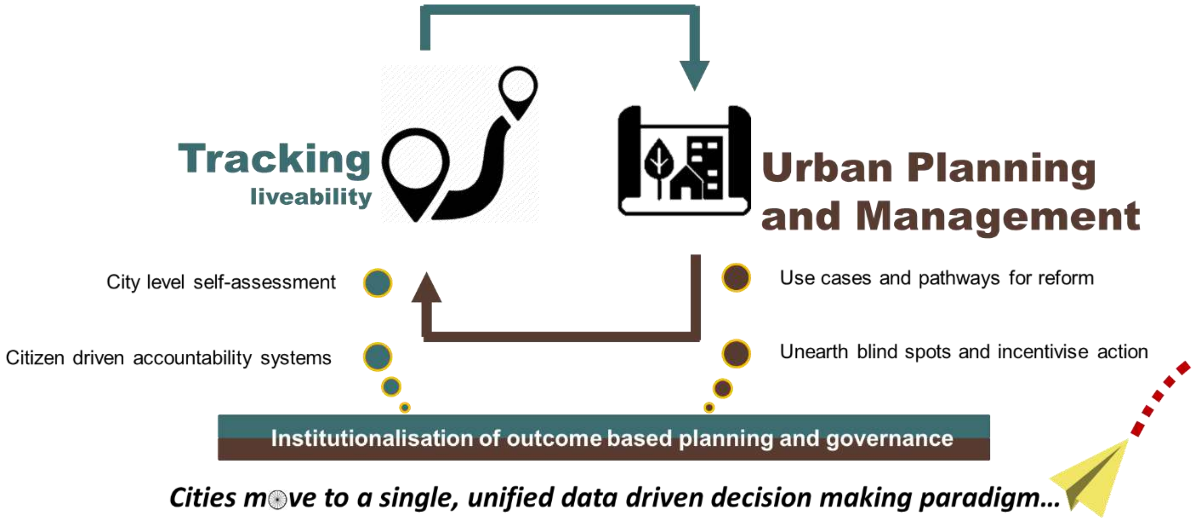
#	**Challenges**	**Proposed Solutions**
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

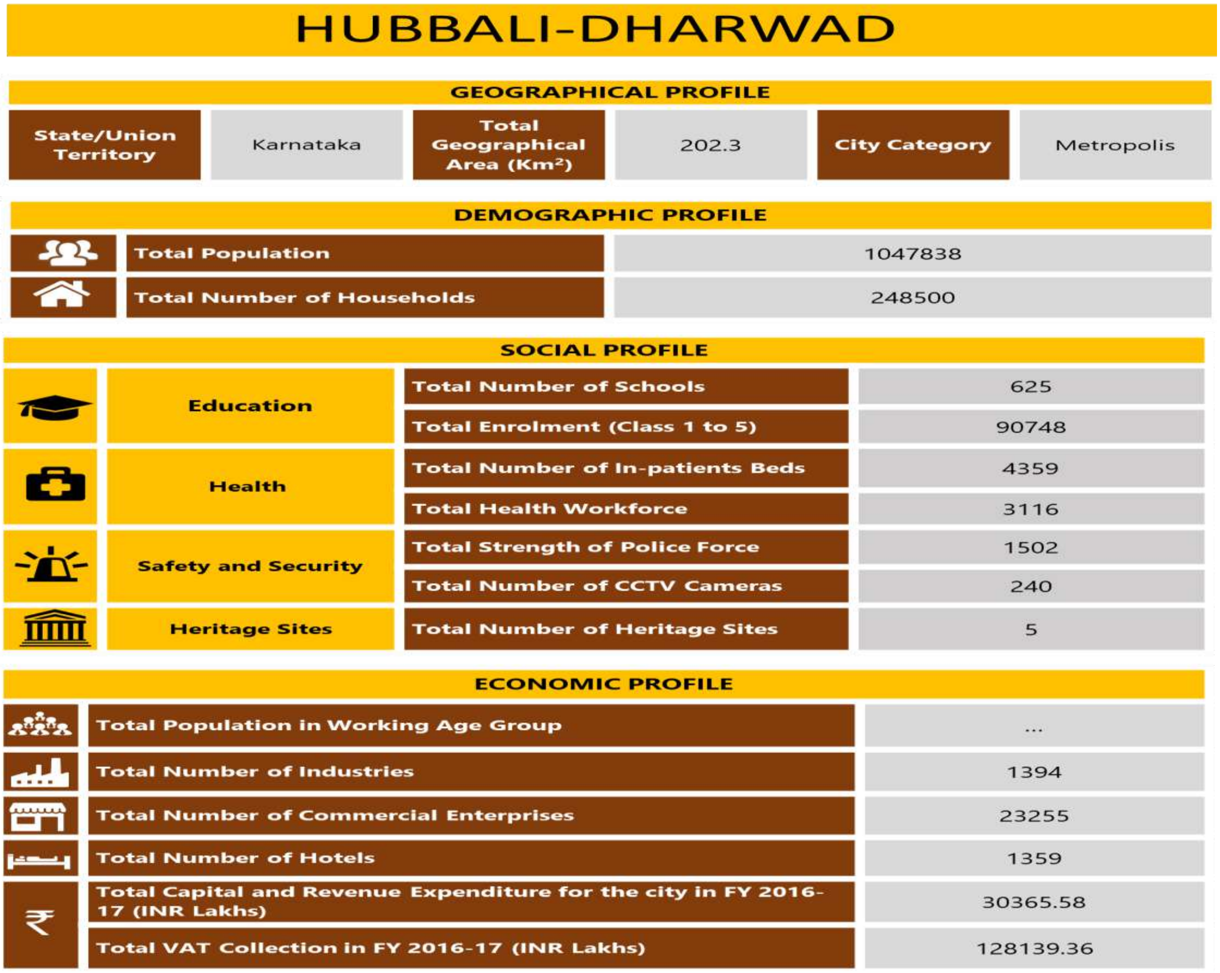

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



HUBBALI-DHARWAD

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km^2)	202.3	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1047838
Total Number of Households	248500

SOCIAL PROFILE

Education	Total Number of Schools	625
	Total Enrolment (Class 1 to 5)	90748
Health	Total Number of In-patients Beds	4359
	Total Health Workforce	3116
Safety and Security	Total Strength of Police Force	1502
	Total Number of CCTV Cameras	240
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	1394
Total Number of Commercial Enterprises	23255
Total Number of Hotels	1359
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30365.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	128139.36

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	63.64
	Total Number of Water Connections	58416
Sanitation Facilities	Total number of households with access to individual toilets in the city	199000
	Total number of households in the city with access to community toilets in the city	21200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	360
	Total number of households covered through door-to-door collection of solid waste	175000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	60
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	Total number of authorized electrical connections in the city	351955
	Total electricity supplied to the city (kWh)	492491861
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	218477.66
Roads and Transport	Total Length of Road Network in the City (Km)	2223.86
	Total length of arterial and sub-arterial road network in the city (Km)	1621
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

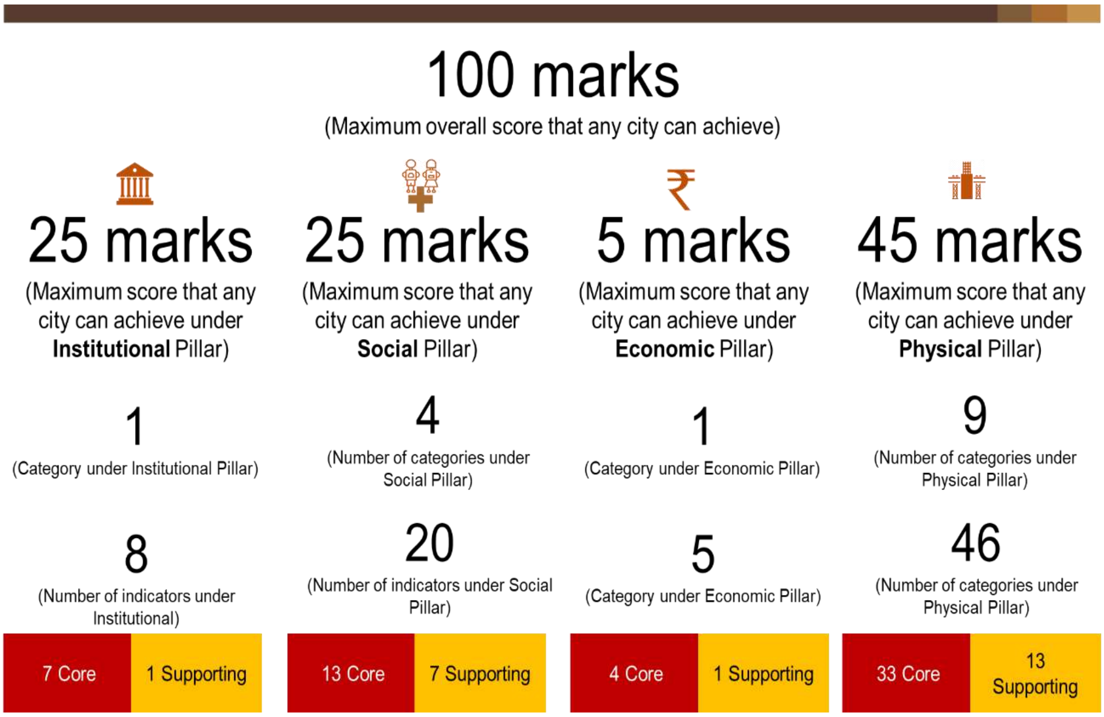
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core	1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core	7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core	1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, HDMC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department, HDMC
Urban Local Body	For Water Supply and Drainage related questions	KUWSDB, Hubballi Office (Water Board) & Engineering Department, HDMC
Urban Local Body	For Heritage sites related data	Town Planning Department, HDMC
Urban Local Body	For Ecological sites related data	Town Planning Department, HDMC
Urban Local Body	For Housing related data	Housing - Engineering Department, HDMC
Urban Local Body	For Building plan related data	Town Planning Department, HDMC
Urban Local Body	For Roads related data	Engineering Department, HDMC
Urban Local Body	For Solid waste management related data	SWM – Engineering Department, HDMC
Urban Local Body	For IT services related data	Information Technology Department, HDMC
Urban Local Body	For Vendor committee related data	Town Vending Committee, HDMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Professional Tax Department

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Dharwad District Office.
Development Authority	Building Infrastructure	Town Planning Department, HDMC
	Construction planning	Town Planning Department, HDMC
	Green Building	Town Planning Department, HDMC
	Rain water harvesting	Town Planning Department, HDMC
	Universal Design Principle	Town Planning Department, HDMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Hubli Electricity Supply Company Limited
State Disaster management authority		Engineering Department, HDMC
State Education Department		Education Department, Dharwad District Office.
State Health Department	Health care professionals	Health Department, Dharwad District Office.
	Citizen Services	Health Department, Dharwad District Office.
	Disease Prevalence	Health Department, Dharwad District Office.
	Health Infrastructure	Health Department, Dharwad District Office.
State Renewable Energy Development Agency	Renewable Energy	Hubli Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Sales & Commercial Taxes Department, Dharwad District Office.
Town and Country Planning Department	Land Use	Hubballi Dharwad Urban Development Authority
Traffic and Police Department		Hubballi Dharwad Police Department.
Transport Authorities	Buses	North Western Karnataka Road Transport Corporation (NWKRTC), Hubli Division.
	Registered Vehicles	Regional Transport Office (RTO) – Navanagar Hubli Office KA 25 & Gabbur cross Hbl KA 63 Office.

Designated data owners	Subcategories	Data owners at city level
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 11 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	1
State Renewable Energy Department	0
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	2
Total	11*

.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

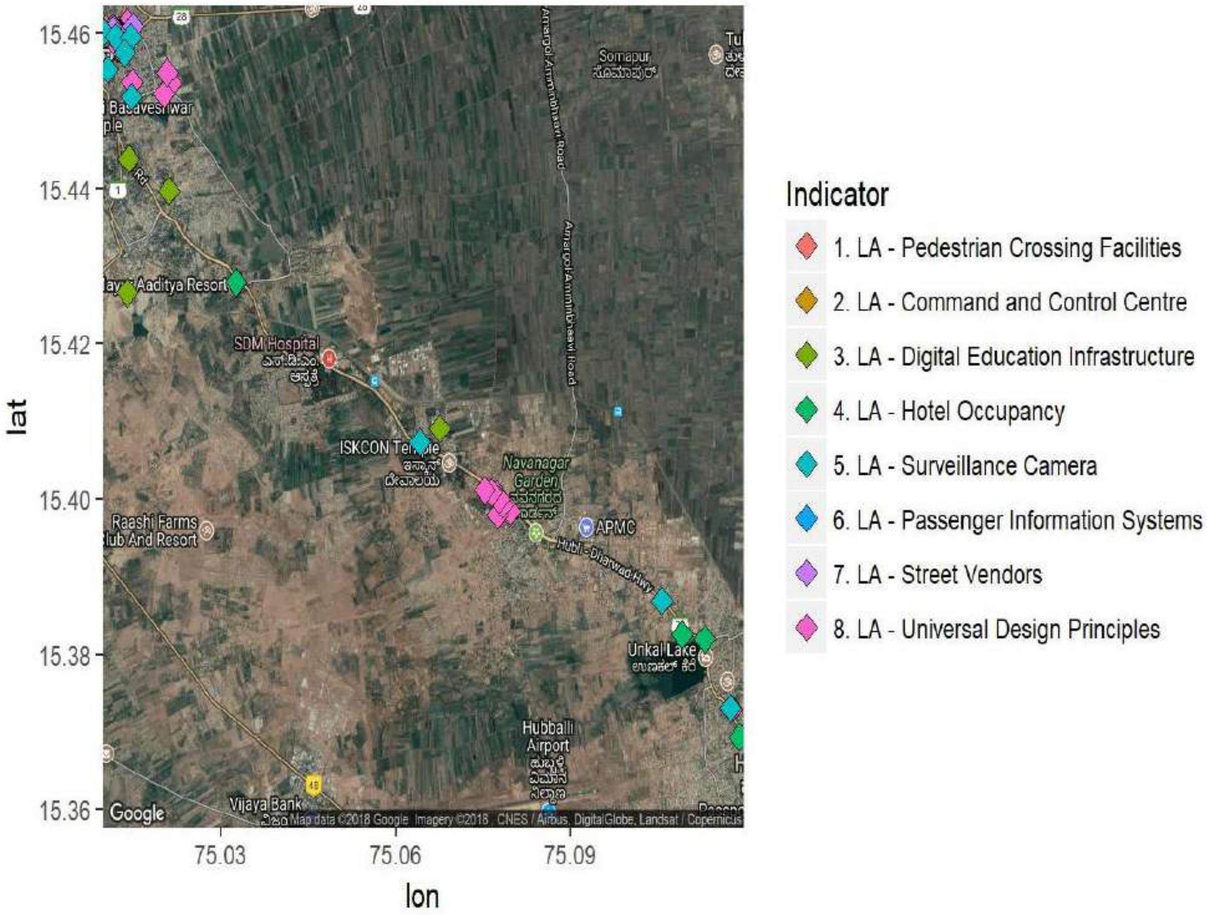
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Navanagar Garden
APMC
Hubli - Dharwad Hwy
Raashi Farms Club And Resort
Unkal Lake
Hubballi Airport
Somapur
Vijaya Bank
Amargol Amminbhavi Road
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	69.57%
Identity & Culture	28%
Education	86%
Health	97%
Safety & Security	68%
Economy & Employment	17%
Housing & Inclusiveness	3%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	57%
Transport & Mobility	40%
Assured Water Supply	63%
Waste Water Management	65%
Solid Waste Management	59%
Reduced Pollution	76%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

HYDERABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

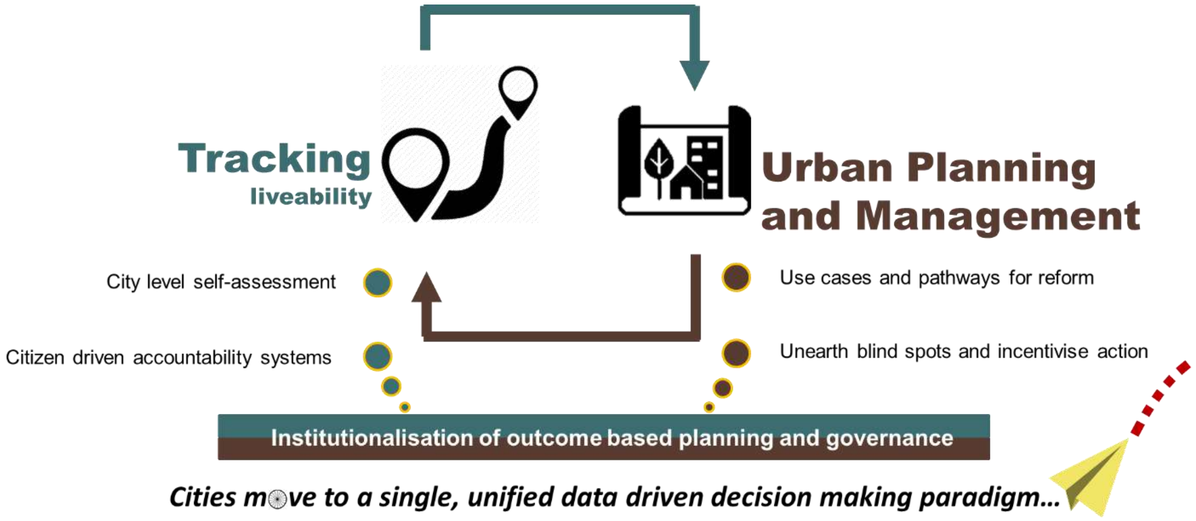
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

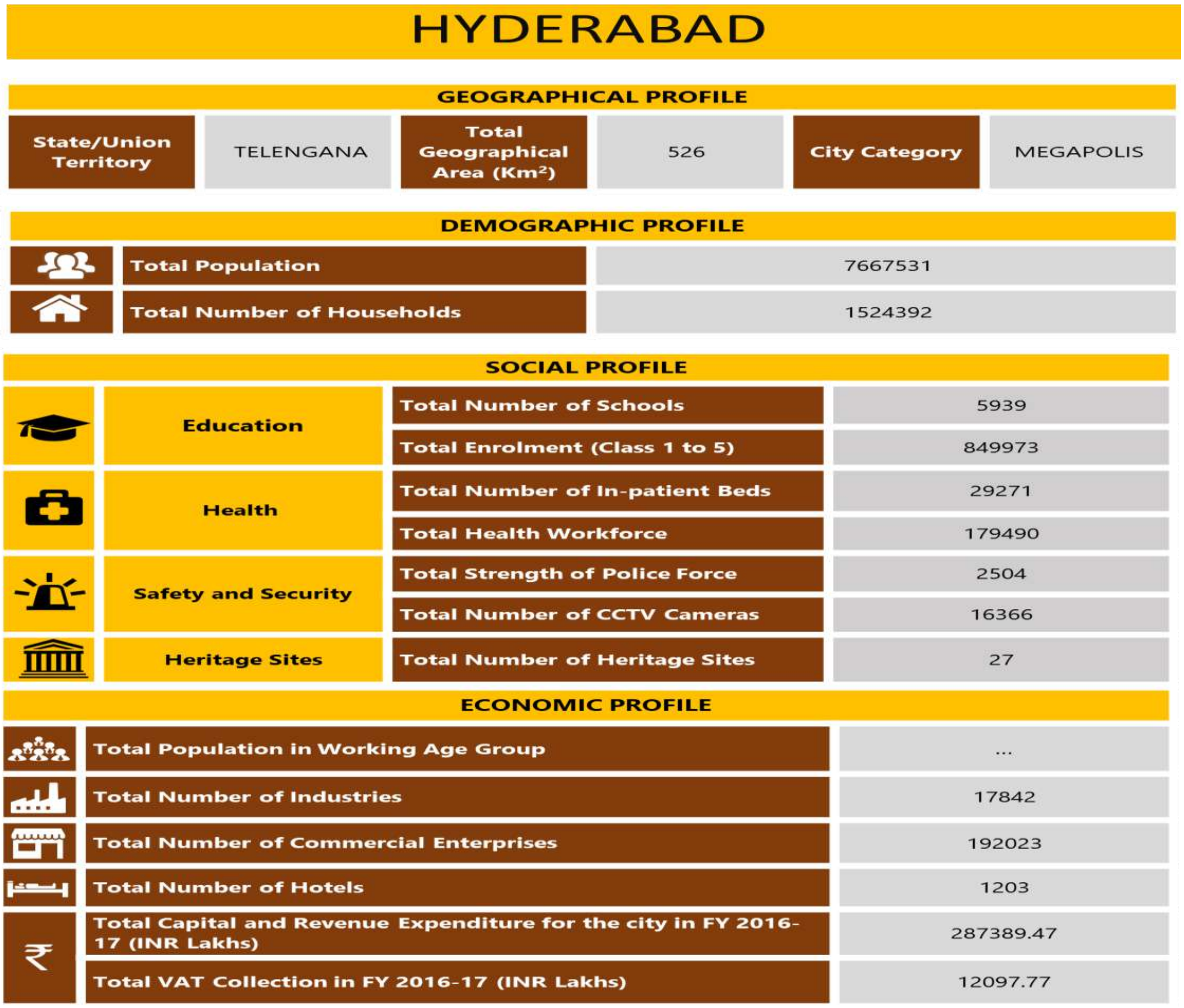

Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



HYDERABAD

GEOGRAPHICAL PROFILE

State/Union Territory	TELENGANA	Total Geographical Area (Km^2)	526	City Category	MEGAPOLIS

DEMOGRAPHIC PROFILE

Total Population	7667531
Total Number of Households	1524392

SOCIAL PROFILE

Education	Total Number of Schools	5939
	Total Enrolment (Class 1 to 5)	849973
Health	Total Number of In-patient Beds	29271
	Total Health Workforce	179490
Safety and Security	Total Strength of Police Force	2504
	Total Number of CCTV Cameras	16366
Heritage Sites	Total Number of Heritage Sites	27

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	17842
Total Number of Commercial Enterprises	192023
Total Number of Hotels	1203
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	287389.47
Total VAT Collection in FY 2016-17 (INR Lakhs)	12097.77

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	1780
	Total Number of Water Connection	945453
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	4800
	Total number of households covered through door-to-door collection of solid waste	19.57
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	1350
	Daily average quantum of waste water treated by STPs in the city (MLD)	700
Electricity	**Total number of authorized electrical connections in the city**	1912994
	Total electricity supplied to the city (kWh)	6612.52
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	2662268
Roads and Transport	**Total Length of Road Network in the City (Km)**	9103.35
	Total length of arterial and sub-arterial road network in the city (Km)	345
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	335

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

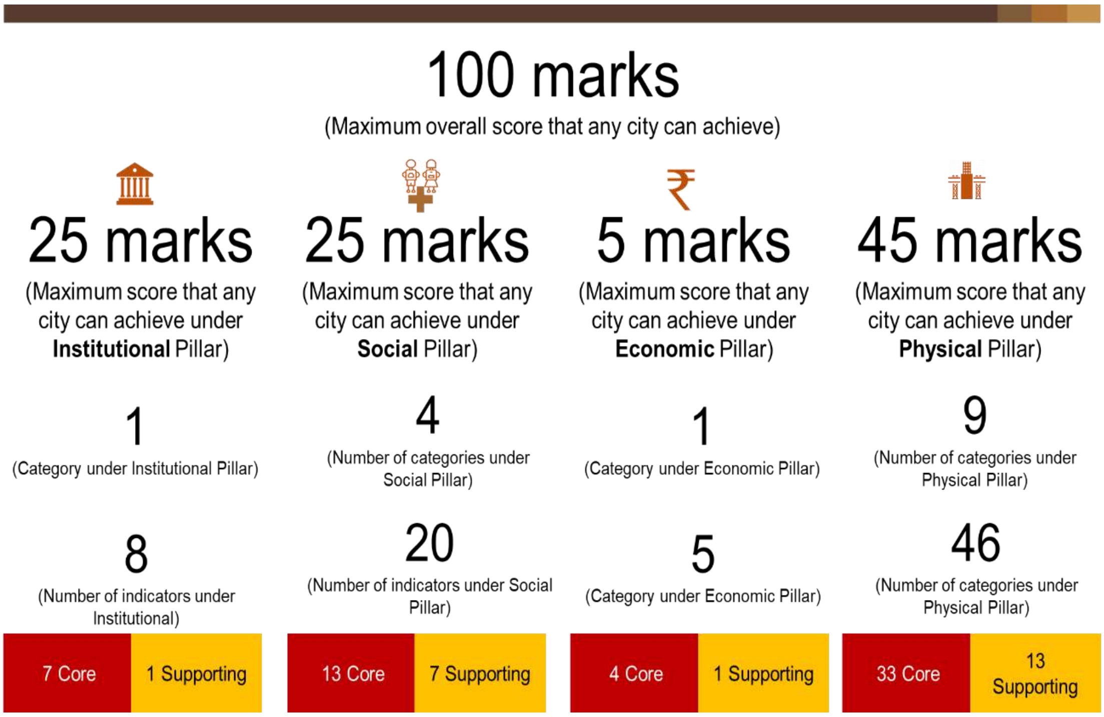
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Finance Wing, Greater Hyderabad Municipal Corporation and Commercial Tax Department, Govt. of Telangana
Urban Local Body	For Park and Recreation Related Questions	Urban Biodiversity Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Hyderabad Metro Water Supply and Sewage Board
Urban Local Body	For Heritage sites related data	Department of Archaeology, Telangana
Urban Local Body	For Ecological sites related data	Department of Archaeology, Telangana
Urban Local Body	For Housing related data	Housing Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For Building plan related data	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
Urban Local Body	For Roads related data	Projects and Maintenance Wings of Greater Hyderabad Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management (SWM) Wing, Greater Hyderabad Municipal Corporation
Urban Local Body	For IT services related data	IT Wing, Greater Hyderabad Municipal Corporation and Information Technology, Electronics and Communications Department, Govt of Telangana
Urban Local Body	For Vendor committee related data	Urban Community Development, Greater Hyderabad Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Sports Authority of Telangana,

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Telangana State Pollution Control Board
Development Authority	Building Infrastructure	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Construction planning	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Green Building	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Rain water harvesting	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad Metropolitan Development Authority
	Universal Design Principle	Town Planning Wings of Greater Hyderabad Municipal Corporation and Hyderabad
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Telangana Southern power distribution Company Limited
State Disaster management authority		State Disaster Management, Greater Hyderabad Municipal Corporation, tank Bund Hyderabad.
State Education Department		Commissioner and Directorate of school Education, Telangana
State Health Department	Health care professionals	NHM/health Department Telagana
	Citizen Services	NHM/health Department Telagana
	Disease Prevalence	Telangana State Health Department
	Health Infrastructure	Telangana State Health Department
State Renewable Energy Development Agency	Renewable Energy	Telangana state renewable energy department
State Sales / Commercial Taxes Department		Government of Telangana Commercial Taxes Department

Designated data owners	Subcategories	Data owners at city level
Town and Country Planning Department	Land Use	Town and country planning, GHMC, Telangana
Traffic and Police Department		Department of police, Telangana
Transport Authorities	Buses	Telangana State Road Transport Corporation
	Registered Vehicles	Road Transport Authority Telangana
	Sub urban rail transport	Indian railways
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 213 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	7
State Education Department	0
DISCOM/Electricity Department	1
Traffic and Police Department	6
Development Authority	8
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	0
Transport Authority	24

Data Owners	Number of Documents
Disaster Management	1
Urban Local Body	161
Total	213*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

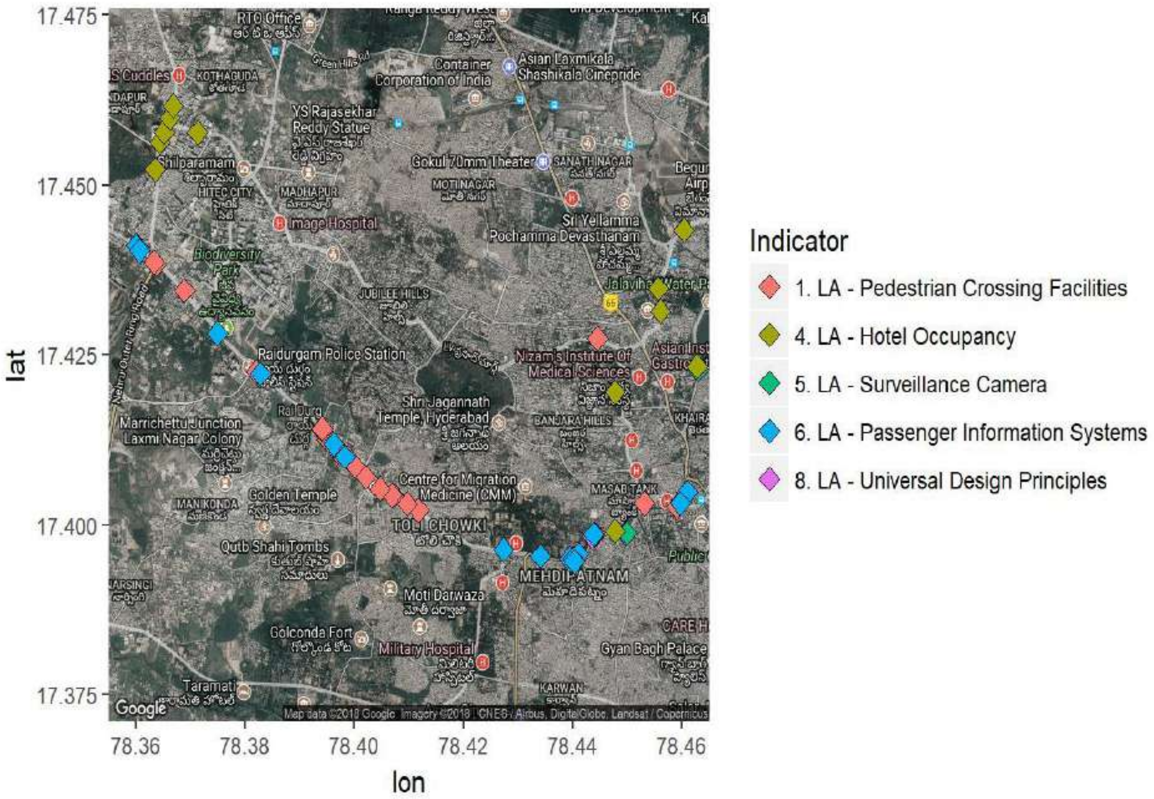
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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lat
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lon
RTO Office
Shilparamam
HITEC CITY
MADHAPUR
Image Hospital
Biodiversity Park
JUBILEE HILLS
Raidurgam Police Station
Marrichettu Junction Laxmi Nagar Colony
Golden Temple
Qutb Shahi Tombs
Golconda Fort
Taramati
Container Corporation of India
Asian Laxmikala Shashikala Cinepride
YS Rajasekhar Reddy Statue
Gokul 70mm Theater
MOTI NAGAR
SANATH NAGAR
Sri Yellamma Pochamma Devasthanam
Jalavihar Water Park
Nizam's Institute Of Medical Sciences
Shri Jagannath Temple, Hyderabad
BANJARA HILLS
Centre for Migration Medicine (CMM)
TOLI CHOWKI
MASAB TANK
MEHDIPATNAM
Moti Darwaza
Military Hospital
KARWAN
Gyan Bagh Palace
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles

5 City score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	80.20%
Identity & Culture	19%
Education	92%
Health	97%
Safety & Security	55%
Economy & Employment	56%
Housing & Inclusiveness	21%
Public Open Spaces	2%
Mixed Land Use & Compactness	50%
Power Supply	59%
Transport & Mobility	43%
Assured Water Supply	57%
Waste Water Management	33%
Solid Waste Management	36%
Reduced Pollution	64%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

IMPHAL

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Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

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pport extended by MoHUA. The state level workshops brought le platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

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ed the process by conducting video conferences with cities to ance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

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		Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not prcjected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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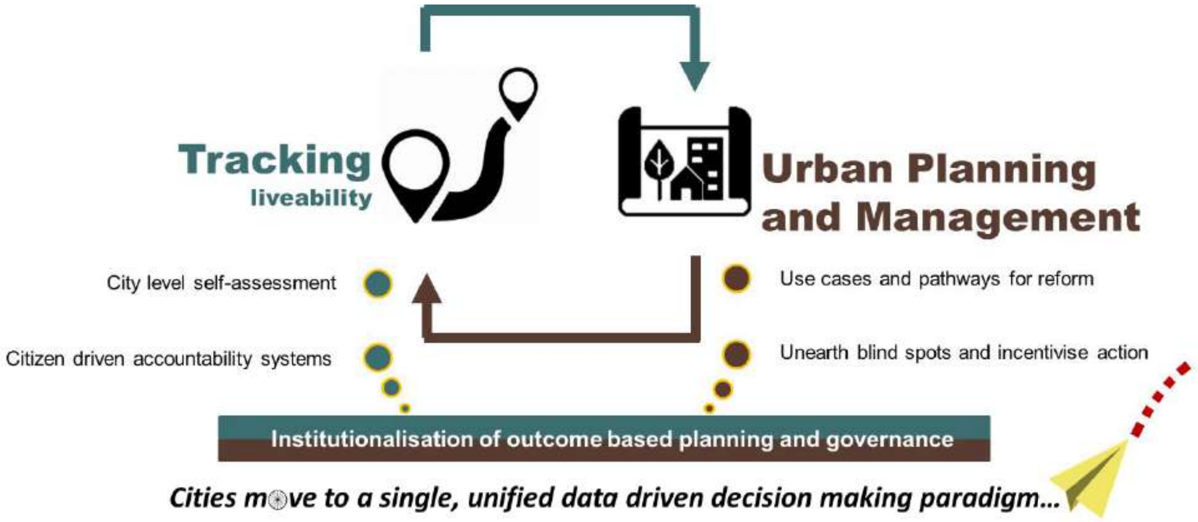
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

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The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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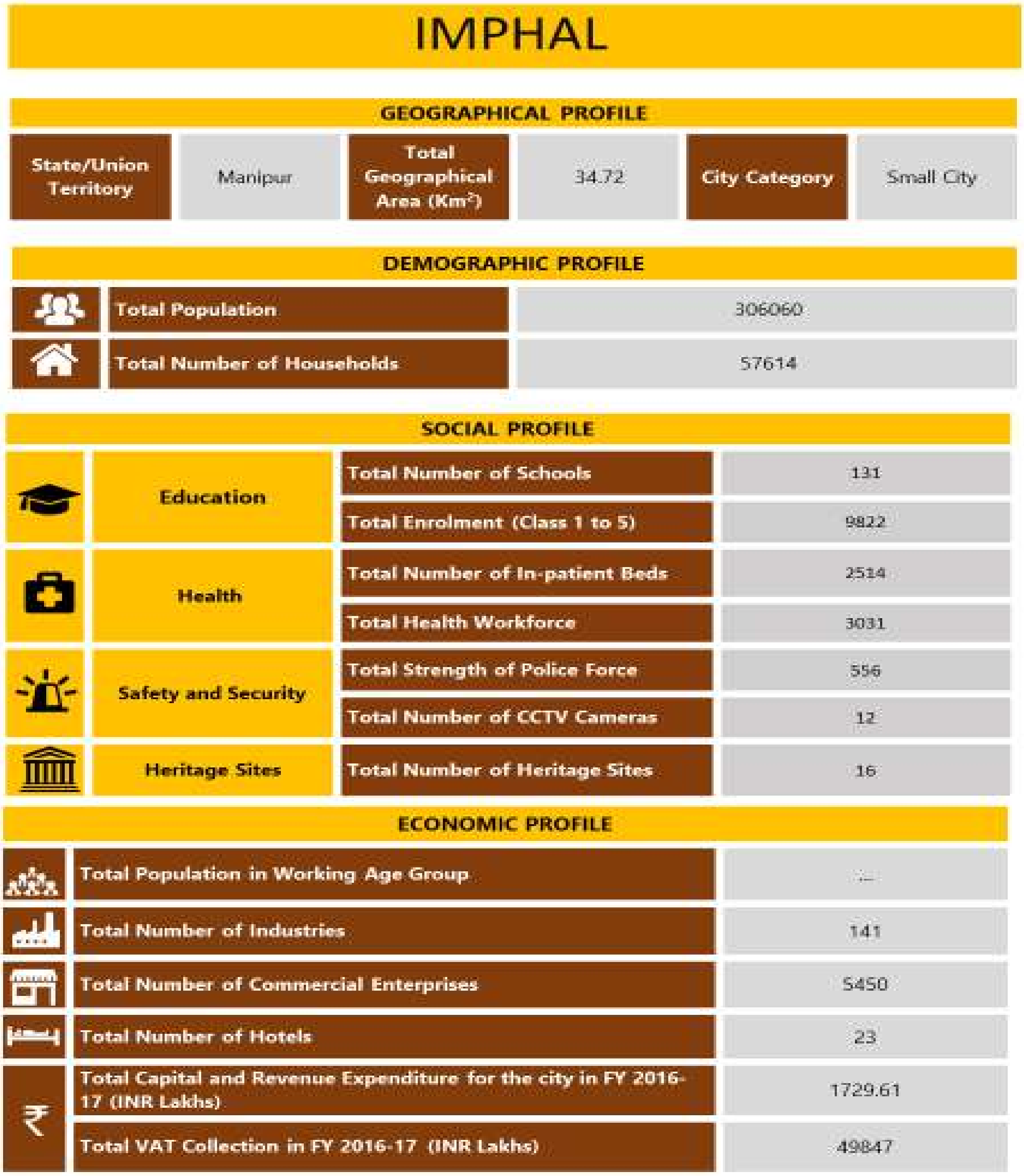
-Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Manipur	Total Geographical Area (Km^2)	34.72	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	306060
Total Number of Households	57614

SOCIAL PROFILE

Education	Total Number of Schools	131
	Total Enrolment (Class 1 to 5)	9822
Health	Total Number of In-patient Beds	2514
	Total Health Workforce	3031
Safety and Security	Total Strength of Police Force	556
	Total Number of CCTV Cameras	12
Heritage Sites	Total Number of Heritage Sites	16

ECONOMIC PROFILE

Total Population in Working Age Group	-.-
Total Number of Industries	141
Total Number of Commercial Enterprises	5450
Total Number of Hotels	23
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1729.61
Total VAT Collection in FY 2016-17 (INR Lakhs)	49847

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PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	73.47
	Total Number of Water Connection	31431
Sanitation Facilities	Total number of households with access to individual toilets in the city	51613
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	63.57
	Total number of households covered through door-to-door collection of solid waste	18152
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	---
	Daily average quantum of waste water treated by STPs in the city (MLD)	---
Electricity	Total number of authorized electrical connections in the city	436774
	Total electricity supplied to the city (kWh)	52274300
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1072790
Roads and Transport	Total Length of Road Network in the City (Km)	278.38
	Total length of arterial and sub-arterial road network in the city (Km)	17.9
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	22.02

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icators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

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Development		Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

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Development		Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

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Development		Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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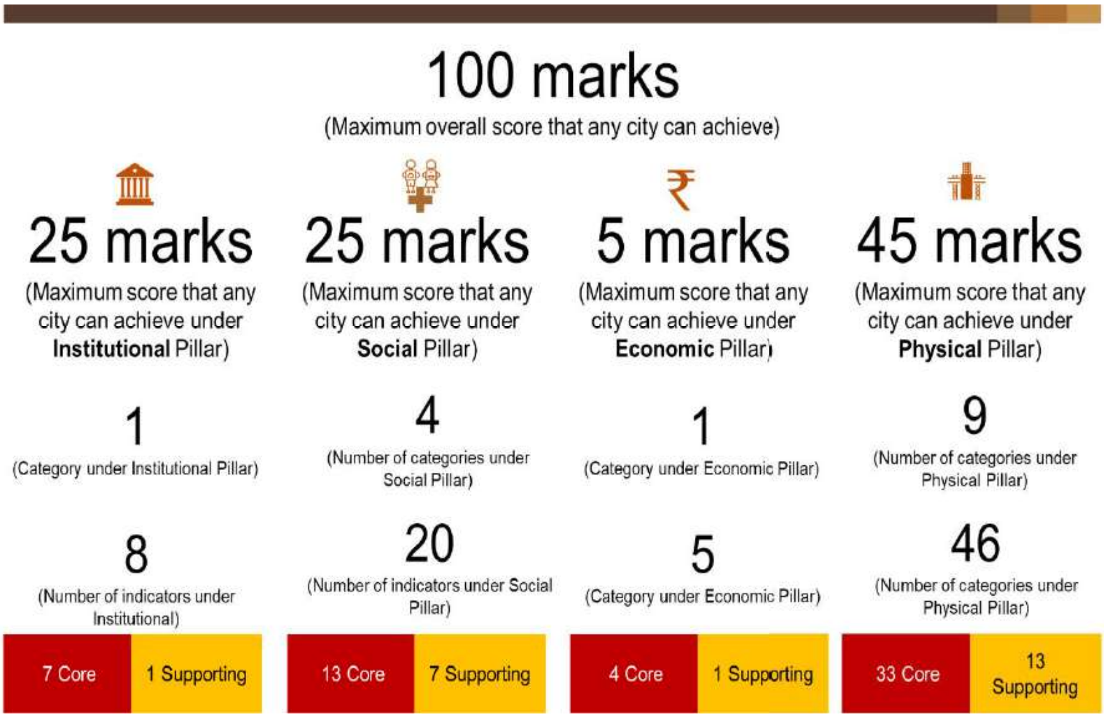
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Imphal Municipal Corporation (IMC)
Urban Local Body	For Park and Recreation Related Questions	Imphal Municipal Corporation (IMC)
Urban Local Body	For Water Supply and Drainage related questions	PHED
Urban Local Body	For Heritage sites related data	Art & Culture
Urban Local Body	For Ecological sites related data	Dept. of Ecology & Environment
Urban Local Body	For Housing related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For Building plan related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For Roads related data	PWD
Urban Local Body	For Solid waste management related data	Imphal Municipal Corporation (IMC)
Urban Local Body	For IT services related data	Imphal Municipal Coorporation (IMC)
Urban Local Body	For Vendor committee related data	Imphal Municipal Corporation (IMC)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	(1) PWD (2) PHED (3) Economics & Statistics Deptt. (4) Water Resources Deptt. (5) Commerce & industry (6) Tourism (7) Education (S) (8) Taxation (9) Arts & Culture (10) Youth Affairs & Sports (11) Employment Exchange (12)

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	categories	Data owners at city level
		Transport (13) Traffic (14) Town Planning (15) PDA (16) Manipur state pollution Control board (17) Manipur State power Development Corporation ltd. (MSPDCL) (18) Ecology 7 Environment (19) Medical & health Services
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Manipur state pollution Control board
Development Authority	Building Infrastructure	IMC
	Construction planning	IMC
	Green Building	IMC
	Rain water harvesting	IMC
	Universal Design Principle	IMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MSPDCL
State Disaster management authority		Relief & Disaster
State Education Department		Education (Schools)
State Health Department	Health care professionals	Medical & Health Services
State Health Department	Citizen Services	Medical & Health Services
State Health Department	Disease Prevalence	Medical & Health Services
State Health Department	Health Infrastructure	Medical & Health Services
State Renewable Energy Development Agency		MANIREDA
State Sales / Commercial Taxes Department		Taxation
Town and Country Planning Department	Land Use	Town Planning Deptt.
Traffic and Police Department		Home Dept.

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	categories	Data owners at city level
Transport Authorities	Buses	Transport Deptt.
Transport Authorities	Registered Vehicles	Transport Deptt.
Transport Authorities	Sub urban rail transport	N/A
Transport Authorities	Mono Rail Authority	N/A
Transport Authorities	Tramways	N/A
Transport Authorities	Marine Transport Authority	N/A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 22 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	12
Total	22

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A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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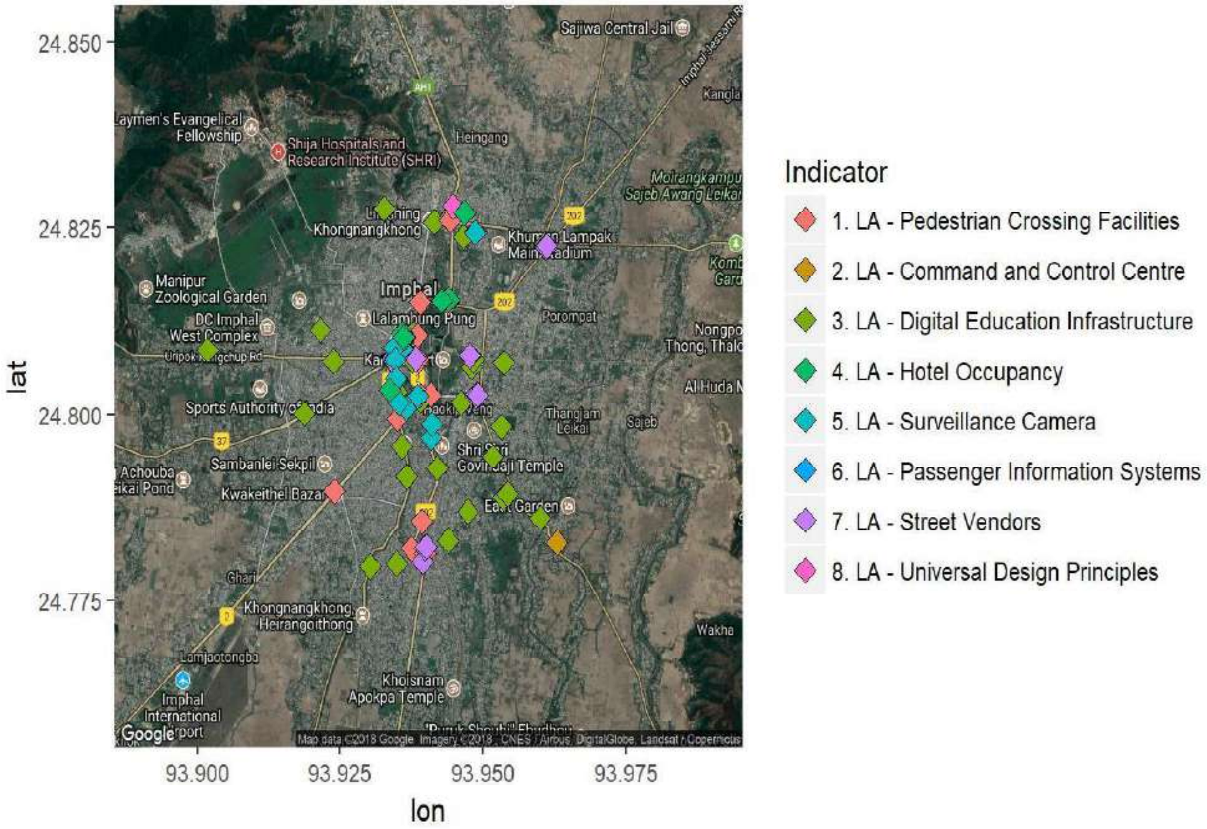
The following map presents the indicators audited at city level.


24.850
24.825
24.800
24.775
lat
93.900
93.925
93.950
93.975
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Imphal
Sajiwa Central Jail
Khongnangkhong
Manipur Zoological Garden
DC Imphal West Complex
Sports Authority of India
Sambanlei Sekpil
Kwakeithel Bazar
Khurai Lampak Main Stadium
Porompat
Thangjam Leikai
East Garden
Khoisnam Apokpa Temple
Imphal International Airport
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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e 5: Category wise scores

Categories	Scores in Percentage
Governance	39.17%
Identity & Culture	50%
Education	64%
Health	92%
Safety & Security	60%
Economy & Employment	29%
Housing & Inclusiveness	100%
Public Open Spaces	20%
Mixed Land Use & Compactness	0%
Power Supply	55%
Transport & Mobility	3%
Assured Water Supply	32%
Waste Water Management	18%
Solid Waste Management	30%
Reduced Pollution	43%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

INDORE

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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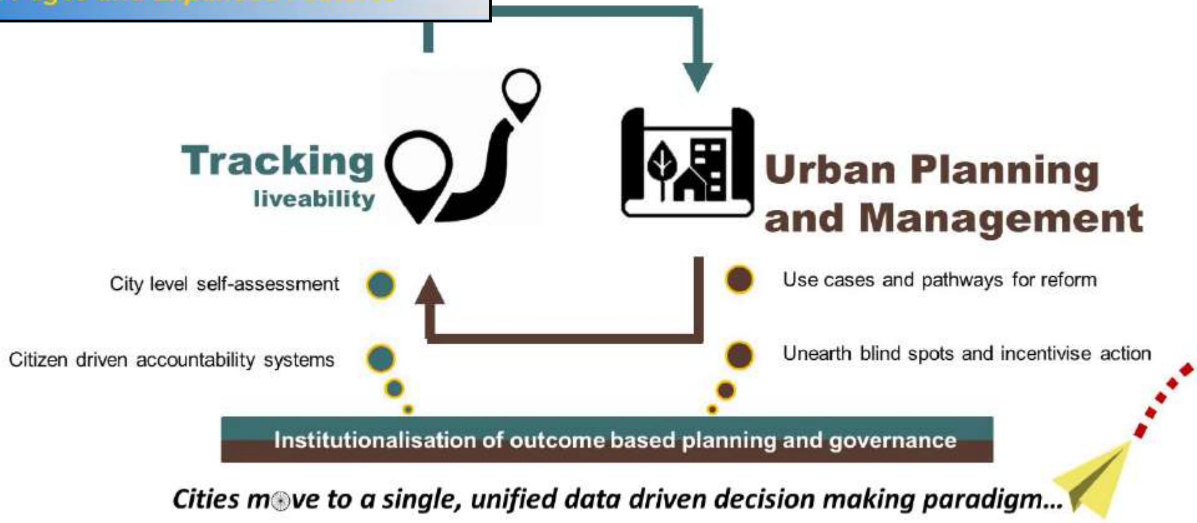
Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

INDORE

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	276	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2473222
Total Number of Households	544922

SOCIAL PROFILE

Education	Total Number of Schools	1649
	Total Enrolment (Class 1 to 5)	198879
Health	Total Number of In-patient Beds	10090
	Total Health Workforce	9957
Safety and Security	Total Strength of Police Force	392
	Total Number of CCTV Cameras	1450
Heritage Sites	Total Number of Heritage Sites	108

ECONOMIC PROFILE

Total Population in Working Age Group	980990
Total Number of Industries	6816
Total Number of Commercial Enterprises	88512
Total Number of Hotels	91
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	106212.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	517903.91

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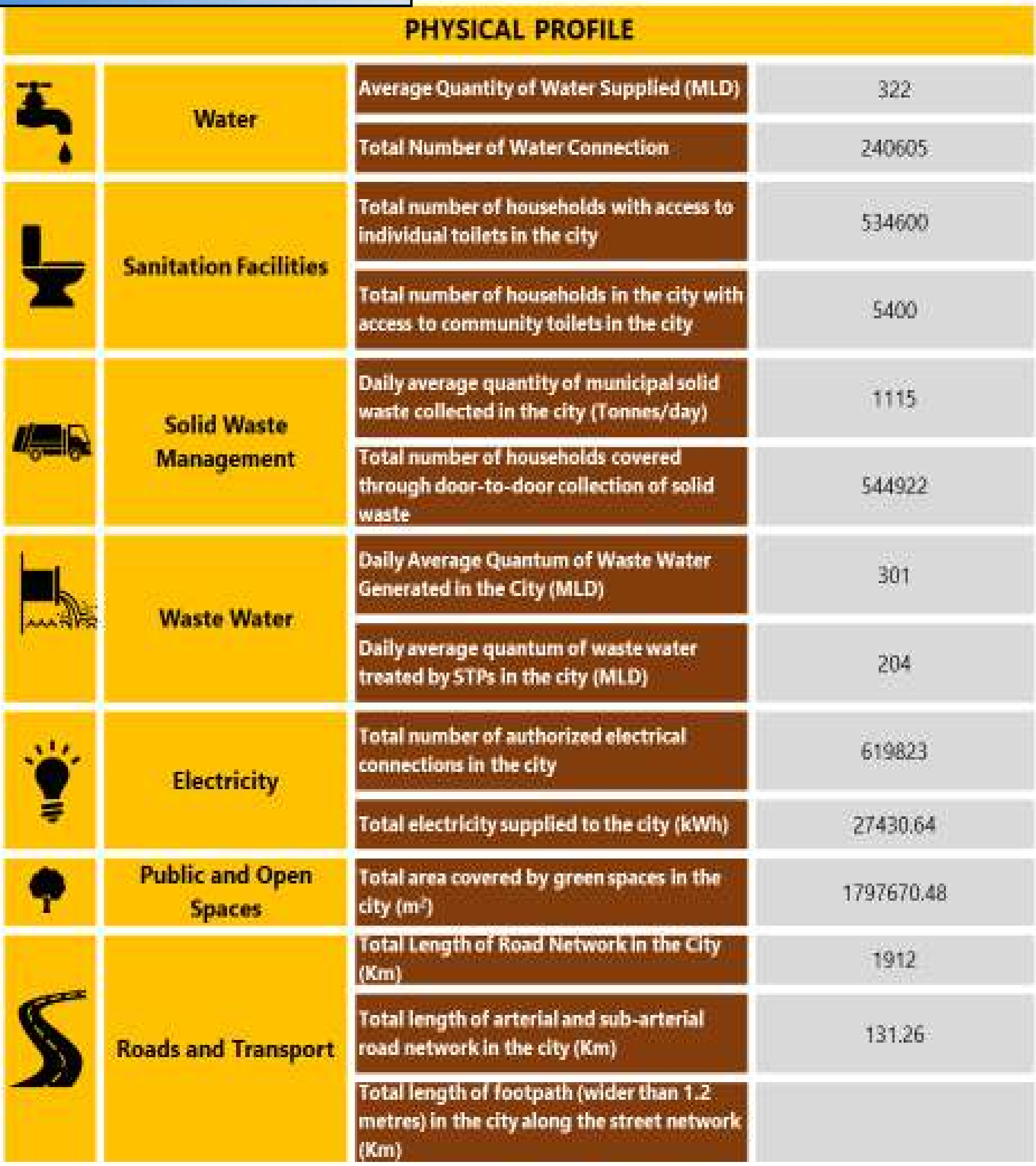

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	322
	Total Number of Water Connection	240605
Sanitation Facilities	Total number of households with access to individual toilets in the city	534600
	Total number of households in the city with access to community toilets in the city	5400
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1115
	Total number of households covered through door-to-door collection of solid waste	544922
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	301
	Daily average quantum of waste water treated by STPs in the city (MLD)	204
Electricity	Total number of authorized electrical connections in the city	619823
	Total electricity supplied to the city (kWh)	27430.64
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1797670.48
Roads and Transport	Total Length of Road Network in the City (Km)	1912
	Total length of arterial and sub-arterial road network in the city (Km)	131.26
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	

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icators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

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Development		Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

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Development		**Indicators**
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

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Development		Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

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4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Indore Municipal Corporation
	Park and Recreation	Indore Municipal Corporation
	Water Supply and Drainage	Engineering Department, Indore Municipal Corporation
	Heritage sites	Indore Municipal Corporation
	Ecological sites	Indore Municipal Corporation
	Housing	Housing section, Indore Municipal Corporation

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	b categories	Data owners at city level
	Building plan	Indore Municipal Corporation
	Roads	Indore Municipal Corporation
	Solid waste management	Solid waste management, Indore Municipal Corporation
	IT services	IT Section, Indore Municipal Corporation
	Vendor committee	Indore Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Indore Development Authority
	Construction planning	Indore Development Authority
	Green Building	Indore Development Authority
	Rain water harvesting	Indore Development Authority
	Universal Design Principle	Indore Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Jabalpur
	Buses	Regional Transport Office

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	b categories	Data owners at city level
Transport Authorities	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 86 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	2
DISCOM/Electricity Department	2
Traffic and Police Department	11
Development Authority	3
Pollution Control Board	4
State Renewable Energy Department	0
Town and Country Planning	3
State Health Department	4
Transport Authority	8
Disaster Management	1
Urban Local Body	46
Total	86

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A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1** | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

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11.3 | Mode share of public transport

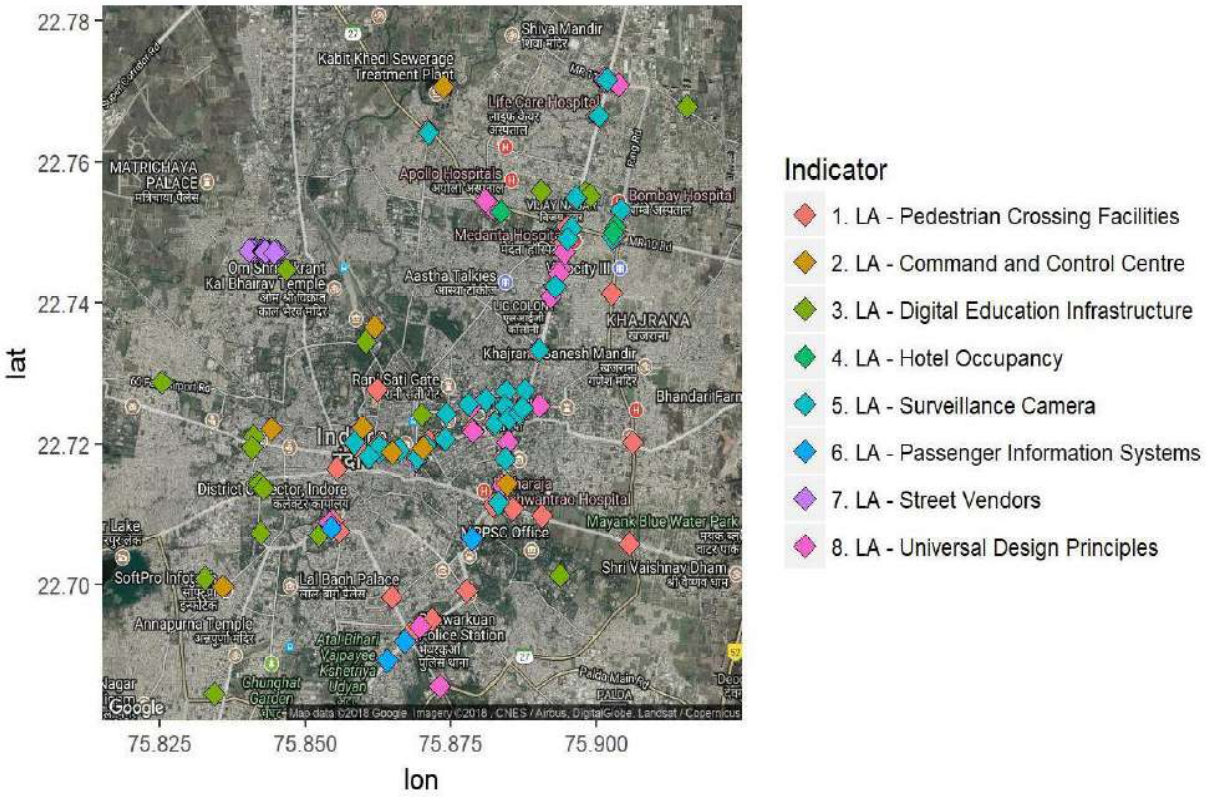
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.78
22.76
22.74
22.72
22.70
lat
75.825
75.850
75.875
75.900
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
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I Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	55.96%
Identity & Culture	57%
Education	76%
Health	87%
Safety & Security	72%
Economy & Employment	16%
Housing & Inclusiveness	2%
Public Open Spaces	4%
Mixed Land Use & Compactness	0%
Power Supply	62%
Transport & Mobility	25%
Assured Water Supply	61%
Waste Water Management	48%
Solid Waste Management	68%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

ITANAGAR

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Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

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itiated by the state and city coordinators. The discussion state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in

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s conducted in 110 cities by physical auditors appointed sultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

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		Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.

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		Proposed Solutions
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

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		Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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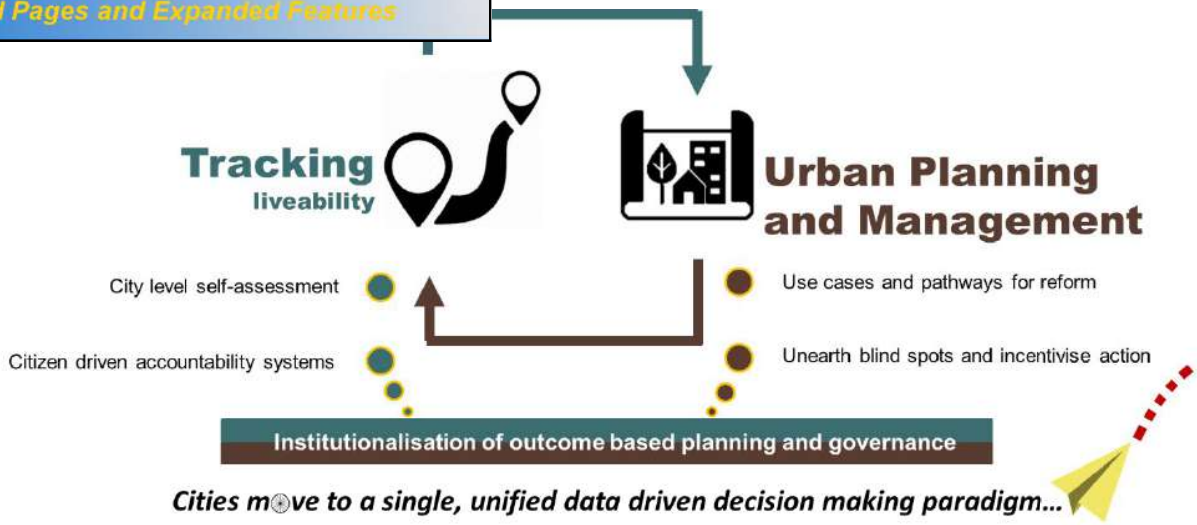
Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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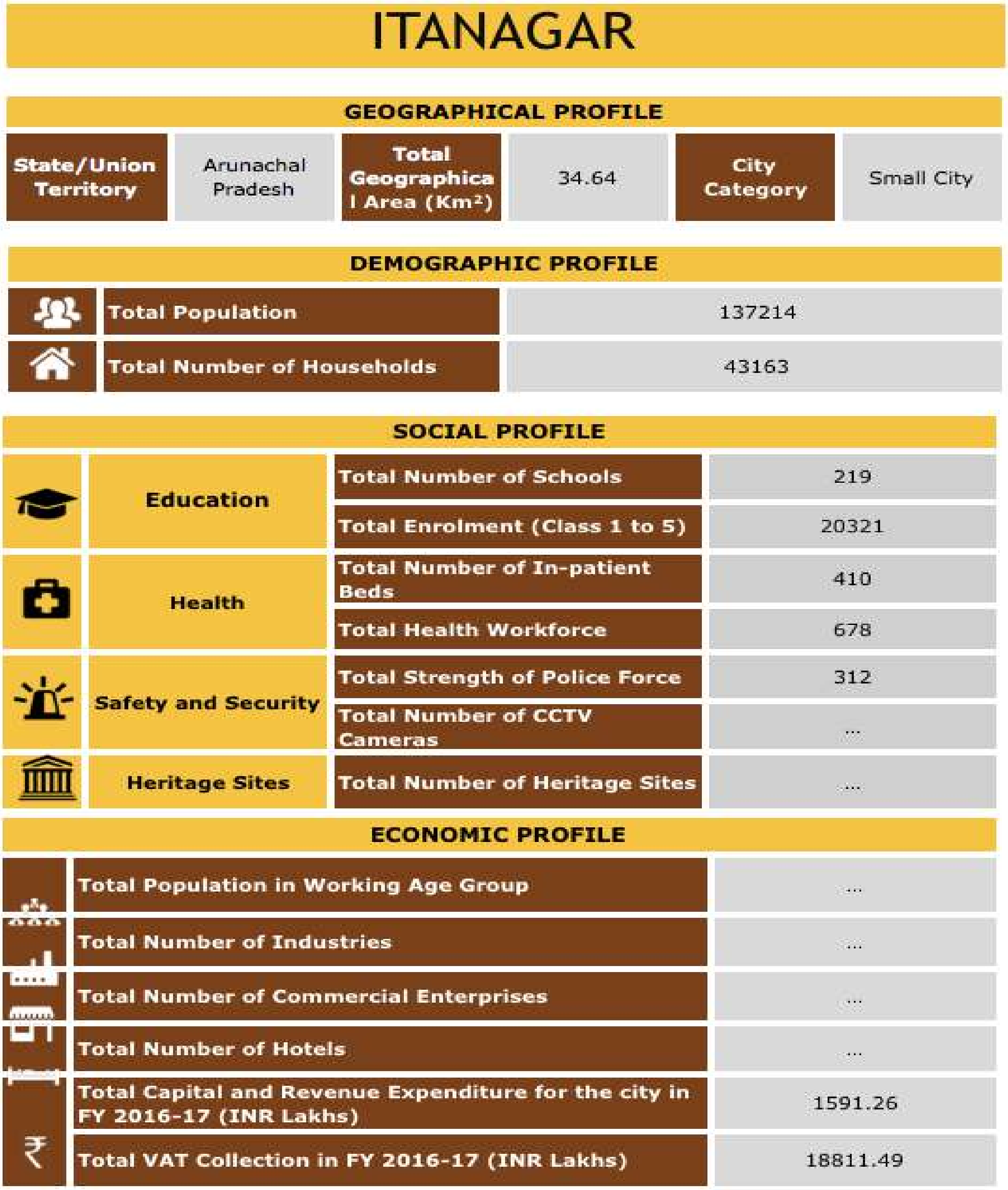
2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



ITANAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Arunachal Pradesh	Total Geographical Area (Km²)	34.64	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	137214
Total Number of Households	43163

SOCIAL PROFILE

Education	Total Number of Schools	219
	Total Enrolment (Class 1 to 5)	20321
Health	Total Number of In-patient Beds	410
	Total Health Workforce	678
Safety and Security	Total Strength of Police Force	312
	Total Number of CCTV Cameras	…
Heritage Sites	Total Number of Heritage Sites	…

ECONOMIC PROFILE

Total Population in Working Age Group	…
Total Number of Industries	…
Total Number of Commercial Enterprises	…
Total Number of Hotels	…
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1591.26
Total VAT Collection in FY 2016-17 (INR Lakhs)	18811.49

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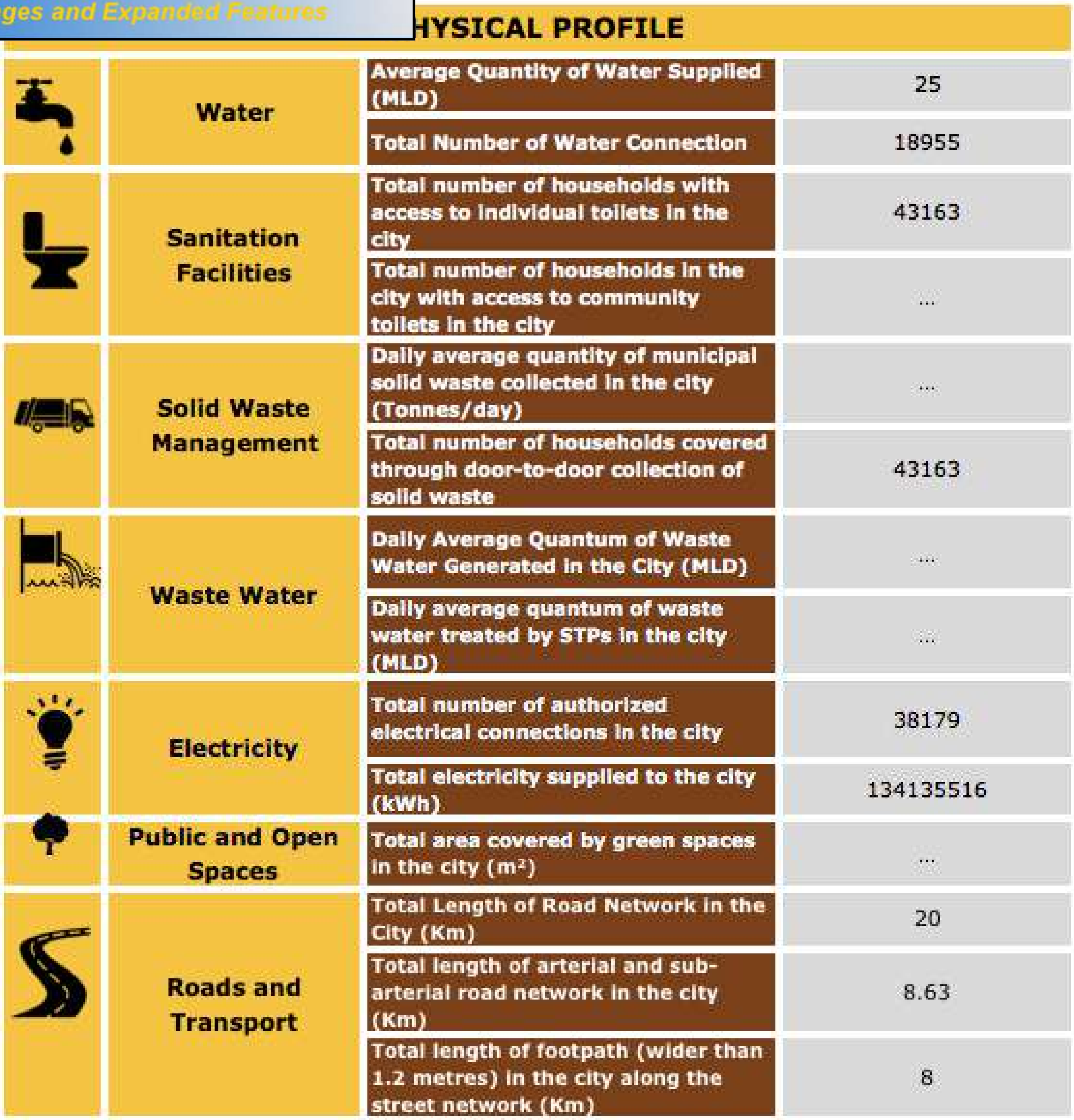

HYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	25
	Total Number of Water Connection	18955
Sanitation Facilities	Total number of households with access to individual toilets in the city	43163
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	...
	Total number of households covered through door-to-door collection of solid waste	43163
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	38179
	Total electricity supplied to the city (kWh)	134135516
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	20
	Total length of arterial and sub-arterial road network in the city (Km)	8.63
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physi-

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against the various core and supporting indicators, various e 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

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velopment		Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Se-	5.1 Number of CCTV Cameras

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velopment		Indicators
	curity	5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

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velopment		Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

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velopment		Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water

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velopment		Indicators
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

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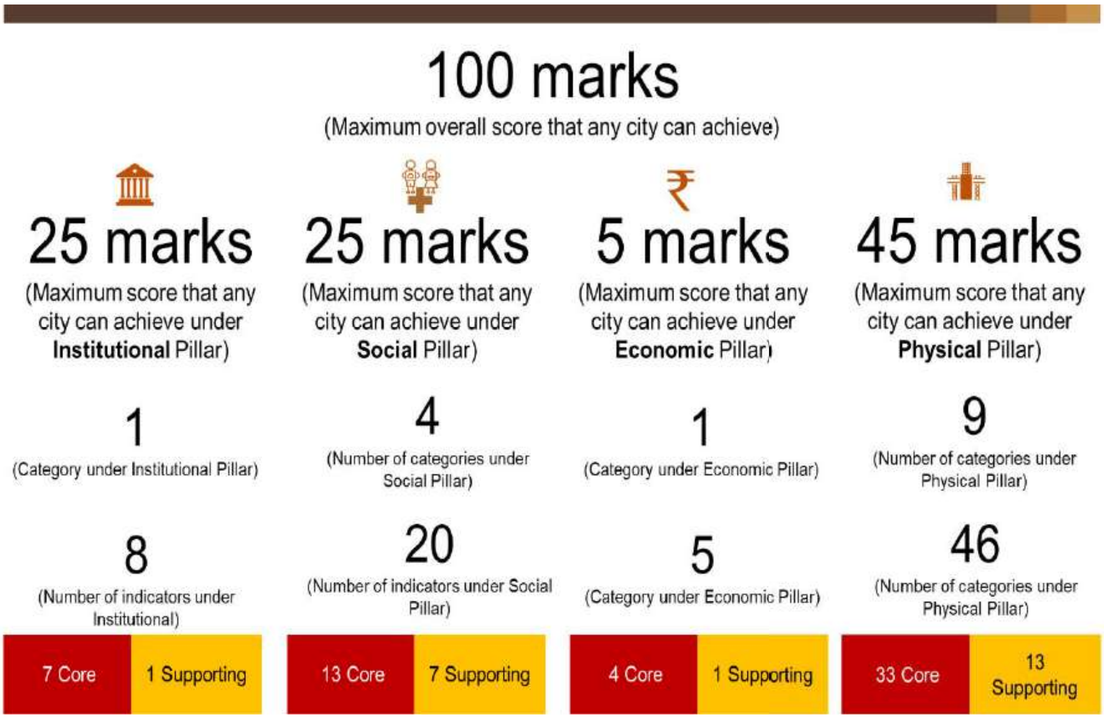
Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

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Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values.

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying,

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city level nodal person was available during the entire pe-

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Itanagar Municipal Council
Urban Local Body	For Park and Recreation Related Questions	Itanagar Municipal Council
Urban Local Body	For Water Supply and Drainage related questions	Itanagar Municipal Council
Urban Local Body	For Heritage sites related data	Itanagar Municipal Council
Urban Local Body	For Ecological sites related data	Itanagar Municipal Council
Urban Local Body	For Housing related data	Itanagar Municipal Council
Urban Local Body	For Building plan related data	Itanagar Municipal Council
Urban Local Body	For Roads related data	Itanagar Municipal Council
Urban Local Body	For Solid waste management related data	Itanagar Municipal Council
Urban Local Body	For IT services related data	Itanagar Municipal Council
Urban Local Body	For Vendor committee related data	Itanagar Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	

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	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Arunachal Pradesh State Pollution Control Board
Development Authority	Building Infrastructure	Urban Development Department, Itanagar
	Construction planning	Urban Development Department, Itanagar
	Green Building	Urban Development Department, Itanagar
	Rain water harvesting	Urban Development Department, Itanagar
	Universal Design Principle	Urban Development Department, Itanagar
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Arunachal Pradesh power corporation private limited
State Disaster management authority		District Disaster management Office, Itanagar
State Education Department		District Education Department, Itanagar
State Health Department	Health care professionals	Health department, Itanagar
	Citizen Services	Health department, Itanagar
	Disease Prevalence	Health department, Itanagar
	Health Infrastructure	Health department, Itanagar
State Renewable Energy Development Agency		Tripura Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and Excise Department, Itanagar
Town and Country Planning Department	Land Use	Town planning department, Itanagar
Traffic and Police Department		Home Department

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	Subcategories	Data owners at city level
Transport Authorities	Buses	Arunachal Pradesh State Transport Department
	Registered Vehicles	Arunachal Pradesh State Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 16 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	3
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0

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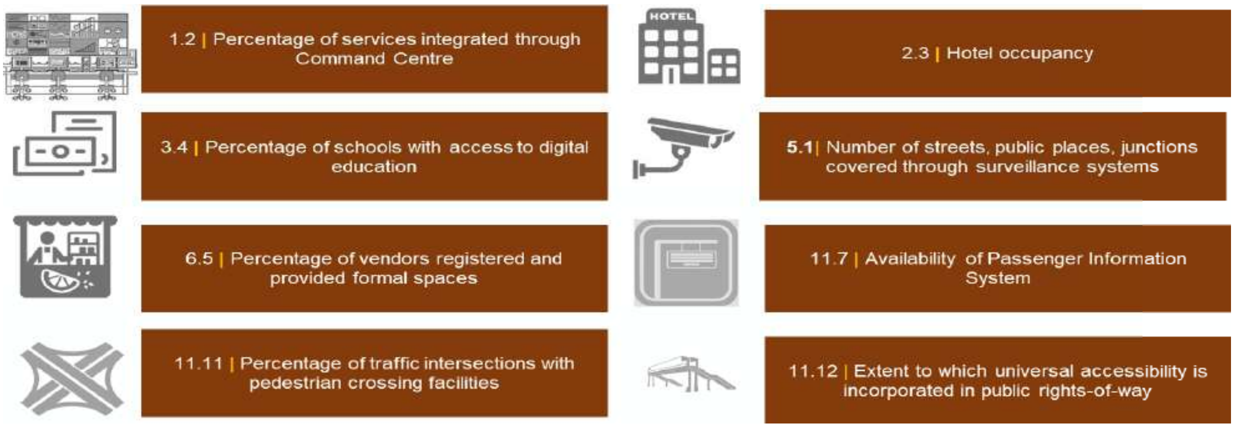
	Number of Documents
Town and Country Planning	0
State Health Department	0
Transport Authority	2
Disaster Management	0
Urban Local Body	6
Total	16

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing

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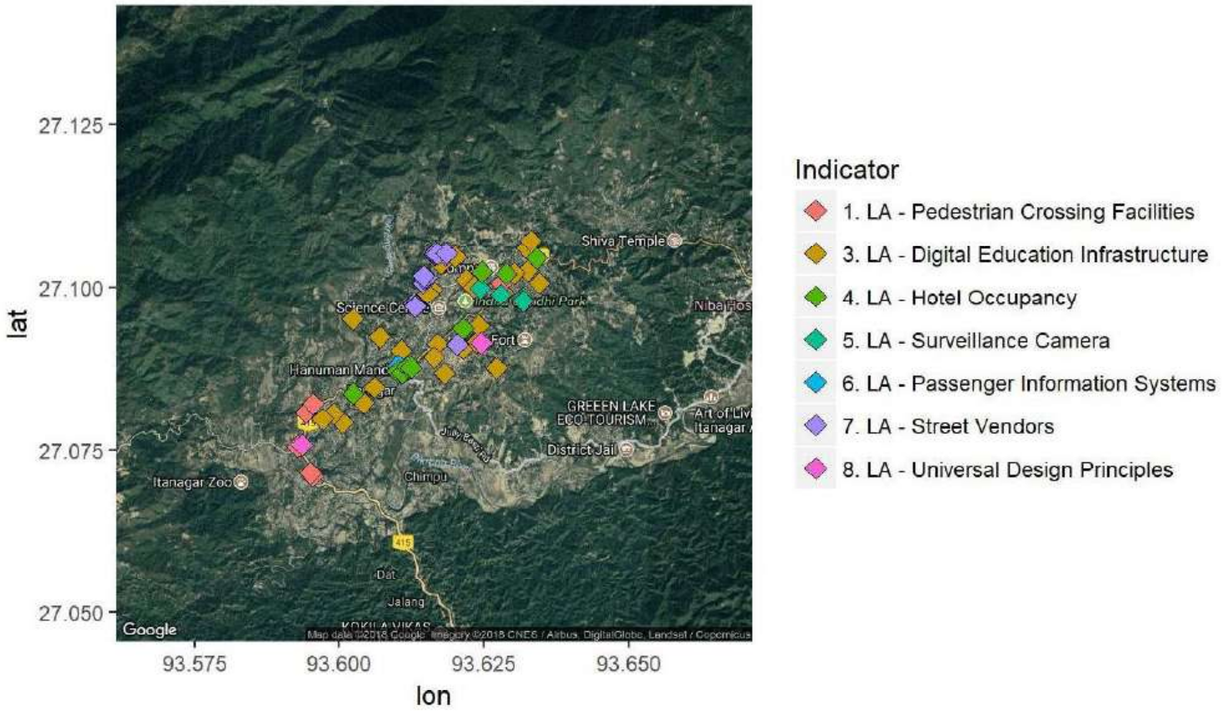
le consistently across all cities and/or were inadequate. To se five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.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District Jail
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Chimpu
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415
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

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5. City Score on 15 categories of assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	49.07%
Identity & Culture	0%
Education	62%
Health	83%
Safety & Security	42%
Economy & Employment	61%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	4%
Power Supply	41%
Transport & Mobility	28%
Assured Water Supply	52%
Waste Water Management	20%
Solid Waste Management	33%
Reduced Pollution	3%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

JABALPUR

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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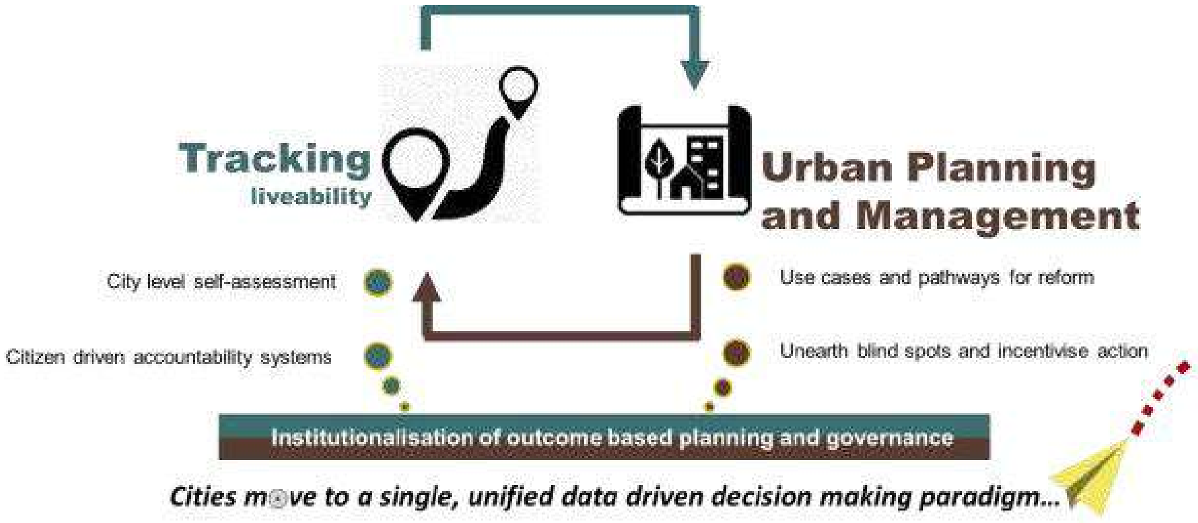
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

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The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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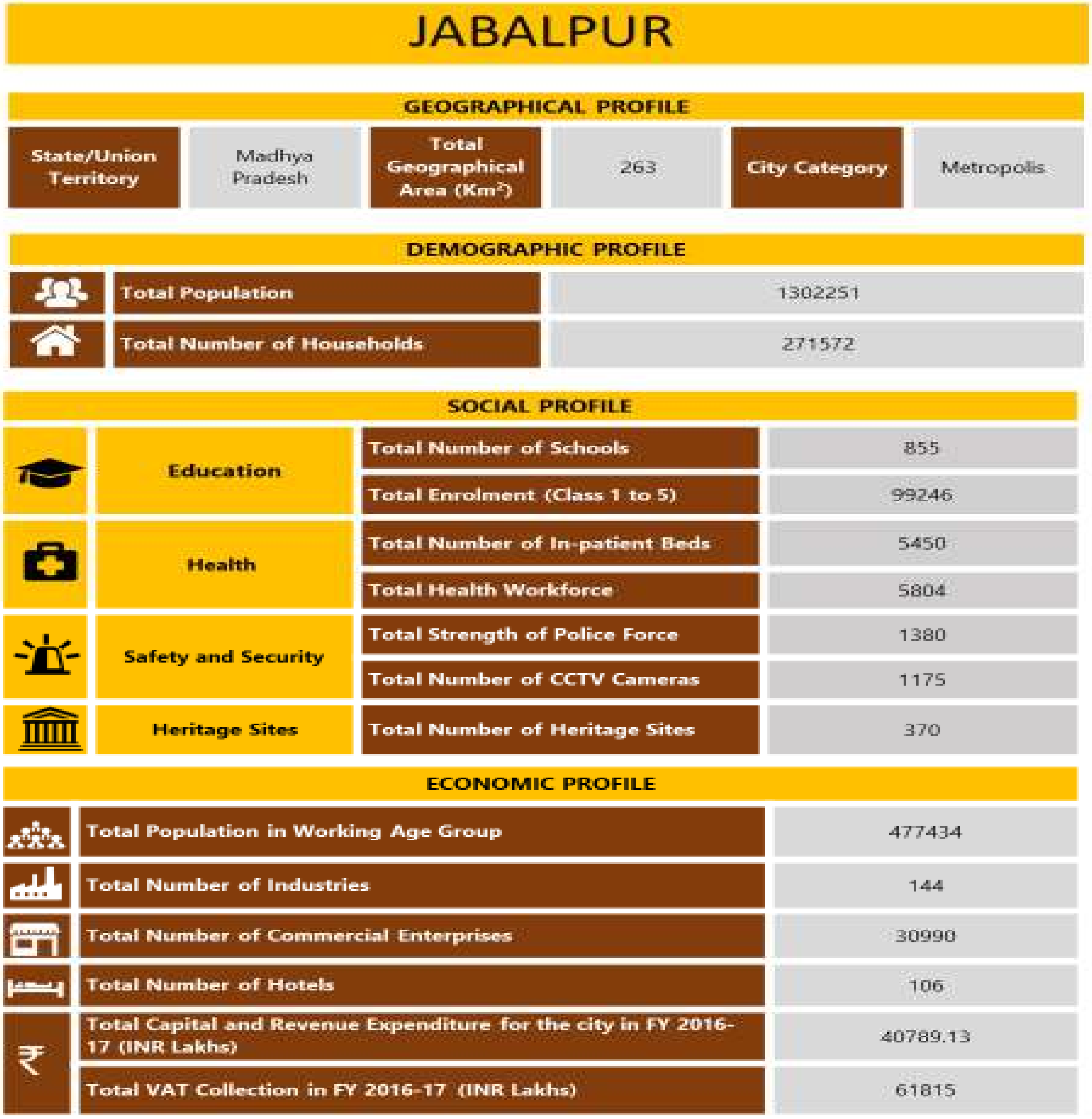
-Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JABALPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km^2)	263	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1302251
Total Number of Households	271572

SOCIAL PROFILE

Education	Total Number of Schools	855
	Total Enrolment (Class 1 to 5)	99246
Health	Total Number of In-patient Beds	5450
	Total Health Workforce	5804
Safety and Security	Total Strength of Police Force	1380
	Total Number of CCTV Cameras	1175
Heritage Sites	Total Number of Heritage Sites	370

ECONOMIC PROFILE

Total Population in Working Age Group	477434
Total Number of Industries	144
Total Number of Commercial Enterprises	30990
Total Number of Hotels	106
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40789.13
Total VAT Collection in FY 2016-17 (INR Lakhs)	61815

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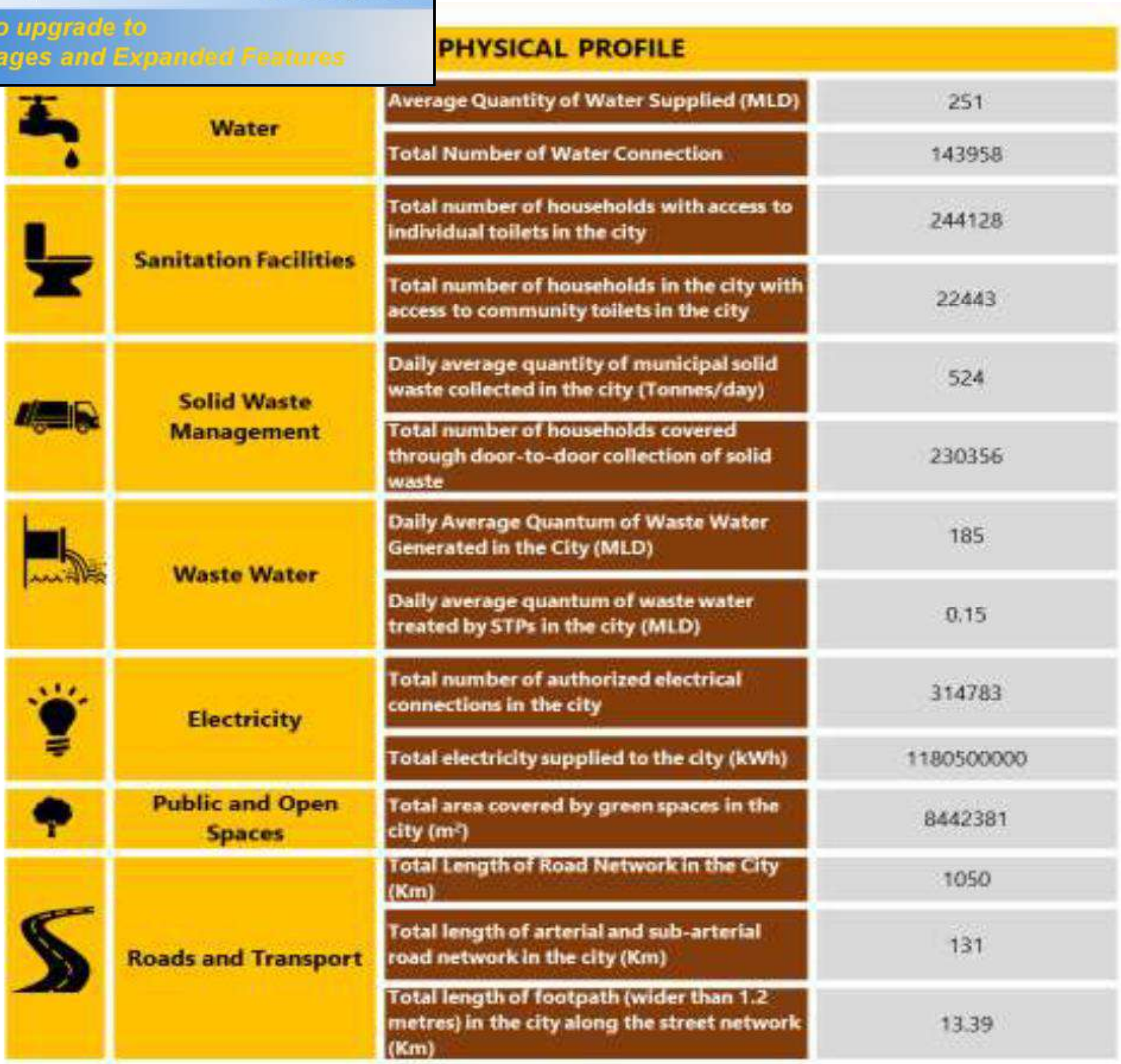

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	251
	Total Number of Water Connection	143958
Sanitation Facilities	Total number of households with access to individual toilets in the city	244128
	Total number of households in the city with access to community toilets in the city	22443
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	524
	Total number of households covered through door-to-door collection of solid waste	230356
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	185
	Daily average quantum of waste water treated by STPs in the city (MLD)	0.15
Electricity	Total number of authorized electrical connections in the city	314783
	Total electricity supplied to the city (kWh)	1180500000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	8442381
Roads and Transport	Total Length of Road Network in the City (Km)	1050
	Total length of arterial and sub-arterial road network in the city (Km)	131
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	13.39

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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5.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

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Development		Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic

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Development		Indicators
		services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking

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Development		Indicators
		facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

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Development		Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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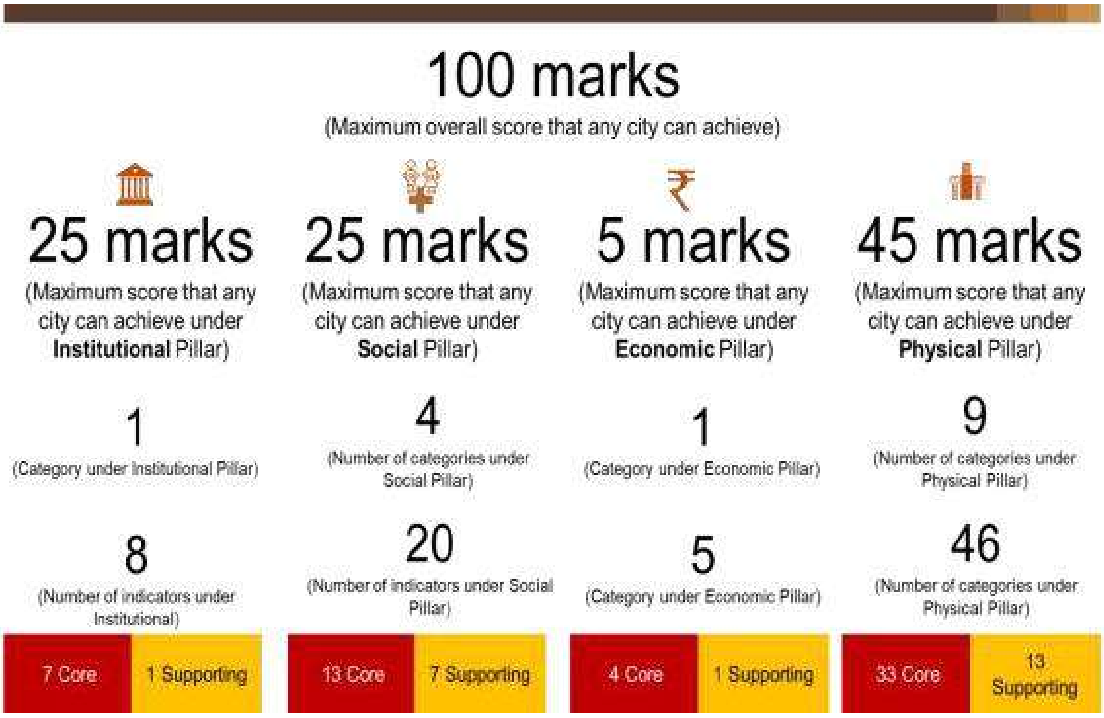
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

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tment, Transport authority, and Urban local body were ns on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Jabalpur Municipal Corporation
	Park and Recreation	Garden Section, Jabalpur Municipal Corporation
	Water Supply and Drainage	Water works and Water Head, Jabalpur Municipal Corporation
	Heritage sites	INTACH & Jabalpur Municipal corporation
	Ecological sites	Development Plan, Jabalpur Municipal Corporation
	Housing	Housing section, Jabalpur Municipal Corporation
	Building plan	Building Section and Colony Cell, Jabalpur Municipal Corporation
	Roads	Smart city corporation limited, Jabalpur city Transport Service Limited, PWD section, JMC
	Solid waste management	Health Section, Jabalpur Municipal Corporation
	IT services	IT Section, Jabalpur Municipal Corporation
	Vendor committee	Market Section, Jabalpur Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment Exchange Census reports Archaeological Survey of India
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development	Building Infrastructure	Building Section and Colony

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	b categories	Data owners at city level
Authority		Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Construction planning	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Green Building	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Rain water harvesting	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
	Universal Design Principle	Building Section and Colony Cell, Jabalpur Municipal Corporation Jabalpur Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department DPC Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department (Urja Vikas Nigam)
State Sales / Commercial Taxes Department		Department of sales and Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning Department
Traffic and Police Department		Traffic and Police Department, Jabalpur
	Buses	Regional Transport Office

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	b categories	Data owners at city level
Transport Authorities		Jabalpur city transport service limited
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 162 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	8
State Education Department	7
DISCOM/Electricity Department	4
Traffic and Police Department	4
Development Authority	2
Pollution Control Board	5
State Renewable Energy Department	3
Town and Country Planning	3
State Health Department	17
Transport Authority	8
Disaster Management	4
Urban Local Body	97
Total	162

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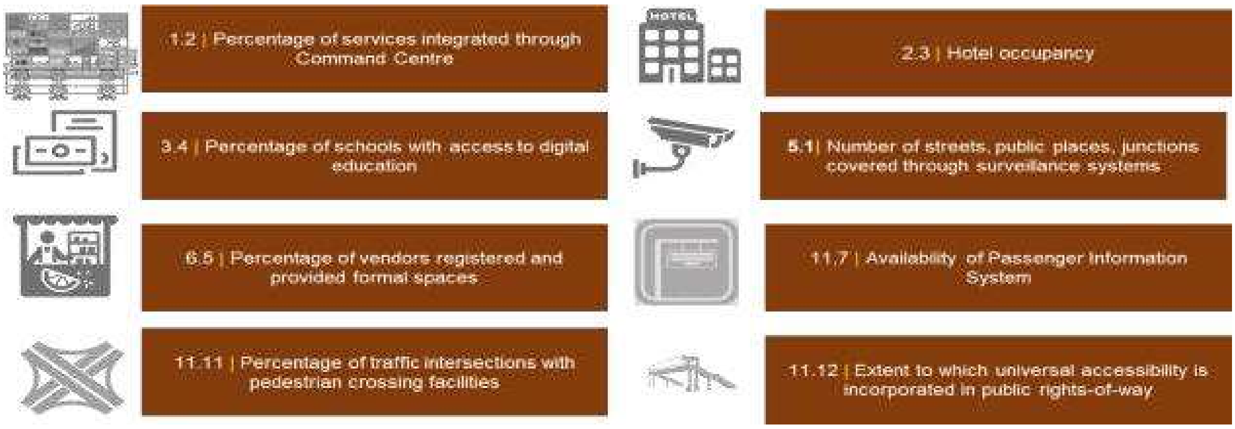
prising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

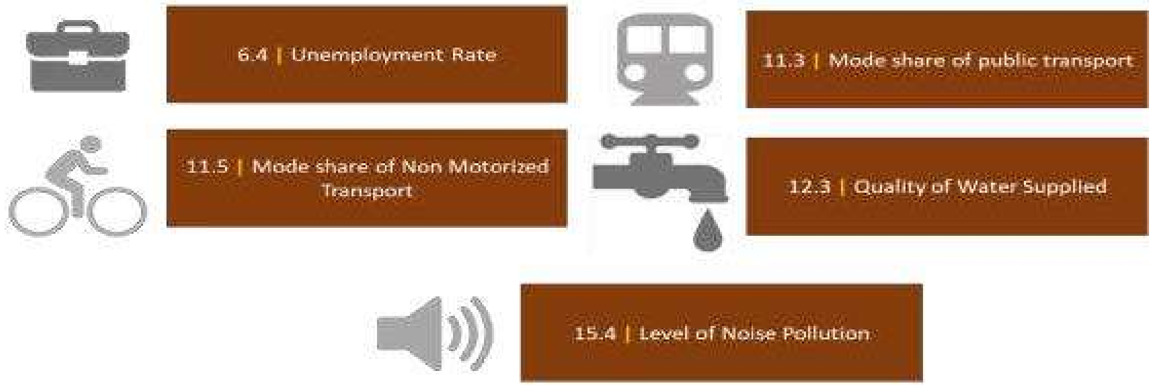
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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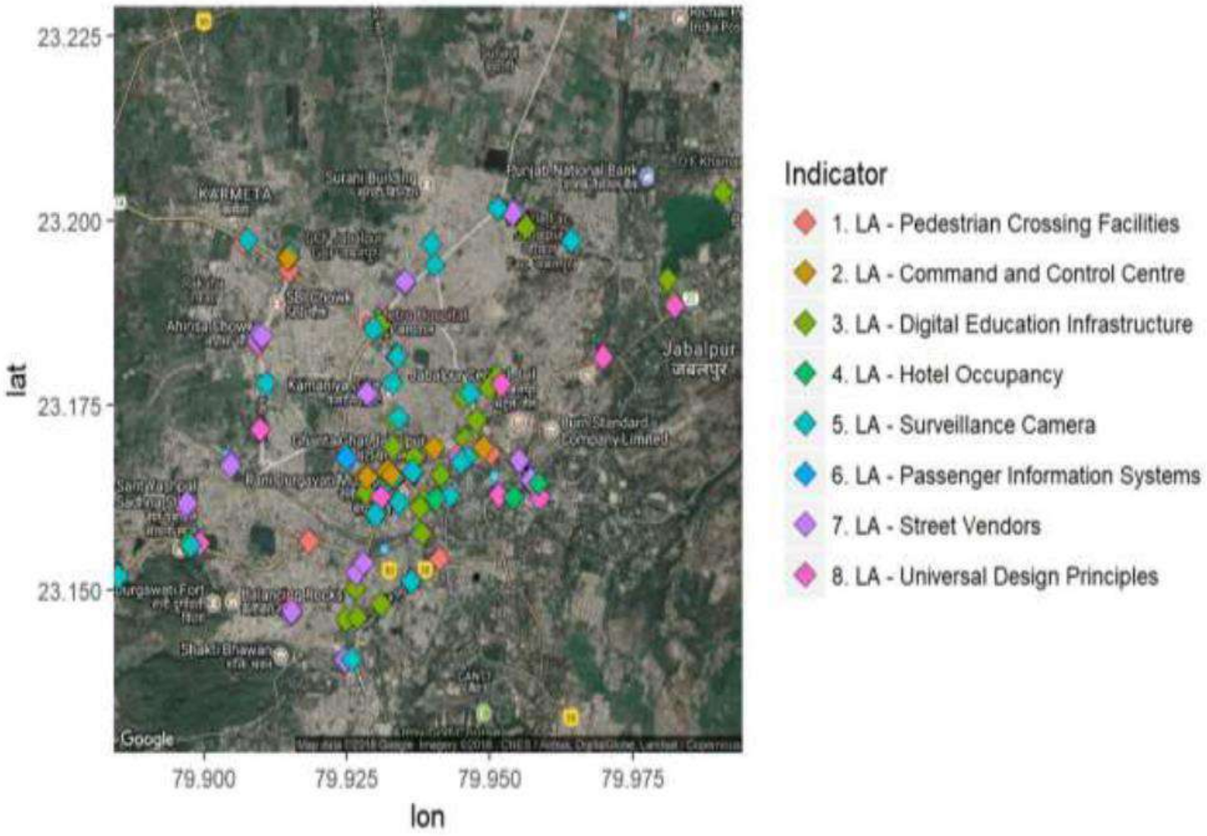
ors audited at city level.


23.225
23.200
23.175
23.150
lat
79.900
79.925
79.950
79.975
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Google

5. Category wise scores

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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e 5: Category wise scores

Categories	Scores in Percentage
Governance	59.18%
Identity & Culture	40%
Education	84%
Health	95%
Safety & Security	58%
Economy & Employment	10%
Housing & Inclusiveness	8%
Public Open Spaces	34%
Mixed Land Use & Compactness	1%
Power Supply	50%
Transport & Mobility	36%
Assured Water Supply	74%
Waste Water Management	42%
Solid Waste Management	100%
Reduced Pollution	69%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

JAIPUR

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Executive Summary

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ative by the Ministry of Housing and Urban Affairs to improve stainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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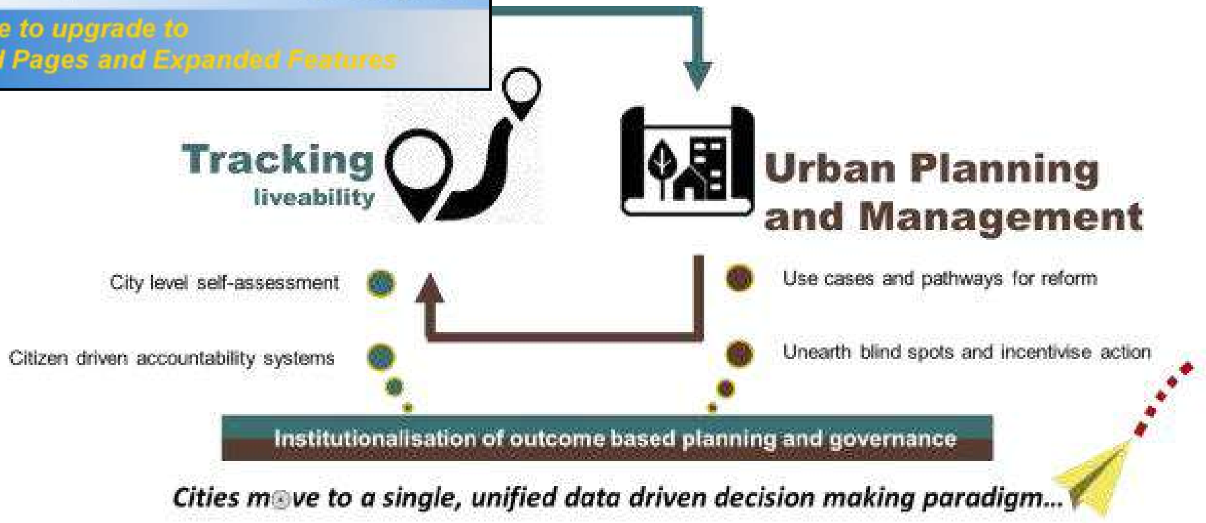
Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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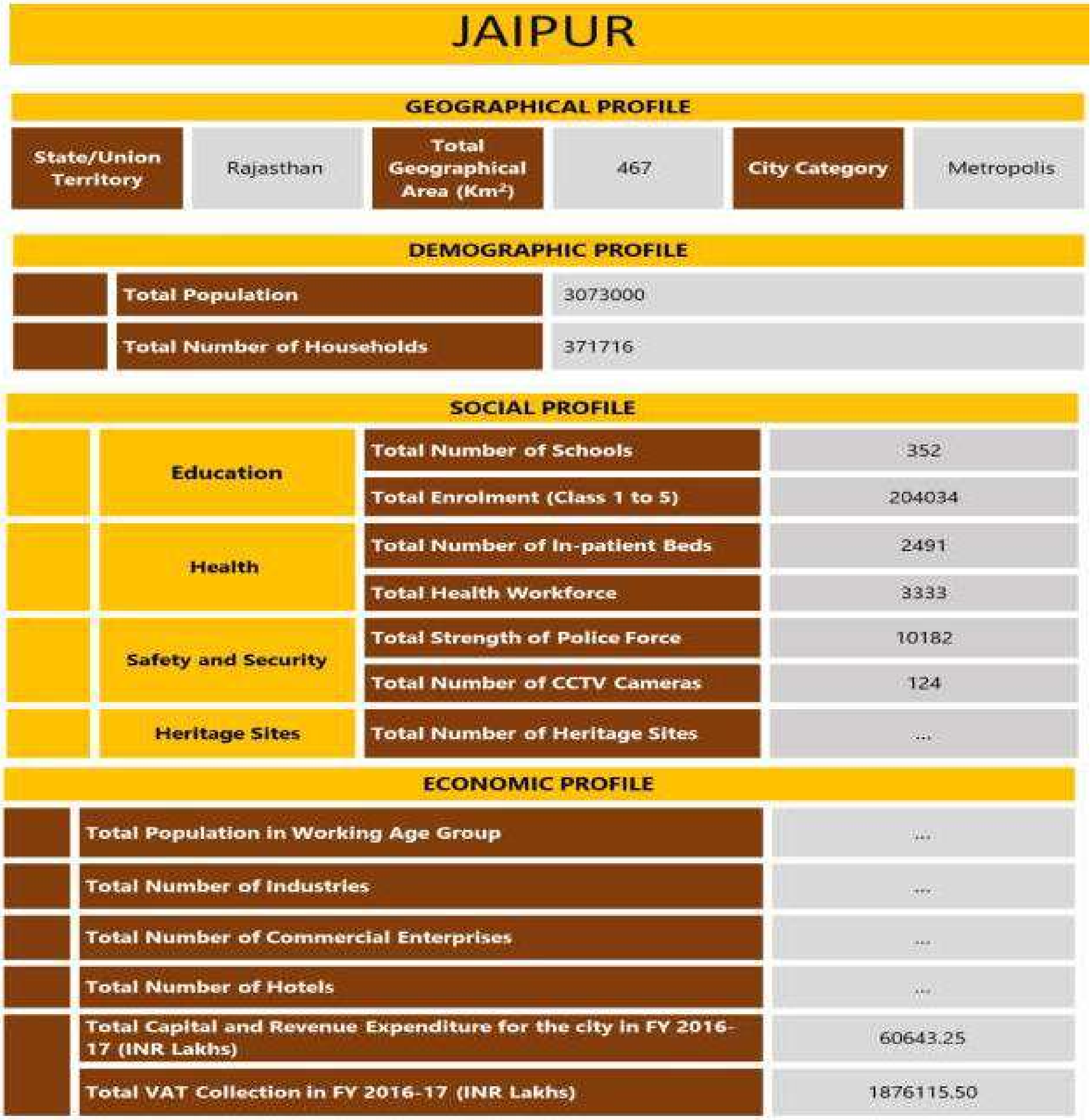
This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	Total Geographical Area (Km^2)	467	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	3073000
Total Number of Households	371716

SOCIAL PROFILE

Education	Total Number of Schools	352
	Total Enrolment (Class 1 to 5)	204034
Health	Total Number of In-patient Beds	2491
	Total Health Workforce	3333
Safety and Security	Total Strength of Police Force	10182
	Total Number of CCTV Cameras	124
Heritage Sites	Total Number of Heritage Sites	....

ECONOMIC PROFILE

Total Population in Working Age Group	....
Total Number of Industries	....
Total Number of Commercial Enterprises	....
Total Number of Hotels	....
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	60643.25
Total VAT Collection in FY 2016-17 (INR Lakhs)	1876115.50

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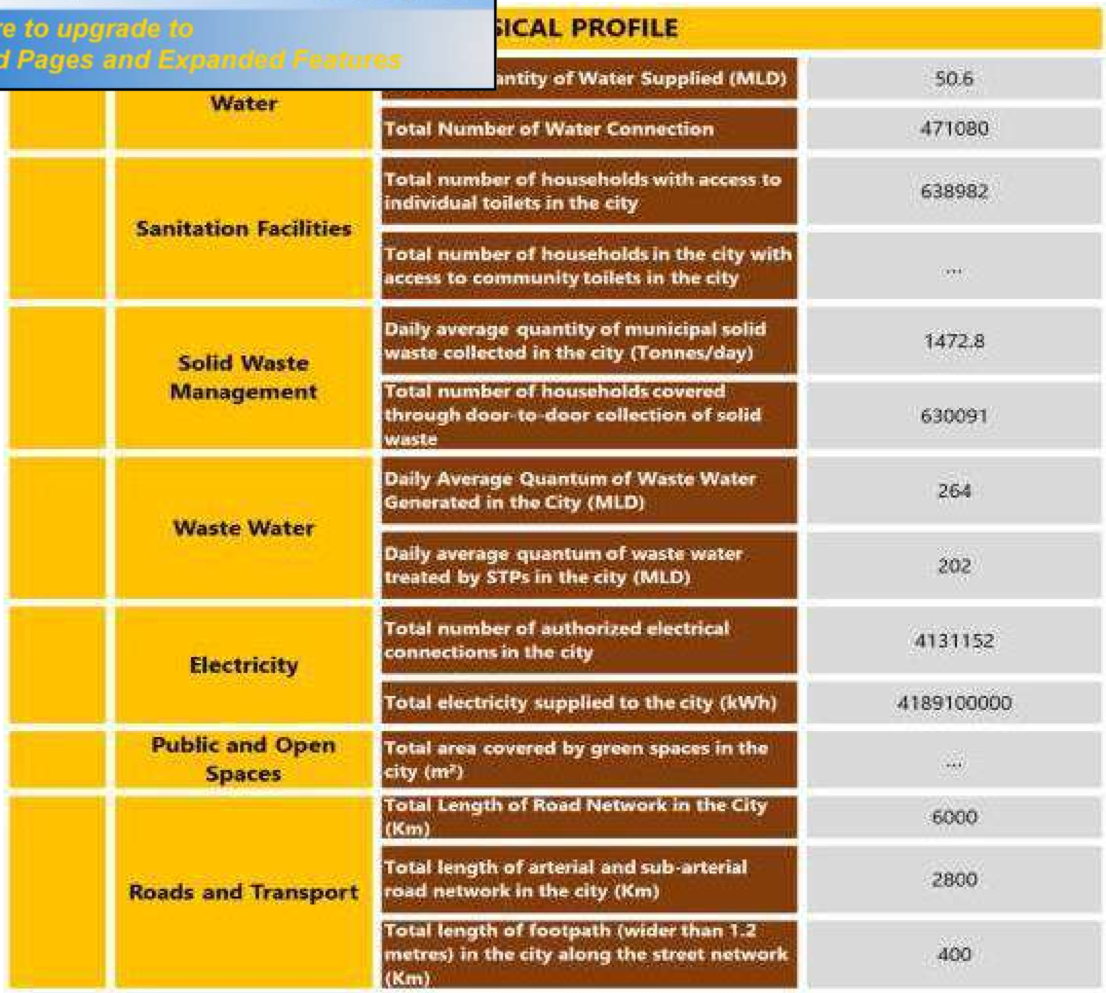

	SICAL PROFILE	
Water	ntity of Water Supplied (MLD)	50.6
	Total Number of Water Connection	471080
Sanitation Facilities	Total number of households with access to individual toilets in the city	638982
	Total number of households in the city with access to community toilets in the city	....
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1472.8
	Total number of households covered through door-to-door collection of solid waste	630091
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	264
	Daily average quantum of waste water treated by STPs in the city (MLD)	202
Electricity	Total number of authorized electrical connections in the city	4131152
	Total electricity supplied to the city (kWh)	4189100000
Public and Open Spaces	Total area covered by green spaces in the city (m²)	....
Roads and Transport	Total Length of Road Network in the City (Km)	6000
	Total length of arterial and sub-arterial road network in the city (Km)	2800
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	400

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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ory Indices of Liveability

egories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

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Development		Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

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Development		**Indicators**
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

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Development		Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

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Development		**Indicators**
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	**Population range**
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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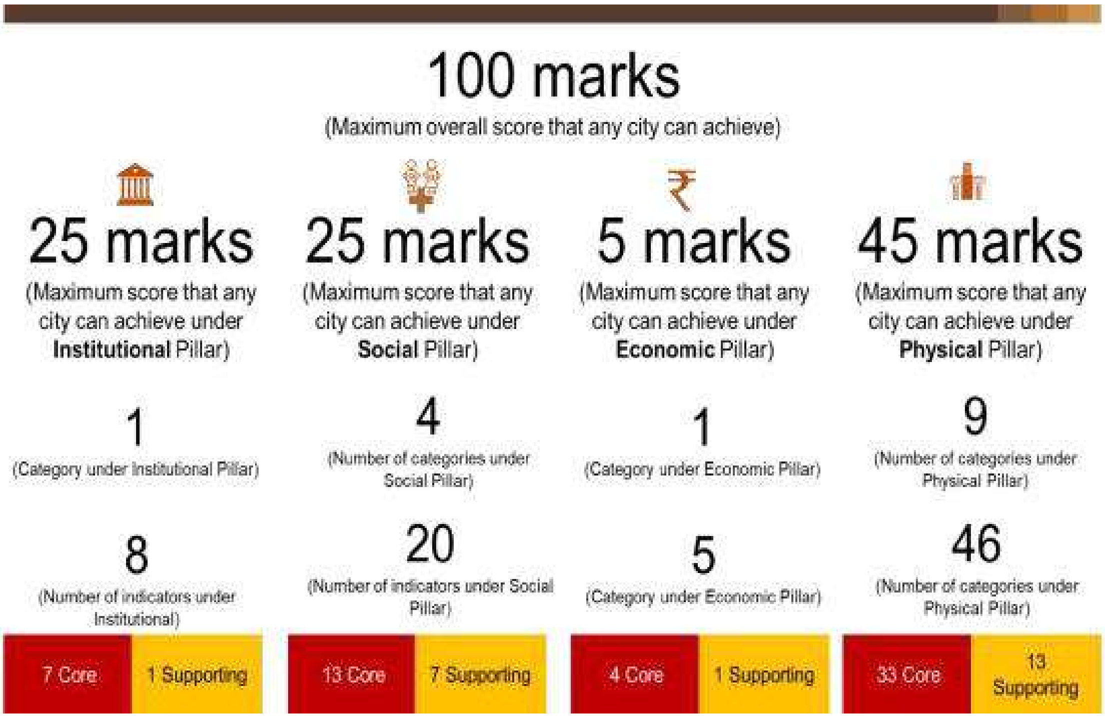
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engineering Department
Urban Local Body	For Heritage sites related data	Not Identified
Urban Local Body	For Ecological sites related data	Municipal Corporation
Urban Local Body	For Housing related data	Municipal Corporation
Urban Local Body	For Building plan related data	Municipal Corporation
Urban Local Body	For Roads related data	Municipal Corporation
Urban Local Body	For Solid waste management related data	Municipal Corporation
Urban Local Body	For IT services related data	Municipal Corporation
Urban Local Body	For Vendor committee related data	Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Town & Country Planning
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority

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	ubcategories	Data owners at city level
	Rain water harvesting	Not Identified
	Universal Design Principle	Not Identified
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jaipur Vidyut Vikas Nigam
State Disaster management authority		Disaster Management,Collectorate Jaipur
State Education Department		District Education Officer
State Health Department	Health care professionals	Director Health Department
	Citizen Services	Director Health Department
	Disease Prevalence	Director Health Department
	Health Infrastructure	Director Health Department
State Renewable Energy Development Agency		State Renewable Energy Department
State Sales / Commercial Taxes Department		Commissioner Commercial Tax
Town and Country Planning Department	Land Use	Town & Country Planning Department
Traffic and Police Department		ACP Traffic Office.Yaadgar,Jaipur
Transport Authorities	Buses	Transport Deoartment
	Registered Vehicles	Transport Department
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 11 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

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cuments against responses given by city, checking the ation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**0**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**4**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**5**
Total	**11***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

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d through

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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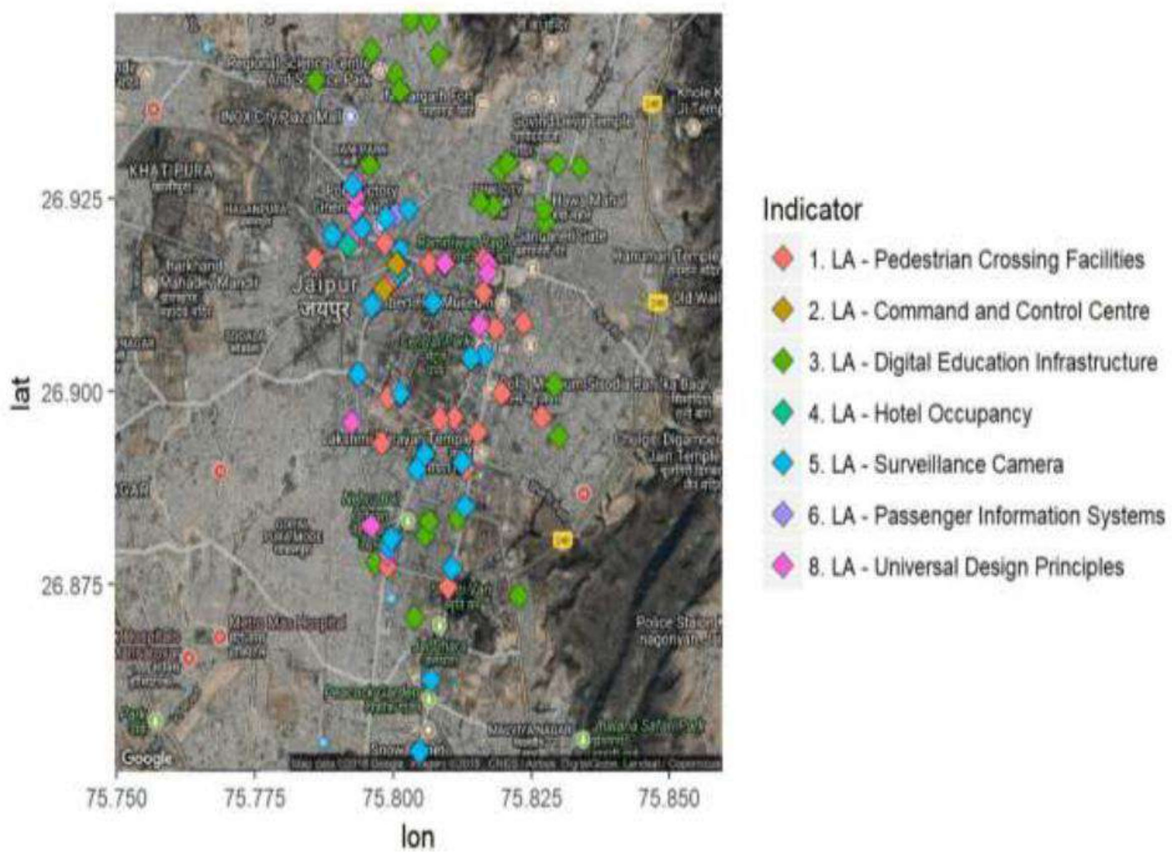
ors audited at city level.


lat
26.925
26.900
26.875
lon
75.750
75.775
75.800
75.825
75.850
Jaipur
जयपुर
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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e 5: Category wise scores

Categories	**Scores in Percentage**
Governance	33.14%
Identity & Culture	26%
Education	66%
Health	58%
Safety & Security	66%
Economy & Employment	12%
Housing & Inclusiveness	0%
Public Open Spaces	4%
Mixed Land Use & Compactness	0%
Power Supply	24%
Transport & Mobility	22%
Assured Water Supply	52%
Waste Water Management	57%
Solid Waste Management	74%
Reduced Pollution	41%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

JALANDHAR

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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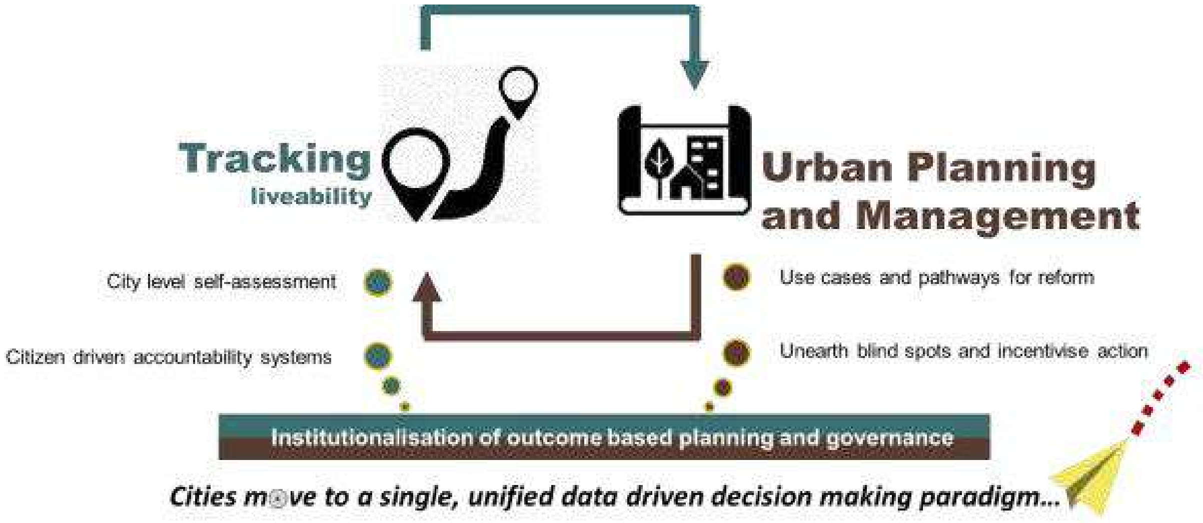
Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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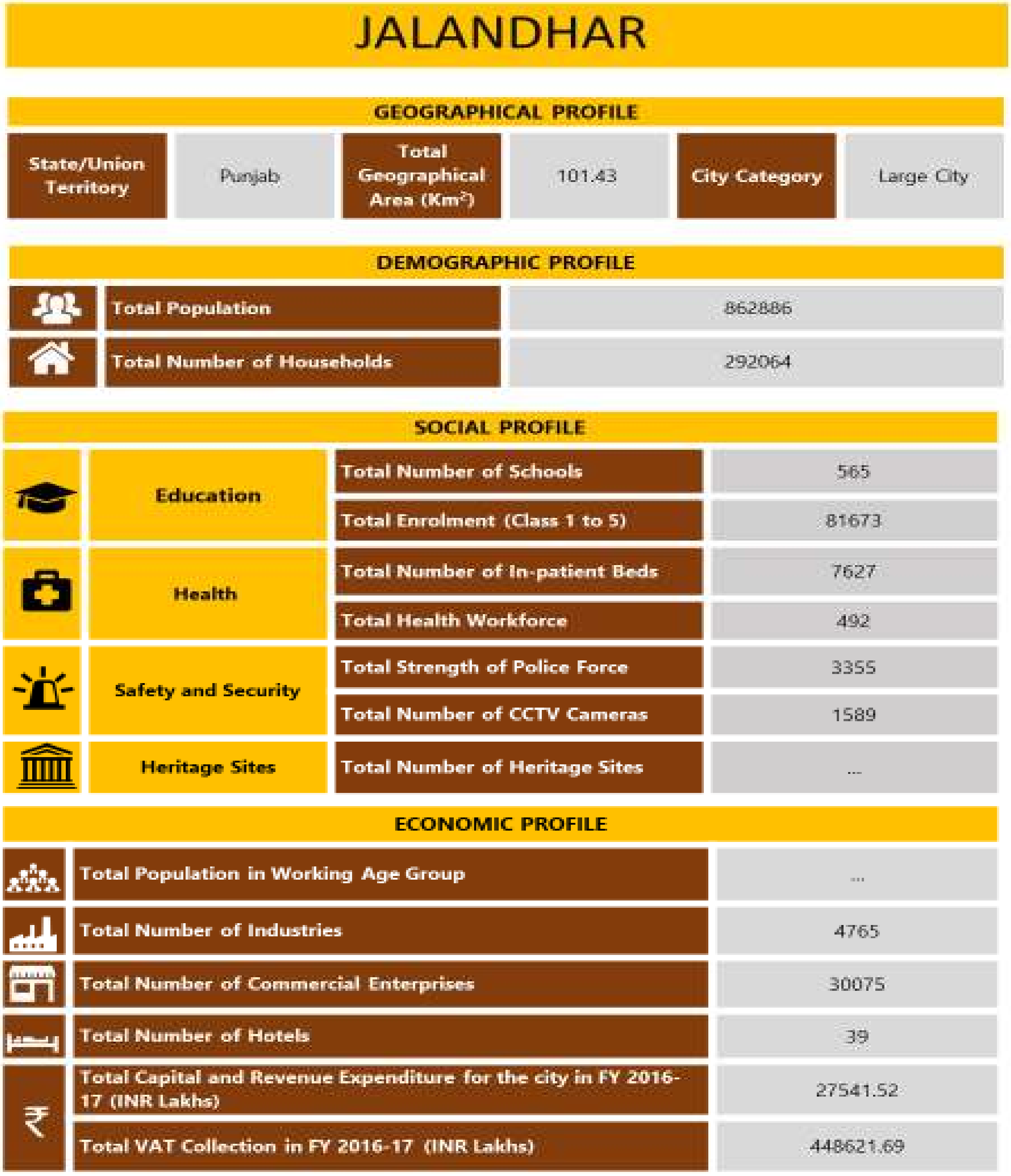
This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JALANDHAR

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	**Total Geographical Area (Km^2)**	101.43	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	862886
Total Number of Households	292064

SOCIAL PROFILE

Education	**Total Number of Schools**	565
	Total Enrolment (Class 1 to 5)	81673
Health	**Total Number of In-patient Beds**	7627
	Total Health Workforce	492
Safety and Security	**Total Strength of Police Force**	3355
	Total Number of CCTV Cameras	1589
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	4765
Total Number of Commercial Enterprises	30075
Total Number of Hotels	39
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	27541.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	448621.69

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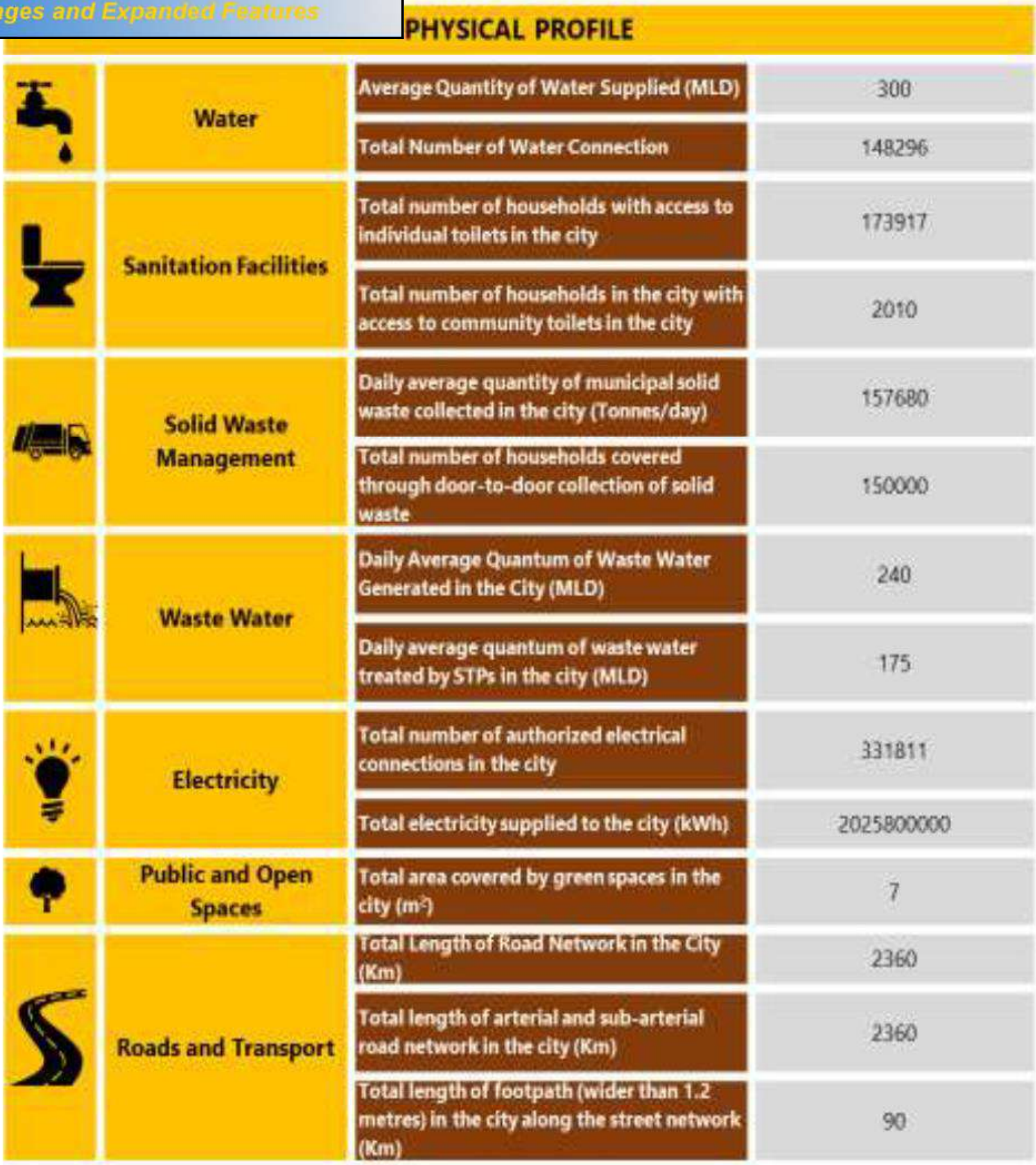

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	300
	Total Number of Water Connection	148296
Sanitation Facilities	Total number of households with access to individual toilets in the city	173917
	Total number of households in the city with access to community toilets in the city	2010
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	157680
	Total number of households covered through door-to-door collection of solid waste	150000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	240
	Daily average quantum of waste water treated by STPs in the city (MLD)	175
Electricity	Total number of authorized electrical connections in the city	331811
	Total electricity supplied to the city (kWh)	2025800000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7
Roads and Transport	Total Length of Road Network in the City (Km)	2360
	Total length of arterial and sub-arterial road network in the city (Km)	2360
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	90

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tors

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	**Indicators**
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

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Development		Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

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Development		Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

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Development		Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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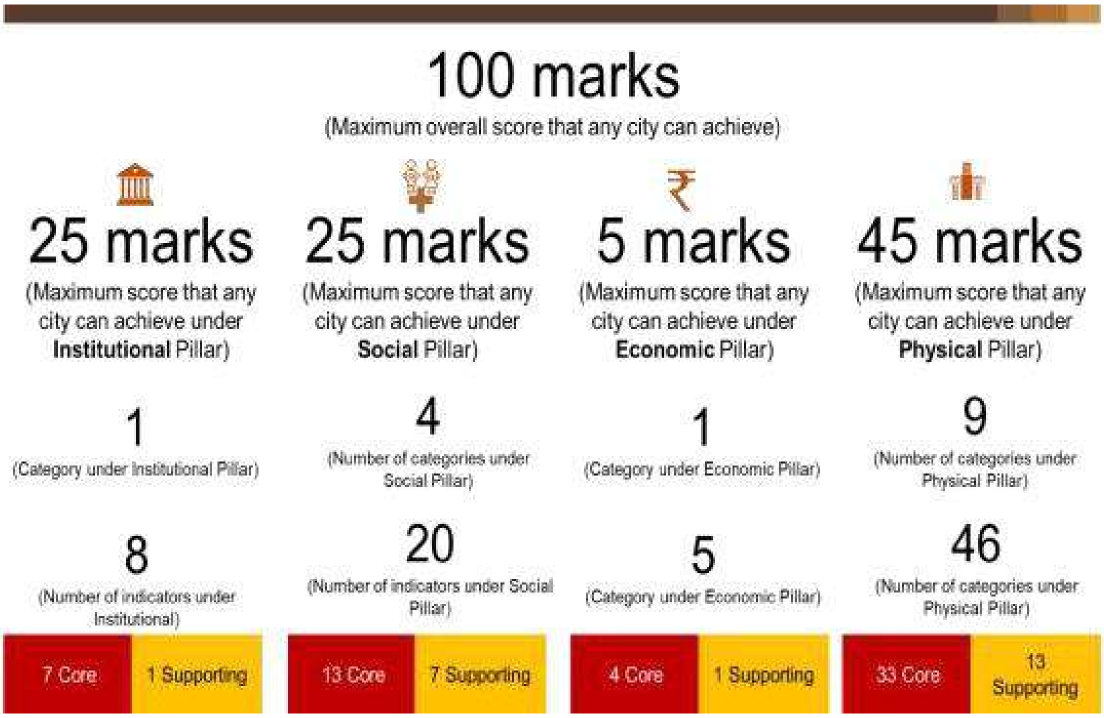
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	**Subcategories**	**Data owners at city level**
Urban Local Body	For Accounts Related Questions	Deputy Controller (Finance & Accounts)
Urban Local Body	For Park and Recreation Related Questions	Horticulture
Urban Local Body	For Water Supply and Drainage related questions	Operation & Maintenance
Urban Local Body	For Heritage sites related data	There are no Heritage sites in Jalandhar
Urban Local Body	For Ecological sites related data	There are no ecological sites in Jalandhar
Urban Local Body	For Housing related data	Housing Branch
Urban Local Body	For Building plan related data	Building Branch
Urban Local Body	For Roads related data	Buildings & Roads Branch
Urban Local Body	For Solid waste management related data	Medical Officer of Health
Urban Local Body	For IT services related data	Information Technology Department
Urban Local Body	For Vendor committee related data	Advertisement Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	District Sports Office District Employment Exchange District Transport Office
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board

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	Subcategories	Data owners at city level
Development Authority	Building infrastructure	Building Branch of the ULB
	Construction planning	Building Branch of the ULB
	Green Building	Building Branch of the ULB
	Rain water harvesting	Building Branch of the ULB
	Universal Design Principle	Building Branch of the ULB
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Building Branch of the ULB
State Disaster management authority		Revenue Department
State Education Department		State Education Department
State Health Department	Health care professionals	Chief Medical Office
State Health Department	Citizen Services	Chief Medical Office
State Health Department	Disease Prevalence	Chief Medical Office
State Health Department	Health Infrastructure	Indian Medical Association
State Renewable Energy Development Agency		Punjab Energy Development Agency
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	District Town and Country Planning
Traffic and Police Department		Traffic Police Department
Transport Authorities	Buses	General Manager Roadways
Transport Authorities	Registered Vehicles	Regional Transport Authority
Transport Authorities	Sub urban rail transport	Not Applicable in Jalandhar
Transport Authorities	Mono Rail Authority	Not Applicable in Jalandhar
Transport Authorities	Tramways	Not Applicable in Jalandhar
Transport Authorities	Marine Transport Authority	Not Applicable in Jalandhar

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vailable as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 101 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	4
Traffic and Police Department	7
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	5
State Health Department	11
Transport Authority	7
Disaster Management	1
Urban Local Body	59
Total	101

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

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reliability of data reported by the cities. The list of these

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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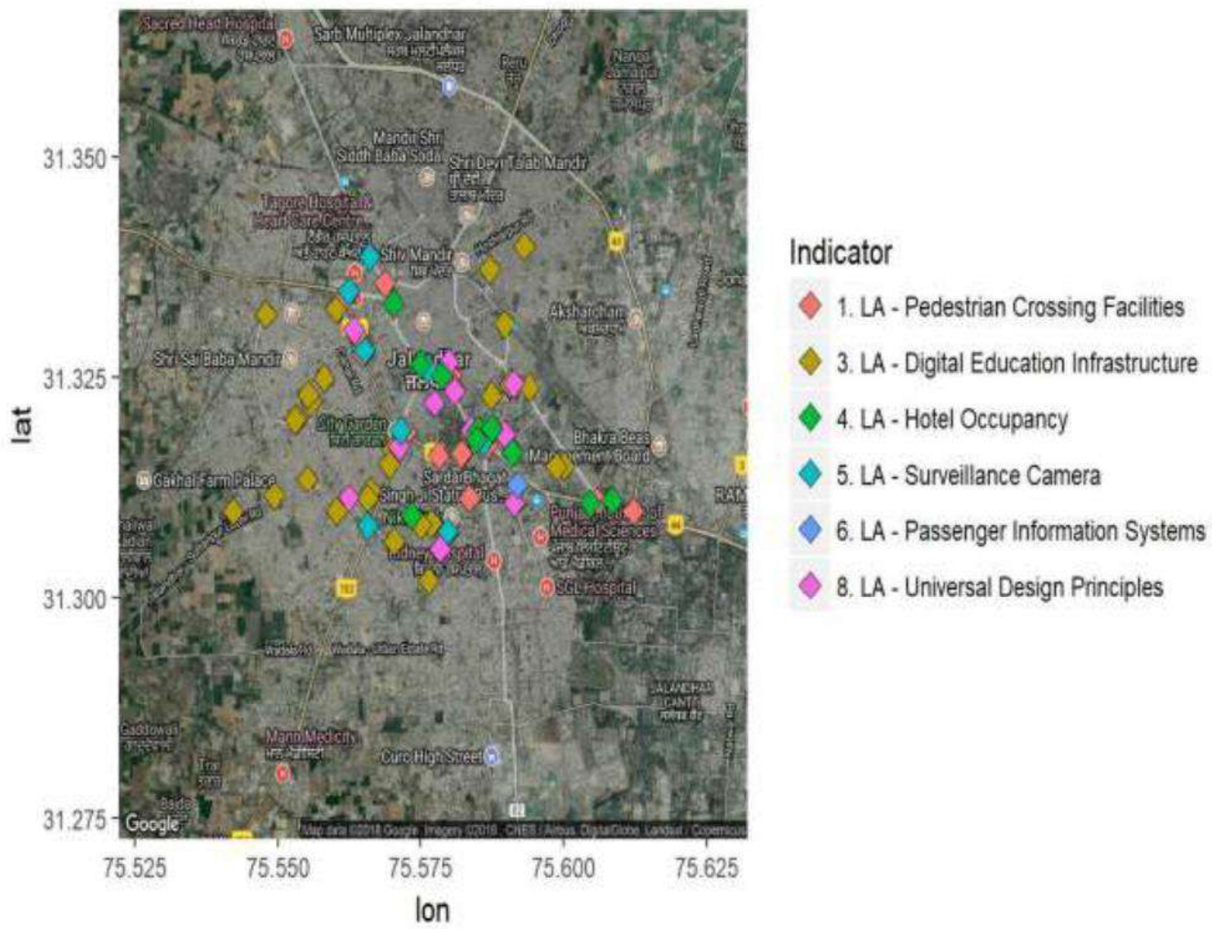
The following map presents the indicators audited at city level.


31.350
31.325
31.300
31.275
lat
75.525
75.550
75.575
75.600
75.625
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
8. LA - Universal Design Principles
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	44.62%
Identity & Culture	19%
Education	82%
Health	83%
Safety & Security	81%
Economy & Employment	42%
Housing & Inclusiveness	2%
Public Open Spaces	5%
Mixed Land Use & Compactness	0%
Power Supply	37%
Transport & Mobility	28%
Assured Water Supply	51%
Waste Water Management	39%
Solid Waste Management	53%
Reduced Pollution	77%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

JAMMU

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was
n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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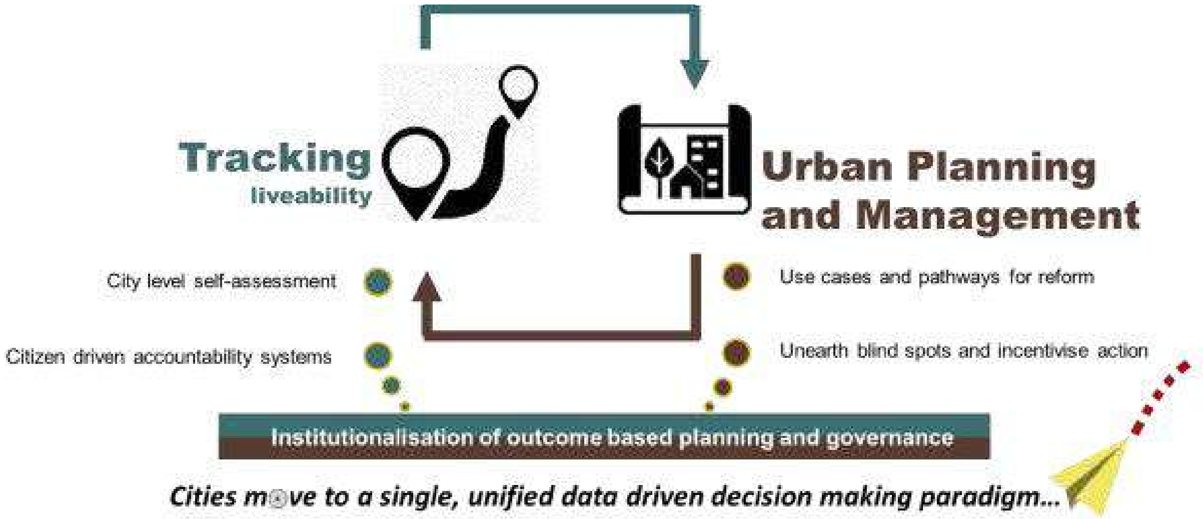
Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

JAMMU

GEOGRAPHICAL PROFILE

State/Union Territory	Jammu & Kashmir	**Total Geographical Area (Km^2)**	112	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	742188
Total Number of Households	150000

SOCIAL PROFILE

Education	**Total Number of Schools**	452
	Total Enrolment (Class 1 to 5)	46551
Health	**Total Number of In-patient Beds**	431
	Total Health Workforce	246
Safety and Security	**Total Strength of Police Force**	3214
	Total Number of CCTV Cameras	7
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	260455
Total Number of Industries	...
Total Number of Commercial Enterprises	86416
Total Number of Hotels	284
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	12441.19
Total VAT Collection in FY 2016-17 (INR Lakhs)	447042

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HYSICAL PROFILE

Water	ge Quantity of Water Supplied (MLD)	227.81
	Total Number of Water Connection	...
Sanitation Facilities	Total number of households with access to individual toilets in the city	140000
	Total number of households in the city with access to community toilets in the city	20000
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	350
	Total number of households covered through door-to-door collection of solid waste	32000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	20
	Daily average quantum of waste water treated by STPs in the city (MLD)	30
Electricity	Total number of authorized electrical connections in the city	20114
	Total electricity supplied to the city (kWh)	...
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	65000000
Roads and Transport	Total Length of Road Network in the City (Km)	...
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

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tors

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

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Development		Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

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Development		Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

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Development		Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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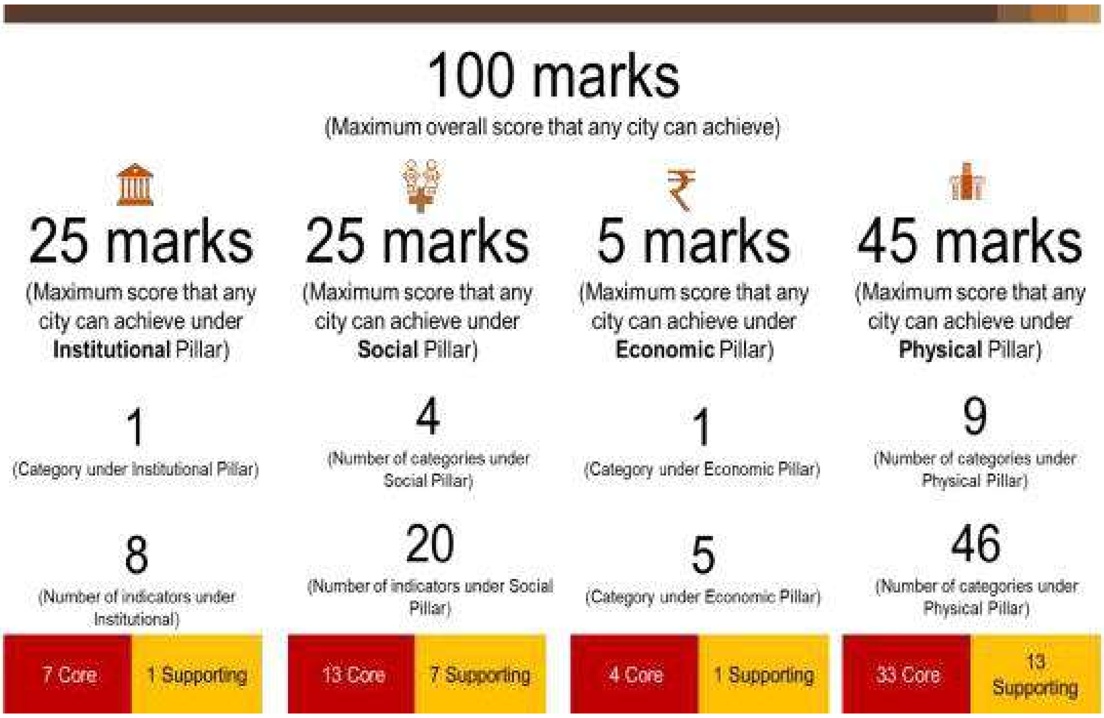
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Department of Accounts
Urban Local Body	For Park and Recreation Related Questions	Jammu Muncipal Cooperation
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engeenering Department (PHE)
Urban Local Body	For Heritage sites related data	Jammu Development Authority (JDA)
Urban Local Body	For Ecological sites related data	Jammu Development Authority (JDA)
Urban Local Body	For Housing related data	Jammu Development Authority (JDA)
Urban Local Body	For Building plan related data	Jammu Development Authority (JDA)
Urban Local Body	For Roads related data	Jammu Development Authority (JDA)
Urban Local Body	For Solid waste management related data	Jammu Pollution Control Board
Urban Local Body	For IT services related data	Department of Information Technology
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Jammu Pollution Control Board

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	ubcategories	Data owners at city level
Development Authority	Building Infrastructure	Jammu Development Authority
	Construction planning	Jammu Development Authority
	Green Building	Jammu Development Authority
	Rain water harvesting	Jammu Development Authority
	Universal Design Principle	Jammu Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Power and works Department (PWD)
State Disaster management authority		Department of State Disaster Management
State Education Department		Education Department Jammu
State Health Department	Health care professionals	Jammu Health Department
	Citizen Services	Jammu Health Department
	Disease Prevalence	Jammu Health Department
	Health Infrastructure	Jammu Health Department
State Renewable Energy Development Agency		Jammu & Kashmir Energy Development AuthorityJKEDA
State Sales / Commercial Taxes Department		Jammu Sales Tax Department
Town and Country Planning Department	Land Use	Department of Town and country planning
Traffic and Police Department		Jammu Traffic Department Jammu Police Department
Transport Authorities	Buses	Jammu Transport department
	Registered Vehicles	Jammu Transport department
	Sub urban rail transport	Railway Department
	Mono Rail Authority	N/A
	Tramways	N/A
	Marine Transport Authority	N/A

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available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 06 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	6
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	6*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

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indicator from the Institutional pillar, one from the Social five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

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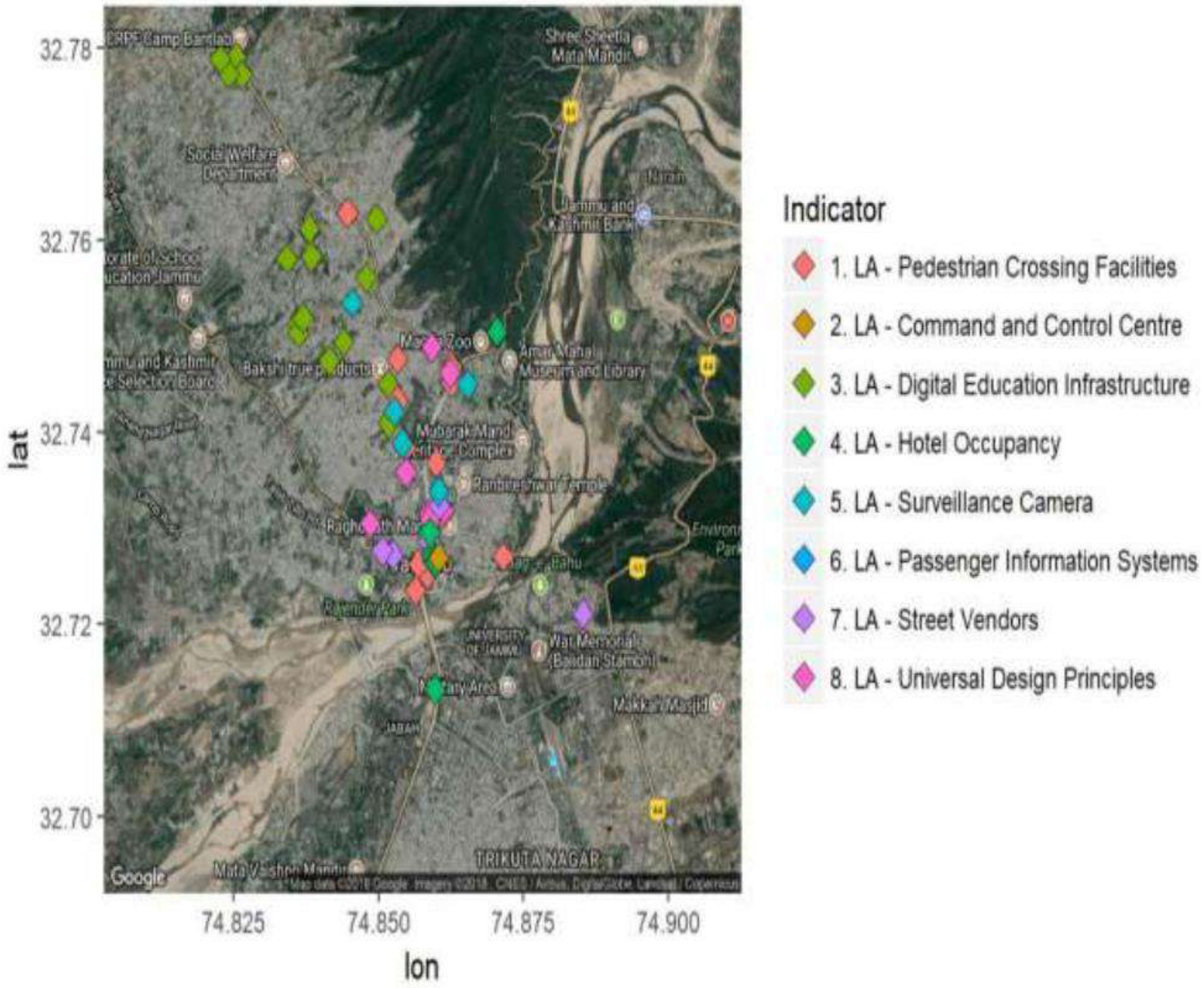
Physical Audit

The following map presents the indicators audited at city level.


lat
32.78
32.76
32.74
32.72
32.70
74.825
74.850
74.875
74.900
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
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essment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	22.57%
Identity & Culture	44%
Education	80%
Health	57%
Safety & Security	68%
Economy & Employment	24%
Housing & Inclusiveness	33%
Public Open Spaces	50%
Mixed Land Use & Compactness	0%
Power Supply	17%
Transport & Mobility	0%
Assured Water Supply	52%
Waste Water Management	33%
Solid Waste Management	39%
Reduced Pollution	20%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

JHANSI

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was
n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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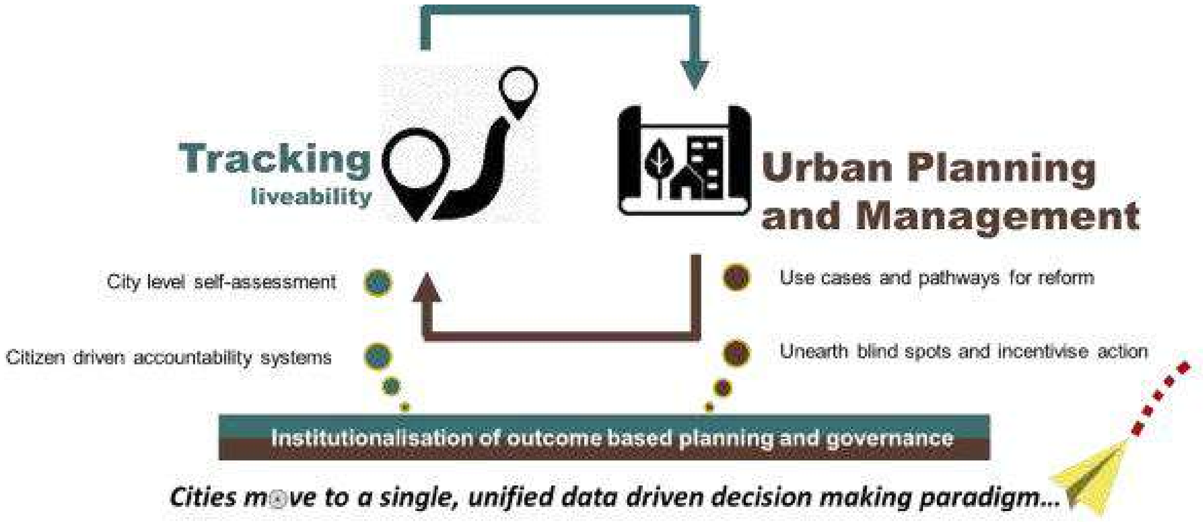
1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

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The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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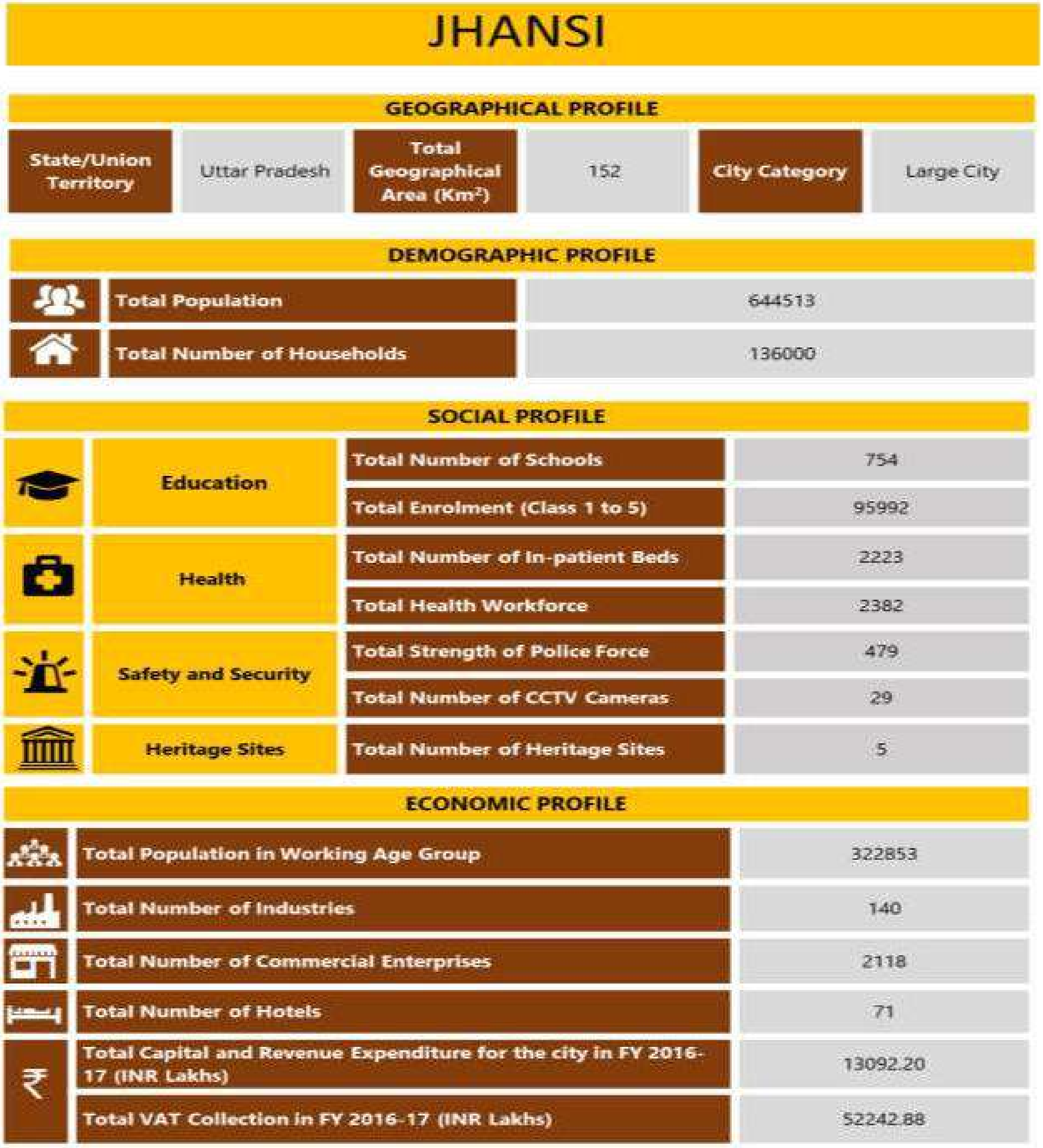
This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JHANSI

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	152	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	644513
Total Number of Households	136000

SOCIAL PROFILE

Education	**Total Number of Schools**	754
	Total Enrolment (Class 1 to 5)	95992
Health	**Total Number of In-patient Beds**	2223
	Total Health Workforce	2382
Safety and Security	**Total Strength of Police Force**	479
	Total Number of CCTV Cameras	29
Heritage Sites	**Total Number of Heritage Sites**	5

ECONOMIC PROFILE

Total Population in Working Age Group	322853
Total Number of Industries	140
Total Number of Commercial Enterprises	2118
Total Number of Hotels	71
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	13092.20
Total VAT Collection in FY 2016-17 (INR Lakhs)	52242.88

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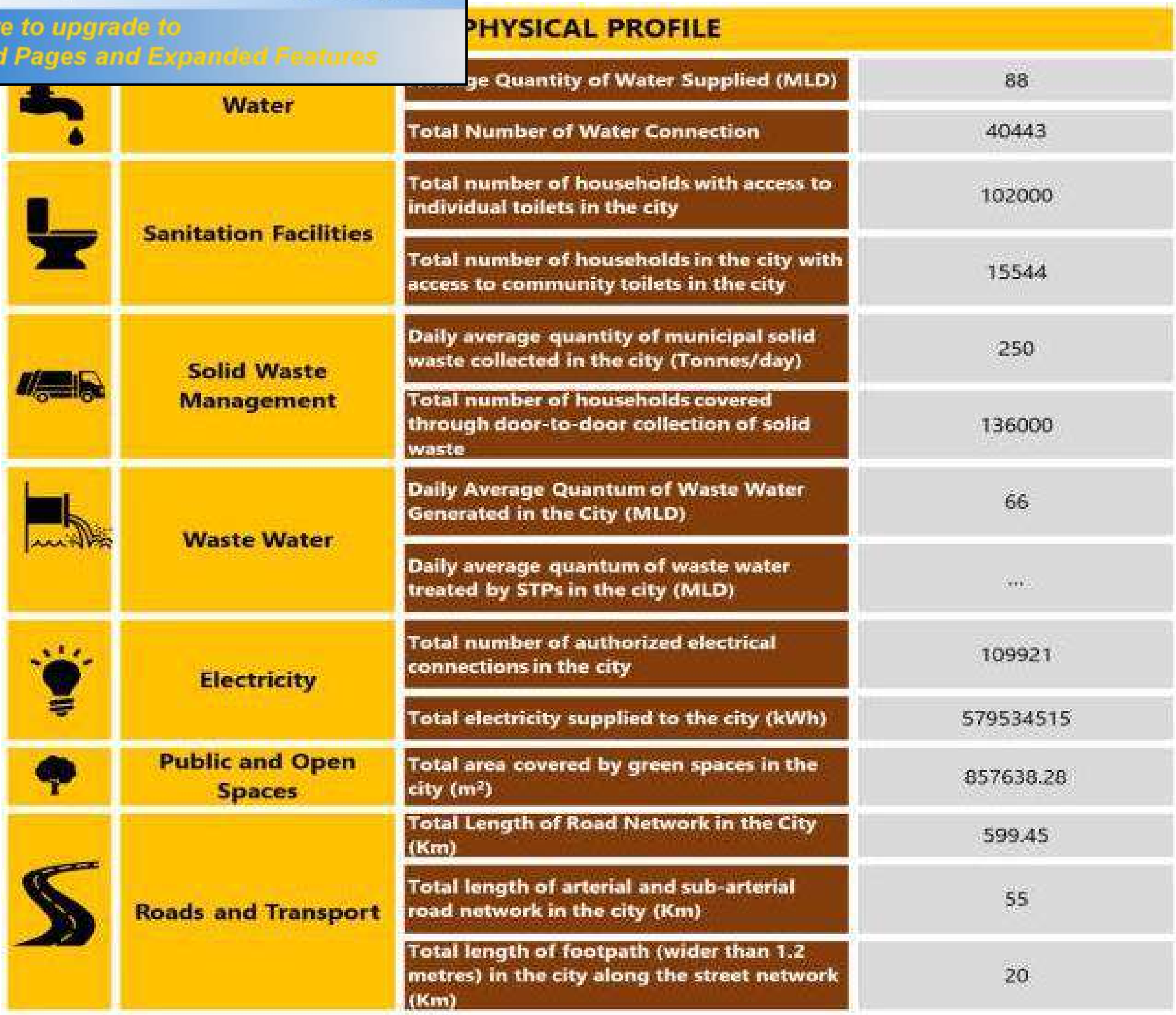

PHYSICAL PROFILE

Water	ge Quantity of Water Supplied (MLD)	88
	Total Number of Water Connection	40443
Sanitation Facilities	Total number of households with access to individual toilets in the city	102000
	Total number of households in the city with access to community toilets in the city	15544
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	250
	Total number of households covered through door-to-door collection of solid waste	136000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	66
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	109921
	Total electricity supplied to the city (kWh)	579534515
Public and Open Spaces	Total area covered by green spaces in the city (m²)	857638.28
Roads and Transport	Total Length of Road Network in the City (Km)	599.45
	Total length of arterial and sub-arterial road network in the city (Km)	55
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	20

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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ory Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

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Development		Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

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Development		Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

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Development		**Indicators**
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	**Population range**
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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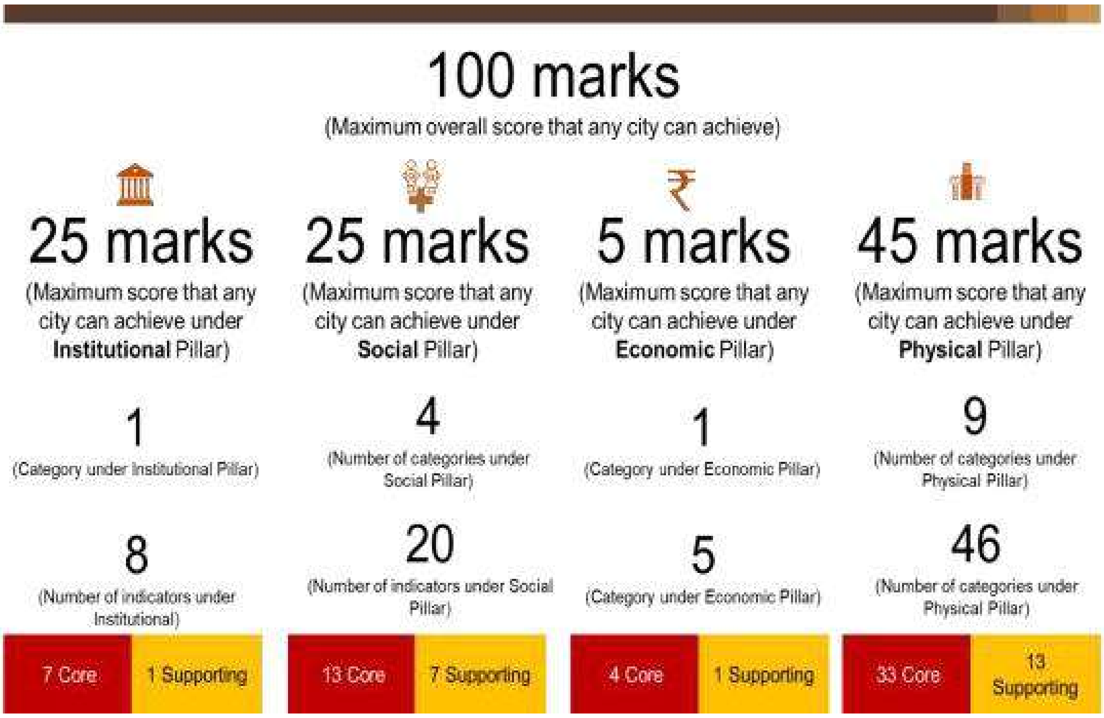
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

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ns on the portal. However, during state workshop and ore data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar nigam Jhansi
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Jhansi
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar nigam Jhansi
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Jhansi
Urban Local Body	For Housing related data	Jhansi Development Authority / Nirmaan Vibhag Nagar Nigam Jhansi
Urban Local Body	For Building plan related data	Jhansi Development Authority Jhansi
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Jhansi
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Jhansi
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Jhansi
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Jhansi
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Jhansi
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Jhansi
Development Authority	Building Infrastructure	Moradabad development Authority Jhansi
	Construction planning	Moradabad development Authority Jhansi
	Green Building	Moradabad development

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	Subcategories	Data owners at city level
		Authority Jhansi
	Rain water harvesting	Moradabad development Authority Jhansi
	Universal Design Principle	Moradabad development Authority Jhansi
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Jhansi
State Disaster management authority		State Disaster Management Jhansi[in UP ADM (FR]
State Education Department		Basic Shikcha Adhikari/district inspector of school Jhansi (DIOS)
State Health Department	Health care professionals	UP State Health Department Jhansi (CMO)
	Citizen Services	UP State Health Department Jhansi(CMO)
	Disease Prevalence	UP State Health Department Jhansi (CMO)
	Health Infrastructure	UP State Health Department Jhansi (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Jhansi
Town and Country Planning Department	Land Use	Town and Country Planning Department Jhansi
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Jhansi
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Jhansi
	Registered Vehicles	Regional Transport Office Jhansi
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

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available as supportive

nts/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**2**
Urban Local Body	**25**
Total	**40***

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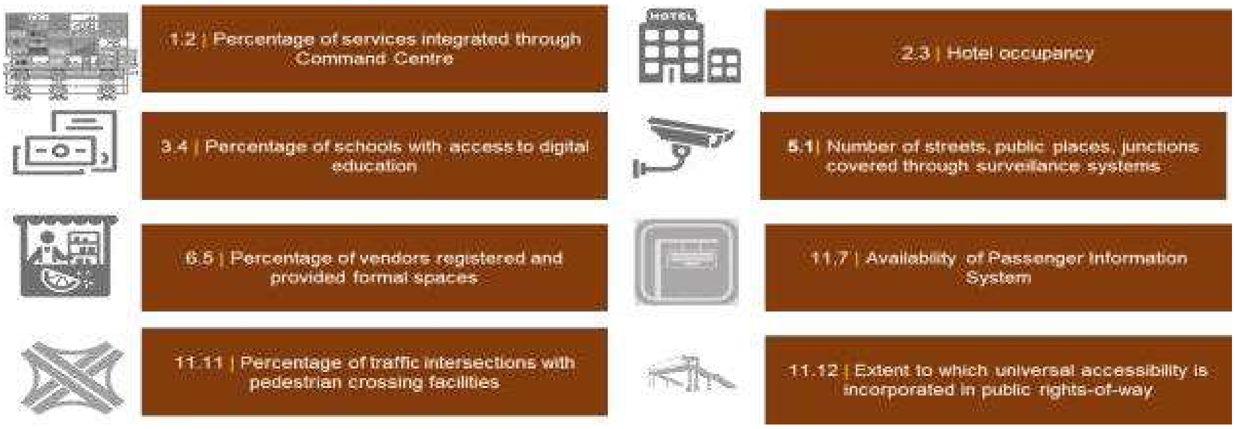
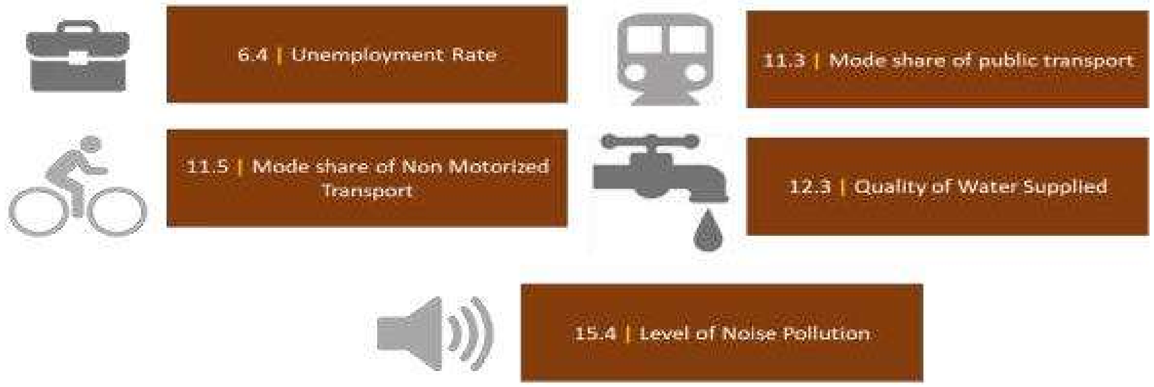
prising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

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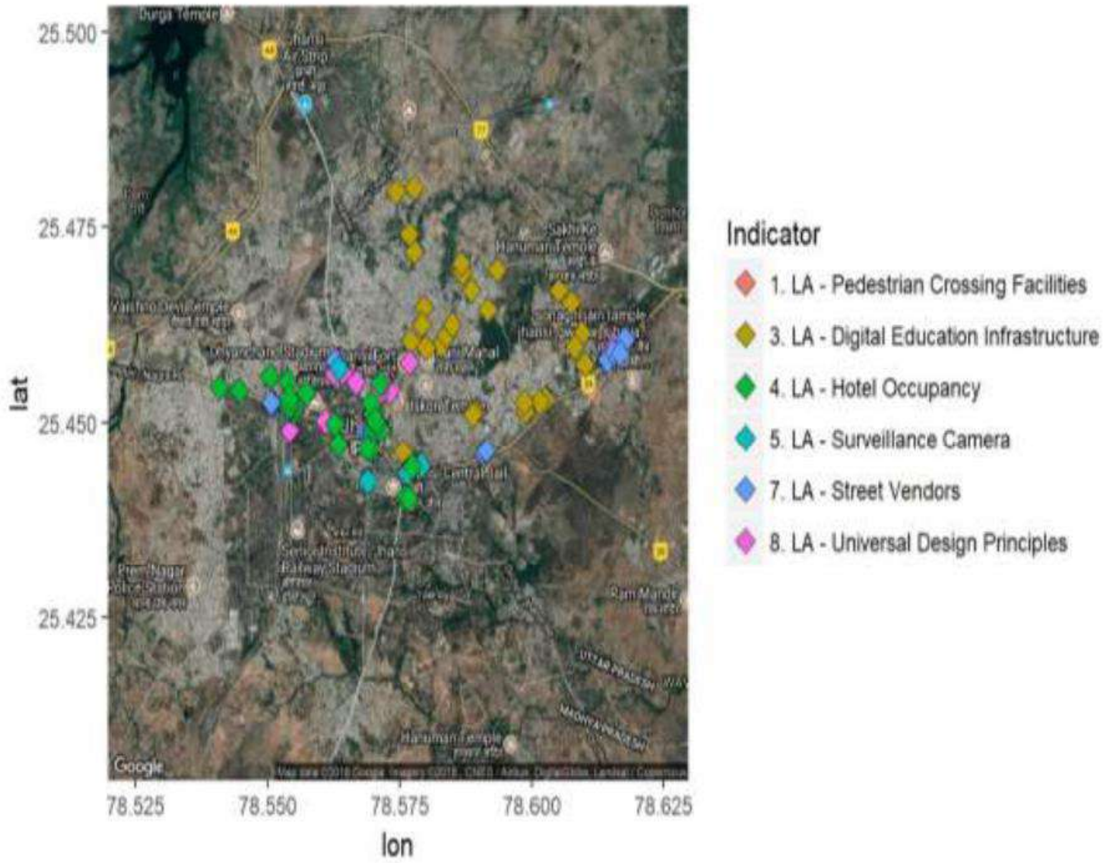
The following map presents the indicators audited at city level.


25.500
25.475
25.450
25.425
lat
78.525
78.550
78.575
78.600
78.625
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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e 5: Category wise scores

Categories	Scores in Percentage
Governance	56.36%
Identity & Culture	48%
Education	91%
Health	91%
Safety & Security	65%
Economy & Employment	19%
Housing & Inclusiveness	12%
Public Open Spaces	7%
Mixed Land Use & Compactness	0%
Power Supply	55%
Transport & Mobility	21%
Assured Water Supply	68%
Waste Water Management	46%
Solid Waste Management	90%
Reduced Pollution	78%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

JODHPUR

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ative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

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le platform to understand and discuss the methodology and

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

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physical audit and primary data collection, citizen survey was n and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

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		Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not prcjected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

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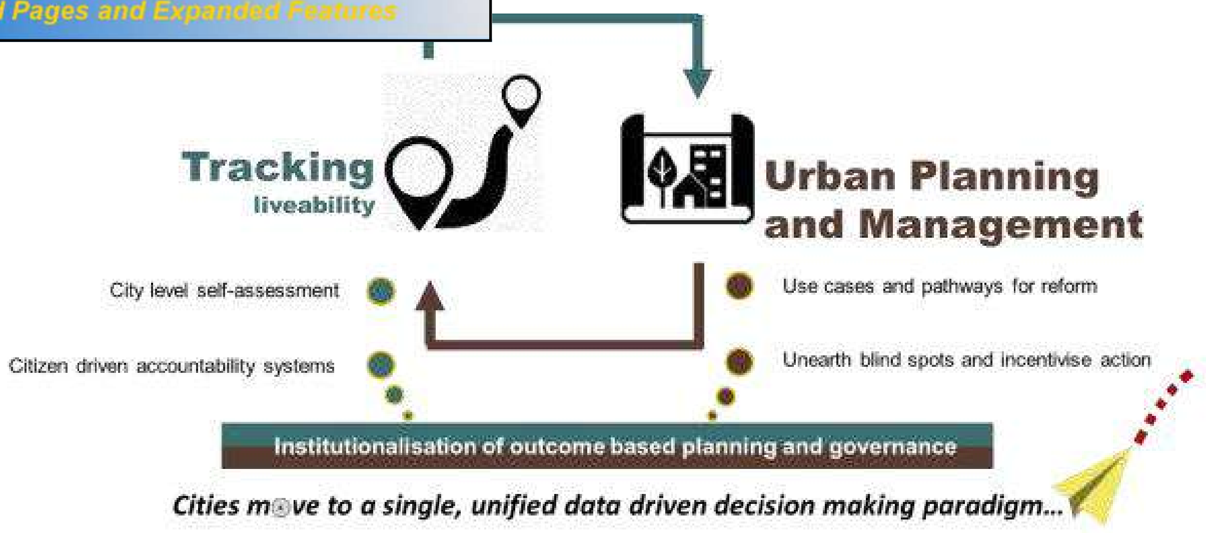
Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

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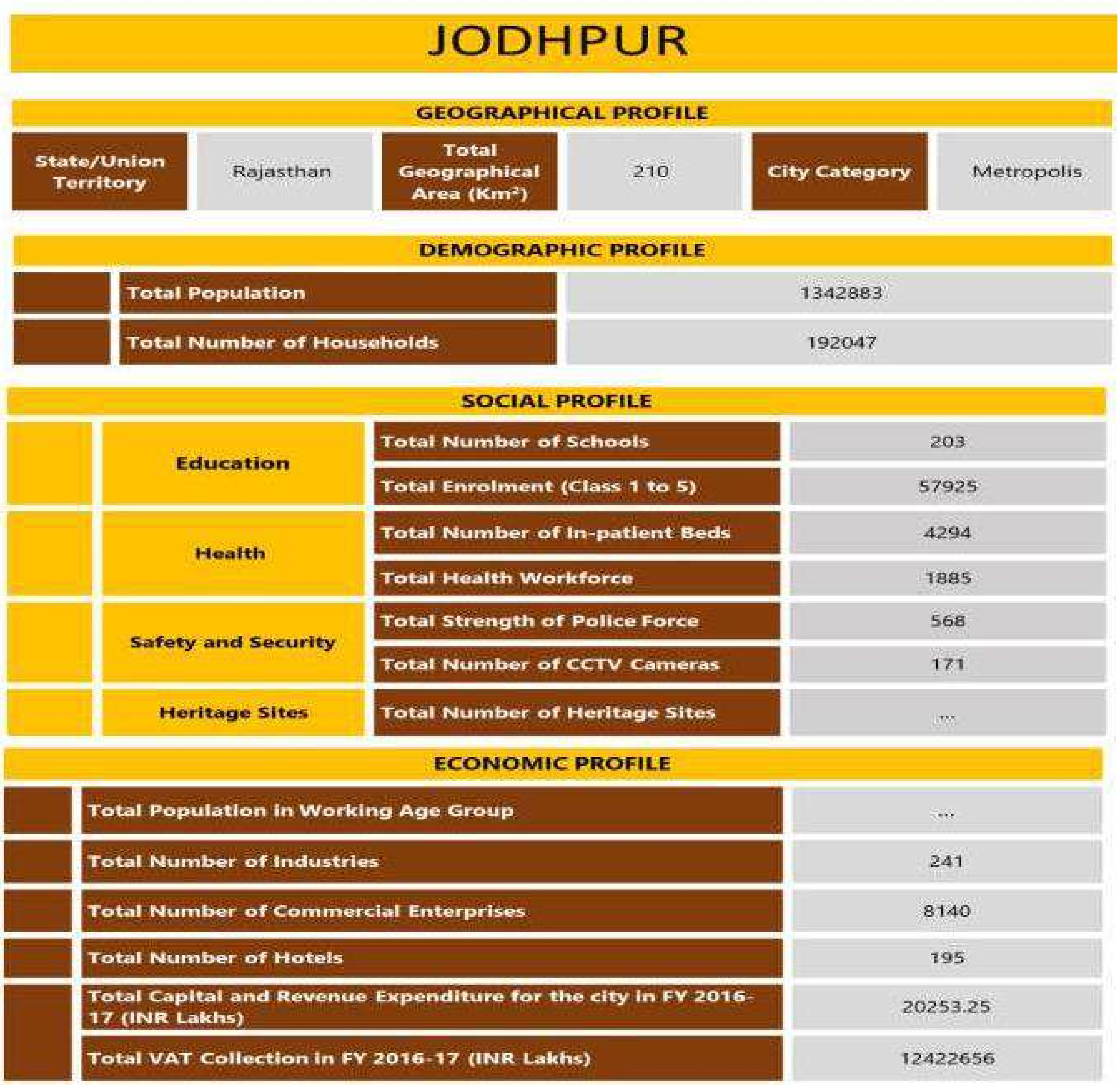
2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



JODHPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	Total Geographical Area (Km²)	210	City Category	Metropolis

DEMOGRAPHIC PROFILE

	Total Population	1342883
	Total Number of Households	192047

SOCIAL PROFILE

	Education	Total Number of Schools	203
		Total Enrolment (Class 1 to 5)	57925
	Health	Total Number of In-patient Beds	4294
		Total Health Workforce	1885
	Safety and Security	Total Strength of Police Force	568
		Total Number of CCTV Cameras	171
	Heritage Sites	Total Number of Heritage Sites	...

ECONOMIC PROFILE

	Total Population in Working Age Group	...
	Total Number of Industries	241
	Total Number of Commercial Enterprises	8140
	Total Number of Hotels	195
	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	20253.25
	Total VAT Collection in FY 2016-17 (INR Lakhs)	12422656

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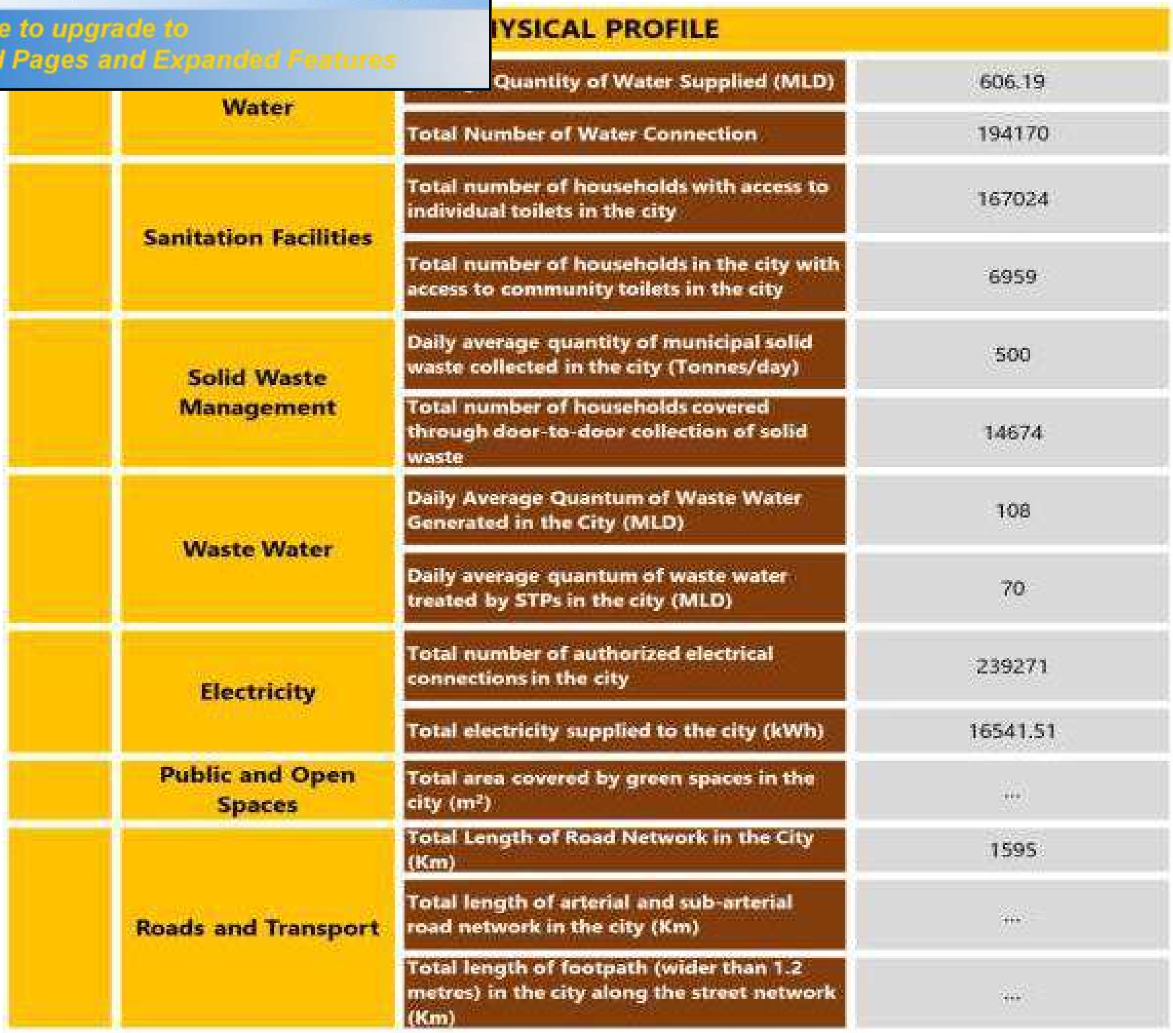

		YSICAL PROFILE	
	Water	Quantity of Water Supplied (MLD)	606.19
		Total Number of Water Connection	194170
	Sanitation Facilities	Total number of households with access to individual toilets in the city	167024
		Total number of households in the city with access to community toilets in the city	6959
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	500
		Total number of households covered through door-to-door collection of solid waste	14674
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	108
		Daily average quantum of waste water treated by STPs in the city (MLD)	70
	Electricity	Total number of authorized electrical connections in the city	239271
		Total electricity supplied to the city (kWh)	16541.51
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
	Roads and Transport	Total Length of Road Network in the City (Km)	1595
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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ory Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	**Indicators**
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

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Development		**Indicators**
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

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Development		Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

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Development		Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

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Development		Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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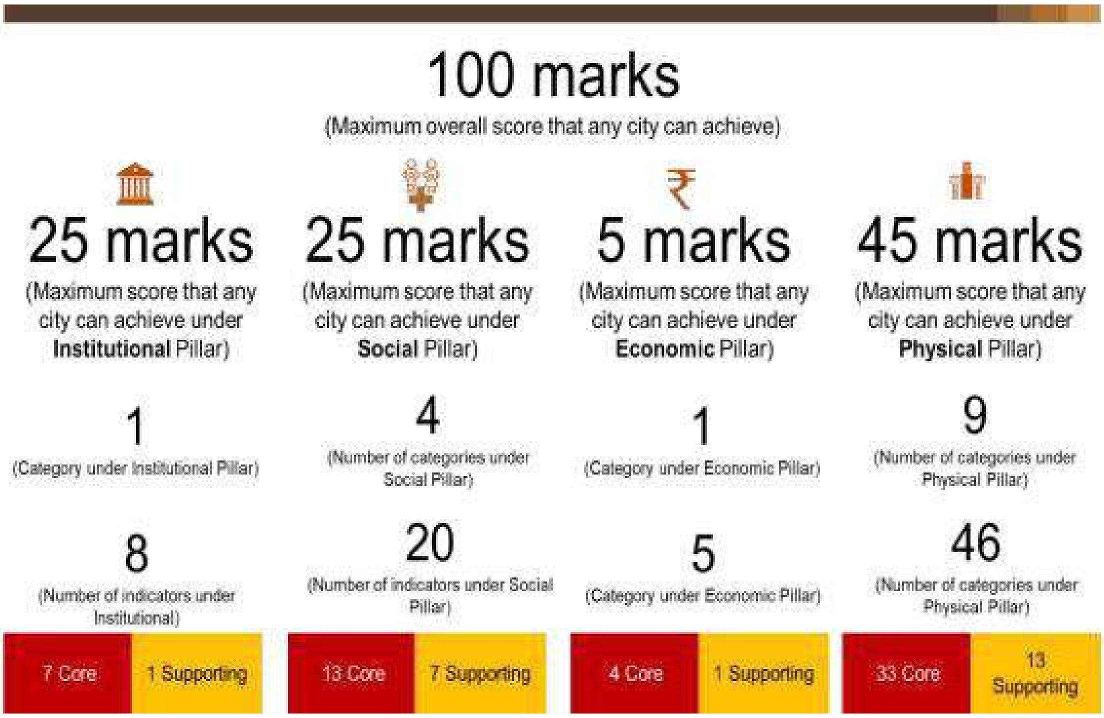
3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

es broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section, Jodhpur Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Town and Country Planning department
Urban Local Body	For Water Supply and Drainage related questions	Public Health and Engineering Department
Urban Local Body	For Heritage sites related data	Jodhpur Nagar Nigam
Urban Local Body	For Ecological sites related data	Jodhpur Nagar Nigam
Urban Local Body	For Housing related data	Jodhpur Nagar Nigam
Urban Local Body	For Building plan related data	Jodhpur Development Authority
Urban Local Body	For Roads related data	Jodhpur Nagar Nigam, Jodhpur Development Authority and Public Works Department
Urban Local Body	For Solid waste management related data	Jodhpur Nagar Nigam
Urban Local Body	For IT services related data	Oswal Data, Jodhpur Nagar Nigam
Urban Local Body	For Vendor committee related data	Jodhpur Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Jodhpur Nagar Nigam
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Central Pollution Control Board

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	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Jodhpur Development Authority
	Construction planning	Jodhpur Development Authority
	Green Building	Jodhpur Development Authority
	Rain water harvesting	Jodhpur Development Authority
	Universal Design Principle	Jodhpur Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Jodhpur Vidyut Vibhag Nigam Limited
State Disaster management authority		Control Room, Collectorate
State Education Department		District Education Office
State Health Department	Health care professionals	Health Department & S.N. medical College
	Citizen Services	Health Department & S.N. medical College
	Disease Prevalence	Health Department & S.N. medical College
	Health Infrastructure	Health Department & S.N. medical College
State Renewable Energy Development Agency		Jodhpur Vidyut Vibhag Nigam Limited
State Sales / Commercial Taxes Department		Sales and Commercial Tax Department, Collectorate
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Department
	Registered Vehicles	Transport Department
	Sub urban rail transport	Transport Department
	Mono Rail Authority	Transport Department
	Tramways	Transport Department

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	Subcategories	**Data owners at city level**
	Marine Transport Authority	Transport Department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	**Number of Documents**
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	3
State Health Department	1
Transport Authority	9
Disaster Management	0
Urban Local Body	14
Total	32*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

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indicator from the Institutional pillar, one from the Social five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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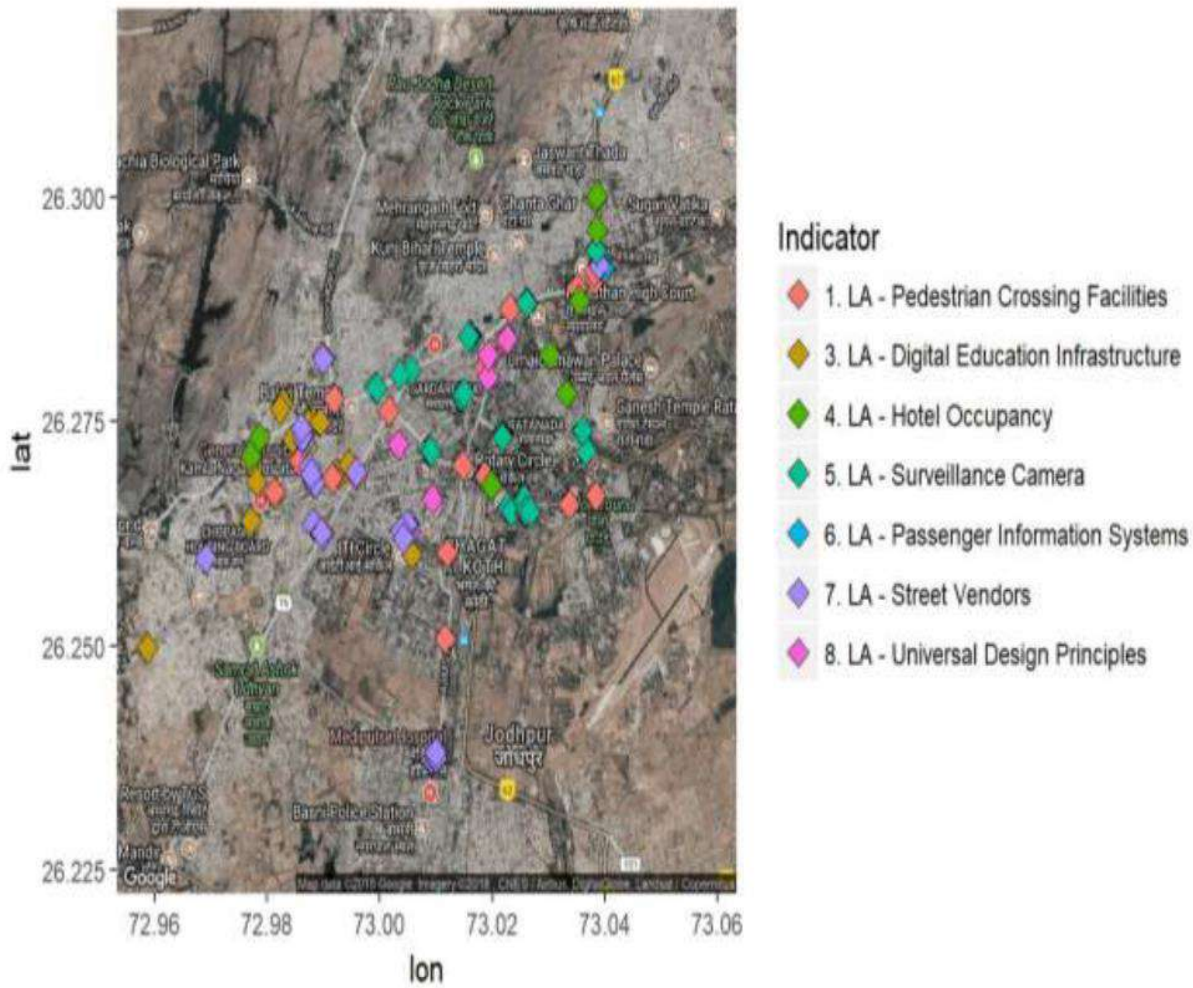
The following map presents the indicators audited at city level.


26.300
26.275
26.250
26.225
lat
72.96
72.98
73.00
73.02
73.04
73.06
lon
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Google
Jodhpur
जोधपुर
Mehrangarh
Jaswant Thada
Umaid Bhawan Palace
Rajasthan High Court
Paota Circle
Ganesh Temple
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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Table 5: Category wise scores

Categories	Scores in Percentage
Governance	41.99%
Identity & Culture	0%
Education	63%
Health	65%
Safety & Security	68%
Economy & Employment	13%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	60%
Transport & Mobility	16%
Assured Water Supply	87%
Waste Water Management	73%
Solid Waste Management	36%
Reduced Pollution	87%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

KAKINADA

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initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

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upport and support extended by MoHUA. The state level epartments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

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tated the process by conducting video conferences with the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

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		Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

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		Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

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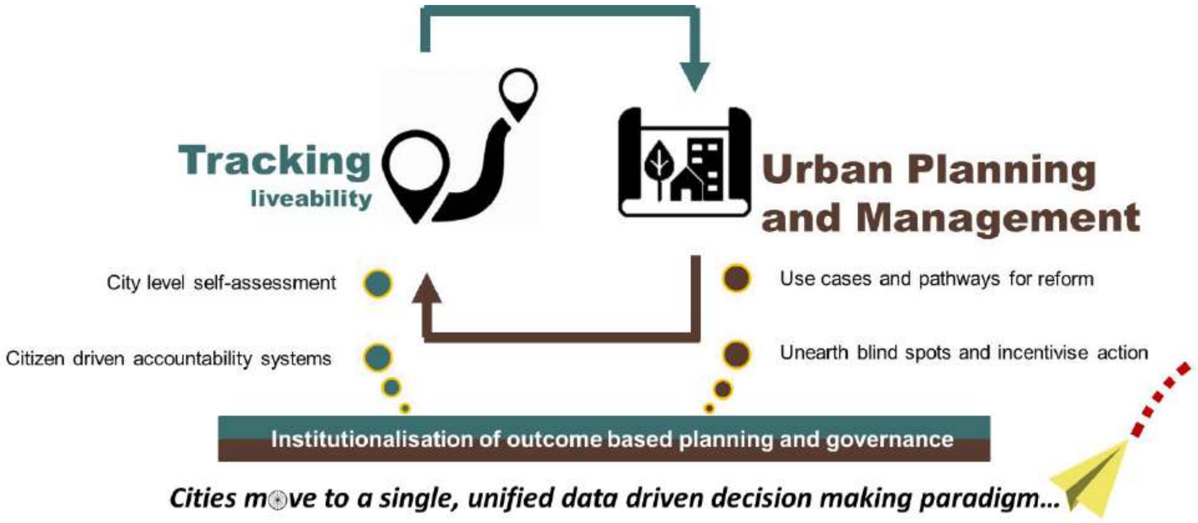
The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

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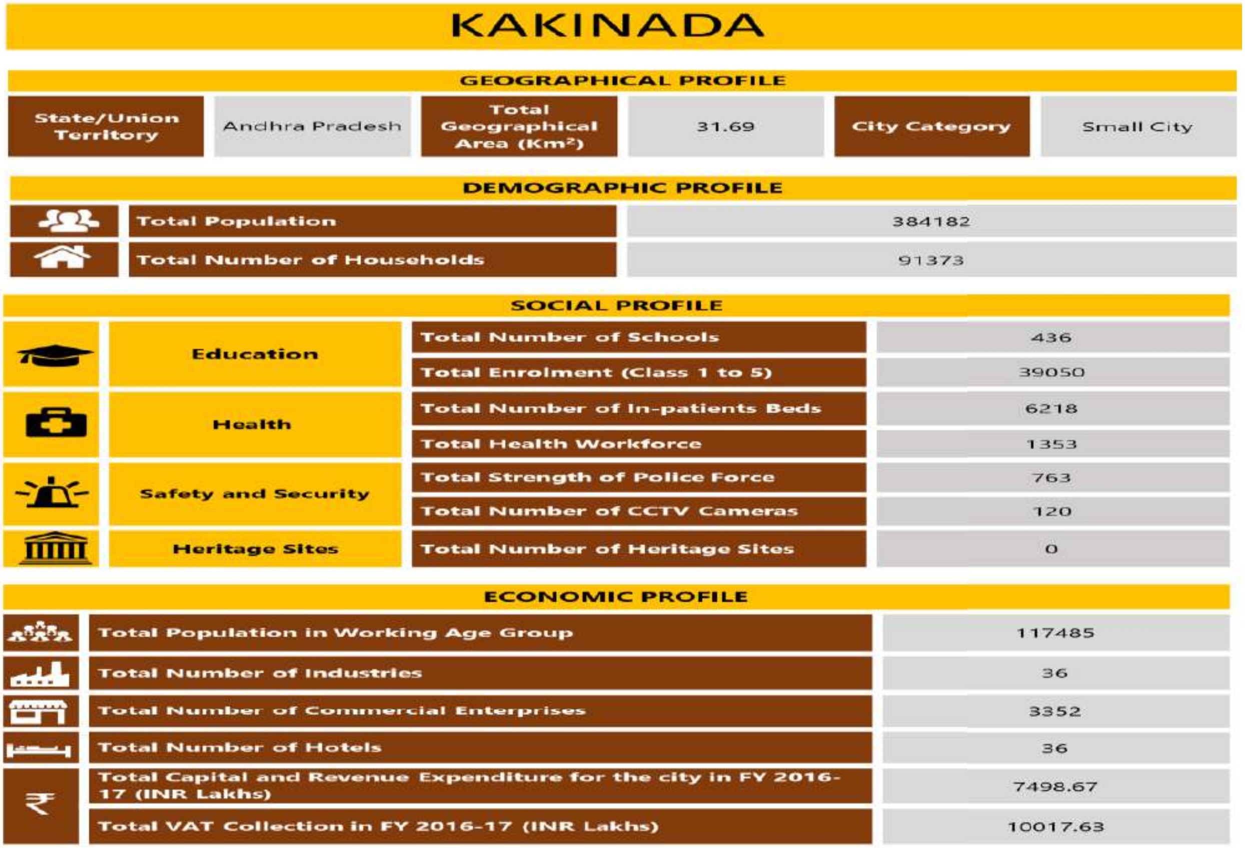
n population of above one million each. Implementation of in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KAKINADA

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	Total Geographical Area (Km²)	31.69	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	384182
Total Number of Households	91373

SOCIAL PROFILE

Education	Total Number of Schools	436
	Total Enrolment (Class 1 to 5)	39050
Health	Total Number of In-patients Beds	6218
	Total Health Workforce	1353
Safety and Security	Total Strength of Police Force	763
	Total Number of CCTV Cameras	120
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

Total Population in Working Age Group	117485
Total Number of Industries	36
Total Number of Commercial Enterprises	3352
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7498.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	10017.63

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		PHYSICAL PROFILE	
	Water	ge Quantity of Water Supplied (MLD)	84.72
		Total Number of Water Connections	40365
	Sanitation Facilities	Total number of households with access to individual toilets in the city	82236
		Total number of households in the city with access to community toilets in the city	7690
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	169
		Total number of households covered through door-to-door collection of solid waste	91373
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	36
		Daily average quantum of waste water treated by STPs in the city (MLD)	0
	Electricity	Total number of authorized electrical connections in the city	168716
		Total electricity supplied to the city (kWh)	433.959
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1518712
	Roads and Transport	Total Length of Road Network in the City (Km)	723
		Total length of arterial and sub-arterial road network in the city (Km)	8
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

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ory Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	**Category**	**Indicators**
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

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Development		Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

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Development		Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

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Development		Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

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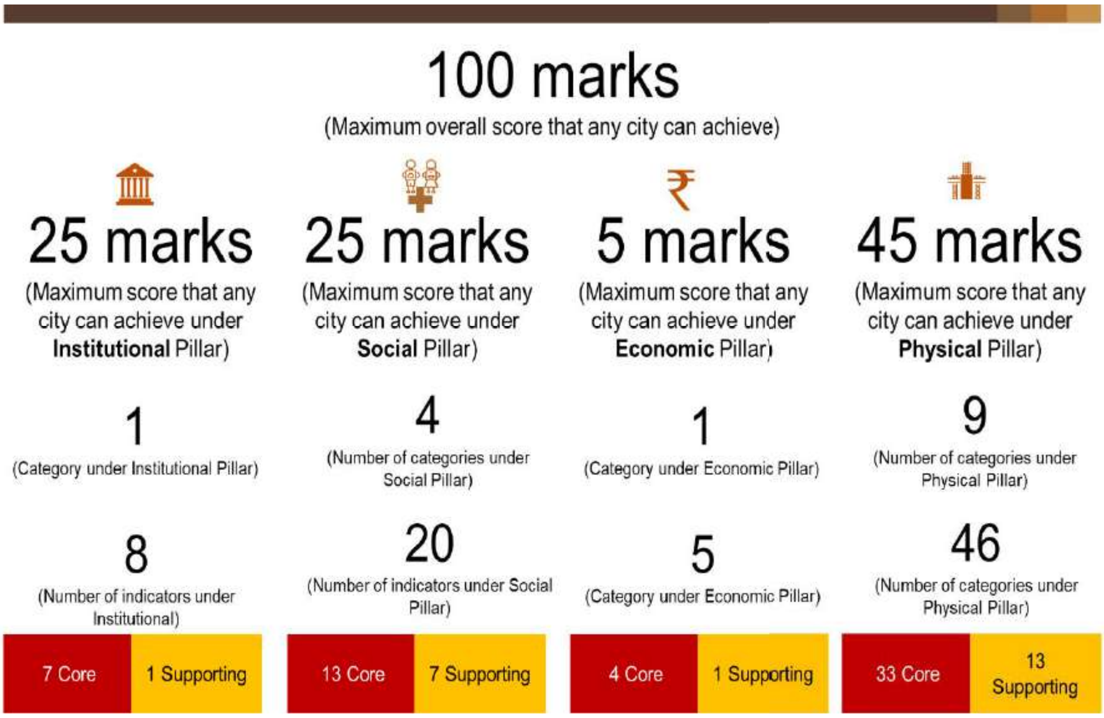
dology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

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To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

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the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Town Planning Section/ Urban Planner (AMRUT)
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Revenue and Accounts Sections for financial figures
Urban Local Body	For Heritage sites related data	Not applicable as there was no such sites
Urban Local Body	For Ecological sites related data	Not applicable as there was no such sites
Urban Local Body	For Housing related data	Town Planning Section
Urban Local Body	For Building plan related data	Town Planning Section
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Public Health and Engineering Sections
Urban Local Body	For IT services related data	IT Cell
Urban Local Body	For Vendor committee related data	Town Planning and Urban Poverty Alleviation Sections
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Administration and Revenue Sections, Urban Planner (AMRUT)

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	egories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	District Pollution Control Board
Development Authority	Building Infrastructure	There is a Development Authority newly formed for the district of East Godavari. But all the items mentioned here are presently being dealt by ULB (Town Planning Section)
	Construction planning	Do
	Green Building	Do
	Rain water harvesting	Do
	Universal Design Principle	Do
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Eastern Power/DISCOM, Kakinada
State Disaster management authority		District Disaster management Authority AC[P]
State Education Department		District Education Office
State Health Department	Health care professionals	District Medical and Health Officer & GGH
	Citizen Services	Do
	Disease Prevalence	Do
	Health Infrastructure	Do
State Renewable Energy Development Agency	Renewable Energy	NEDCAP
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Superintendent of Police
Transport Authorities	Buses	Transport Department
	Registered Vehicles	RTO
	Sub urban rail transport	Do
	Mono Rail Authority	Do
	Tramways	Do

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	egories	Data owners at city level
	Marine Transport Authority	Do

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 60 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**9**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**5**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**6**
Transport Authority	**4**
Disaster Management	**1**
Urban Local Body	**29**
Total	**60***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

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ata, survey results and other statistical records, log books

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

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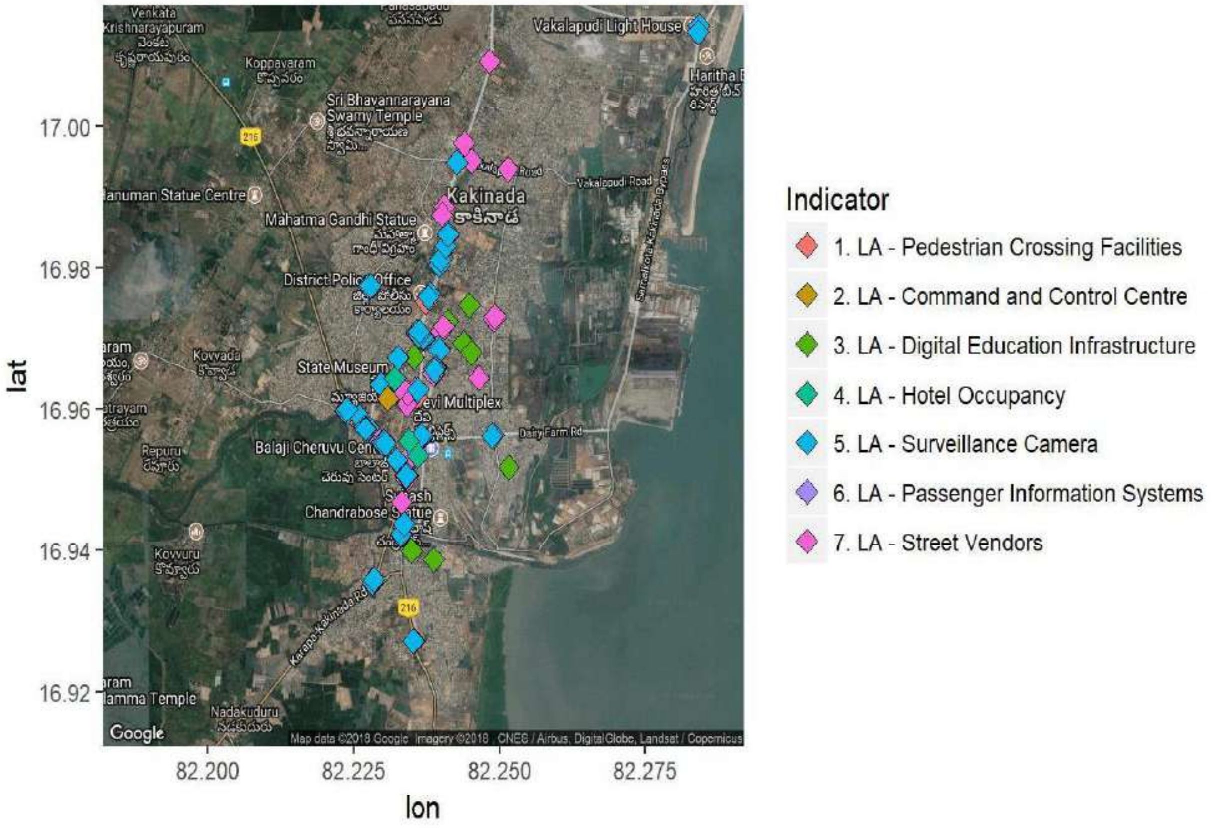
The following map presents the indicators audited at city level.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Vakalapudi Light House
District Police Office
State Museum
Mahatma Gandhi Statue
Balaji Cheruvu Center
Chandrabose Statue
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

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e 5: Category wise scores

Categories	Scores in Percentage
Governance	54.98%
Identity & Culture	20%
Education	91%
Health	89%
Safety & Security	57%
Economy & Employment	12%
Housing & Inclusiveness	7%
Public Open Spaces	17%
Mixed Land Use & Compactness	4%
Power Supply	53%
Transport & Mobility	13%
Assured Water Supply	68%
Waste Water Management	39%
Solid Waste Management	89%
Reduced Pollution	80%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

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LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KALYAN-DOMBIVALI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

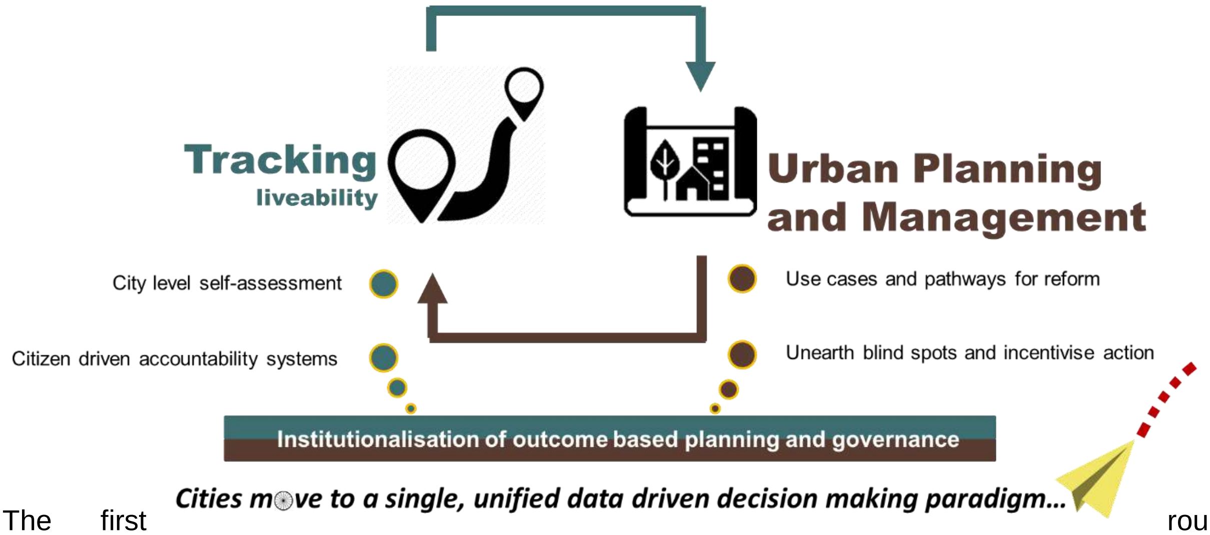
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

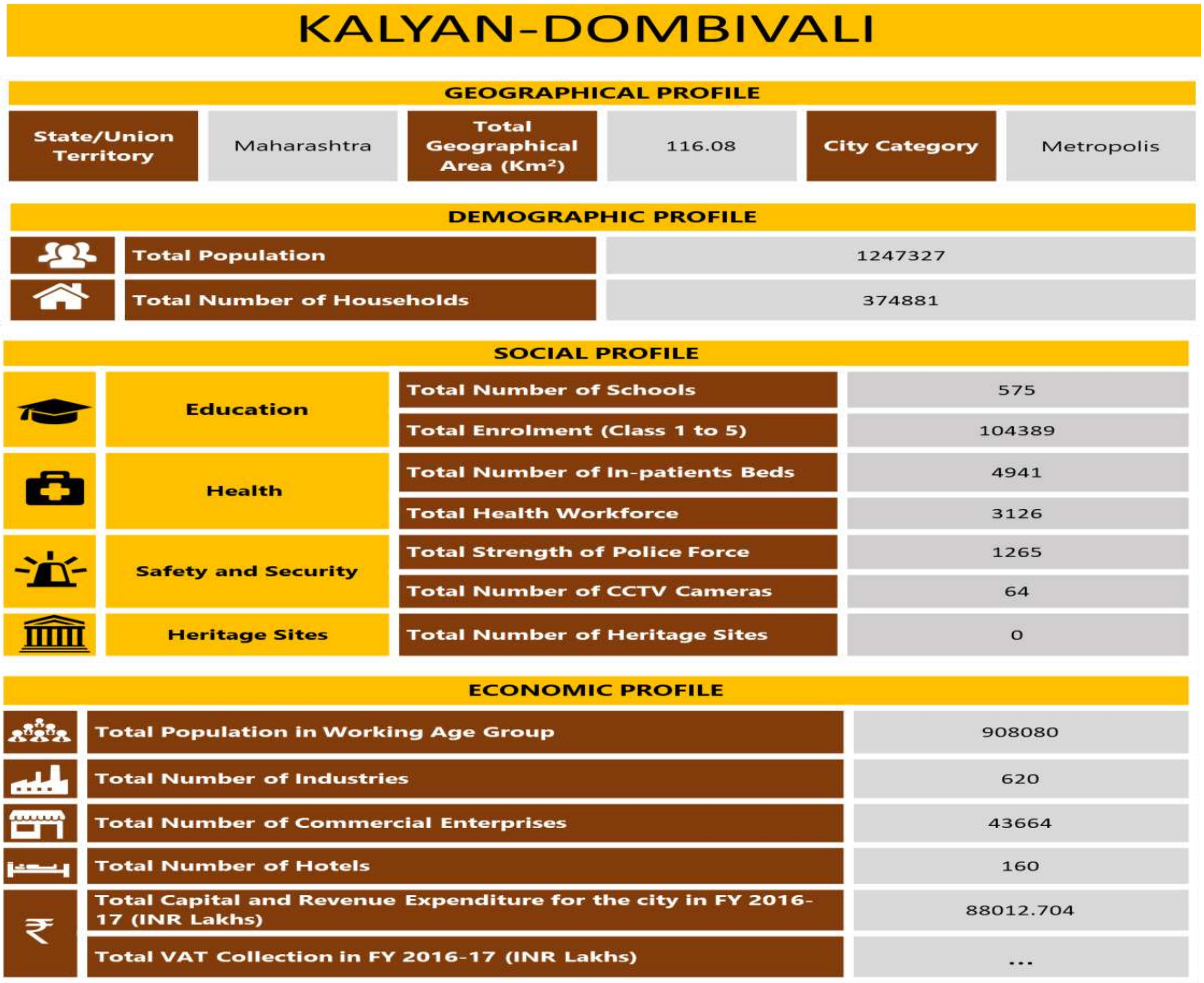
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KALYAN-DOMBIVALI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	116.08	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1247327
Total Number of Households	374881

SOCIAL PROFILE

Education	Total Number of Schools	575
	Total Enrolment (Class 1 to 5)	104389
Health	Total Number of In-patients Beds	4941
	Total Health Workforce	3126
Safety and Security	Total Strength of Police Force	1265
	Total Number of CCTV Cameras	64
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

Total Population in Working Age Group	908080
Total Number of Industries	620
Total Number of Commercial Enterprises	43664
Total Number of Hotels	160
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	88012.704
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	310
		Total Number of Water Connections	105016
	Sanitation Facilities	Total number of households with access to individual toilets in the city	132500
		Total number of households in the city with access to community toilets in the city	383
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
		Total number of households covered through door-to-door collection of solid waste	310881
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	216
		Daily average quantum of waste water treated by STPs in the city (MLD)	44
	Electricity	Total number of authorized electrical connections in the city	595697
		Total electricity supplied to the city (kWh)	1768520000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	0
	Roads and Transport	Total Length of Road Network in the City (Km)	488
		Total length of arterial and sub-arterial road network in the city (Km)	42
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	412

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized

Pillars of Comprehensive Development	Category	Indicators
		electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way

Pillars of Comprehensive Development	Category	Indicators
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

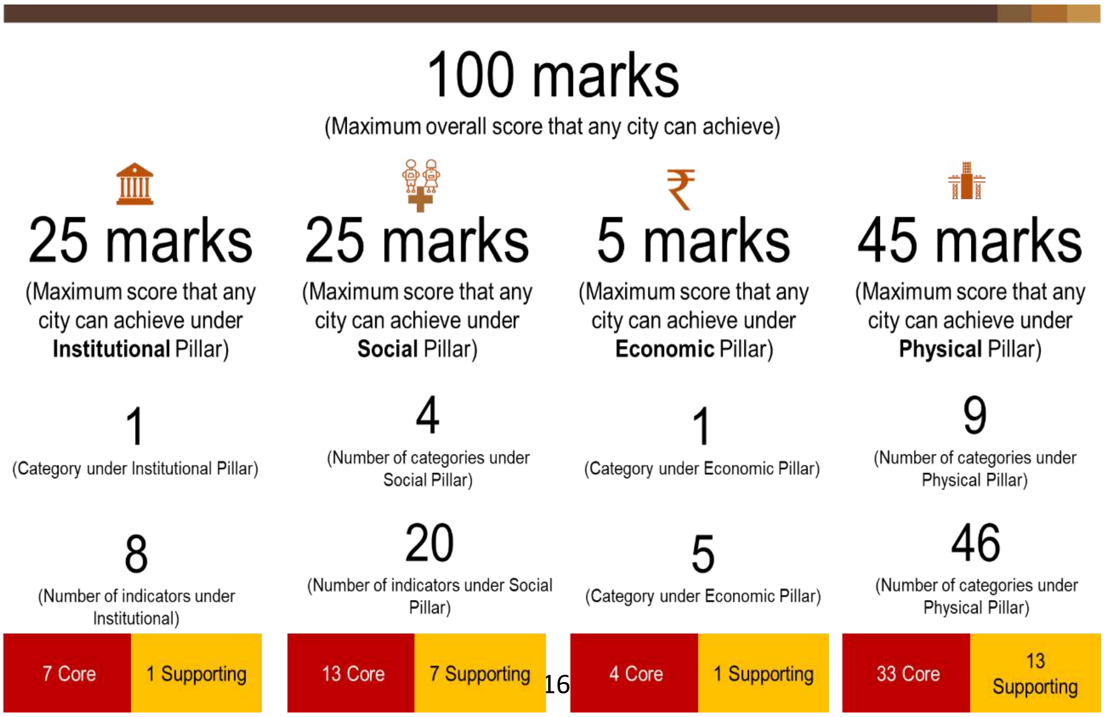
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4 Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts
Urban Local Body	For Park and Recreation Related Questions	Solide Waste Management
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Town Planning
Urban Local Body	For Building plan related data	Town Planning
Urban Local Body	For Roads related data	Town Planning
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	Citizen Facilitation Centre
Urban Local Body	For Vendor committee related data	Solide Waste Management
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Account,Tax, IT,Health Dept
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Town Planning
	Construction planning	Town Planning
	Green Building	Town Planning
	Rain water harvesting	Town Planning
	Universal Design Principle	Town Planning
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM
State Disaster		Disaster management

Designated data owners	Subcategories	Data owners at city level
management authority		
State Education Department		Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		DISCOM
State Sales / Commercial Taxes Department		Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	MSRTC
	Registered Vehicles	Traffic
	Sub urban rail transport	Railway Dept
	Mono Rail Authority	Railway Dept
	Tramways	Railway Dept
	Marine Transport Authority	Railway Dept

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 80 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**9**
DISCOM/Electricity Department	**4**
Traffic and Police Department	**5**
Development Authority	**7**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**3**
State Health Department	**7**
Transport Authority	**7**
Disaster Management	**1**
Urban Local Body	**33**
Total	**80***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

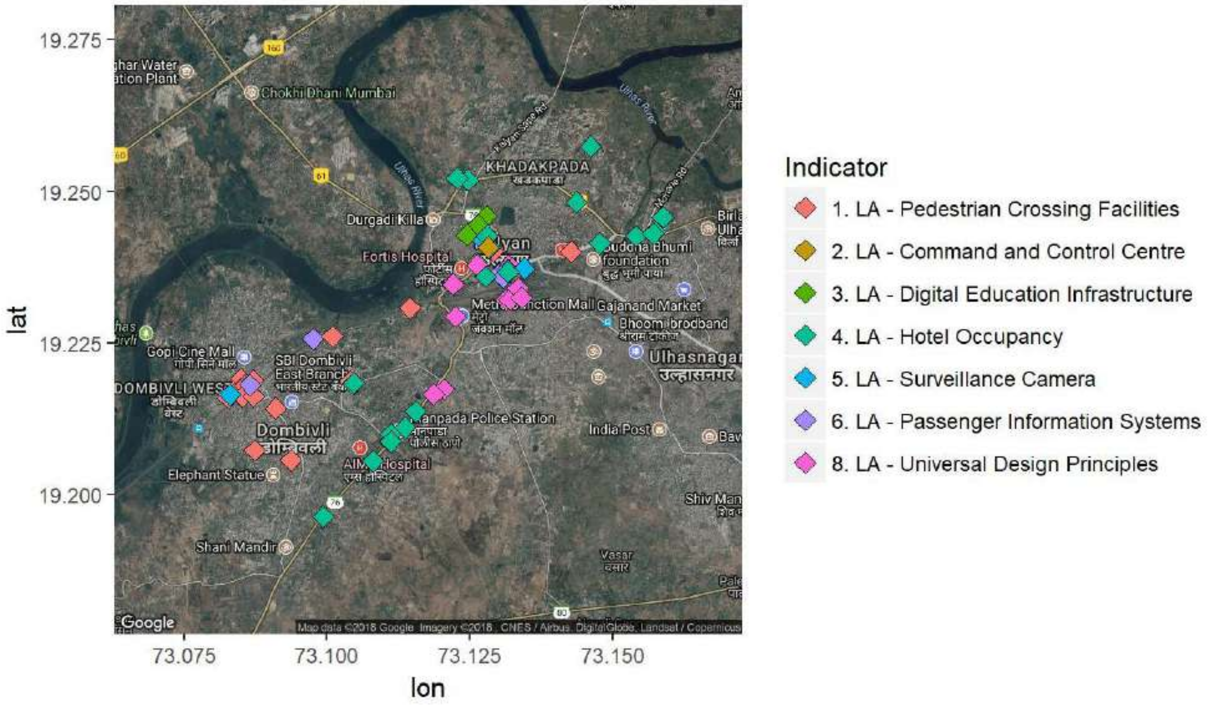
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.275
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KHADAKPADA
Durgadi Killa
Fortis Hospital
Chokhi Dhani Mumbai
Gopi Cine Mall
SBI Dombivli East Branch
DOMBIVLI WEST
Dombivli
Elephant Statue
Kalyanpada Police Station
AIMS Hospital
Shani Mandir
India Post
Ulhasnagar
Gajanand Market
Bhoomi brodband
Shiv Mandir
Vasar
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	40.47%
Identity & Culture	7%
Education	84%
Health	87%
Safety & Security	67%
Economy & Employment	38%
Housing & Inclusiveness	6%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	62%
Transport & Mobility	53%
Assured Water Supply	61%
Waste Water Management	42%
Solid Waste Management	68%
Reduced Pollution	64%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KANPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

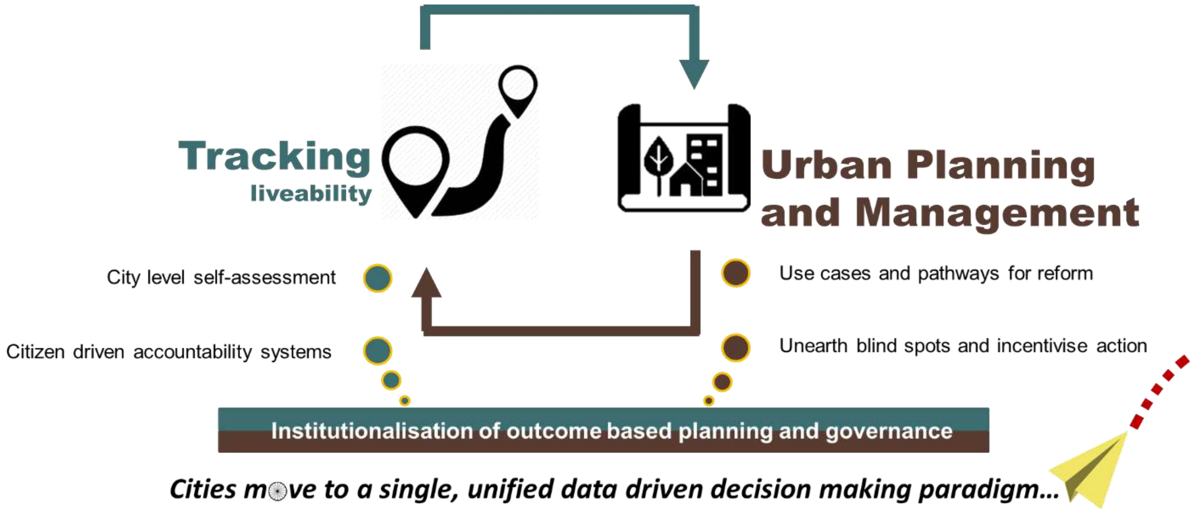
#	**Challenges**	**Proposed Solutions**
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities m◎ve to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KANPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	260	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2931269
Total Number of Households	528347

SOCIAL PROFILE

Education	**Total Number of Schools**	5314
	Total Enrolment (Class 1 to 5)	435112
Health	**Total Number of In-patient Beds**	16121
	Total Health Workforce	3194
Safety and Security	**Total Strength of Police Force**	2308
	Total Number of CCTV Cameras	50
Heritage Sites	**Total Number of Heritage Sites**	6

ECONOMIC PROFILE

Total Population in Working Age Group	804433
Total Number of Industries	3237
Total Number of Commercial Enterprises	65664
Total Number of Hotels	88
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	58390
Total VAT Collection in FY 2016-17 (INR Lakhs)	378474.38

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	430
	Total Number of Water Connection	196650
Sanitation Facilities	Total number of households with access to individual toilets in the city	472320
	Total number of households in the city with access to community toilets in the city	32302
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1200
	Total number of households covered through door-to-door collection of solid waste	322260
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	301
	Daily average quantum of waste water treated by STPs in the city (MLD)	185
Electricity	Total number of authorized electrical connections in the city	583266
	Total electricity supplied to the city (kWh)	3657804000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	4636.31
	Total length of arterial and sub-arterial road network in the city (Km)	146.31
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	32

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar Nigam Kanpur Nagar
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Kanpur Nagar
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar Nigam Kanpur Nagar Nagar
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB Kanpur Nagar
Urban Local Body	For Ecological sites related data	Forest Department Kanpur Nagar
Urban Local Body	For Housing related data	Kanpur Development Authority / Nirmaan Vibhag Nagar Nigam Kanpur/ DUDA Kanpur Nagar
Urban Local Body	For Building plan related data	Kanpur Development Authority Kanpur Nagar
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Kanpur
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Kanpur
Urban Local Body	For IT services related data	GIS/ IT / Computer Department. Nagar Nigam Kanpur
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Kanpur Nagar
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District Urban Development Agency Kanpur Nagar
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Kanpur Nagar
Development Authority	Building Infrastructure	Kanpur Development Authority Kanpur
	Construction planning	Kanpur Development Authority Kanpur

Designated data owners	Subcategories	Data owners at city level
	Green Building	Kanpur Development Authority Kanpur
	Rain water harvesting	Kanpur Development Authority Kanpur
	Universal Design Principle	Kanpur Development Authority Kanpur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	KESCO Kanpur Nagar / Uttar Pradesh Power Corporation Ltd Kanpur Nagar
State Disaster management authority		State Disaster Management Kanpur Nagar [ADM(FR]
State Education Department		Basic Siksha Adhikari / District Inspector of School Kanpur Nagar (DIOS)
State Health Department	Health care professionals	UP State Health Department Kanpur Nagar (CMO)
	Citizen Services	UP State Health Department Kanpur Nagar (CMO)
	Disease Prevalence	UP State Health Department Kanpur Nagar (CMO)
	Health Infrastructure	UP State Health Department Kanpur Nagar (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA) Kanpur Nagar
State Sales / Commercial Taxes Department		Commercial Taxes Department Kanpur Nagar
Town and Country Planning Department	Land Use	Town and Country Planning Department Kanpur Nagar
Traffic and Police Department		Traffic police, Civil police Kanpur Nagar
Transport Authorities	Buses	Uttar Pradesh State Roadways Transport Corporation & Regional Transport Office Kanpur Nagar
	Registered Vehicles	Regional Transport Office Kanpur Nagar
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 39 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**39***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

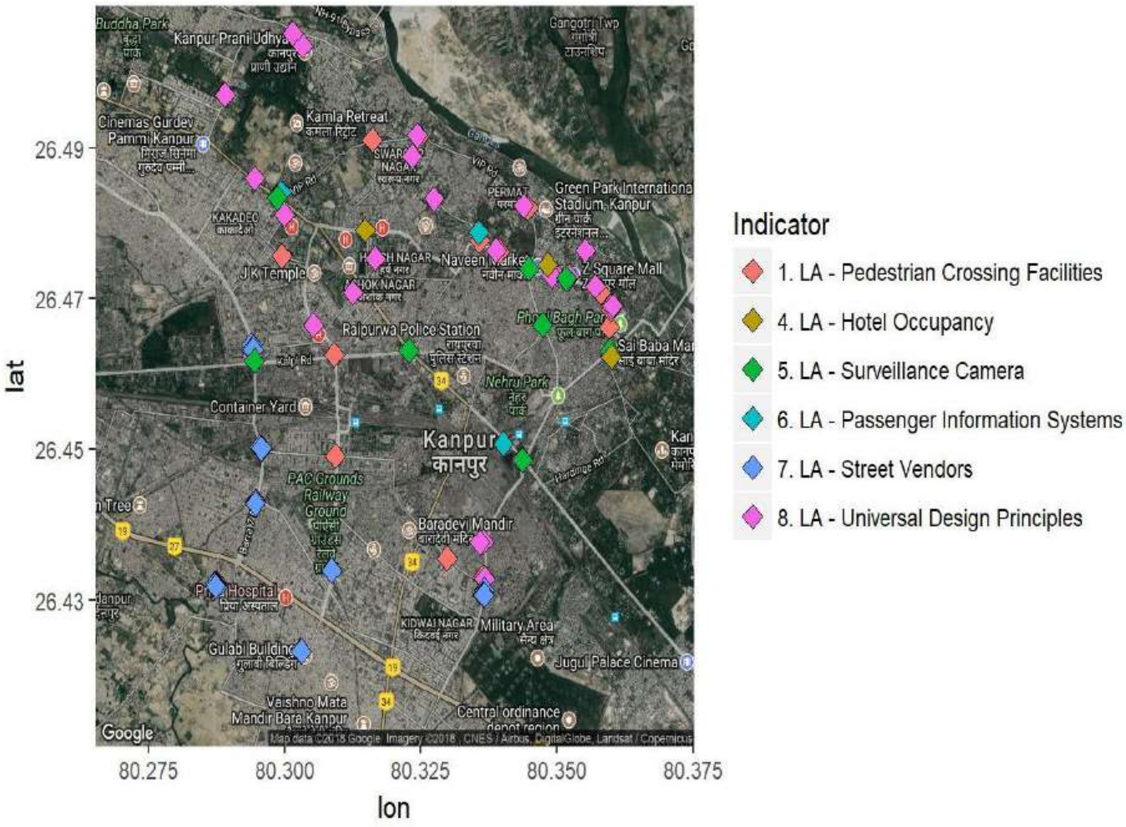
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Buddha Park
Kanpur Prani Udhyan
Kamla Retreat
Cinemas Gurdev Pammi Kanpur
SWARUP NAGAR
Green Park International Stadium, Kanpur
KAKADEO
J K Temple
Naveen Market
Z Square Mall
ASHOK NAGAR
Rajpurwa Police Station
Phool Bagh Park
Sai Baba Mandir
Nehru Park
Container Yard
Kanpur
कानपुर
PAC Grounds Railway Ground
Baradevi Mandir
Priya Hospital
KIDWAI NAGAR
Military Area
Gulabi Building
Jugul Palace Cinema
Vaishno Mata Mandir Bara Kanpur
Central ordinance depot region
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
26.49
26.47
26.45
26.43
lat
80.275
80.300
80.325
80.350
80.375
lon
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	47.51%
Identity & Culture	37%
Education	80%
Health	71%
Safety & Security	41%
Economy & Employment	10%
Housing & Inclusiveness	8%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	47%
Transport & Mobility	46%
Assured Water Supply	59%
Waste Water Management	73%
Solid Waste Management	85%
Reduced Pollution	56%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KARIM NAGAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

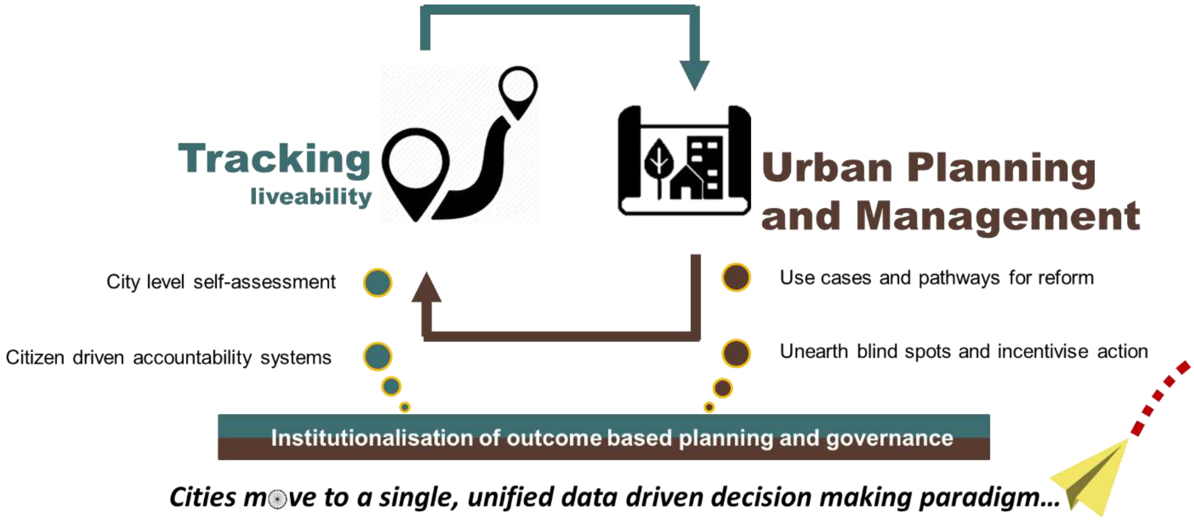
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KARIM NAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Telengana	**Total Geographical Area (Km^2)**	23.5	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	301885
Total Number of Households	79080

SOCIAL PROFILE

Education	**Total Number of Schools**	202
	Total Enrolment (Class 1 to 5)	25084
Health	**Total Number of In-patient Beds**	686
	Total Health Workforce	529
Safety and Security	**Total Strength of Police Force**	236
	Total Number of CCTV Cameras	1414
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	105548
Total Number of Industries	54
Total Number of Commercial Enterprises	9205
Total Number of Hotels	6
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4177
Total VAT Collection in FY 2016-17 (INR Lakhs)	10151.56

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	37
		Total Number of Water Connection	42237
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	28697
		Total number of households in the city with access to community toilets in the city	120
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	120
		Total number of households covered through door-to-door collection of solid waste	79880
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	38
		Daily average quantum of waste water treated by STPs in the city (MLD)	2
	Electricity	**Total number of authorized electrical connections in the city**	131685
		Total electricity supplied to the city (kWh)	224633933
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	182753
	Roads and Transport	**Total Length of Road Network in the City (Km)**	579
		Total length of arterial and sub-arterial road network in the city (Km)	8.39
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	4.95

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section
Urban Local Body	For Park and Recreation Related Questions	Town Planning Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	Tourism Department
Urban Local Body	For Housing related data	Sanitation Section
Urban Local Body	For Building plan related data	Town Planning Section
Urban Local Body	For Roads related data	Town Planning Section
Urban Local Body	For Solid waste management related data	Sanitation Section
Urban Local Body	For IT services related data	Revenue, Engineering, Birth & Death, Town Planning, Sanitation Sections.
Urban Local Body	For Vendor committee related data	Town Planning Section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Office of District Employment Exchange
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control Board
Development Authority	Building Infrastructure	Town Planning Section
	Construction planning	Town Planning Section
	Green Building	
	Rain water harvesting	Town Planning Section
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Telangana Northern Power Distribution Company Limited
State Disaster management		District Collectorate

Designated data owners	Subcategories	Data owners at city level
authority		
State Education Department		District Medical and Health Office
State Health Department	Health care professionals	District Medical and Health Office
	Citizen Services	District Medical and Health Office
	Disease Prevalence	District Medical and Health Office
	Health Infrastructure	District Medical and Health Office
State Renewable Energy Development Agency	Renewable Energy	Telangana Northern Power Distribution Company Limited
State Sales / Commercial Taxes Department		Commercial Tax Office
Town and Country Planning Department	Land Use	Town Planning Section
Traffic and Police Department		Police Commissionerate
Transport Authorities	Buses	Telangana State Road Transport Corporation
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	Not applicable as the facility is not there in the city
	Mono Rail Authority	Not applicable as the facility is not there in the city
	Tramways	Not applicable as the facility is not there in the city
	Marine Transport Authority	Not applicable as the facility is not there in the city

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 196 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**8**
Traffic and Police Department	**3**
Development Authority	**13**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**4**
State Health Department	**3**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**157**
Total	**196***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

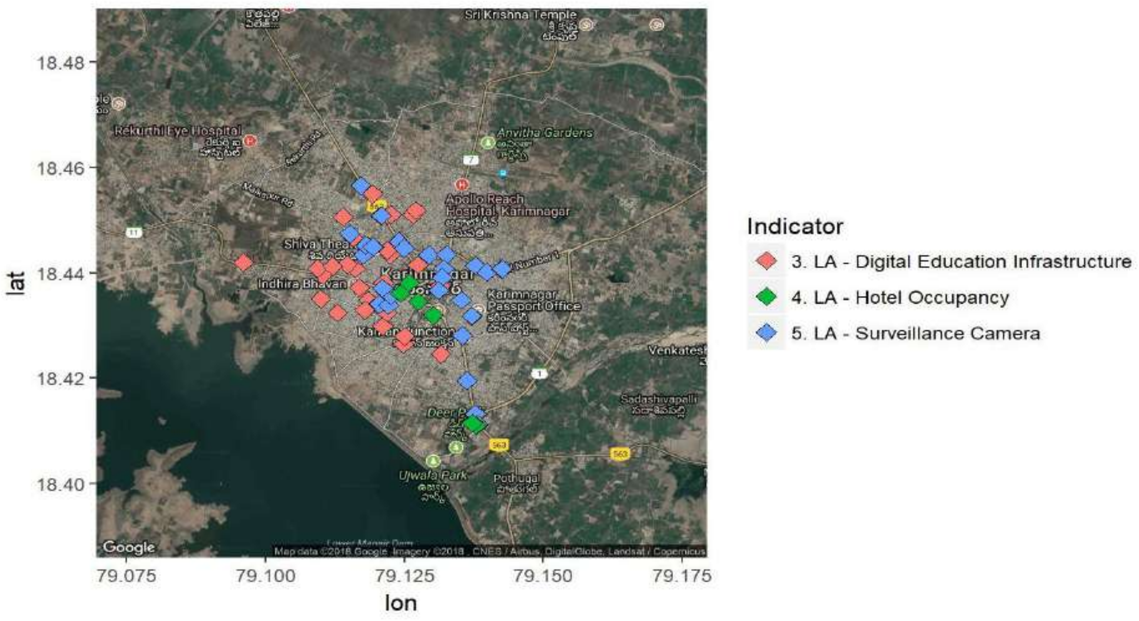
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


18.48
18.46
18.44
18.42
18.40
lat
79.075
79.100
79.125
79.150
79.175
lon
Sri Krishna Temple
Rekurthi Eye Hospital
Anvitha Gardens
Apollo Reach Hospital, Karimnagar
Shiva Theatre
Indhira Bhavan
Karimnagar
Karimnagar Passport Office
Venkatesh
Sadashivapalli
Ujwala Park
Pothugal
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	63.79%
Identity & Culture	42%
Education	79%
Health	96%
Safety & Security	62%
Economy & Employment	22%
Housing & Inclusiveness	9%
Public Open Spaces	4%
Mixed Land Use & Compactness	0%
Power Supply	51%
Transport & Mobility	17%
Assured Water Supply	81%
Waste Water Management	34%
Solid Waste Management	72%
Reduced Pollution	89%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KARNAL

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

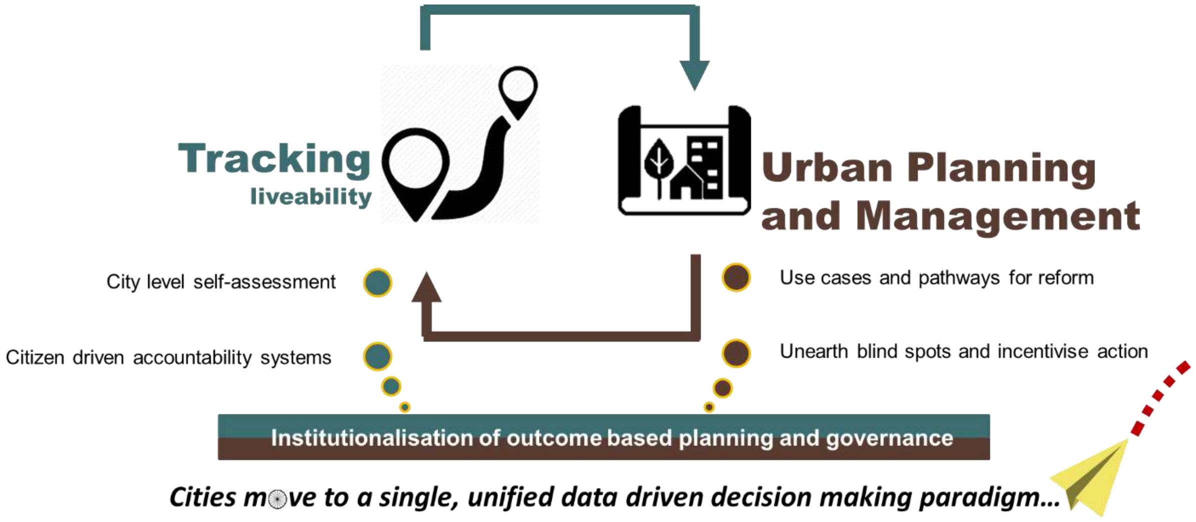
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KARNAL

GEOGRAPHICAL PROFILE

State/Union Territory	Haryana	**Total Geographical Area (Km²)**	87	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	397000
Total Number of Households	77668

SOCIAL PROFILE

Education	**Total Number of Schools**	194
	Total Enrolment (Class 1 to 5)	36362
Health	**Total Number of In-patient Beds**	3402
	Total Health Workforce	1791
Safety and Security	**Total Strength of Police Force**	283
	Total Number of CCTV Cameras	129
Heritage Sites	**Total Number of Heritage Sites**	25

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	955
Total Number of Commercial Enterprises	21061
Total Number of Hotels	34
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	6932.51
Total VAT Collection in FY 2016-17 (INR Lakhs)	100659.39

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	85.97
	Total Number of Water Connection	37524
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	77028
	Total number of households in the city with access to community toilets in the city	640
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	140
	Total number of households covered through door-to-door collection of solid waste	77668
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	63.5
	Daily average quantum of waste water treated by STPs in the city (MLD)	55
Electricity	**Total number of authorized electrical connections in the city**	99726
	Total electricity supplied to the city (kWh)	4389.25
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	5000
Roads and Transport	**Total Length of Road Network in the City (Km)**	691.38
	Total length of arterial and sub-arterial road network in the city (Km)	19.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	34.3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

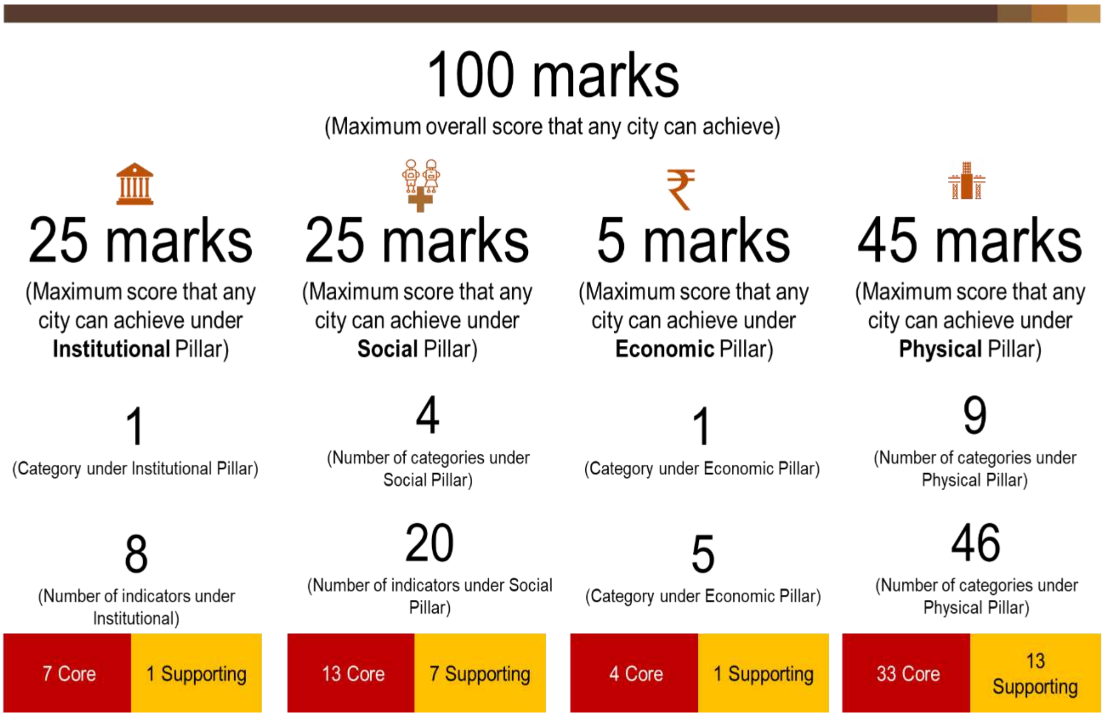
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Corporation Karnal
Urban Local Body	For Park and Recreation Related Questions	Municipal Corporation Karnal
Urban Local Body	For Water Supply and Drainage related questions	Municipal Corporation Karnal
Urban Local Body	For Heritage sites related data	Municipal Corporation Karnal
Urban Local Body	For Ecological sites related data	Municipal Corporation Karnal
Urban Local Body	For Housing related data	Municipal Corporation Karnal
Urban Local Body	For Building plan related data	Municipal Corporation Karnal
Urban Local Body	For Roads related data	Municipal Corporation Karnal
Urban Local Body	For Solid waste management related data	Municipal Corporation Karnal
Urban Local Body	For IT services related data	Municipal Corporation Karnal
Urban Local Body	For Vendor committee related data	Municipal Corporation Karnal
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Municipal Corporation Karnal

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Haryana State Pollution Control Board
Development Authority	Building Infrastructure	Haryana Urban Development Authority
	Construction planning	Haryana Urban Development Authority
	Green Building	Haryana Urban Development Authority
	Rain water harvesting	Haryana Urban Development Authority
	Universal Design Principle	Haryana Urban Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Haryana Bijli Vitran Nigam
State Disaster management authority		District Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Hospital Karnal
	Citizen Services	Civil Hospital Karnal
	Disease Prevalence	Civil Hospital Karnal
	Health Infrastructure	Civil Hospital Karnal
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Excise & Taxation Department
Town and Country Planning Department	Land Use	District Town and Country Planning Department
Traffic and Police Department		Haryana Police
Transport Authorities	Buses	Haryana Roadways
	Registered Vehicles	Transport Authority
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 6 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	3
Transport Authority	0
Disaster Management	1
Urban Local Body	0
Total	6*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

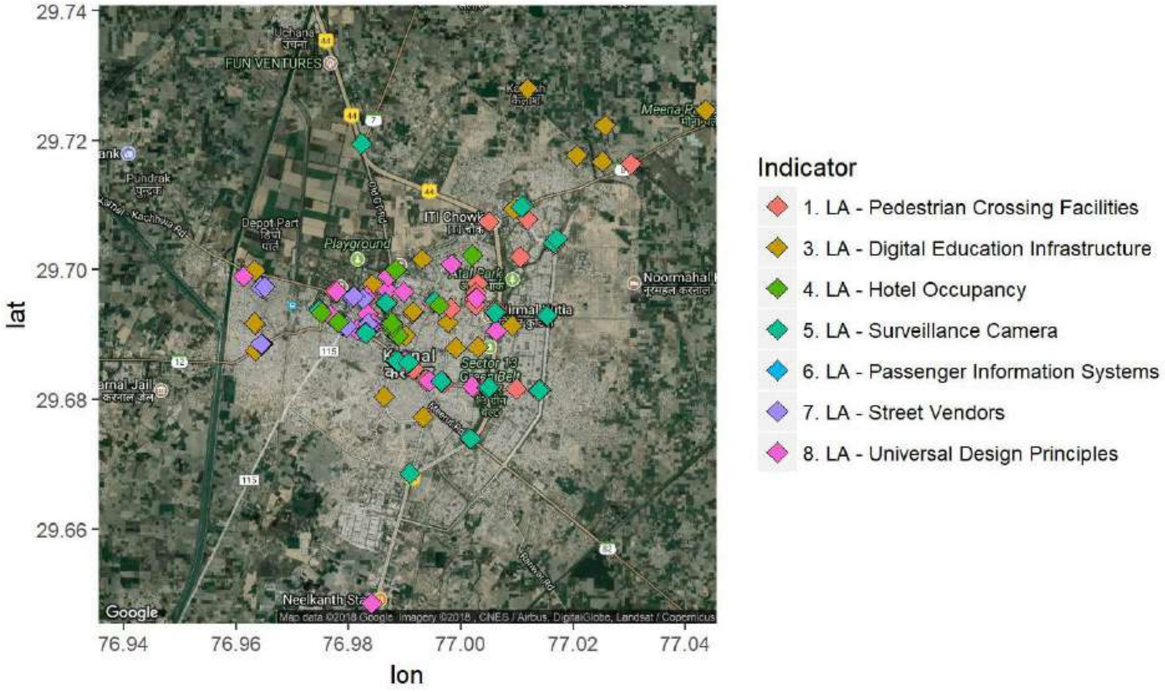
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


29.74
29.72
29.70
29.68
29.66
lat
76.94
76.96
76.98
77.00
77.02
77.04
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google, Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	46.84%
Identity & Culture	31%
Education	94%
Health	100%
Safety & Security	57%
Economy & Employment	32%
Housing & Inclusiveness	6%
Public Open Spaces	2%
Mixed Land Use & Compactness	0%
Power Supply	71%
Transport & Mobility	21%
Assured Water Supply	56%
Waste Water Management	84%
Solid Waste Management	89%
Reduced Pollution	80%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KAVARATTI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

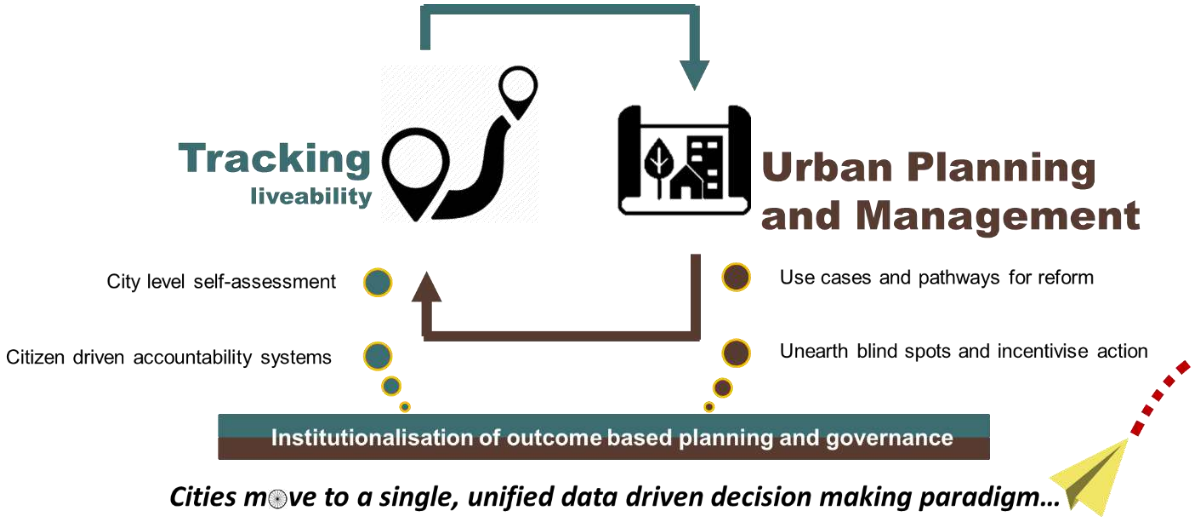
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

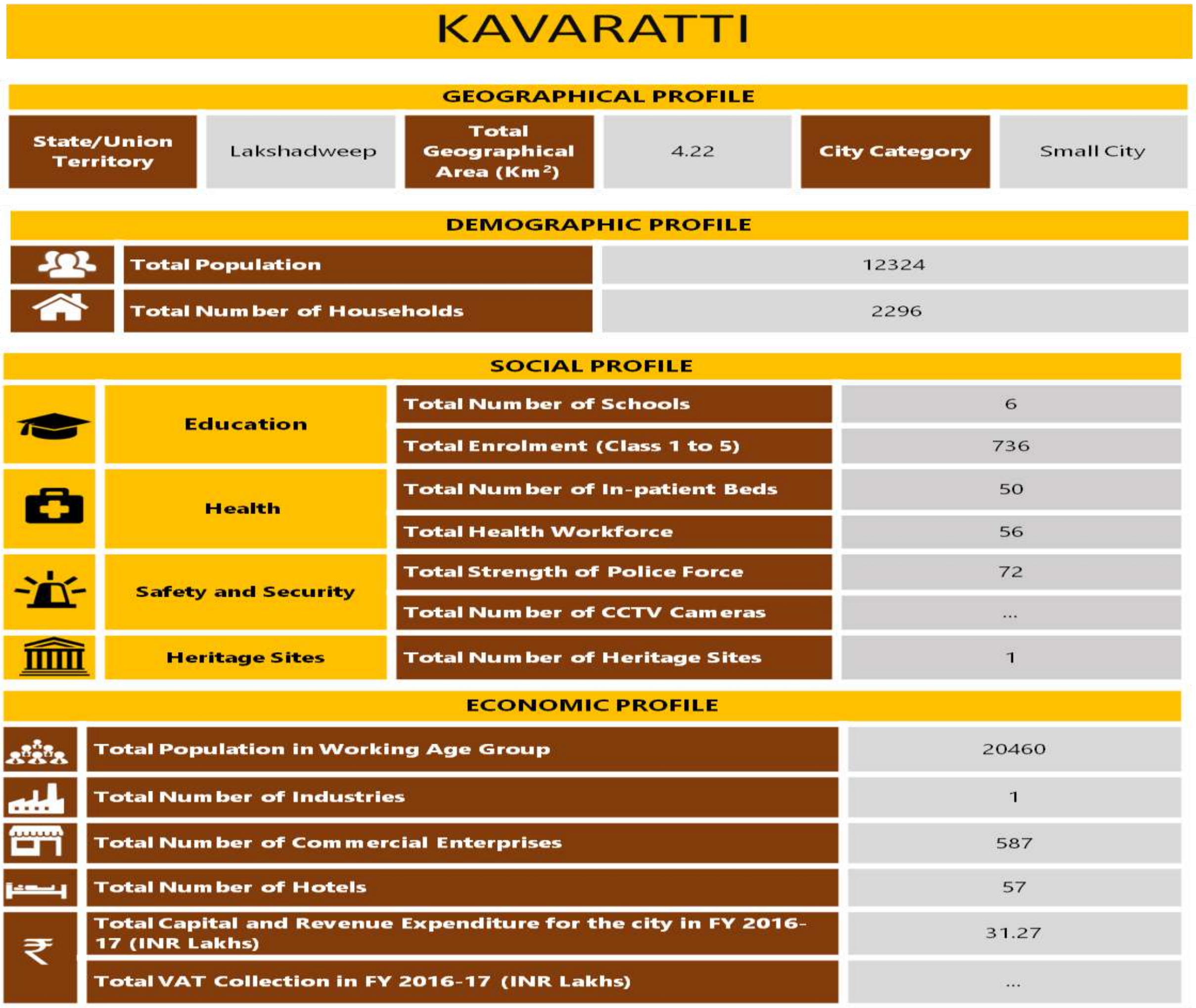

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KAVARATTI

GEOGRAPHICAL PROFILE

State/Union Territory	Lakshadweep	**Total Geographical Area (Km^2)**	4.22	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	12324
Total Number of Households	2296

SOCIAL PROFILE

Education	**Total Number of Schools**	6
	Total Enrolment (Class 1 to 5)	736
Health	**Total Number of In-patient Beds**	50
	Total Health Workforce	56
Safety and Security	**Total Strength of Police Force**	72
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	20460
Total Number of Industries	1
Total Number of Commercial Enterprises	587
Total Number of Hotels	57
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	31.27
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	0.945
	Total Number of Water Connection	630
Sanitation Facilities	Total number of households with access to individual toilets in the city	2296
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0.491
	Total number of households covered through door-to-door collection of solid waste	2246
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	1.1
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	4562
	Total electricity supplied to the city (kWh)	12029822
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	4130000
Roads and Transport	Total Length of Road Network in the City (Km)	36
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary

Pillars of Comprehensive Development	Category	Indicators
		education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational

Pillars of Comprehensive Development	Category	Indicators
		places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse

Pillars of Comprehensive Development	Category	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

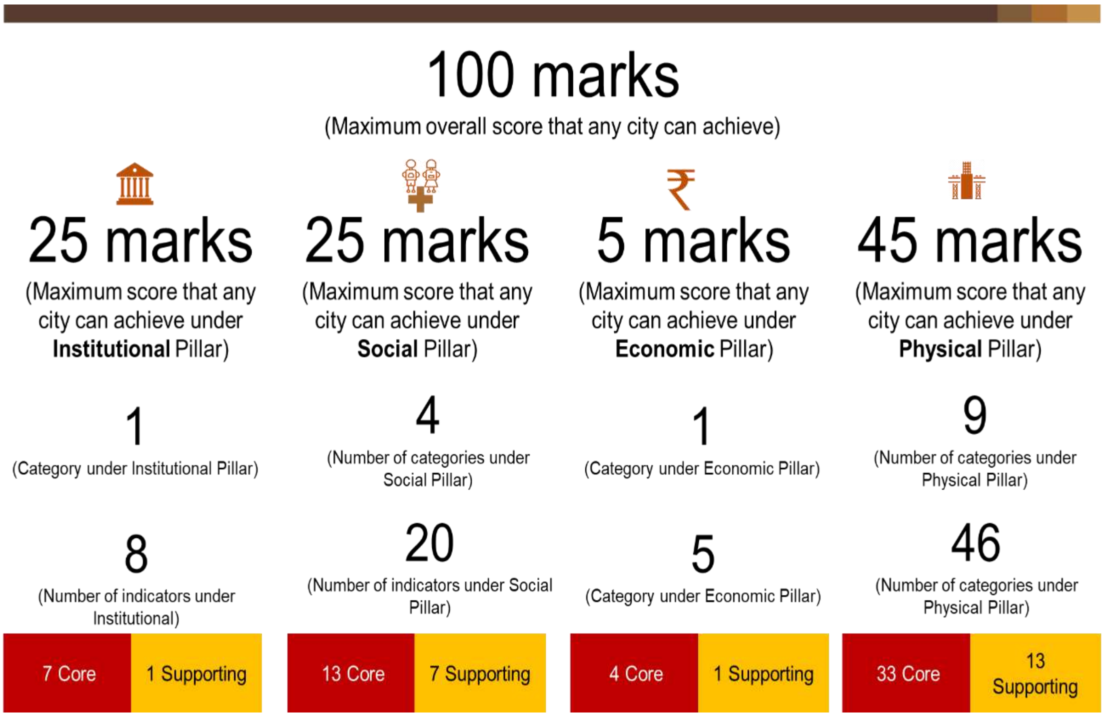
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core | 1 Supporting	13 Core | 7 Supporting	4 Core | 1 Supporting	33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	District administration
Urban Local Body	For Park and Recreation Related Questions	PWD - Public works department
Urban Local Body	For Water Supply and Drainage related questions	PWD
Urban Local Body	For Heritage sites related data	Science and Technology
Urban Local Body	For Ecological sites related data	Science and Technology
Urban Local Body	For Housing related data	PWD
Urban Local Body	For Building plan related data	PWD
Urban Local Body	For Roads related data	Transport department
Urban Local Body	For Solid waste management related data	PWD and Forest department
Urban Local Body	For IT services related data	PWD
Urban Local Body	For Vendor committee related data	Kavaratti Panchayat
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	PWD, Pollution control department
Development Authority	Building Infrastructure	PWD
	Construction planning	PWD
	Green Building	PWD
	Rain water harvesting	PWD
	Universal Design Principle	PWD
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		PWD
State Education Department		Directorate of education

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	Directorate of Health services
	Citizen Services	Directorate of Health services
	Disease Prevalence	Directorate of Health services
	Health Infrastructure	Directorate of Health services
State Renewable Energy Development Agency		Electricity department
State Sales / Commercial Taxes Department		NA
Town and Country Planning Department	Land Use	PWD
Traffic and Police Department		Police department
Transport Authorities	Buses	NA
	Registered Vehicles	Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	Marine transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 37 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**2**
DISCOM/Electricity Department	**3**
Traffic and Police Department	**3**
Development Authority	**0**
Pollution Control Board	**2**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**3**
Transport Authority	**4**
Disaster Management	**2**
Urban Local Body	**17**
Total	**37***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	48.62%
Identity & Culture	29%
Education	70%
Health	92%
Safety & Security	66%
Economy & Employment	0%
Housing & Inclusiveness	0%
Public Open Spaces	52%
Mixed Land Use & Compactness	0%
Power Supply	45%
Transport & Mobility	-2%

Assured Water Supply	36%
Waste Water Management	40%
Solid Waste Management	49%
Reduced Pollution	20%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KOCHI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

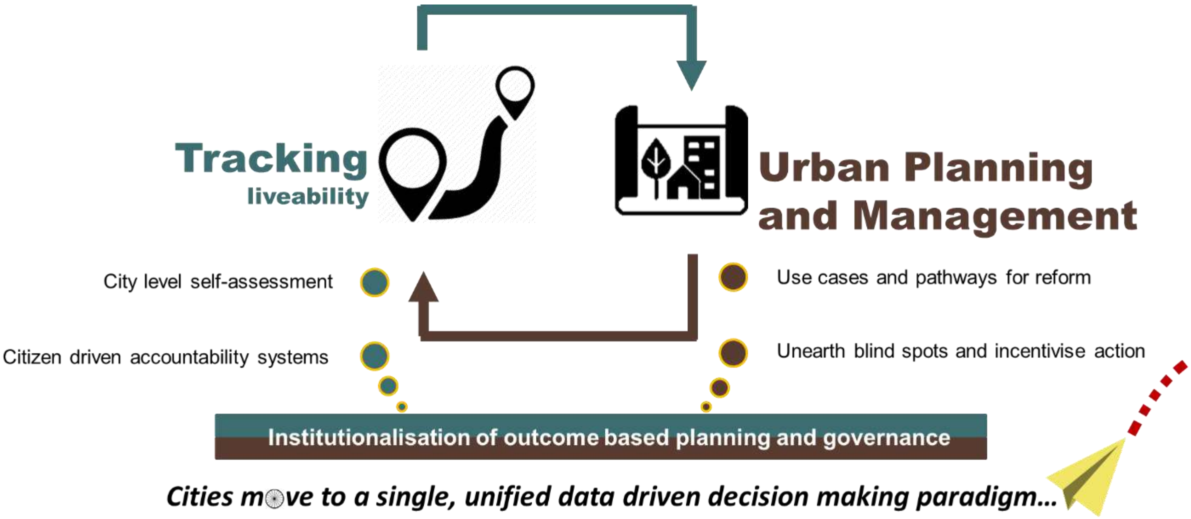
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

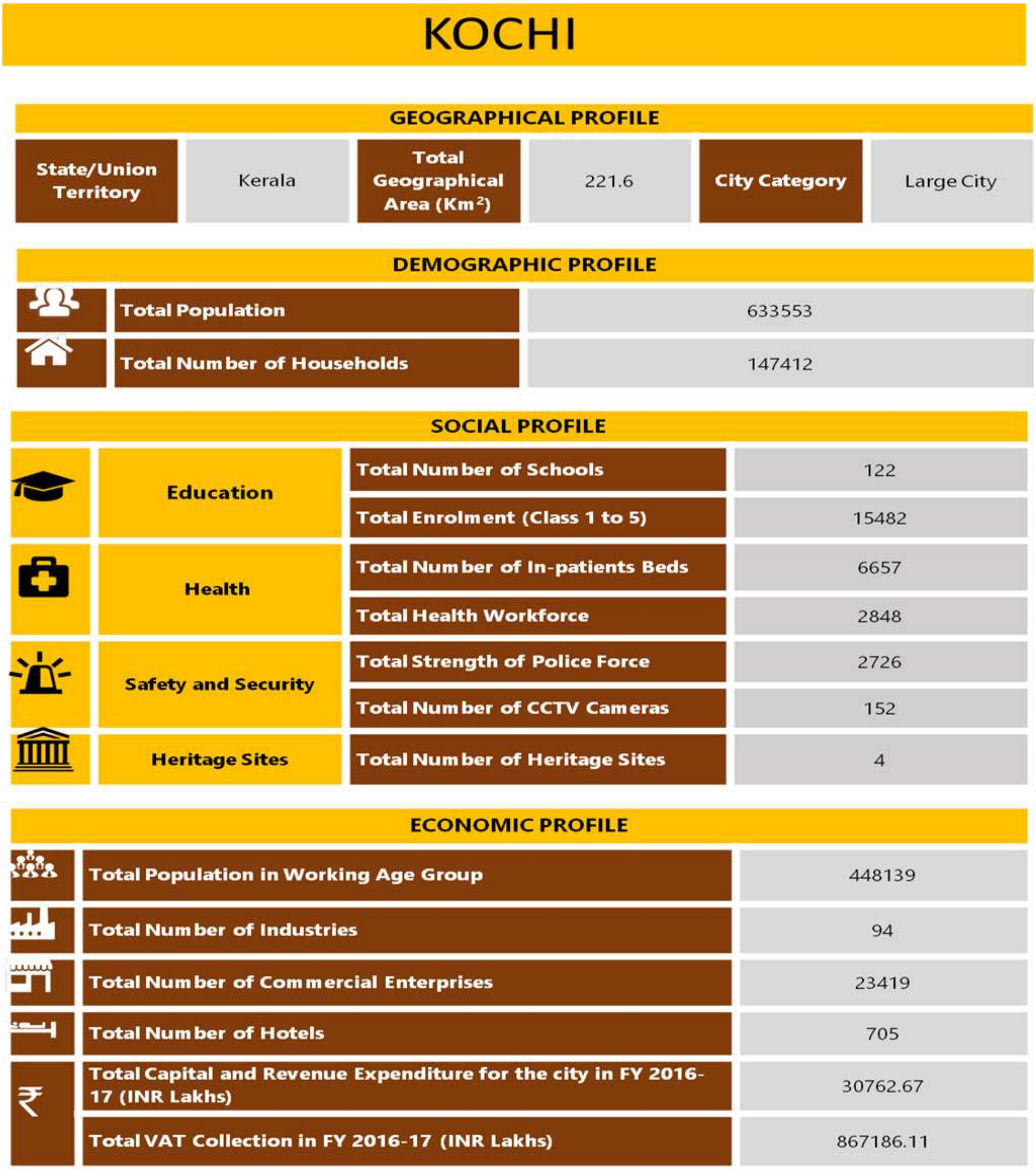
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Kerala	**Total Geographical Area (Km²)**	221.6	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	633553
Total Number of Households	147412

SOCIAL PROFILE

Education	**Total Number of Schools**	122
	Total Enrolment (Class 1 to 5)	15482
Health	**Total Number of In-patients Beds**	6657
	Total Health Workforce	2848
Safety and Security	**Total Strength of Police Force**	2726
	Total Number of CCTV Cameras	152
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	448139
Total Number of Industries	94
Total Number of Commercial Enterprises	23419
Total Number of Hotels	705
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30762.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	867186.11

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	185
	Total Number of Water Connections	149030
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	..
	Total number of households in the city with access to community toilets in the city	1207
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	278
	Total number of households covered through door-to-door collection of solid waste	140000
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	73
	Daily average quantum of waste water treated by STPs in the city (MLD)	30
Electricity	**Total number of authorized electrical connections in the city**	283657
	Total electricity supplied to the city (kWh)	694900000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	25447.84
Roads and Transport	**Total Length of Road Network in the City (Km)**	1135.733
	Total length of arterial and sub-arterial road network in the city (Km)	197.1882
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	29.455

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

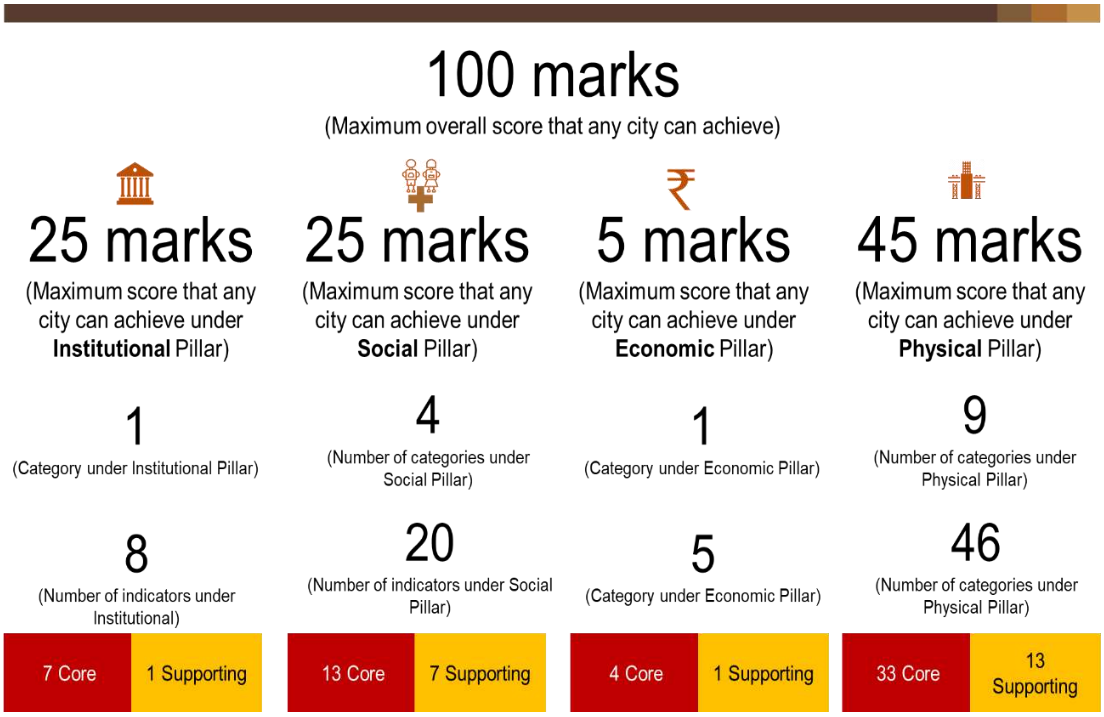
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Revenue Officer, Accounts Officer
Urban Local Body	For Park and Recreation Related Questions	Executive Engineer, Engineering Department
Urban Local Body	For Water Supply and Drainage related questions	Executive Engineer, P.H.Division, Kerala Water Authority, Thevara, Ernakulam (Separate Department not ULB)
Urban Local Body	For Heritage sites related data	Executive Engineer, Engineering Department
Urban Local Body	For Ecological sites related data	Executive Engineer, Engineering Department
Urban Local Body	For Housing related data	Manager, PMAY
Urban Local Body	For Building plan related data	Executive Engineer, Engineering Department
Urban Local Body	For Roads related data	Executive Engineer, Engineering Department
Urban Local Body	For Solid waste management related data	Health Officer
Urban Local Body	For IT services related data	Project Manager-TCS ***Not Direct staff of Kochi Corporation. All IT and Online services are done by TCS which is housed at Kochi Municipal Corporation.***
Urban Local Body	For Vendor committee related data	Manager, NULM
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	**Ward Sabha Details**-Superintendent, Planning cell **Offline Grievances**- Superintendent, General Section **Population Details**-Senior Clerk,

Designated data owners	Subcategories	Data owners at city level
		Census Department **Unemployment Data Source :(Not ULB)** 1.District Employment Officer, District Employment Office, Ernakulam 2. Divisional Employment Officer, Professional & Executive Exchange, Ernakulam **Online Service** Project Manager-TCS **Sewerage Services :** Environment Engineer under Engineering Department **Transport & City Mobility Plan Details** Kochi Smart City Mission
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Kerala State Pollution Control Board, Regional Office, Ernakulam
Development Authority	Building Infrastructure	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Construction planning	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Green Building	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Rain water harvesting	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
	Universal Design Principle	Executive Engineer, Engineering Department of ULB. In Kerala scenario this aspect comes under ULB
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Deputy Chief Engineer, Kerala State Electricity Board Ltd, Electrical Circle, Ernakulam
State Disaster management authority		District Disaster Management Authority, Civil Station, Kakkanad
State Education Department		District Education Officer, Ernakulam

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	District Medical Office (Health), Ernakulam
	Citizen Services	District Medical Office (Health), Ernakulam
	Disease Prevalence	District Medical Office (Health), Ernakulam
	Health Infrastructure	District Medical Office (Health), Ernakulam
State Renewable Energy Development Agency		ANERT, Kakkanad
State Sales / Commercial Taxes Department		1.Deputy Commissioner, Deputy Commissioner Office, Sales and Commercial Tax Department, Thevara, Ernakulam 2. Deputy Commissioner, Deputy Commissioner Office, Sales and Commercial Tax Department, Mattancherry, Ernakulam
Town and Country Planning Department	Land Use	Senior Town Planner, Town and Country Planning Department, Civil Station, Kakkanad
Traffic and Police Department		City Police Commissioner, Kochi City
Transport Authorities	Buses	Regional Transport Office, Civil Station, Kakkanad
	Registered Vehicles	Regional Transport Office, Civil Station, Kakkanad
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	Senior Superintendent, Regional Office, Water Transport, Ernakulam

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 36 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**1**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**4**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**2**
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**26**
Total	**36***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

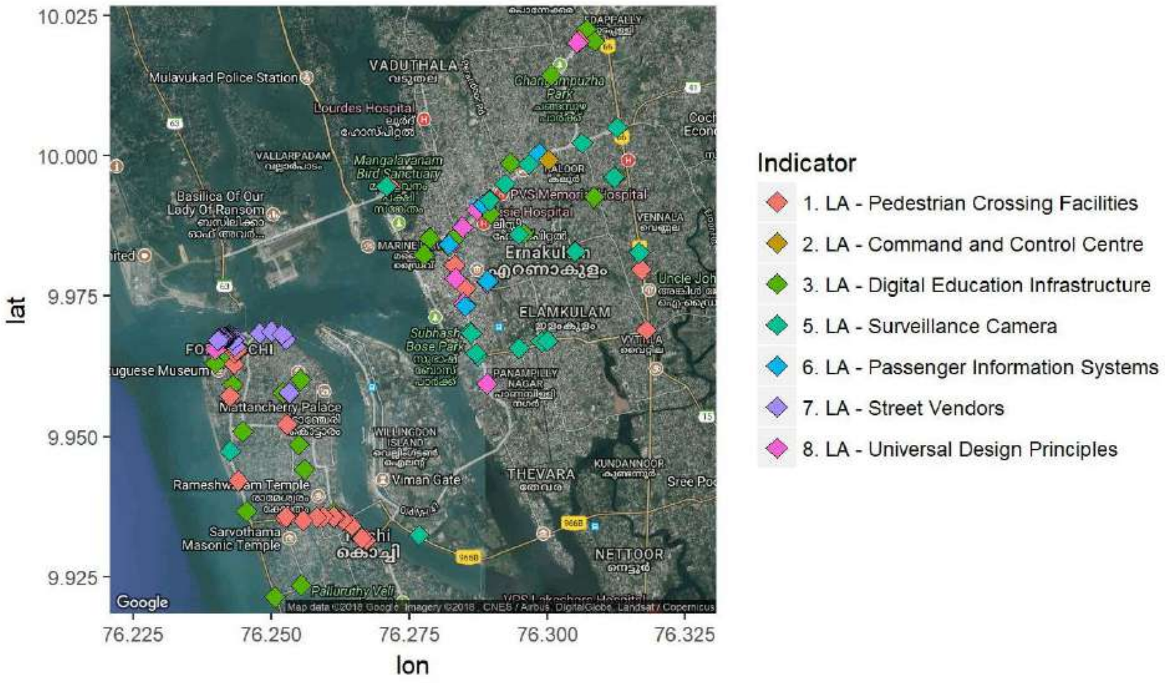
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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lon
Mulavukad Police Station
VADUTHALA
Lourdes Hospital
VALLARPADAM
Mangalavanam Bird Sanctuary
Basilica Of Our Lady Of Ransom
PVS Memorial Hospital
Ernakulam
ELAMKULAM
Subhash Bose Park
PANAMPILLY NAGAR
Mattancherry Palace
WILLINGDON ISLAND
Viman Gate
THEVARA
KUNDANNOOR
Rameshwaram Temple
Sarvothama Masonic Temple
NETTOOR
Palluruthy Veli
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	69.02%
Identity & Culture	9%
Education	68%
Health	86%
Safety & Security	68%
Economy & Employment	34%
Housing & Inclusiveness	8%
Public Open Spaces	2%
Mixed Land Use & Compactness	8%
Power Supply	52%
Transport & Mobility	30%
Assured Water Supply	55%
Waste Water Management	12%
Solid Waste Management	64%
Reduced Pollution	81%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KOHIMA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

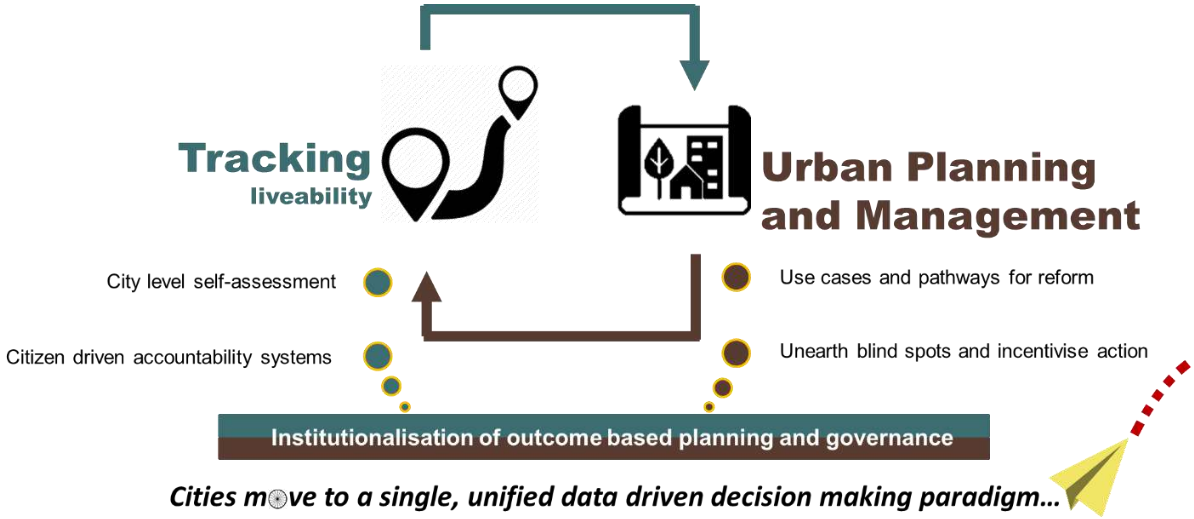
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

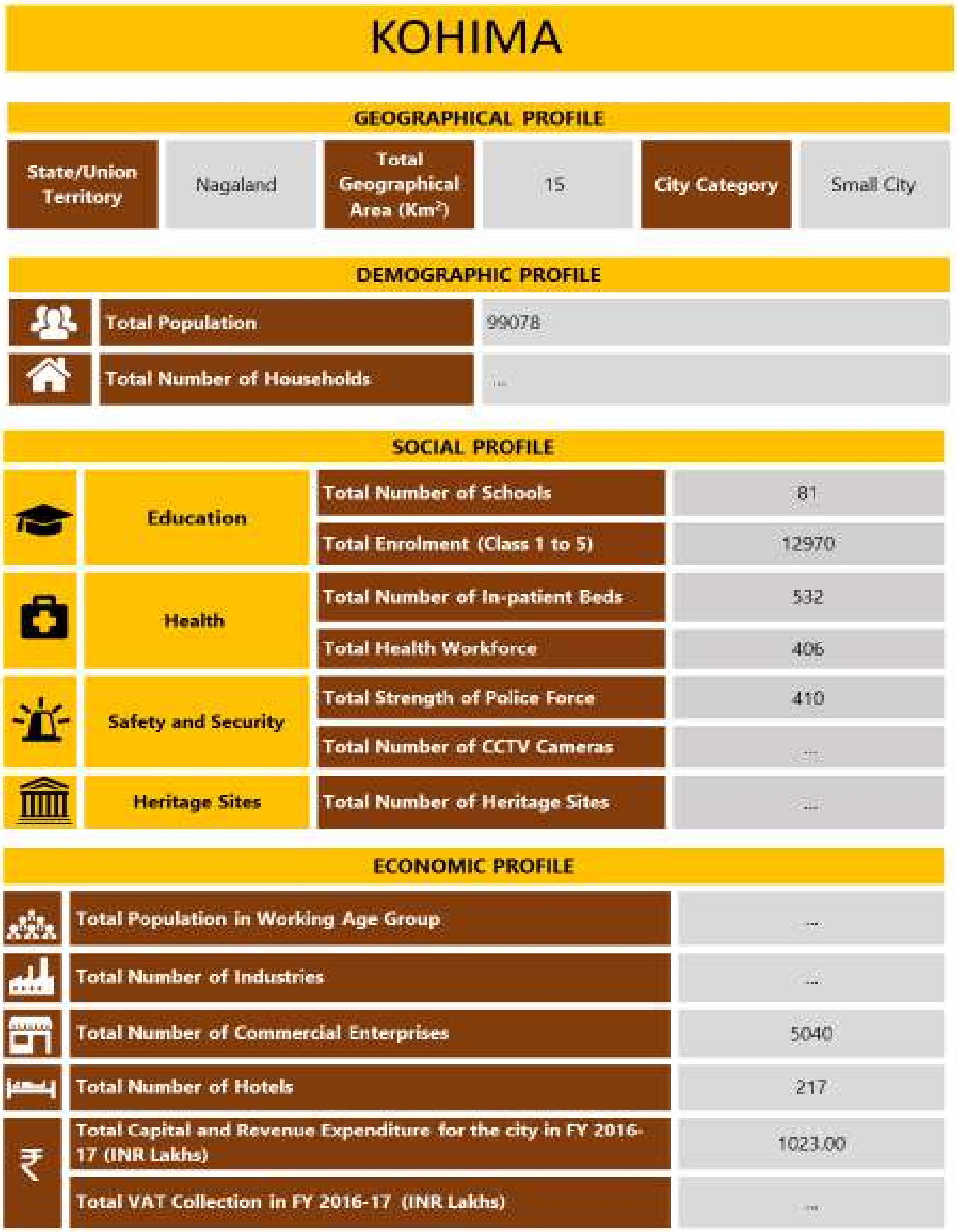
Cities m◉ve to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



KOHIMA

GEOGRAPHICAL PROFILE

State/Union Territory	Nagaland	**Total Geographical Area (Km^2)**	15	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	99078
Total Number of Households	...

SOCIAL PROFILE

Education	**Total Number of Schools**	81
	Total Enrolment (Class 1 to 5)	12970
Health	**Total Number of In-patient Beds**	532
	Total Health Workforce	406
Safety and Security	**Total Strength of Police Force**	410
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	5040
Total Number of Hotels	217
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	1023.00
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	...
	Total Number of Water Connections	...
Sanitation Facilities	Total number of households with access to individual toilets in the city	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	25000
	Total number of households covered through door-to-door collection of solid waste	70
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	20000
	Total electricity supplied to the city (kWh)	40
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	108.7
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration

Pillars of Comprehensive Development	Category	Indicators
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and**	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms

Pillars of Comprehensive Development	Category	Indicators
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal Council
Urban Local Body	For Park and Recreation Related Questions	
Urban Local Body	For Water Supply and Drainage related questions	Public Health Engineering
Urban Local Body	For Heritage sites related data	Tourism
Urban Local Body	For Ecological sites related data	Tourism
Urban Local Body	For Housing related data	Department of Housing
Urban Local Body	For Building plan related data	
Urban Local Body	For Roads related data	Public Works Department
Urban Local Body	For Solid waste management related data	Municipal Council
Urban Local Body	For IT services related data	Department of Information and Technology
Urban Local Body	For Vendor committee related data	Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	
	Rain water harvesting	
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Department of Power
State Disaster management authority	Disaster management	Disaster management
State Education Department		
State Health Department	Health care professionals	Department of Health and Family Welfare
State Health Department	Citizen Services	Department of Health and Family Welfare
State Health Department	Disease Prevalence	Department of Health and Family Welfare
State Health Department	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Department of Taxes
Town and Country Planning Department	Land Use	
Traffic and Police Department		
Transport Authorities	Buses	Nagaland State Transport
Transport Authorities	Registered Vehicles	Nagaland State Transport
Transport Authorities	Sub urban rail transport	NA
Transport Authorities	Mono Rail Authority	NA
Transport Authorities	Tramways	NA
Transport Authorities	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 9 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register,

signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	2
Total	9

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

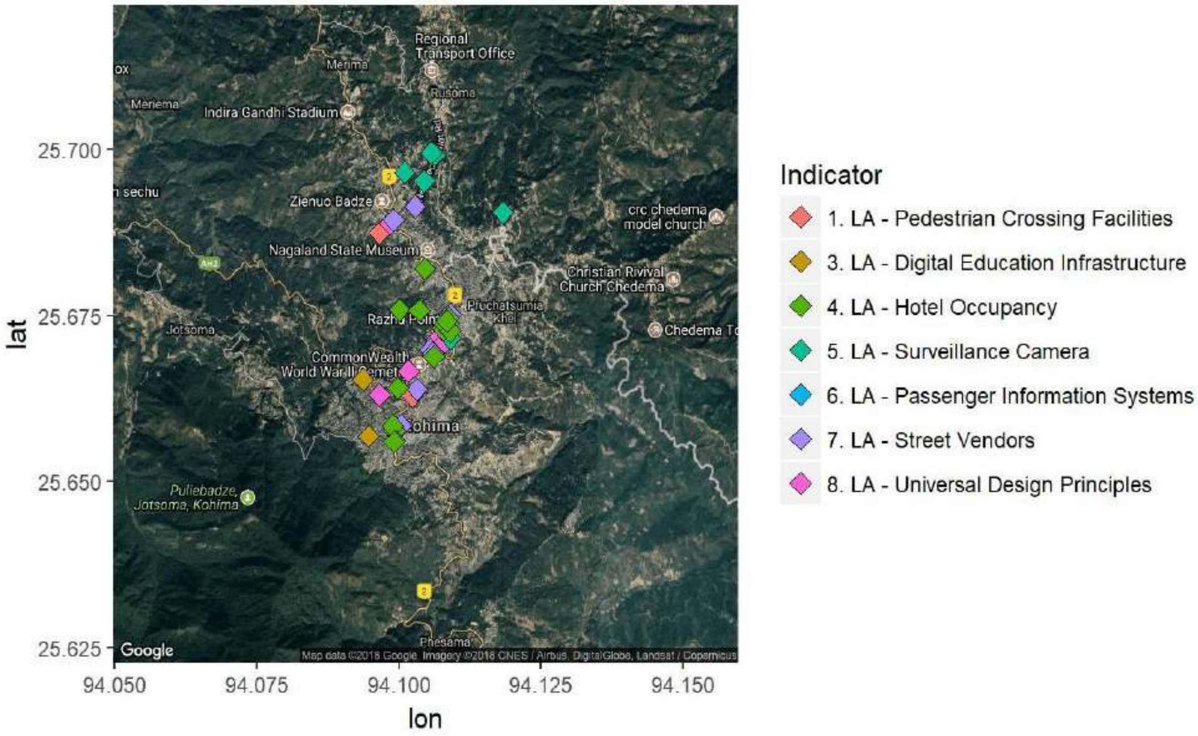
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Regional Transport Office
Merima
Rusoma
Meriema
Indira Gandhi Stadium
sechu
Zienuo Badze
Nagaland State Museum
crc chedema model church
Christian Rivival Church Chedema
Pfuchatsumia Khel
Chedema
Jotsoma
Razhu Point
CommonWealth World War II Cemetery
Kohima
Puliebadze, Jotsoma, Kohima
Phesama
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
lon
25.700
25.675
25.650
25.625
94.050
94.075
94.100
94.125
94.150
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	34.21%
Identity & Culture	12%
Education	93%
Health	87%
Safety & Security	58%
Economy & Employment	0%
Housing & Inclusiveness	0%
Public Open Spaces	6%
Mixed Land Use & Compactness	25%
Power Supply	47%
Transport & Mobility	19%
Assured Water Supply	2%
Waste Water Management	0%
Solid Waste Management	33%
Reduced Pollution	83%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

KOTA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

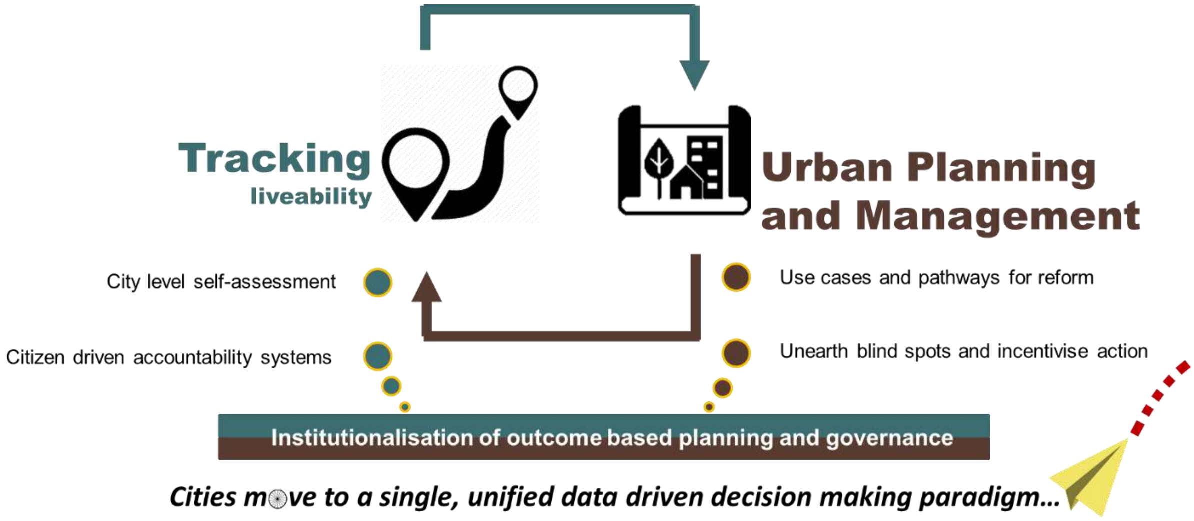
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

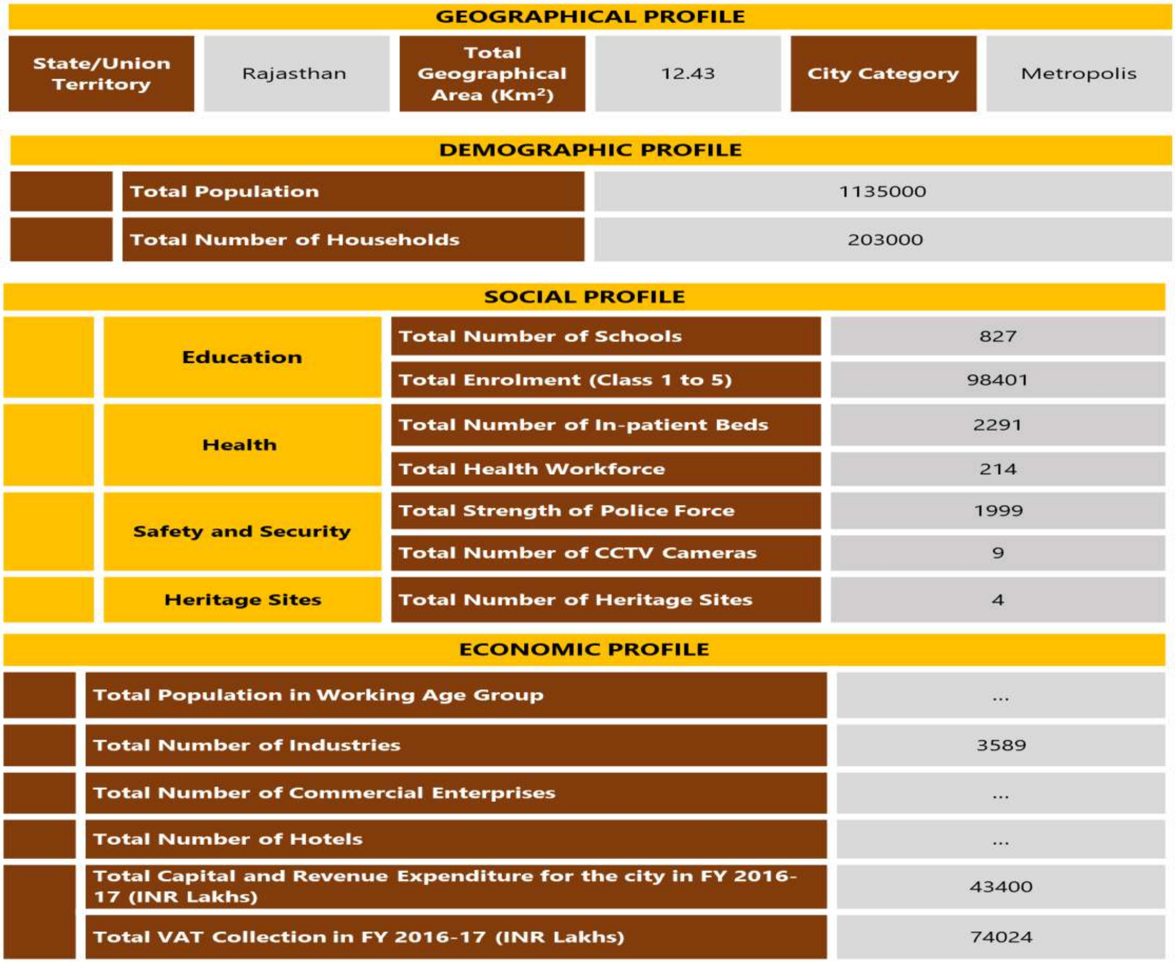
The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

KOTA



GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	**Total Geographical Area (Km²)**	12.43	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

	Total Population	1135000
	Total Number of Households	203000

SOCIAL PROFILE

	Education	**Total Number of Schools**	827
		Total Enrolment (Class 1 to 5)	98401
	Health	**Total Number of In-patient Beds**	2291
		Total Health Workforce	214
	Safety and Security	**Total Strength of Police Force**	1999
		Total Number of CCTV Cameras	9
	Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

	Total Population in Working Age Group	…
	Total Number of Industries	3589
	Total Number of Commercial Enterprises	…
	Total Number of Hotels	…
	Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	43400
	Total VAT Collection in FY 2016-17 (INR Lakhs)	74024

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	271
		Total Number of Water Connections	148150
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	5619
		Total number of households in the city with access to community toilets in the city	...
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	600
		Total number of households covered through door-to-door collection of solid waste	230000
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	108
		Daily average quantum of waste water treated by STPs in the city (MLD)	10
	Electricity	**Total number of authorized electrical connections in the city**	191659
		Total electricity supplied to the city (kWh)	1202110000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	...
	Roads and Transport	**Total Length of Road Network in the City (Km)**	...
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary

Pillars of Comprehensive Development	Category	Indicators
		education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational

Pillars of Comprehensive Development	Category	Indicators
		places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse

Pillars of Comprehensive Development	Category	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

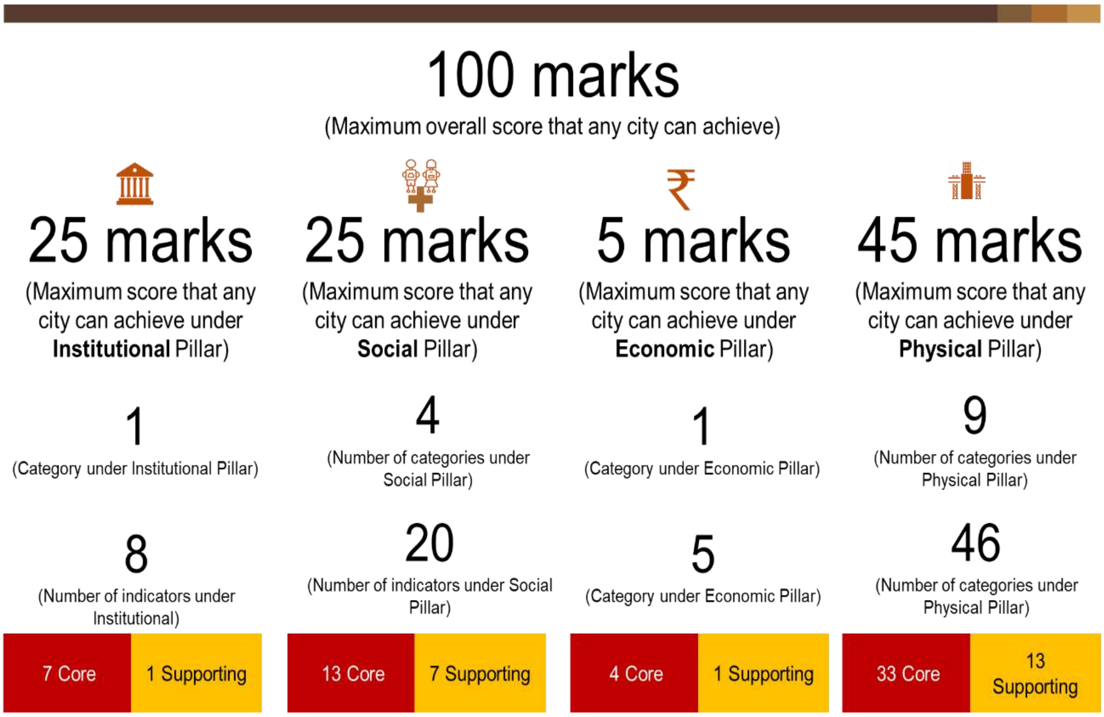
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account department
Urban Local Body	For Park and Recreation Related Questions	Chief Medical And Health Officer
Urban Local Body	For Water Supply and Drainage related questions	Public Health and Engineering Department
Urban Local Body	For Heritage sites related data	Urban Improvement Trust
Urban Local Body	For Ecological sites related data	Tourism department
Urban Local Body	For Housing related data	Town Plan Department
Urban Local Body	For Building plan related data	Town Plan Department
Urban Local Body	For Roads related data	Regional Transport Office
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	NO
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Town Plan Department
	Construction planning	Town Plan Department
	Green Building	Urban Improvement Trust
	Rain water harvesting	Urban Local Body
	Universal Design Principle	Urban Local Body
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	KDEL department (JVVNL)
State Disaster management authority		Fire brigade

Designated data owners	Subcategories	Data owners at city level
State Education Department		District Education Officer
State Health Department	Health care professionals	Chief Medical And Health Officer
	Citizen Services	Chief Medical And Health Officer
	Disease Prevalence	Chief Medical And Health Officer
	Health Infrastructure	Chief Medical And Health Officer
State Renewable Energy Development Agency		Rajasthan Renewable energy corporation
State Sales / Commercial Taxes Department		Office Joint Commissioner State Commissioner of commerce, Kota
Town and Country Planning Department	Land Use	Town Plan Department
Traffic and Police Department		City SP
Transport Authorities	Buses	Central Bus Stand
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 21 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**0**
State Health Department	**3**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**12**
Total	**21***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

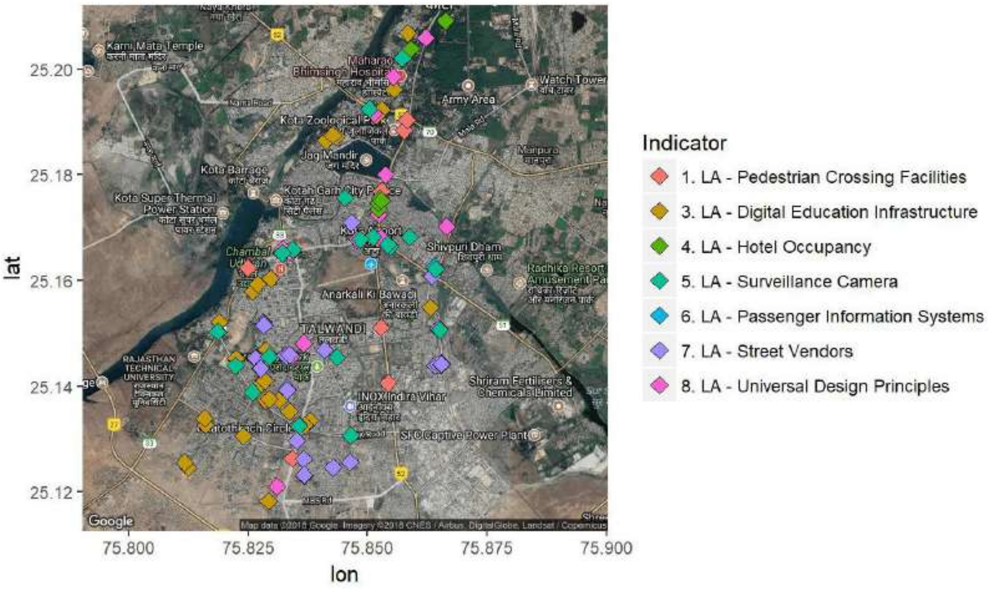
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
25.20
25.18
25.16
25.14
25.12
lon
75.800
75.825
75.850
75.875
75.900
Kota Barrage
Kota Zoological Park
Army Area
Shivpuri Dham
TALWANDI
Anarkali Ki Bawadi
INOX Indra Vihar
Shriram Fertilisers & Chemicals Limited
RAJASTHAN TECHNICAL UNIVERSITY
Kota Super Thermal Power Station
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	40.62%
Identity & Culture	27%
Education	81%
Health	46%
Safety & Security	49%
Economy & Employment	11%
Housing & Inclusiveness	2%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	39%
Transport & Mobility	20%
Assured Water Supply	64%
Waste Water Management	4%
Solid Waste Management	71%
Reduced Pollution	81%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

LUCKNOW

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

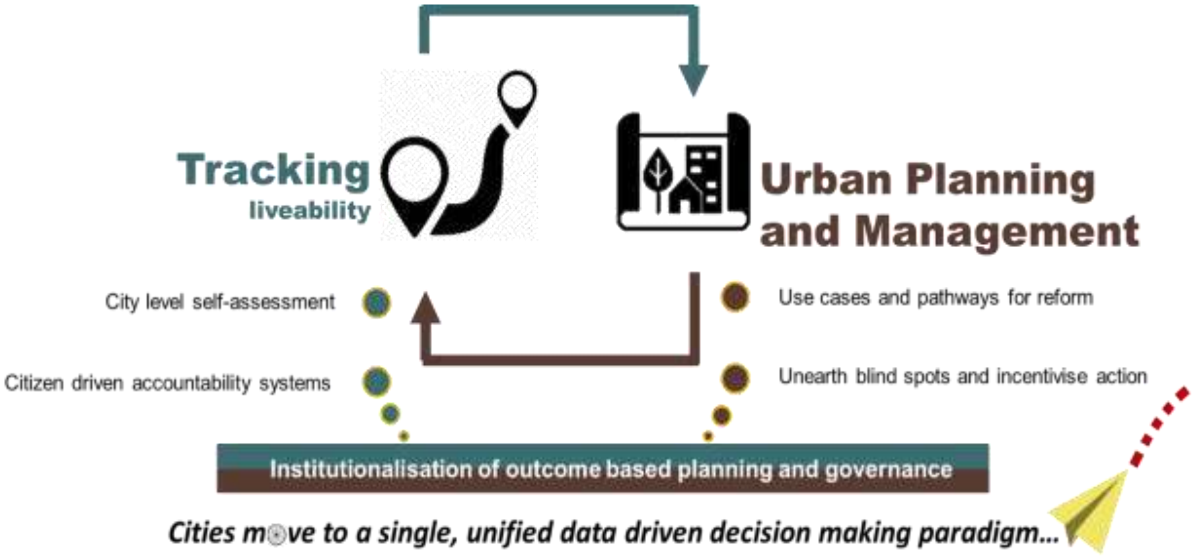
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

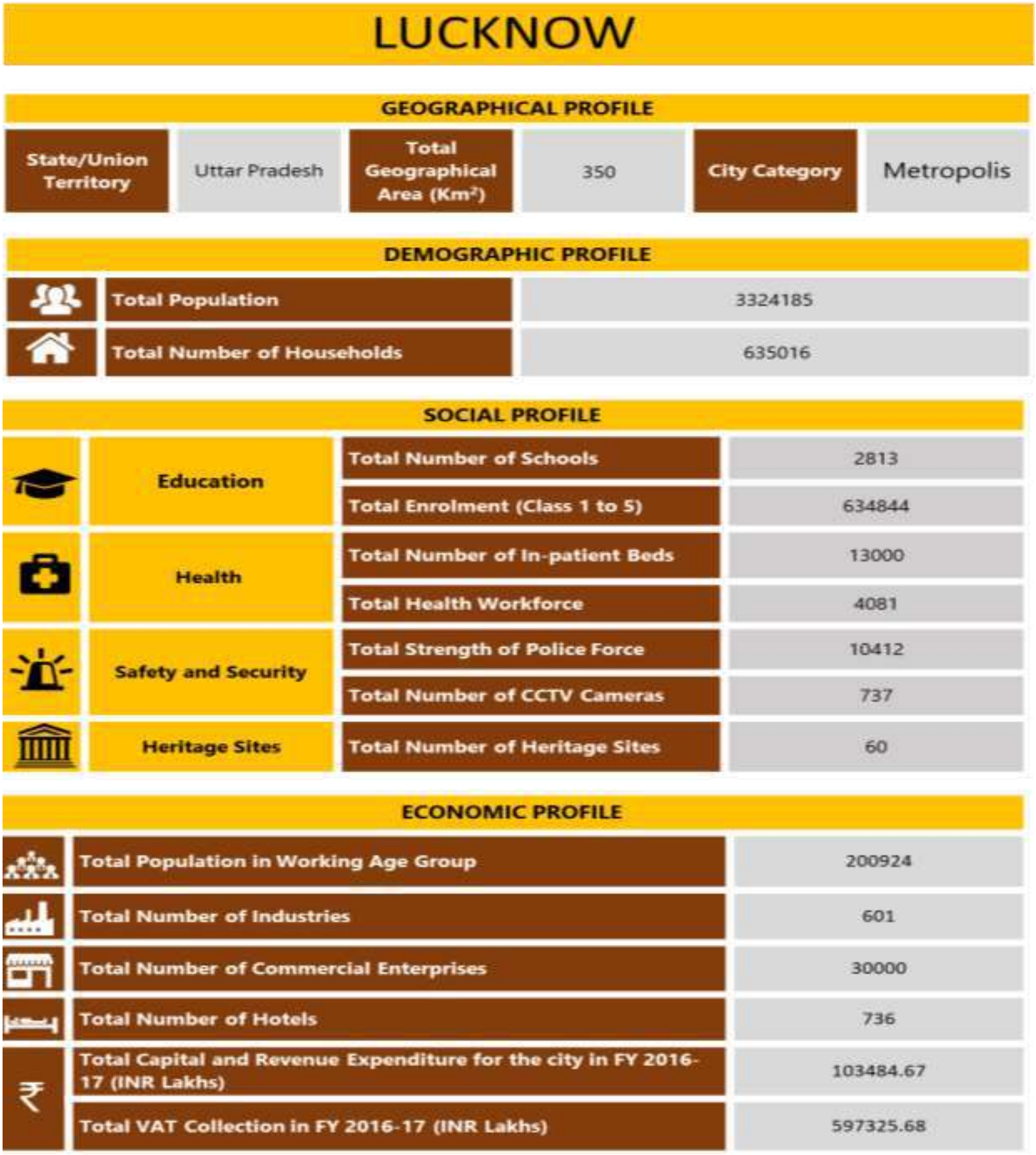
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



LUCKNOW

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	350	City Category	Metropolis

DEMOGRAPHIC PROFILE

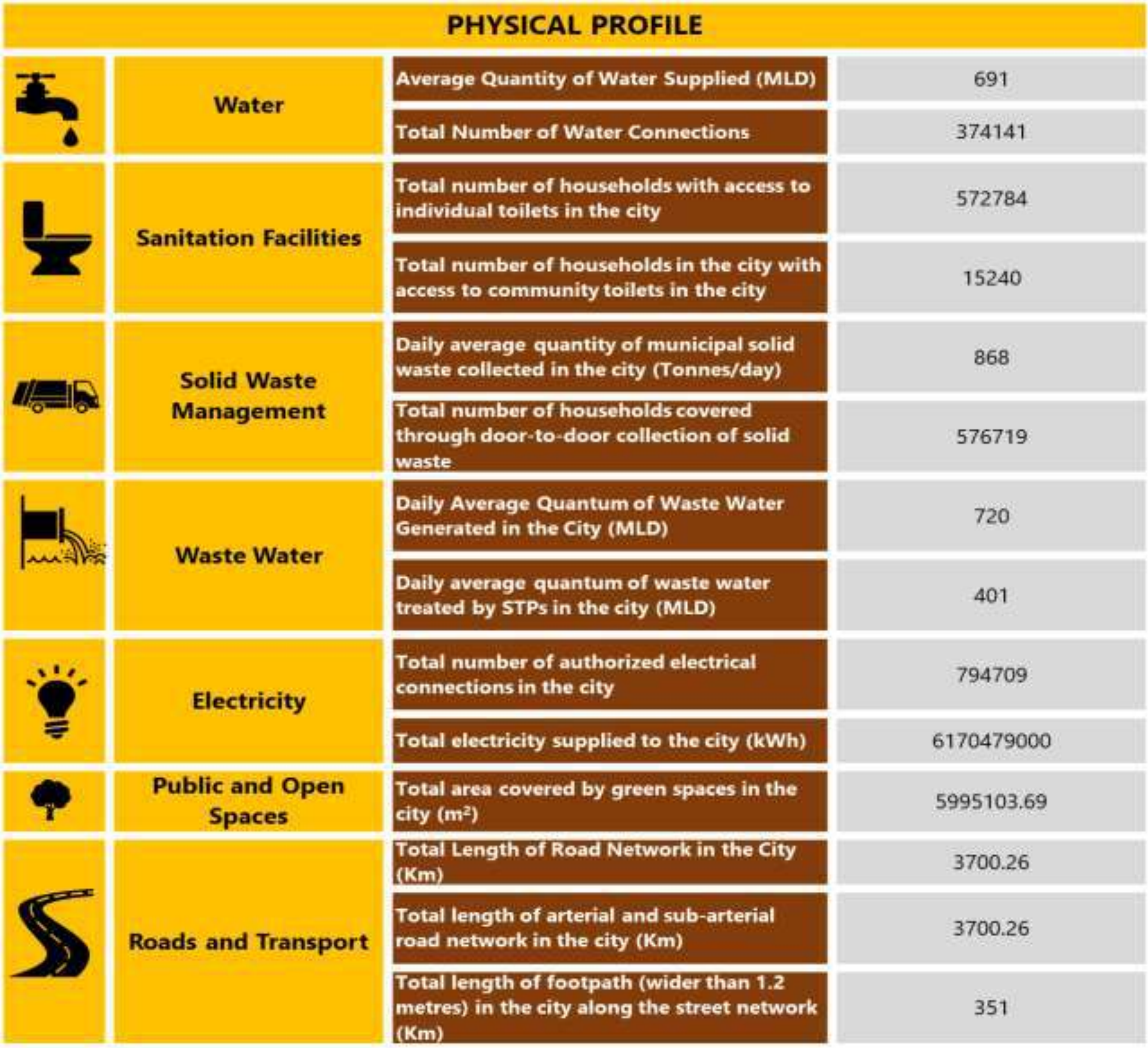
Total Population	3324185
Total Number of Households	635016

SOCIAL PROFILE

Education	Total Number of Schools	2813
	Total Enrolment (Class 1 to 5)	634844
Health	Total Number of In-patient Beds	13000
	Total Health Workforce	4081
Safety and Security	Total Strength of Police Force	10412
	Total Number of CCTV Cameras	737
Heritage Sites	Total Number of Heritage Sites	60

ECONOMIC PROFILE

Total Population in Working Age Group	200924
Total Number of Industries	601
Total Number of Commercial Enterprises	30000
Total Number of Hotels	736
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	103484.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	597325.68



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	691
	Total Number of Water Connections	374141
Sanitation Facilities	Total number of households with access to individual toilets in the city	572784
	Total number of households in the city with access to community toilets in the city	15240
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	868
	Total number of households covered through door-to-door collection of solid waste	576719
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	720
	Daily average quantum of waste water treated by STPs in the city (MLD)	401
Electricity	Total number of authorized electrical connections in the city	794709
	Total electricity supplied to the city (kWh)	6170479000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	5995103.69
Roads and Transport	Total Length of Road Network in the City (Km)	3700.26
	Total length of arterial and sub-arterial road network in the city (Km)	3700.26
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	351

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

Pillars of Comprehensive Development	Category	Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

Pillars of Comprehensive Development	Category	Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

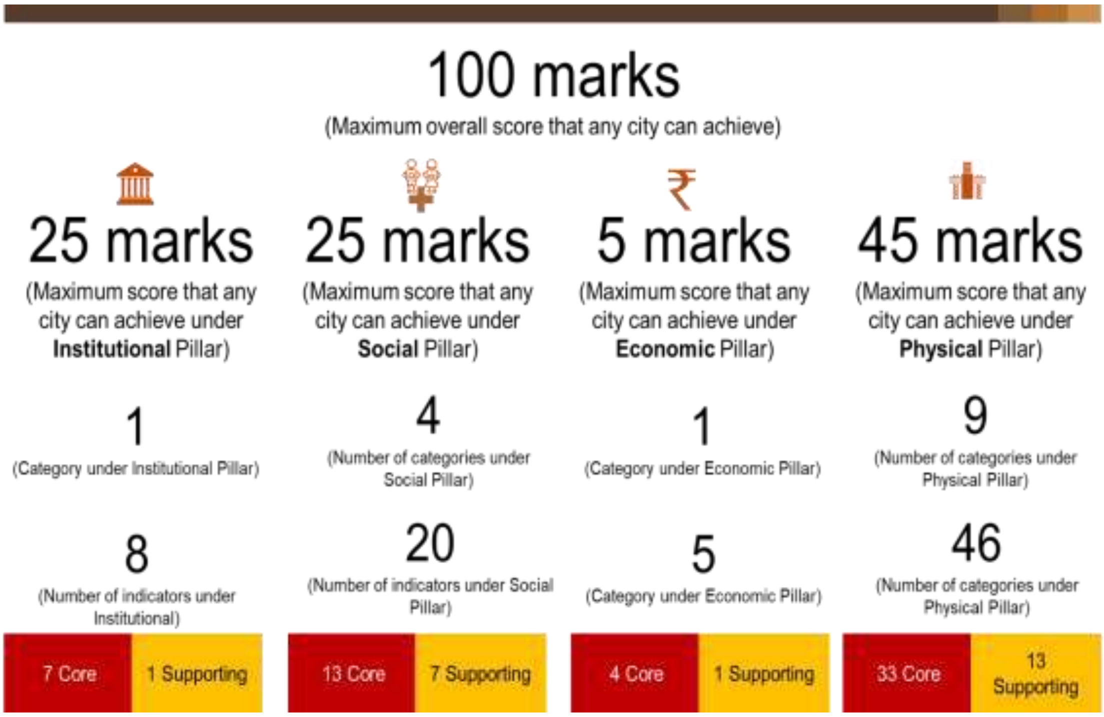
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MFO, Lucknow Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Garden Drpartment, Lucknow Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	GPCU
Urban Local Body	For Heritage sites related data	Uttar Pradesh State Archeological Department
Urban Local Body	For Ecological sites related data	Lucknow Nagar Nigam
Urban Local Body	For Housing related data	DUDA
Urban Local Body	For Building plan related data	Lucknow Development Authority
Urban Local Body	For Roads related data	Engineering Department, Lucknow Nagar Nigam
Urban Local Body	For Solid waste management related data	Lucknow Nagar Nigam
Urban Local Body	For IT services related data	Lucknow Nagar Nigam
Urban Local Body	For Vendor committee related data	Lucknow Nagar Nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	DUDA, LDA, Water works deptt.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Lucknow Development Authority

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Lucknow Development Authority
	Green Building	Lucknow Development Authority
	Rain water harvesting	Lucknow Development Authority
	Universal Design Principle	Lucknow Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Lucknow Electricity Supply Administration
State Disaster management authority		Nodal Officer/ADM
State Education Department		Basic Education Department Lucknow
State Health Department	Health care professionals	CMO Office
	Citizen Services	CMO Office
	Disease Prevalence	CMO Office
	Health Infrastructure	CMO Office
State Renewable Energy Development Agency	Renewable Energy	UP New energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country Planning Department	Land Use	Town and Country Planning
Traffic and Police Department		DCRB
Transport Authorities	Buses	Lucknow City Transport Service Limited
	Registered Vehicles	RTO office
	Sub urban rail transport	N.A
	Mono Rail Authority	N.A
	Tramways	N.A
	Marine Transport Authority	N.A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 50 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**3**
Traffic and Police Department	**7**
Development Authority	**1**
Pollution Control Board	**2**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**8**
Disaster Management	**0**
Urban Local Body	**25**
Total	**50***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

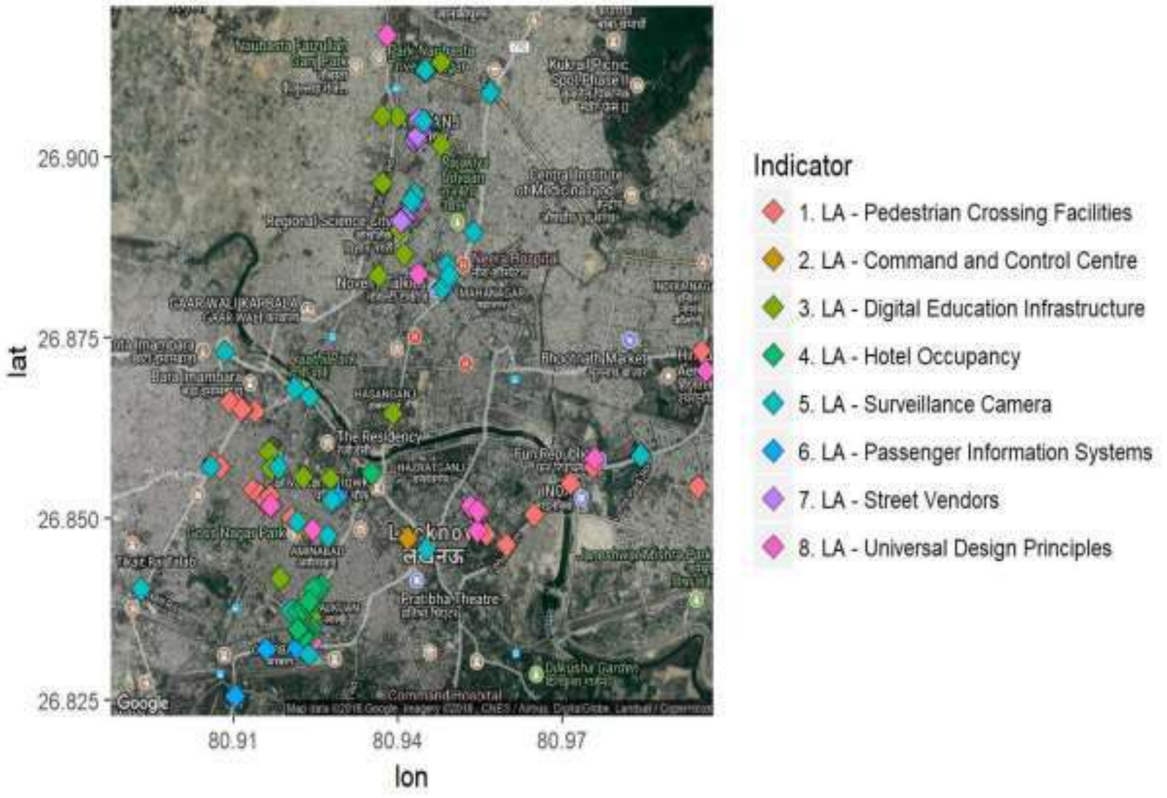
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


26.900
26.875
26.850
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lat
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Lucknow
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	60.54%
Identity & Culture	20%
Education	85%
Health	59%
Safety & Security	41%
Economy & Employment	15%
Housing & Inclusiveness	7%
Public Open Spaces	10%
Mixed Land Use & Compactness	1%
Power Supply	48%
Transport & Mobility	35%
Assured Water Supply	76%
Waste Water Management	54%
Solid Waste Management	69%
Reduced Pollution	84%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

LUDHIANA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

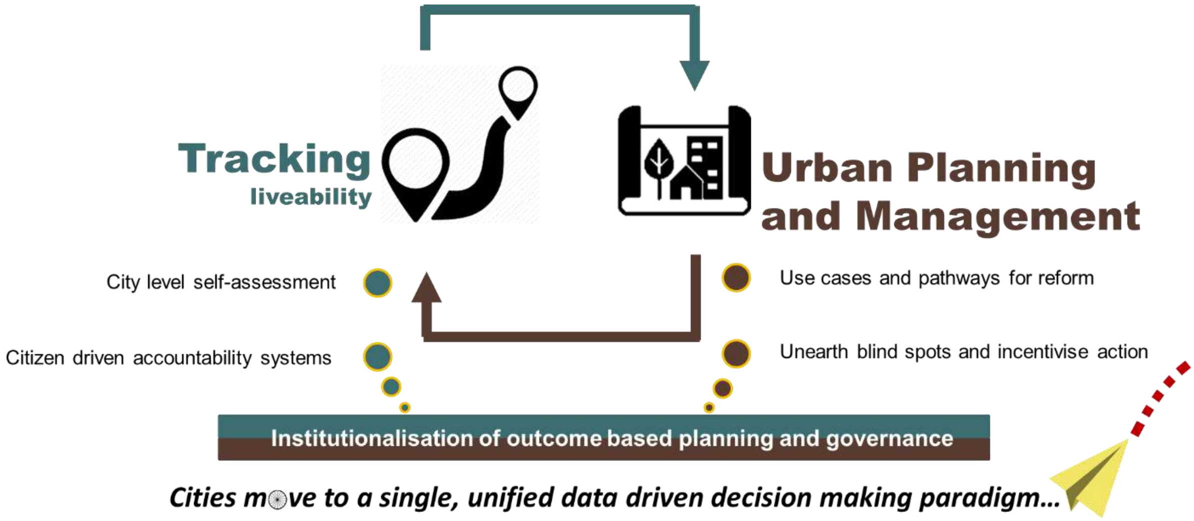
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

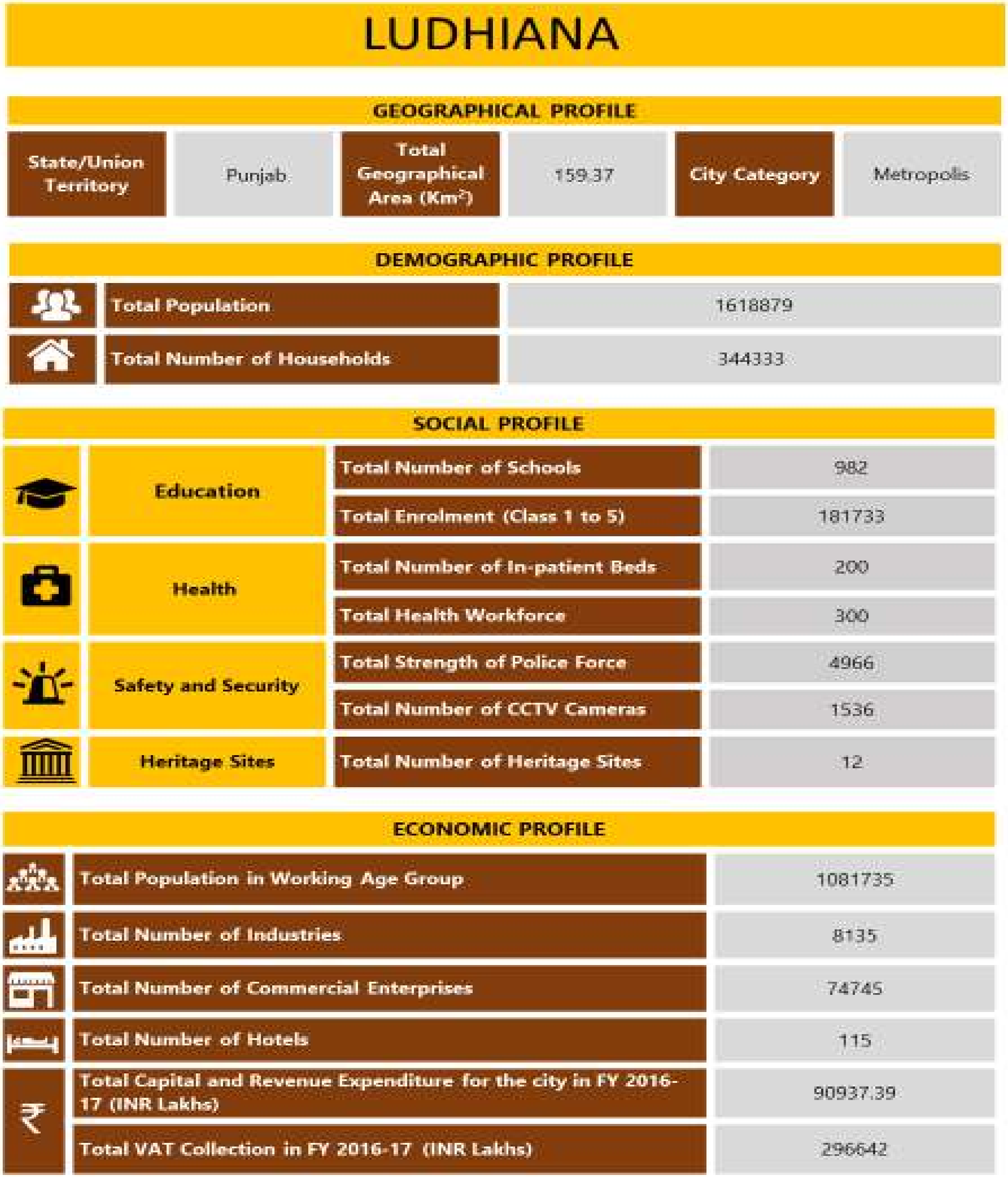
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



LUDHIANA

GEOGRAPHICAL PROFILE

State/Union Territory	Punjab	Total Geographical Area (Km^2)	159.37	City Category	Metropolis

DEMOGRAPHIC PROFILE

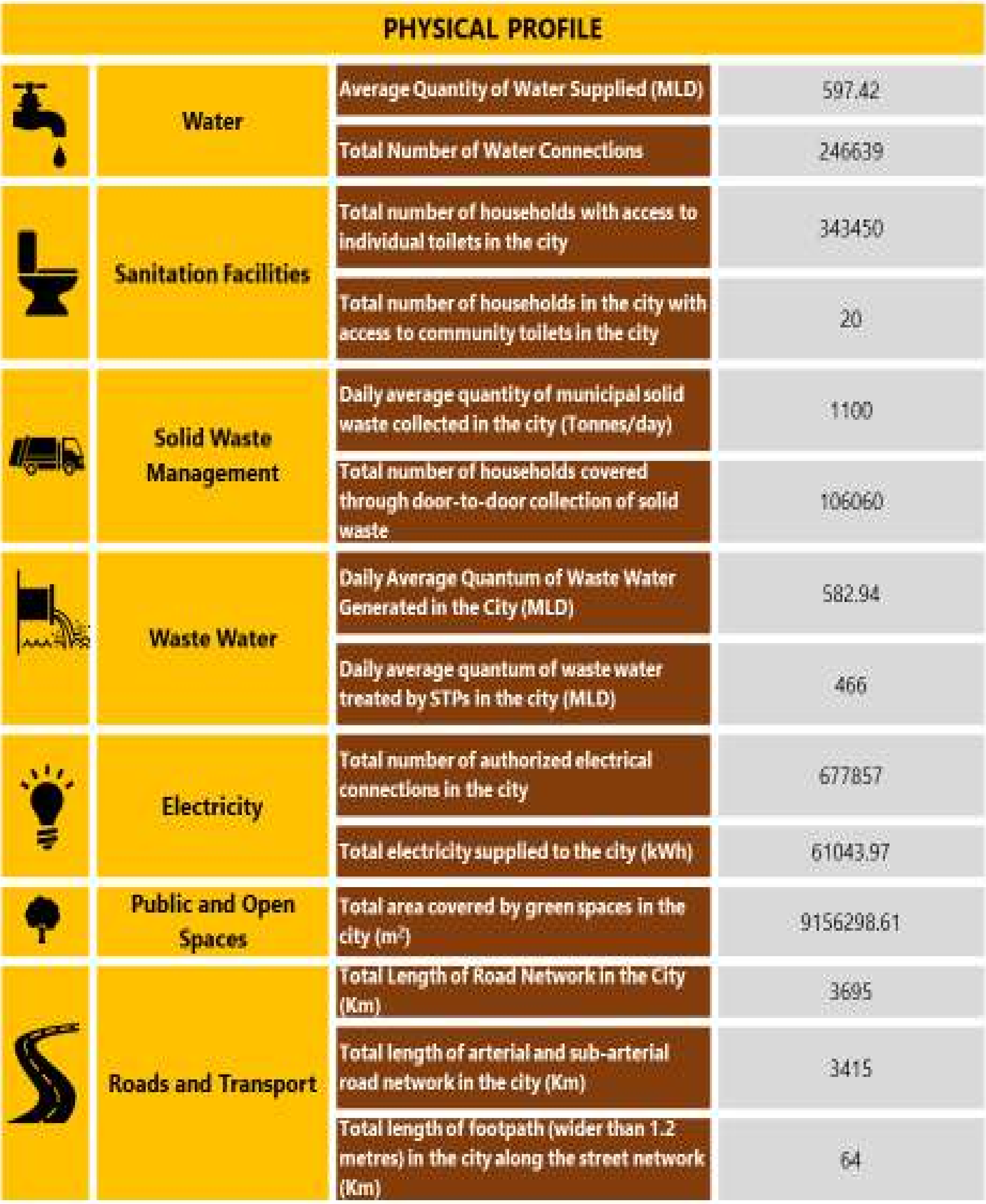
Total Population	1618879
Total Number of Households	344333

SOCIAL PROFILE

Education	Total Number of Schools	982
	Total Enrolment (Class 1 to 5)	181733
Health	Total Number of In-patient Beds	200
	Total Health Workforce	300
Safety and Security	Total Strength of Police Force	4966
	Total Number of CCTV Cameras	1536
Heritage Sites	Total Number of Heritage Sites	12

ECONOMIC PROFILE

Total Population in Working Age Group	1081735
Total Number of Industries	8135
Total Number of Commercial Enterprises	74745
Total Number of Hotels	115
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	90937.39
Total VAT Collection in FY 2016-17 (INR Lakhs)	296642



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	597.42
	Total Number of Water Connections	246639
Sanitation Facilities	Total number of households with access to individual toilets in the city	343450
	Total number of households in the city with access to community toilets in the city	20
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1100
	Total number of households covered through door-to-door collection of solid waste	106060
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	582.94
	Daily average quantum of waste water treated by STPs in the city (MLD)	466
Electricity	Total number of authorized electrical connections in the city	677857
	Total electricity supplied to the city (kWh)	61043.97
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	9156298.61
Roads and Transport	Total Length of Road Network in the City (Km)	3695
	Total length of arterial and sub-arterial road network in the city (Km)	3415
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	64

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 2 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city

Pillars of Comprehensive Development	Category	Indicators
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	Compactness	
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW

Pillars of Comprehensive Development	Category	Indicators
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 3 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 4:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Municipal Corporation Ludhiana
Urban Local Body	For Park and Recreation Related Questions	Horticulture Department, Municipal Corporation Ludhiana
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Sewerage, Municipal Corporation Ludhiana
Urban Local Body	For Heritage sites related data	No heritage sites available in Ludhiana
Urban Local Body	For Ecological sites related data	No ecological sites available in Ludhiana
Urban Local Body	For Housing related data	Census Department, Municipal Corporation Ludhiana
Urban Local Body	For Building plan related data	Municipal Town Planning, Municipal Corporation Ludhiana
Urban Local Body	For Roads related data	B&R Department, Municipal Corporation Ludhiana
Urban Local Body	For Solid waste management related data	Municipal Health and Sanitation Wing, Municipal Corporation Ludhiana
Urban Local Body	For IT services related data	IT department, Municipal Corporation Ludhiana
Urban Local Body	For Vendor committee related data	Tehbazari Department, Municipal Corporation Ludhiana
Urban Local Body	Any other departments involved in providing data for questions mentioned under	• District Sports Office • Employment Exchange • District Transport Office

Designated data owners	Subcategories	Data owners at city level
	Urban Local Body	- Traffic and Police Department - Property Tax Department
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Punjab Pollution Control Board
Development Authority	Building Infrastructure	District Town Planning
	Construction planning	District Town Planning
	Green Building	District Town Planning
	Rain water harvesting	District Town Planning
	Universal Design Principle	District Town Planning
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Punjab State Power Corporation Limited
State Disaster management authority		Revenue Department
State Education Department		State Education Department
State Health Department	Health care professionals	State Health Department
State Health Department	Citizen Services	State Health Department
State Health Department	Disease Prevalence	State Health Department
State Health Department	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		Punjab Energy Development Agency
State Sales / Commercial Taxes Department		Excise Department and Taxations Department, Ludhiana
Town and Country Planning Department	Land Use	District and Town Planning, Ludhiana
Traffic and Police Department		Traffic and Police Department, Ludhiana
Transport Authorities	Buses	City Bus Services, Ludhiana
Transport Authorities	Registered Vehicles	District Transport Office, Ludhiana
Transport Authorities	Sub urban rail transport	Not Applicable
Transport Authorities	Mono Rail Authority	Not Applicable
Transport Authorities	Tramways	Not Applicable
Transport Authorities	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 177 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 5: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	7
DISCOM/Electricity Department	14
Traffic and Police Department	5
Development Authority	1
Pollution Control Board	8
State Renewable Energy Department	0
Town and Country Planning	6
State Health Department	16
Transport Authority	12
Disaster Management	0
Urban Local Body	105
Total	177

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

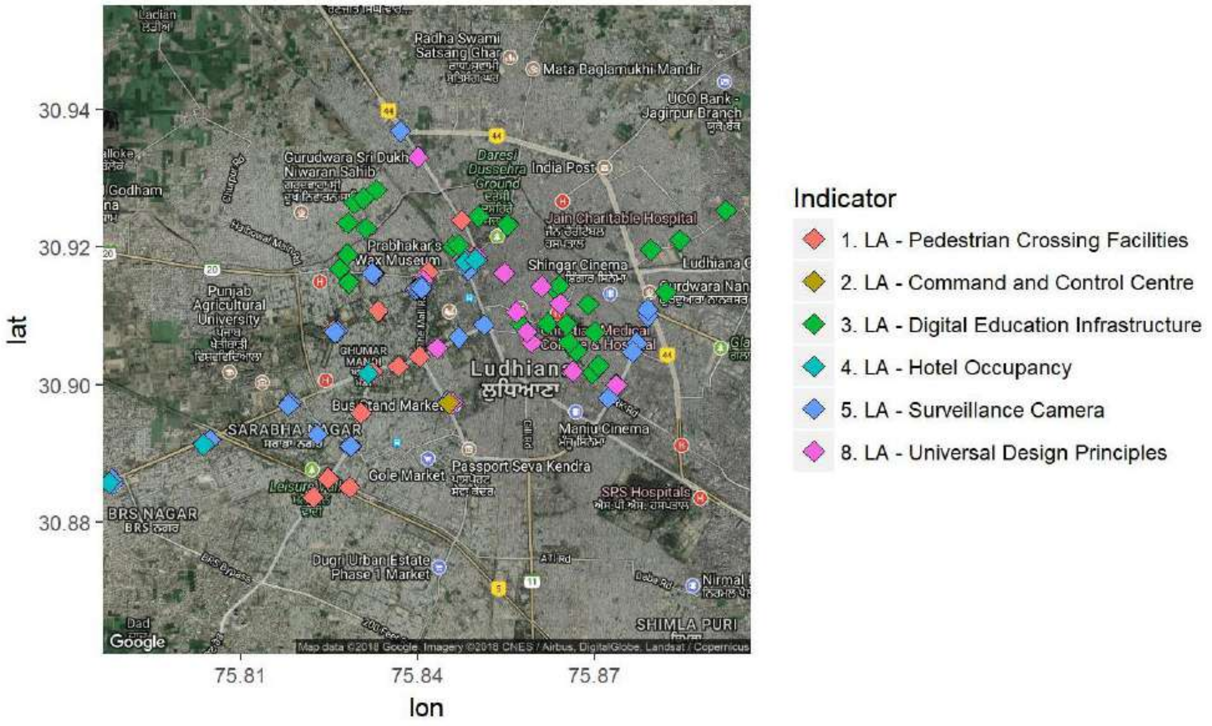
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


30.94
30.92
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Radha Swami Satsang Ghar
Mata Baglamukhi Mandir
UCO Bank - Jagirpur Branch
Gurudwara Sri Dukh Niwaran Sahib
Daresi Dussehra Ground
India Post
Jain Charitable Hospital
Prabhakar's Wax Museum
Shingar Cinema
Punjab Agricultural University
GHUMAR MANDI
Ludhiana
ਲੁਧਿਆਣਾ
Bus Stand Market
SARABHA NAGAR
Gole Market
Passport Seva Kendra
Manju Cinema
SPS Hospitals
BRS NAGAR
Dugri Urban Estate Phase 1 Market
SHIMLA PURI
Google
Map data ©2018 Google, Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 6: Category wise scores

Categories	Scores in Percentage
Governance	52.13%
Identity & Culture	59%
Education	90%
Health	58%
Safety & Security	57%
Economy & Employment	27%
Housing & Inclusiveness	14%
Public Open Spaces	24%
Mixed Land Use & Compactness	6%
Power Supply	65%
Transport & Mobility	32%
Assured Water Supply	69%
Waste Water Management	63%
Solid Waste Management	62%
Reduced Pollution	92%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

MADURAI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

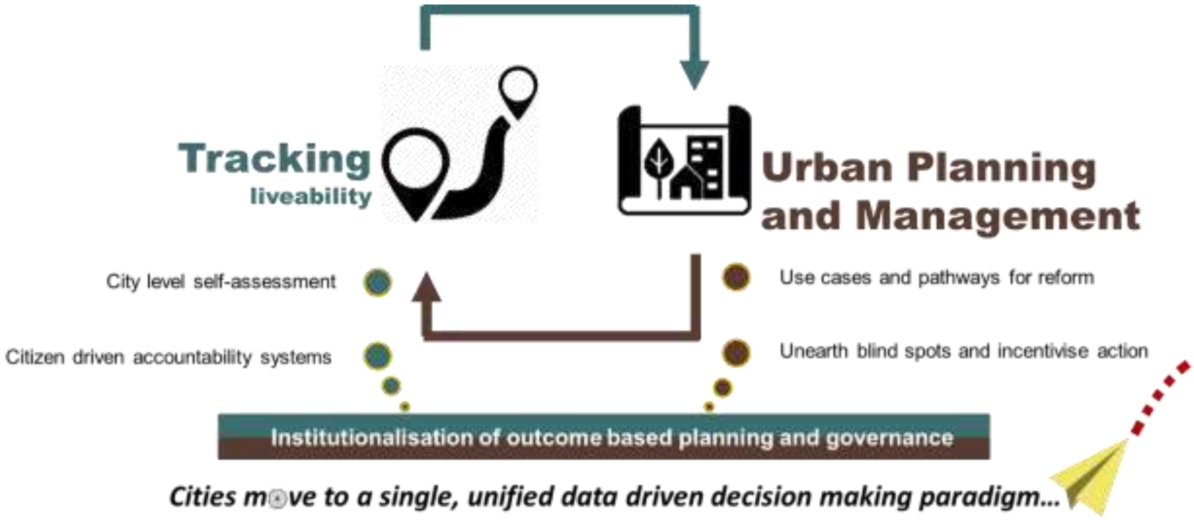
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

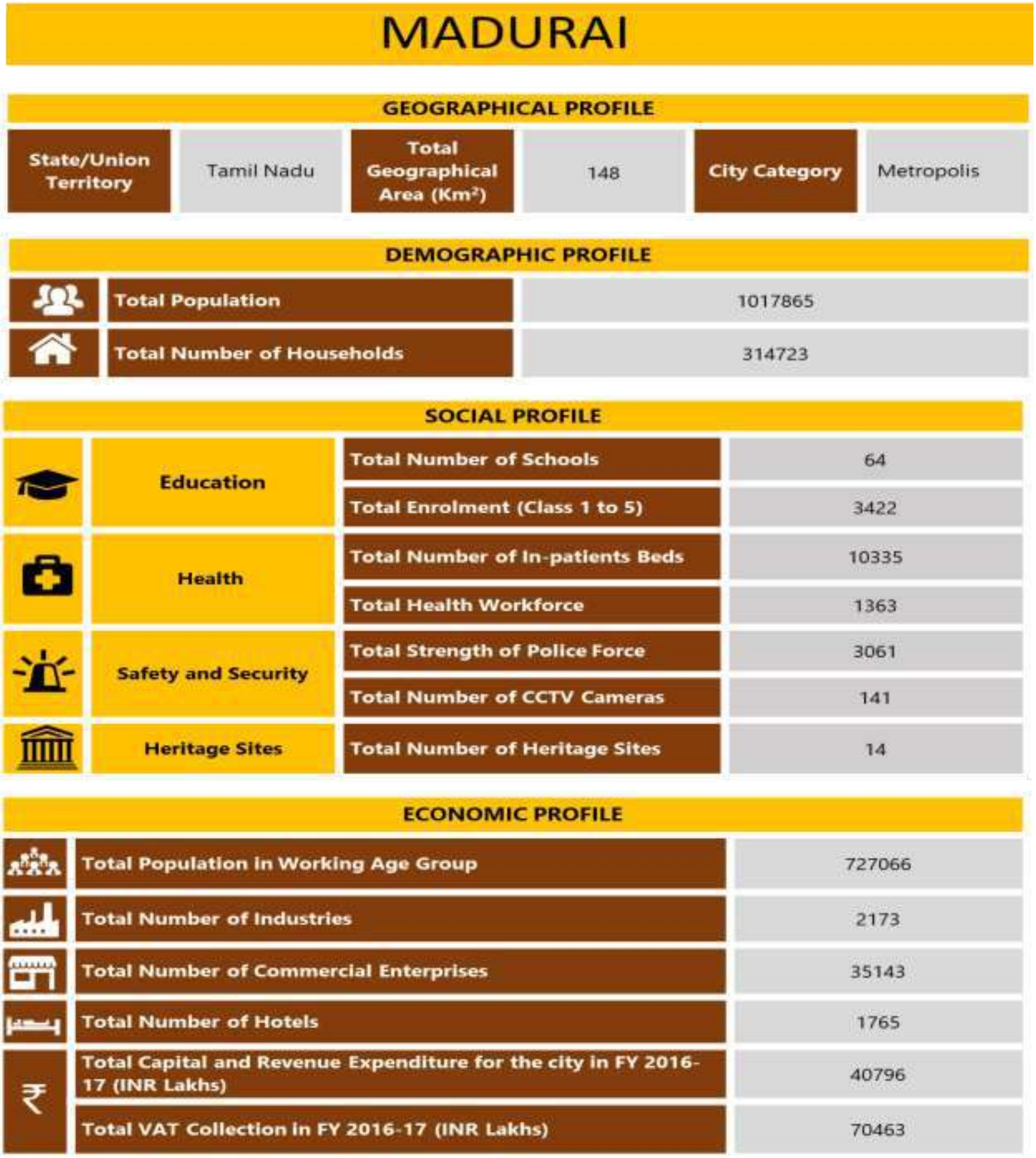
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MADURAI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km^2)	148	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1017865
Total Number of Households	314723

SOCIAL PROFILE

Education	Total Number of Schools	64
	Total Enrolment (Class 1 to 5)	3422
Health	Total Number of In-patients Beds	10335
	Total Health Workforce	1363
Safety and Security	Total Strength of Police Force	3061
	Total Number of CCTV Cameras	141
Heritage Sites	Total Number of Heritage Sites	14

ECONOMIC PROFILE

Total Population in Working Age Group	727066
Total Number of Industries	2173
Total Number of Commercial Enterprises	35143
Total Number of Hotels	1765
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	40796
Total VAT Collection in FY 2016-17 (INR Lakhs)	70463

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	148
	Total Number of Water Connections	152365
Sanitation Facilities	Total number of households with access to individual toilets in the city	292312
	Total number of households in the city with access to community toilets in the city	400
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	650
	Total number of households covered through door-to-door collection of solid waste	314723
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
	Daily average quantum of waste water treated by STPs in the city (MLD)	50
Electricity	Total number of authorized electrical connections in the city	602272
	Total electricity supplied to the city (kWh)	1327353
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	36.75
Roads and Transport	Total Length of Road Network in the City (Km)	1640
	Total length of arterial and sub-arterial road network in the city (Km)	1572.53
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	163

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

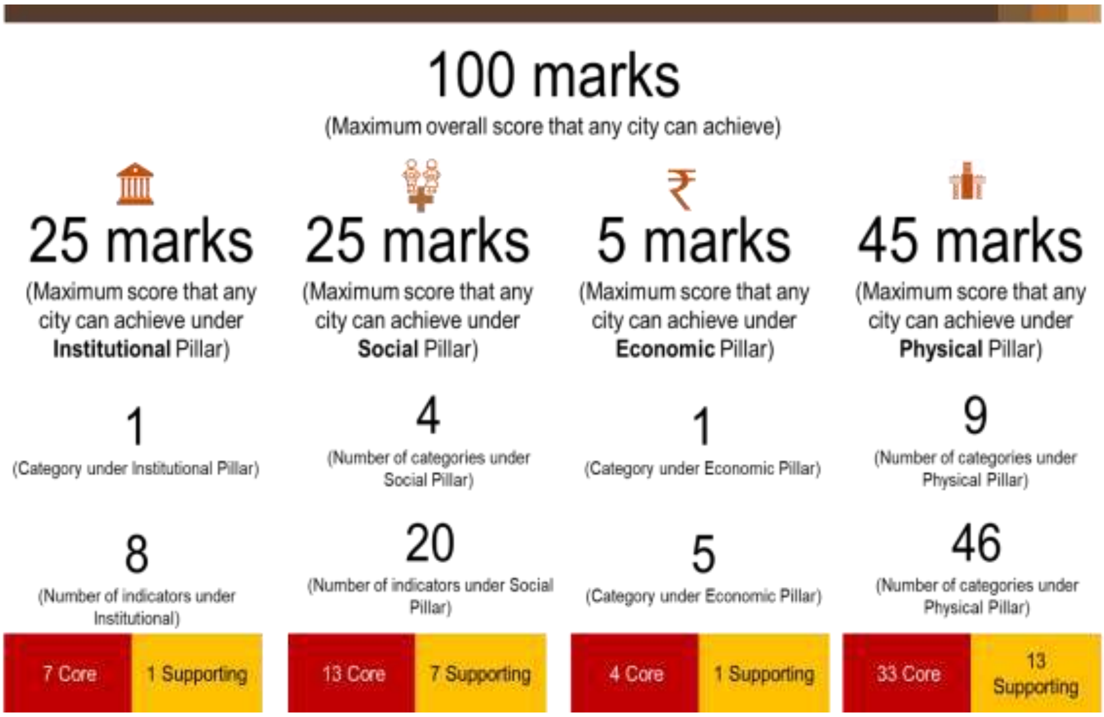
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban	Revenue Section

Designated data owners	Subcategories	Data owners at city level
	Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 65 number of documents. Documents submitted include reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	4
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	7
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	3
State Health Department	7
Transport Authority	6
Disaster Management	1
Urban Local Body	24
Total	65*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

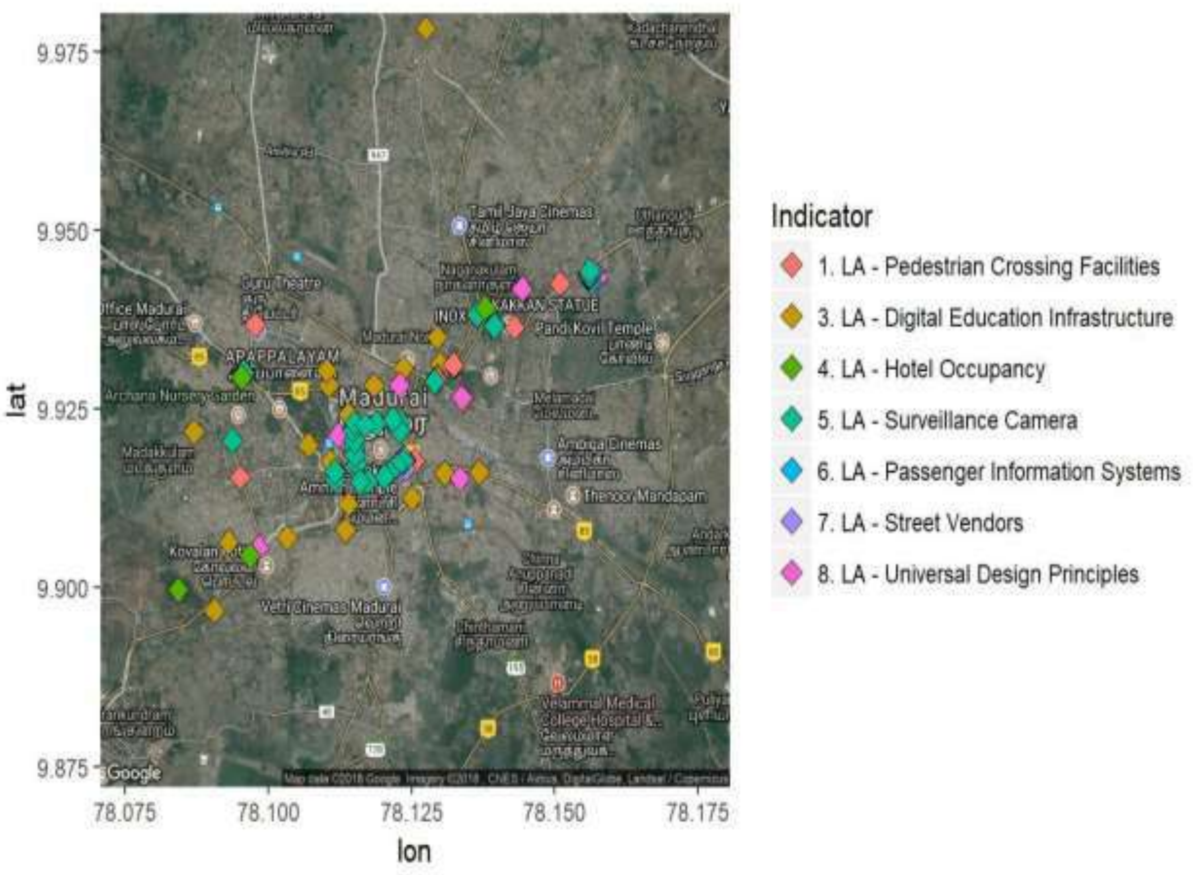
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


9.975
9.950
9.925
9.900
9.875
lat
78.075
78.100
78.125
78.150
78.175
lon
Madurai
Tamil Jaya Cinemas
Guru Theatre
KAKKAN STATUE
INOX
Pandi Kovil Temple
ARAPPALAYAM
Archana Nursery Garden
Madakkulam
Ambiga Cinemas
Thenoor Mandapam
Kovalan pottal
Vetri Cinemas Madurai
Velammal Medical College Hospital &
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	56.13%
Identity & Culture	62%
Education	52%
Health	89%
Safety & Security	49%
Economy & Employment	8%
Housing & Inclusiveness	45%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	65%
Transport & Mobility	29%
Assured Water Supply	91%
Waste Water Management	85%
Solid Waste Management	70%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

MANGALORE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

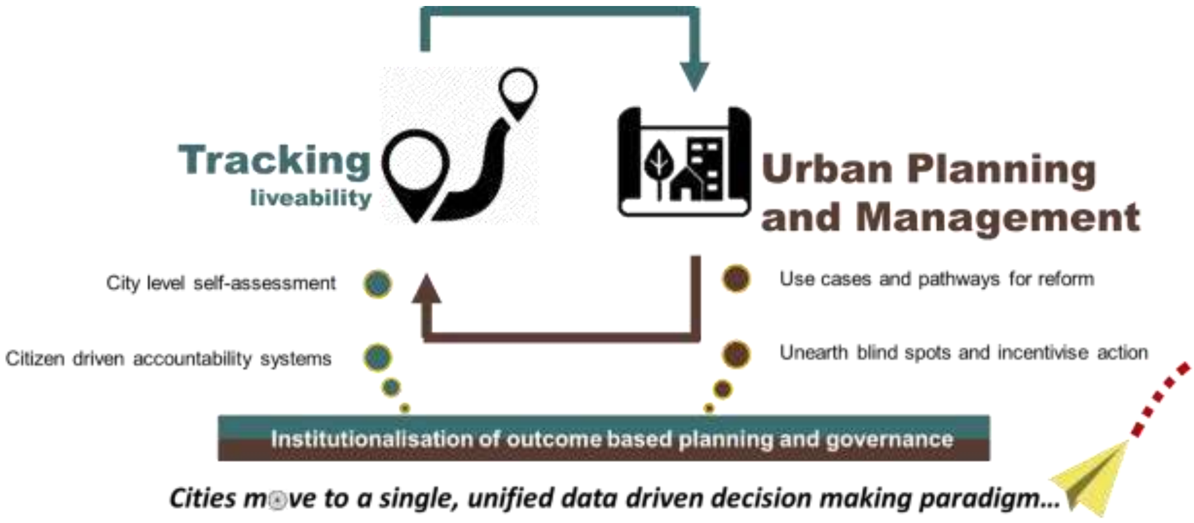
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

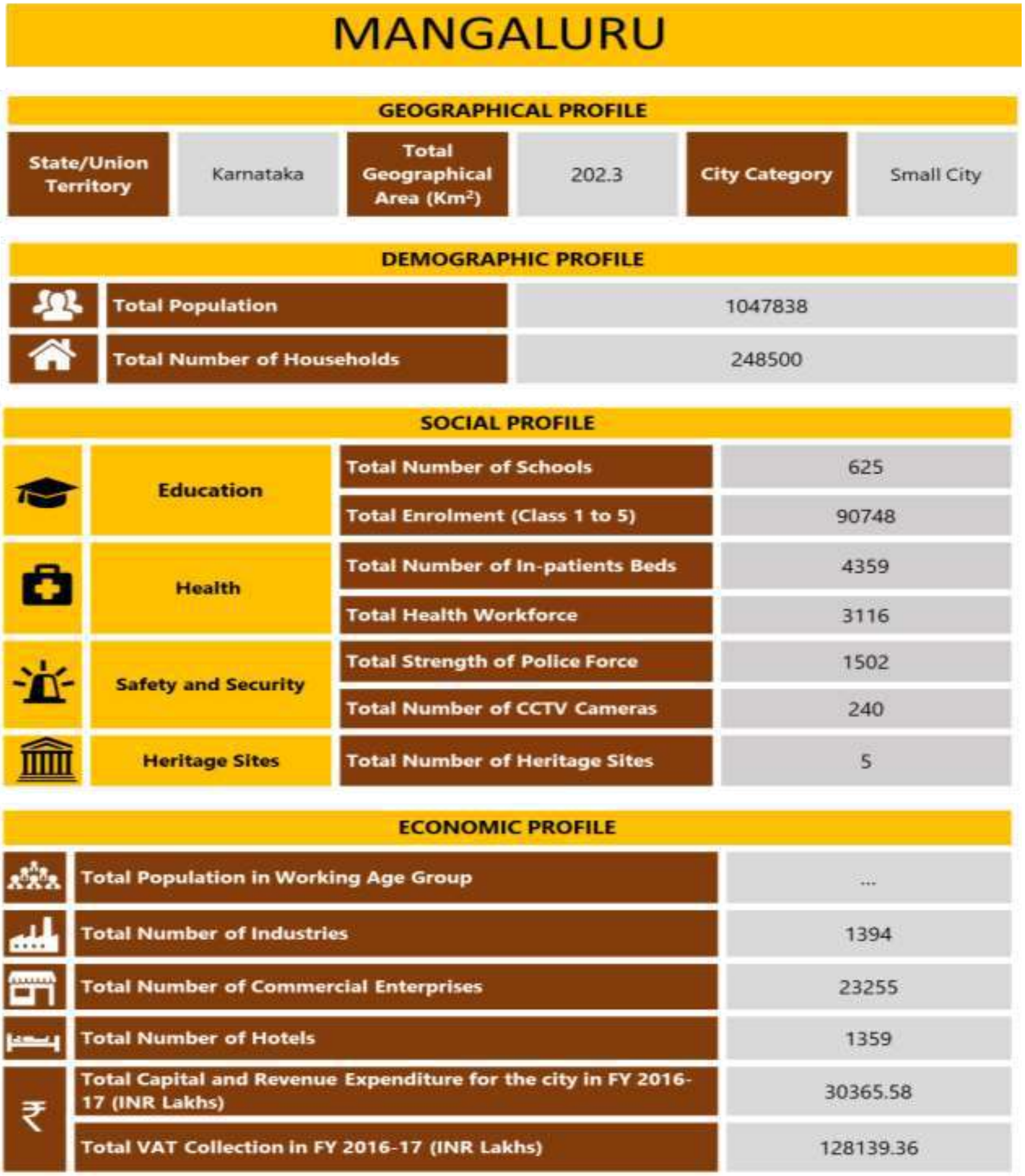
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



MANGALURU

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	Total Geographical Area (Km²)	202.3	City Category	Small City

DEMOGRAPHIC PROFILE

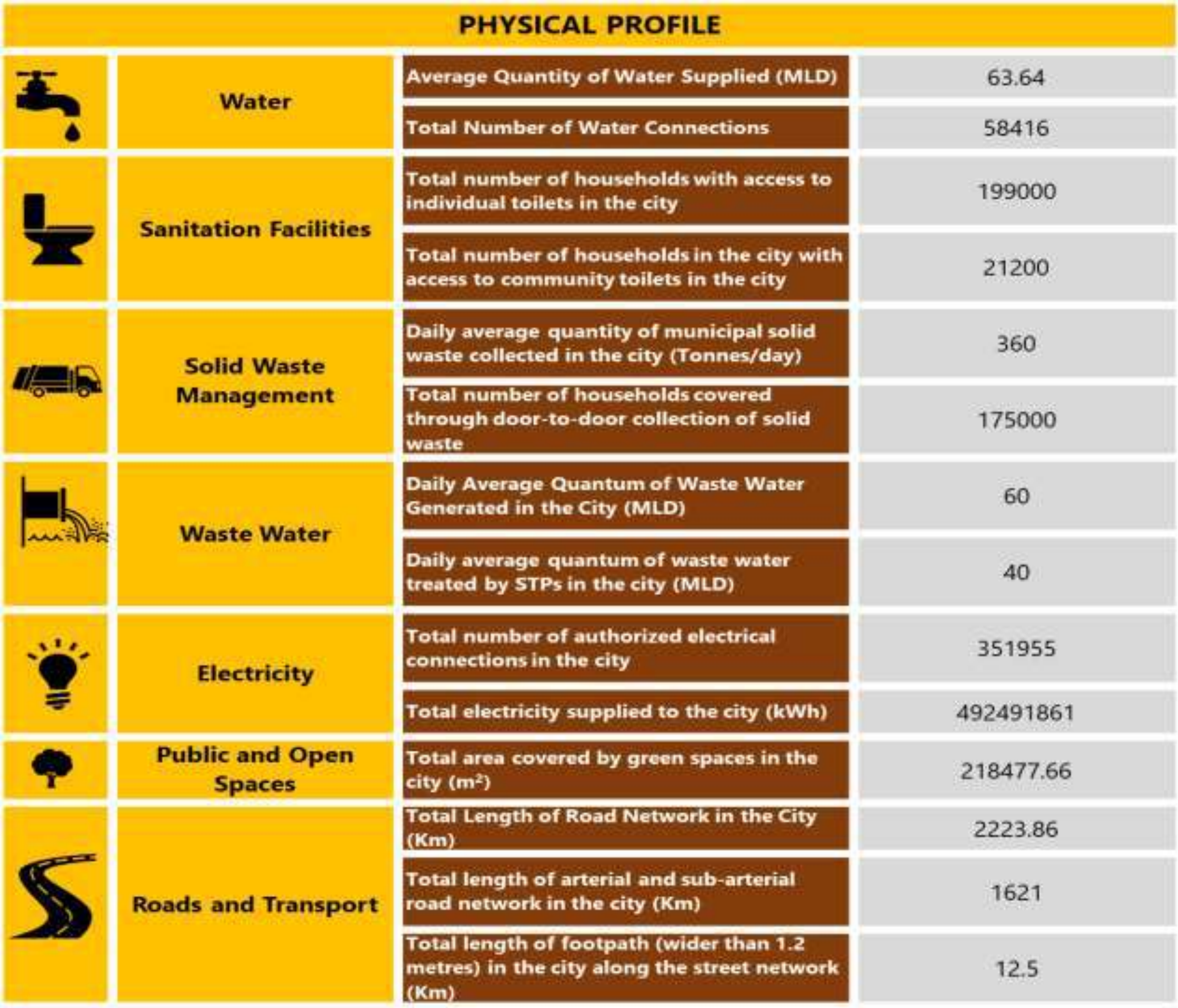
Total Population	1047838
Total Number of Households	248500

SOCIAL PROFILE

Education	Total Number of Schools	625
	Total Enrolment (Class 1 to 5)	90748
Health	Total Number of In-patients Beds	4359
	Total Health Workforce	3116
Safety and Security	Total Strength of Police Force	1502
	Total Number of CCTV Cameras	240
Heritage Sites	Total Number of Heritage Sites	5

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	1394
Total Number of Commercial Enterprises	23255
Total Number of Hotels	1359
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	30365.58
Total VAT Collection in FY 2016-17 (INR Lakhs)	128139.36



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	63.64
	Total Number of Water Connections	58416
Sanitation Facilities	Total number of households with access to individual toilets in the city	199000
	Total number of households in the city with access to community toilets in the city	21200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	360
	Total number of households covered through door-to-door collection of solid waste	175000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	60
	Daily average quantum of waste water treated by STPs in the city (MLD)	40
Electricity	Total number of authorized electrical connections in the city	351955
	Total electricity supplied to the city (kWh)	492491861
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	218477.66
Roads and Transport	Total Length of Road Network in the City (Km)	2223.86
	Total length of arterial and sub-arterial road network in the city (Km)	1621
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	12.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

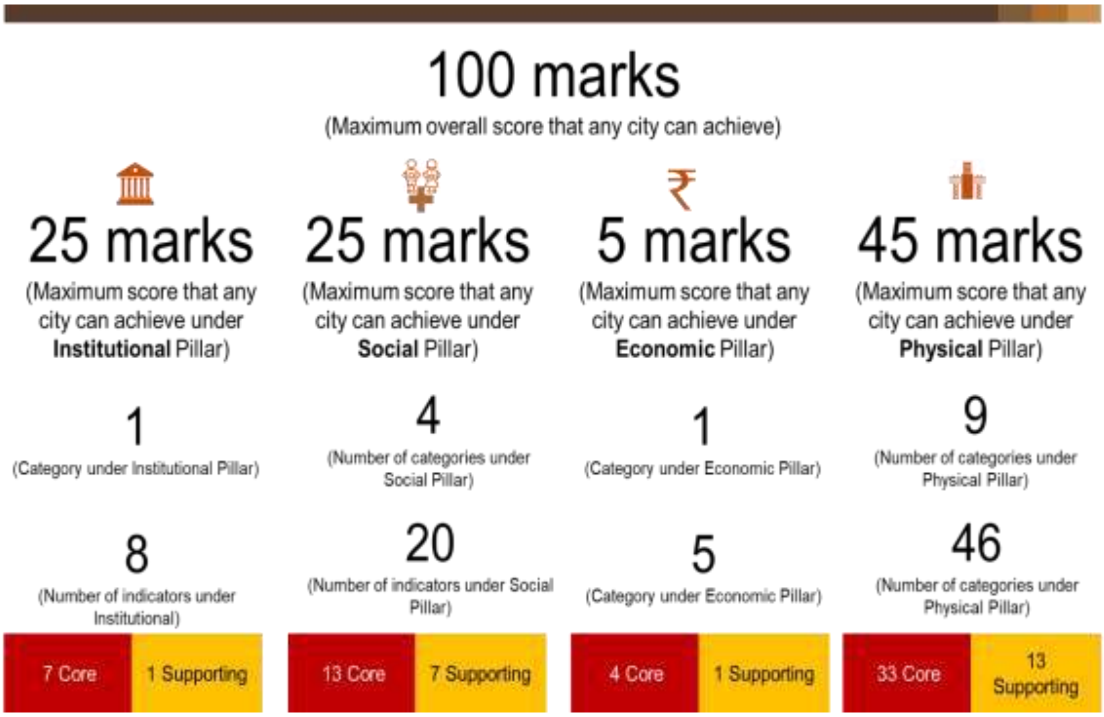
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department MCC
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department MCC
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department MCC
Urban Local Body	For Heritage sites related data	Town Planning Department MCC
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. MCC
Urban Local Body	For Building plan related data	Town Planning Department MCC
Urban Local Body	For Roads related data	Engineering Department MCC
Urban Local Body	For Solid waste management related data	Environment Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. MCC (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, Pollution Department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution department

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, MCC
	Green Building	Town Planning Department, MCC
	Rain water harvesting	Town Planning Department, MCC
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Mangalore Electricity Supply Company Limited
State Disaster management authority		District Collector Office
State Education Department		
State Health Department	Health care professionals	District Health Office
	Citizen Services	District Health Office
	Disease Prevalence	District Health Office
	Health Infrastructure	District Health Office
State Renewable Energy Development Agency	Renewable Energy	Mangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Joint Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Deputy Police Commissioner's Office
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Urban Local Body

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 149 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

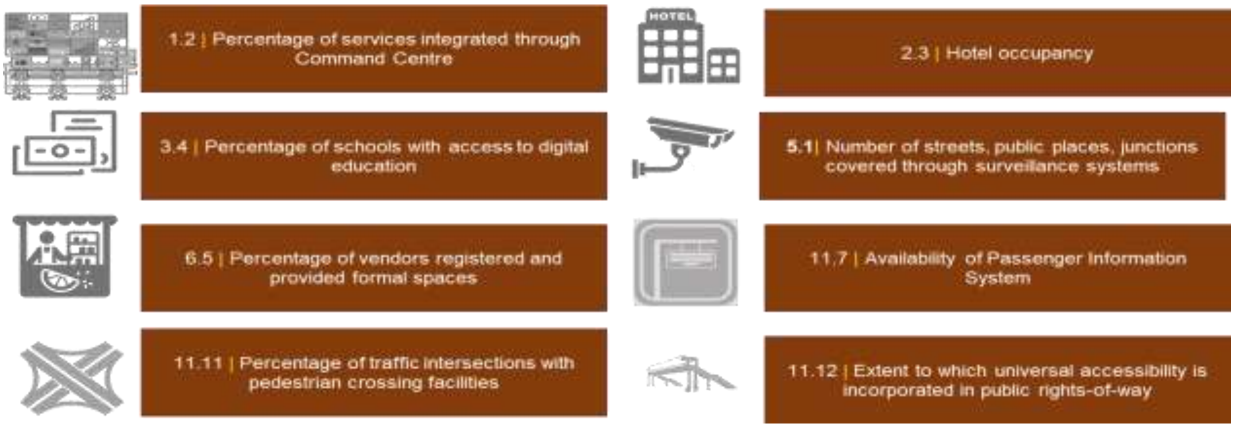
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**6**
DISCOM/Electricity Department	**11**
Traffic and Police Department	**10**
Development Authority	**2**
Pollution Control Board	**7**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**14**
Transport Authority	**10**
Disaster Management	**1**
Urban Local Body	**84**
Total	**149***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

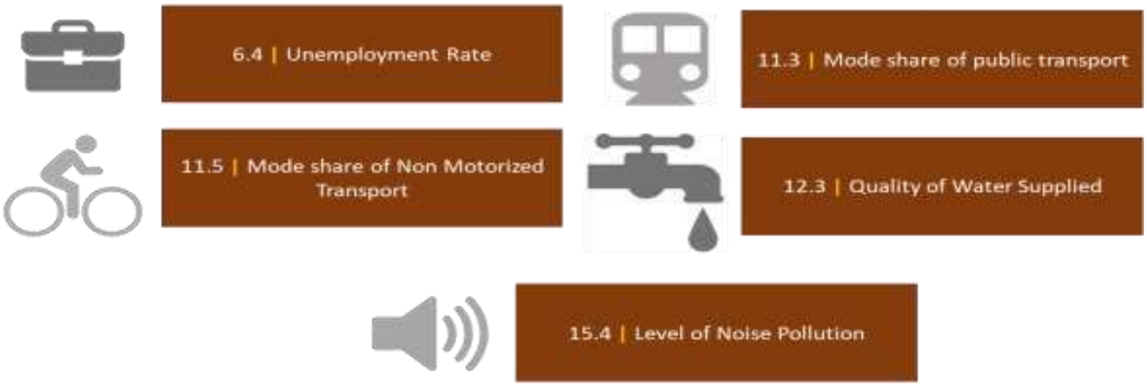
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

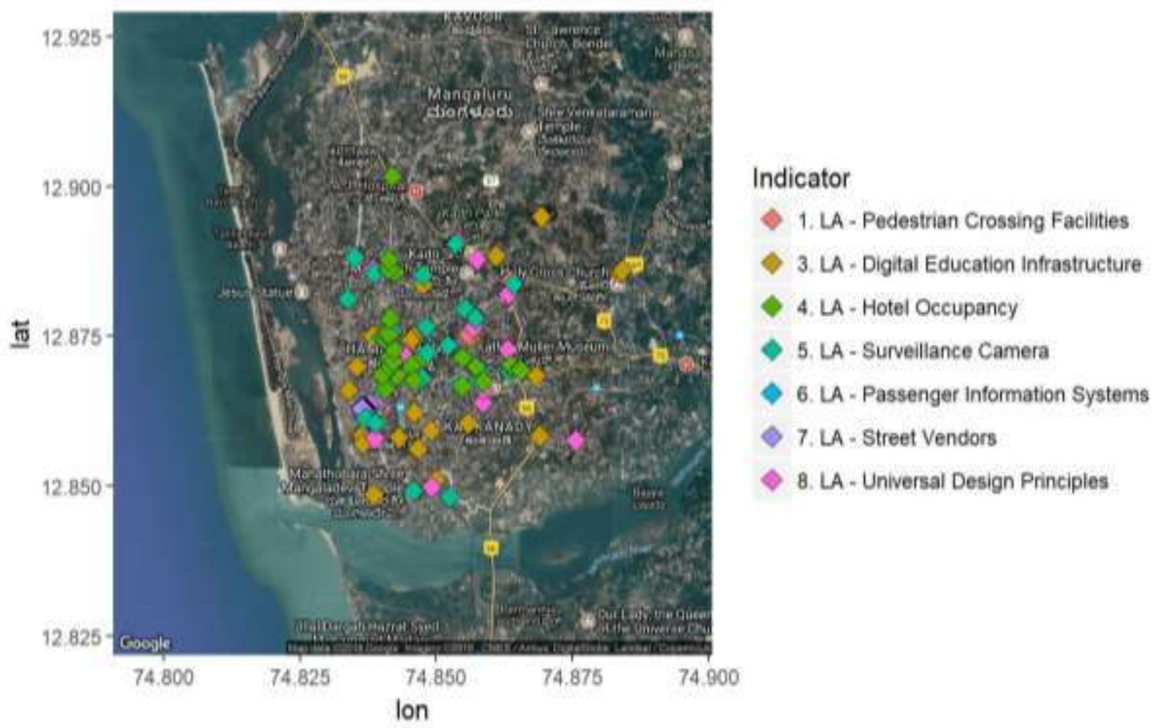
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


12.925
12.900
12.875
12.850
12.825
lat
74.800
74.825
74.850
74.875
74.900
lon
Mangaluru
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	69.23%
Identity & Culture	49%
Education	88%
Health	94%
Safety & Security	60%
Economy & Employment	25%
Housing & Inclusiveness	2%
Public Open Spaces	2%
Mixed Land Use & Compactness	0%
Power Supply	59%
Transport & Mobility	46%
Assured Water Supply	91%
Waste Water Management	65%
Solid Waste Management	98%
Reduced Pollution	87%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs
Government of India

MEERUT

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

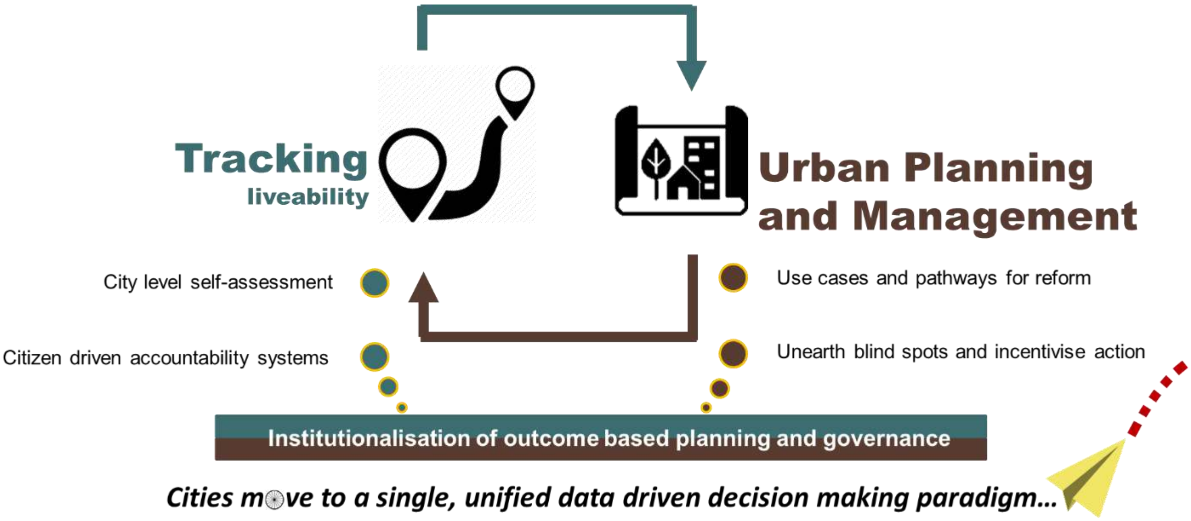
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	141.94	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1762329
Total Number of Households	226065

SOCIAL PROFILE

Education	**Total Number of Schools**	165
	Total Enrolment (Class 1 to 5)	12763
Health	**Total Number of In-patient Beds**	8903
	Total Health Workforce	3828
Safety and Security	**Total Strength of Police Force**	1112
	Total Number of CCTV Cameras	83
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	42827
Total Number of Hotels	86
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25249.77
Total VAT Collection in FY 2016-17 (INR Lakhs)	83775

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	230.19
	Total Number of Water Connections	119940
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	...
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	536
	Total number of households covered through door-to-door collection of solid waste	...
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	273.88
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	**Total number of authorized electrical connections in the city**	329482
	Total electricity supplied to the city (kWh)	1660558000
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	9540000
Roads and Transport	**Total Length of Road Network in the City (Km)**	1427.63
	Total length of arterial and sub-arterial road network in the city (Km)	548.35
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

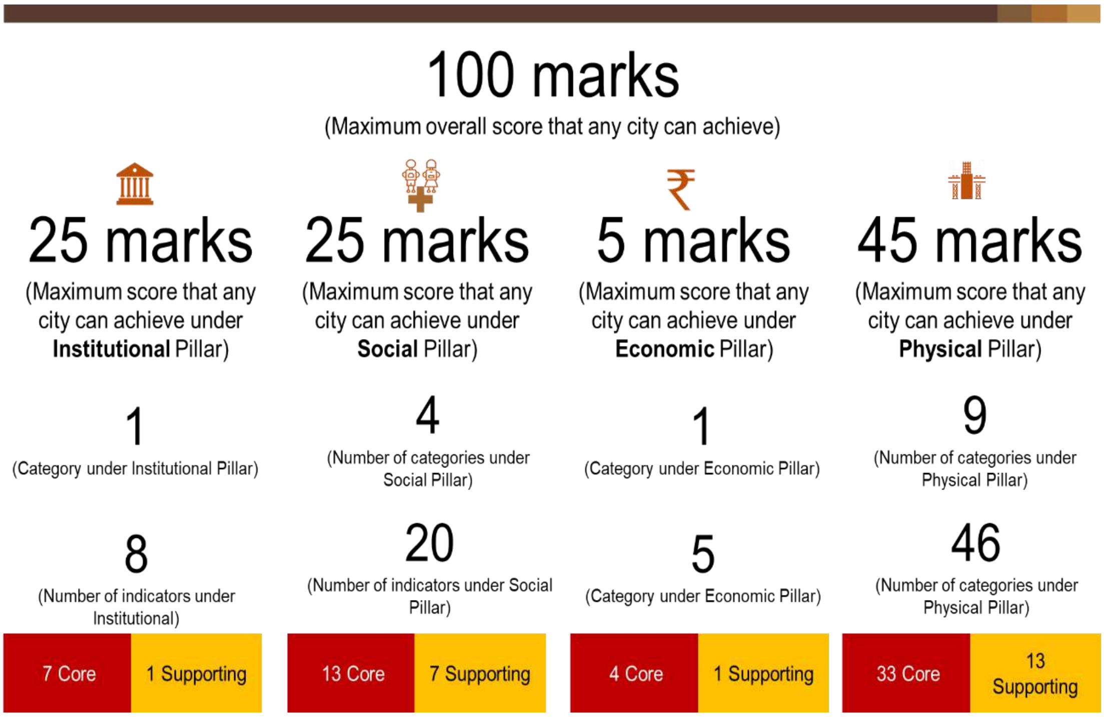
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts section, Meerut Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Garden Section, Meerut Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Water supply, Meerut Nagar Nigam
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	
Urban Local Body	For Housing related data	Housing, Meerut Nagar Nigam
Urban Local Body	For Building plan related data	Development authority
Urban Local Body	For Roads related data	Development authority, roads
Urban Local Body	For Solid waste management related data	PHED
Urban Local Body	For IT services related data	IT Section, Meerut Nagar Nigam
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	UP Pollution control Board
Development	Building Infrastructure	Development Authority

Designated data owners	Subcategories	Data owners at city level
Authority		
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Development Authority
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM/Electricity Board
State Disaster management authority		State Disaster management authority
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Development Agency
State Sales / Commercial Taxes Department		State Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	RTO
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**1**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**1**
Total	**12***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

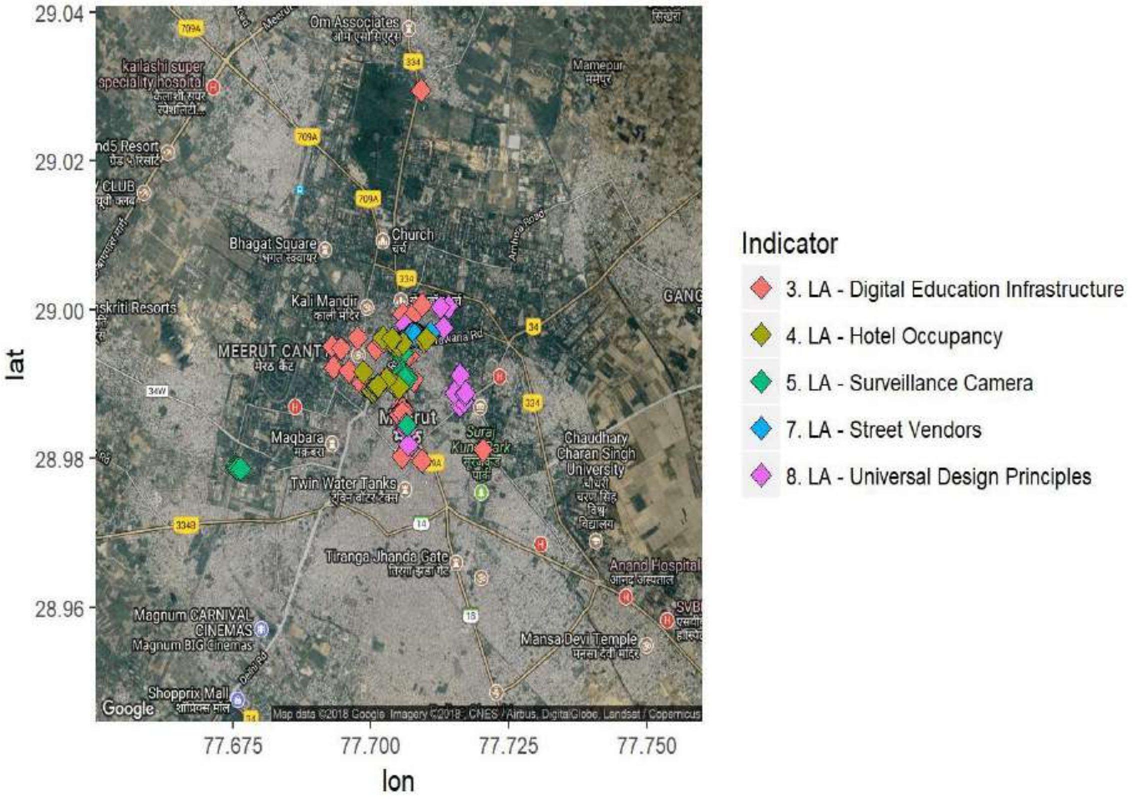
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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MEERUT CANT
Maqbara
Meerut
Suraj Kund Park
Chaudhary Charan Singh University
Twin Water Tanks
Tiranga Jhanda Gate
Anand Hospital
Magnum CARNIVAL CINEMAS
Magnum BIG Cinemas
Mansa Devi Temple
Shopprix Mall
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	36.44%
Identity & Culture	26%
Education	35%
Health	85%
Safety & Security	47%
Economy & Employment	13%
Housing & Inclusiveness	0%
Public Open Spaces	31%
Mixed Land Use & Compactness	50%
Power Supply	43%
Transport & Mobility	14%
Assured Water Supply	62%
Waste Water Management	0%
Solid Waste Management	20%
Reduced Pollution	51%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

MORADABAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

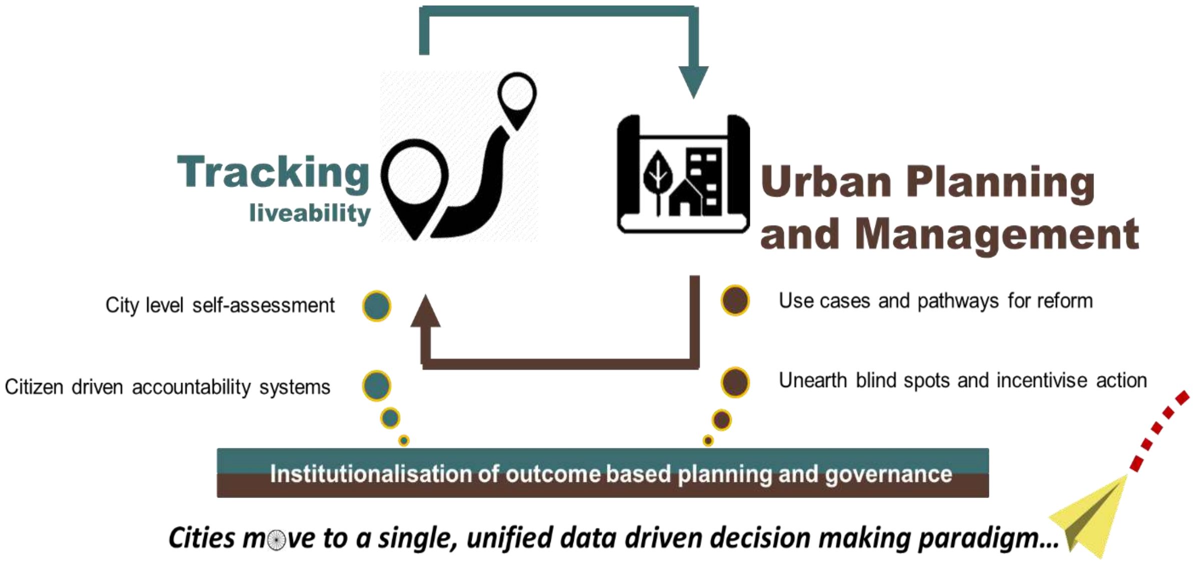
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

MORADABAD

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	349	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	887871
Total Number of Households	129924

SOCIAL PROFILE

Education	**Total Number of Schools**	596
	Total Enrolment (Class 1 to 5)	83230
Health	**Total Number of In-patient Beds**	965
	Total Health Workforce	1349
Safety and Security	**Total Strength of Police Force**	731
	Total Number of CCTV Cameras	20
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	464580
Total Number of Industries	7
Total Number of Commercial Enterprises	15292
Total Number of Hotels	48
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15658.56
Total VAT Collection in FY 2016-17 (INR Lakhs)	24542.29

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	95
	Total Number of Water Connections	110469
Sanitation Facilities	Total number of households with access to individual toilets in the city	161329
	Total number of households in the city with access to community toilets in the city	1294
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	380
	Total number of households covered through door-to-door collection of solid waste	158560
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	…
	Daily average quantum of waste water treated by STPs in the city (MLD)	…
Electricity	Total number of authorized electrical connections in the city	137428
	Total electricity supplied to the city (kWh)	862.549
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	…
Roads and Transport	Total Length of Road Network in the City (Km)	35
	Total length of arterial and sub-arterial road network in the city (Km)	…
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	…

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Nagar Nigam Moradabad
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag, Nagar Nigam Moradabad
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal, vibhag Nagar Nigam Moradabd
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Moradabad
Urban Local Body	For Housing related data	Moradabad Development Authority / Nirmaan Vibhag Nagar Nigam Moradabad
Urban Local Body	For Building plan related data	Moradabad Development Authority Moradabad
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Moradabad
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Moradabad
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Moradabad
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Moradabad
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency moradabad
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Moradabad
Development Authority	Building Infrastructure	Moradabad development Authority Moradabad
	Construction planning	Moradabad development Authority

Designated data owners	Subcategories	Data owners at city level
		Moradabad
	Green Building	Moradabad development Authority Moradabad
	Rain water harvesting	Moradabad development Authority Moradabad
	Universal Design Principle	Moradabad development Authority Moradabad
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Moradabad
State Disaster management authority		State Disaster Management Moradabad [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Moradabad (DIOS)
State Health Department	Health care professionals	UP State Health Department Moradabad (CMO)
	Citizen Services	UP State Health Department Moradabad (CMO)
	Disease Prevalence	UP State Health Department Moradabad (CMO)
	Health Infrastructure	UP State Health Department Moradabad (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Moradabad Zone
Town and Country Planning Department	Land Use	Town and Country Planning Department Moradabad
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Moradabad
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Moradabad
	Registered Vehicles	Regional Transport Office Moradabad
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 27 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**2**
State Health Department	**1**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**14**
Total	**27***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

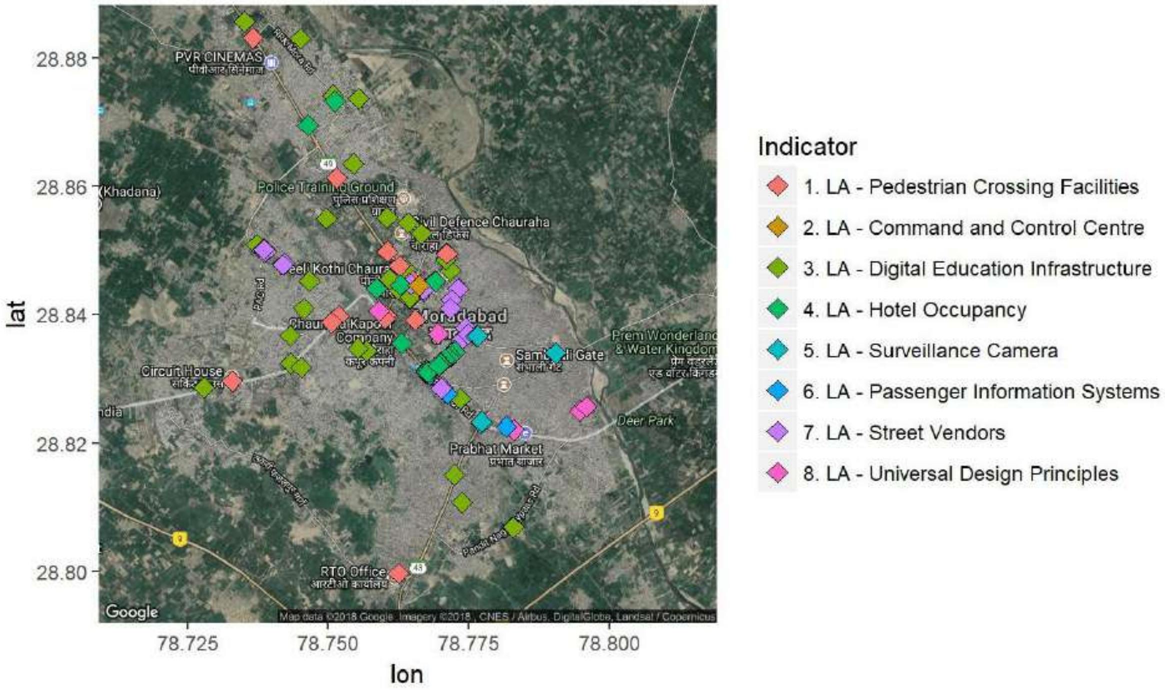
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.88
28.86
28.84
28.82
28.80
lat
78.725
78.750
78.775
78.800
lon
PVR CINEMAS
Police Training Ground
Civil Defence Chauraha
Peel Kothi Chauraha
Moradabad
Kapoor Company
Circuit House
Sambhal Gate
Prem Wonderland & Water Kingdom
Deer Park
Prabhat Market
RTO Office
(Khadana)
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	53.64%
Identity & Culture	16%
Education	77%
Health	68%
Safety & Security	68%
Economy & Employment	21%
Housing & Inclusiveness	2%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	48%
Transport & Mobility	31%
Assured Water Supply	53%
Waste Water Management	20%
Solid Waste Management	66%
Reduced Pollution	74%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

MUZAFFARPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

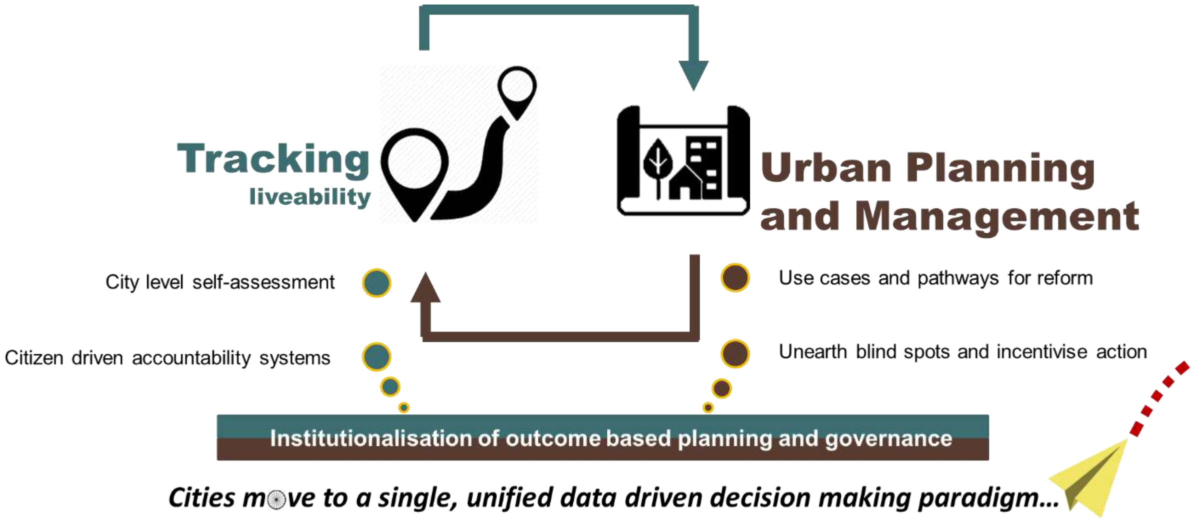
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

MUZAFFARPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	**Total Geographical Area (Km^2)**	31.72	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	354462
Total Number of Households	69051

SOCIAL PROFILE

Education	**Total Number of Schools**	194
	Total Enrolment (Class 1 to 5)	20680
Health	**Total Number of In-patient Beds**	843
	Total Health Workforce	67
Safety and Security	**Total Strength of Police Force**	303
	Total Number of CCTV Cameras	74
Heritage Sites	**Total Number of Heritage Sites**	36

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	204
Total Number of Commercial Enterprises	5321
Total Number of Hotels	52
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4972.97
Total VAT Collection in FY 2016-17 (INR Lakhs)	2681.8

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	38.34
	Total Number of Water Connections	26100
Sanitation Facilities	Total number of households with access to individual toilets in the city	63530
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	195
	Total number of households covered through door-to-door collection of solid waste	26521
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	129814
	Total electricity supplied to the city (kWh)	445988
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10000
Roads and Transport	Total Length of Road Network in the City (Km)	72.18
	Total length of arterial and sub-arterial road network in the city (Km)	72.18
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

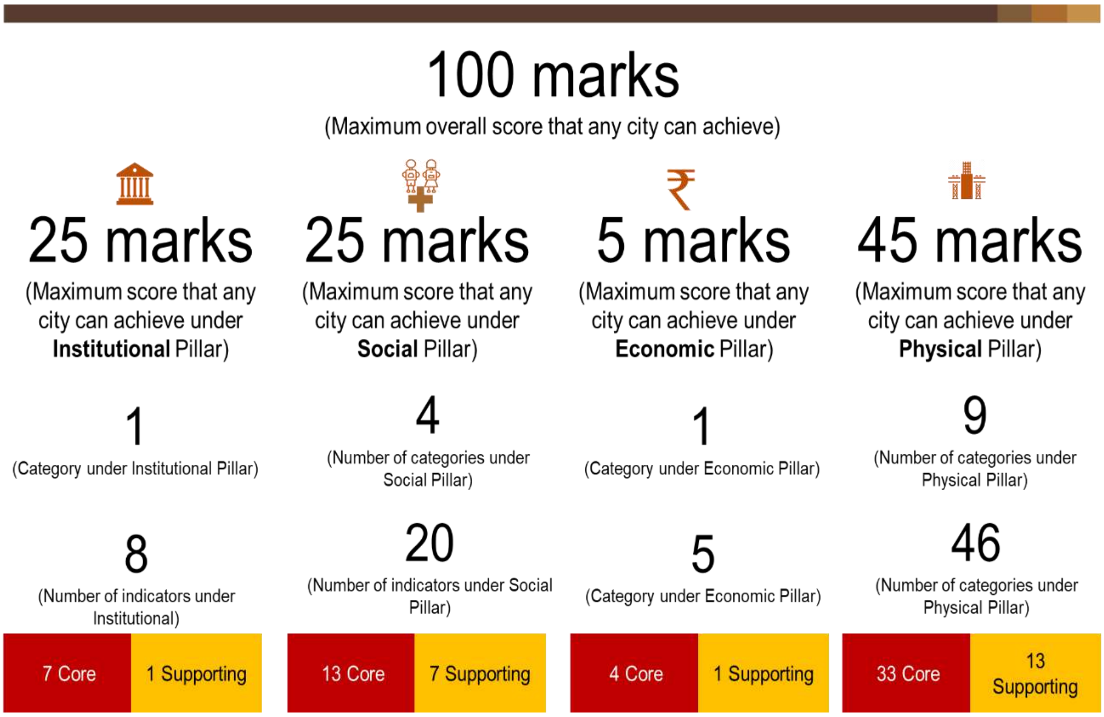
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Heritage sites related data	Muzaffarpur Municipal Corporation
Urban Local Body	For Ecological sites related data	Muzaffarpur Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Muzaffarpur Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Muzaffarpur Municipal Corporation
Urban Local Body	For Solid waste management related data	Muzaffarpur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For IT services related data	IT section, Muzaffarpur Municipal Corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Muzaffarpur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar
Development Authority	Building Infrastructure	Engineering Department, Muzaffarpur Municipal Corporation
	Construction planning	Engineering Department, Muzaffarpur Municipal Corporation
	Green Building	Engineering Department, Muzaffarpur Municipal Corporation
	Rain water harvesting	Engineering Department, Muzaffarpur Municipal Corporation
	Universal Design Principle	Engineering Department, Muzaffarpur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	Civil Surgeon Office
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development		Bihar Renewable Energy Development Authority

Designated data owners	Subcategories	Data owners at city level
Agency		
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Muzaffarpur Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	District Transport office
	Registered Vehicles	District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	4
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	5
Transport Authority	0
Disaster Management	0
Urban Local Body	27
Total	40*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

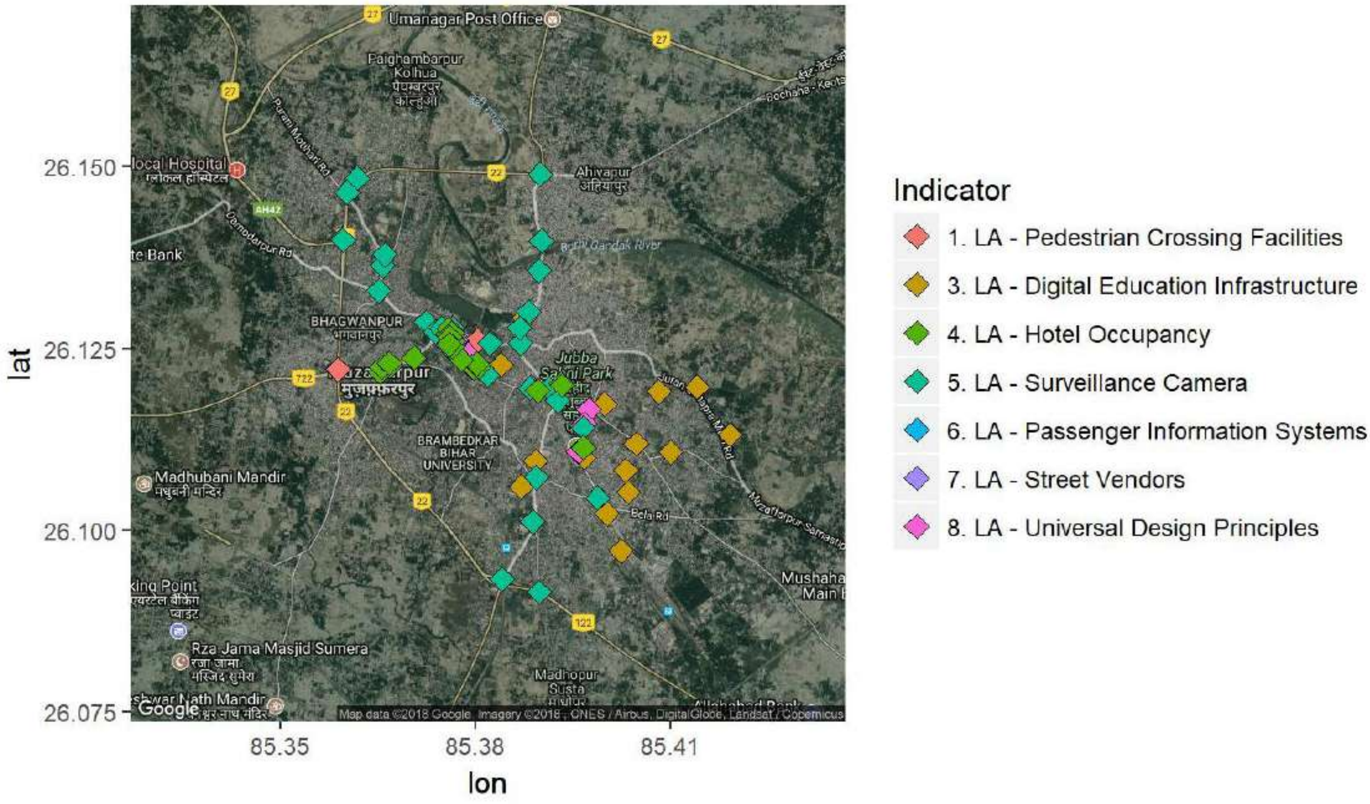
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.150
26.125
26.100
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lat
85.35
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lon
Umanagar Post Office
Muzaffarpur
Jubba Sahni Park
BRAMBEDKAR BIHAR UNIVERSITY
BHAGWANPUR
Madhubani Mandir
Ahiyapur
Madhopur Susta
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	47.83%
Identity & Culture	31%
Education	68%
Health	72%
Safety & Security	59%
Economy & Employment	42%
Housing & Inclusiveness	8%
Public Open Spaces	50%
Mixed Land Use & Compactness	0%
Power Supply	34%
Transport & Mobility	7%
Assured Water Supply	66%
Waste Water Management	39%
Solid Waste Management	51%
Reduced Pollution	52%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

NAGPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

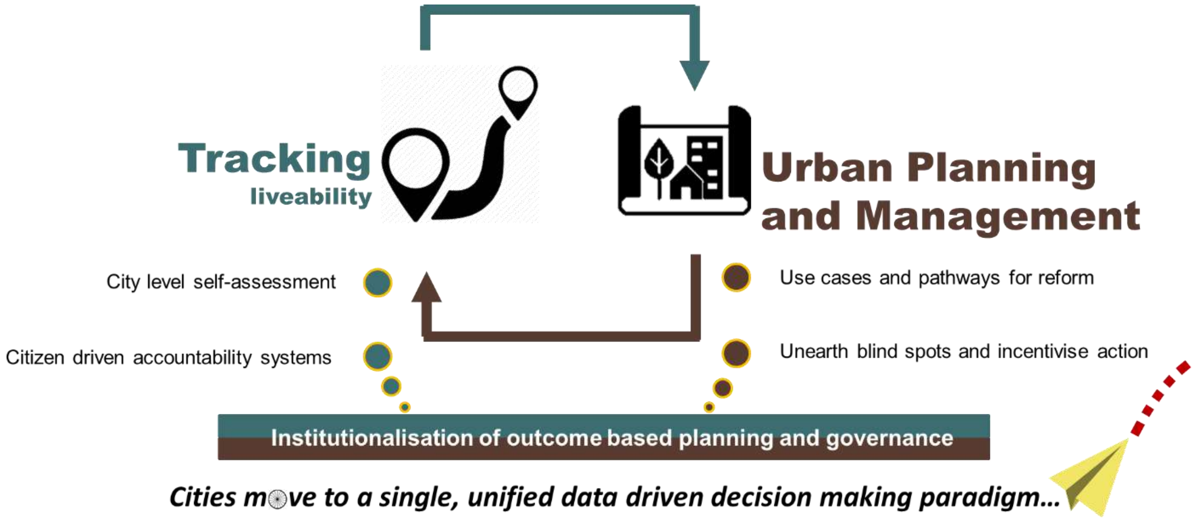
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

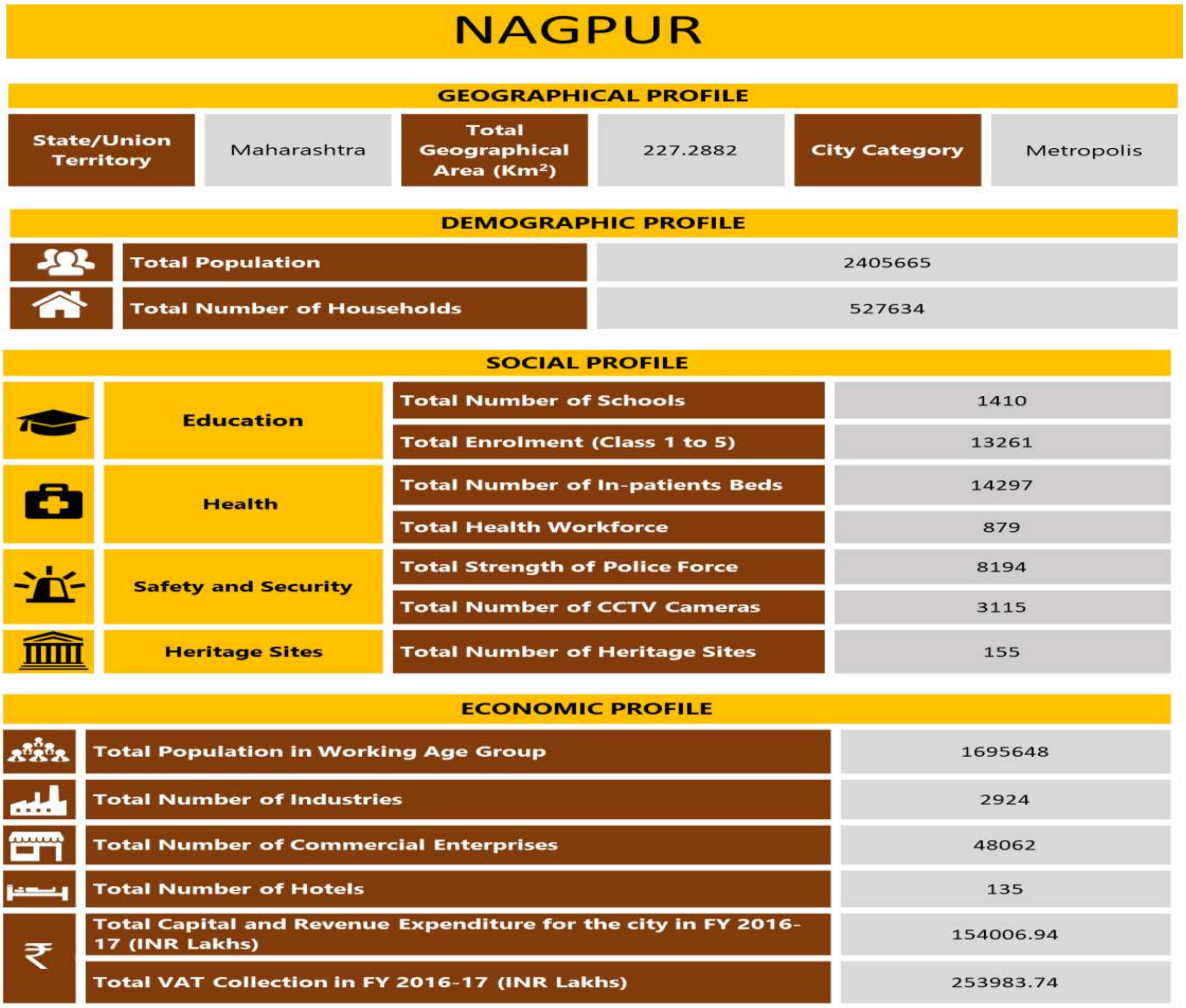

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NAGPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	227.2882	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	2405665
Total Number of Households	527634

SOCIAL PROFILE

Education	Total Number of Schools	1410
	Total Enrolment (Class 1 to 5)	13261
Health	Total Number of In-patients Beds	14297
	Total Health Workforce	879
Safety and Security	Total Strength of Police Force	8194
	Total Number of CCTV Cameras	3115
Heritage Sites	Total Number of Heritage Sites	155

ECONOMIC PROFILE

Total Population in Working Age Group	1695648
Total Number of Industries	2924
Total Number of Commercial Enterprises	48062
Total Number of Hotels	135
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	154006.94
Total VAT Collection in FY 2016-17 (INR Lakhs)	253983.74

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	685.83
		Total Number of Water Connections	336686
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	523122
		Total number of households in the city with access to community toilets in the city	4512
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1200
		Total number of households covered through door-to-door collection of solid waste	527634
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	400
		Daily average quantum of waste water treated by STPs in the city (MLD)	210
	Electricity	**Total number of authorized electrical connections in the city**	672033
		Total electricity supplied to the city (kWh)	1765769233
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	70250900
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2794.53
		Total length of arterial and sub-arterial road network in the city (Km)	192.1
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	431.16

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account and Finance Department
Urban Local Body	For Park and Recreation Related Questions	Garden Department.
Urban Local Body	For Water Supply and Drainage related questions	Water Works Department
Urban Local Body	For Heritage sites related data	Estate Department
Urban Local Body	For Ecological sites related data	Town Planning Department
Urban Local Body	For Housing related data	Slum Department
Urban Local Body	For Building plan related data	General Administration Department

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Roads related data	Public Work Department (City Engineer & Development Engineer).
Urban Local Body	For Solid waste management related data	Health Department (Sanitation)
Urban Local Body	For IT services related data	E-Governance Department
Urban Local Body	For Vendor committee related data	Market Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Garden Department, Election Department, Education Department, Zilla Udyog Bhawan, Nagpur Residential Hotel Association,
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Central Board.
Development Authority	Building Infrastructure	Town Planning Department Nagpur Municipal Corporation.
	Construction planning	Town Planning Department Nagpur Municipal Corporation.
	Green Building	Data Unavailable
	Rain water harvesting	Town Planning Department Nagpur Municipal Corporation.
	Universal Design Principle	Town Planning Department Nagpur Municipal Corporation.
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MahaVitran / DISCOM
State Disaster management authority		Fire Brigade Department Nagpur Municipal Corporation
State Education Department		Zilla Parishad Nagpur
State Health Department	Health care professionals	Nagpur Deputy Director Health Services.
	Citizen Services	Nagpur Deputy Director Health Services.
	Disease Prevalence	Nagpur Deputy Director Health Services.
	Health Infrastructure	Nagpur Deputy Director Health Services.
State Renewable Energy Development Agency		Maharashtra Energy Development Agency
State Sales / Commercial Taxes Department		Sales Tax Department Nagpur

Designated data owners	Subcategories	Data owners at city level
Town and Country Planning Department	Land Use	Town Planning Department Nagpur Municipal Corporation.
Traffic and Police Department		Traffic Police Department Nagpur
Transport Authorities	Buses	Transport Departmental
	Registered Vehicles	Deputy RTO Nagpur
	Sub urban rail transport	Central Railway / South East central Railway Nagpur.
	Mono Rail Authority	_
	Tramways	_
	Marine Transport Authority	_

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 59 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

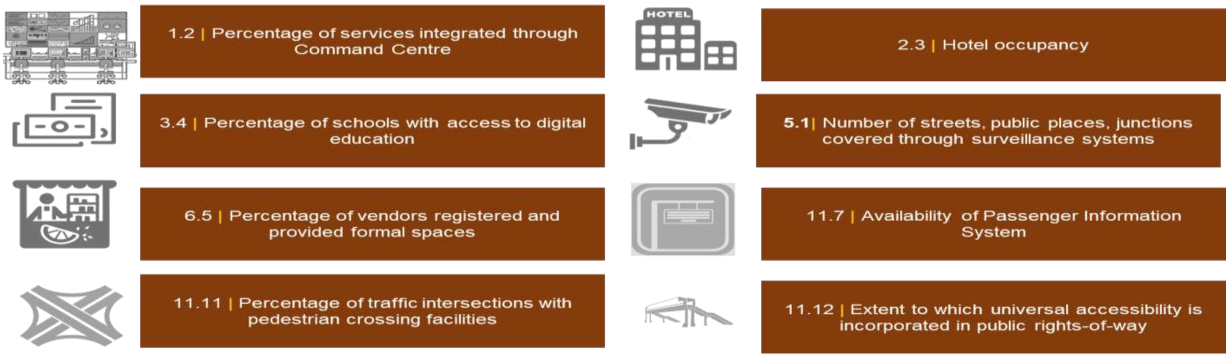
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	4
Town and Country Planning	2
State Health Department	1
Transport Authority	4
Disaster Management	1
Urban Local Body	40
Total	59*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

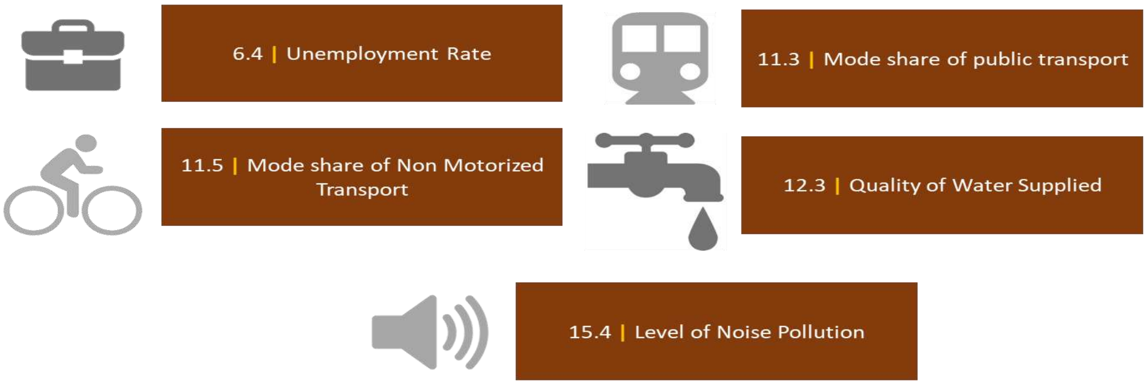
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

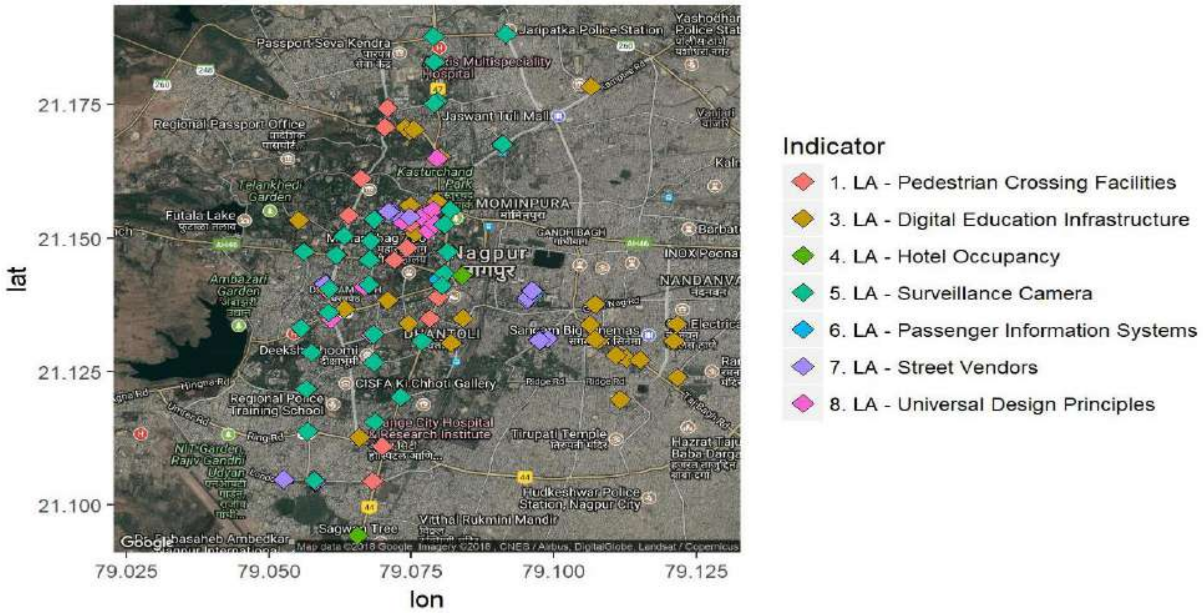
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
21.175
21.150
21.125
21.100
lon
79.025
79.050
79.075
79.100
79.125
Nagpur
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5 City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	43.28%
Identity & Culture	18%
Education	44%
Health	89%
Safety & Security	67%
Economy & Employment	16%
Housing & Inclusiveness	0%
Public Open Spaces	51%
Mixed Land Use & Compactness	17%

Categories	Scores in Percentage
Power Supply	51%
Transport & Mobility	46%
Assured Water Supply	81%
Waste Water Management	70%
Solid Waste Management	74%
Reduced Pollution	81%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

NAMCHI

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Exécutive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the

CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP

#	Challenges	Proposed Solutions
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

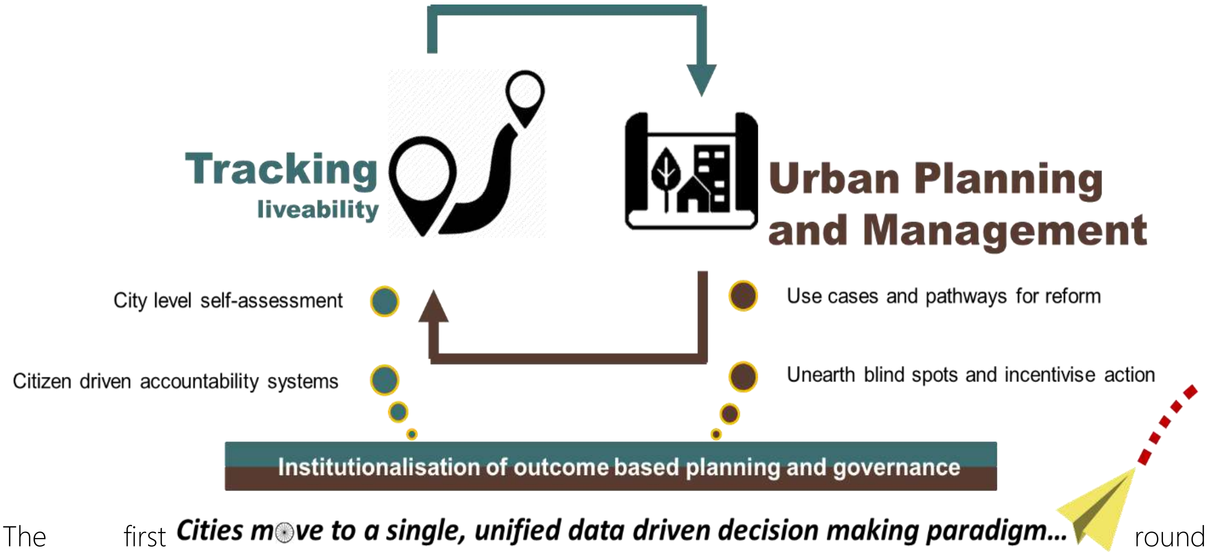
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

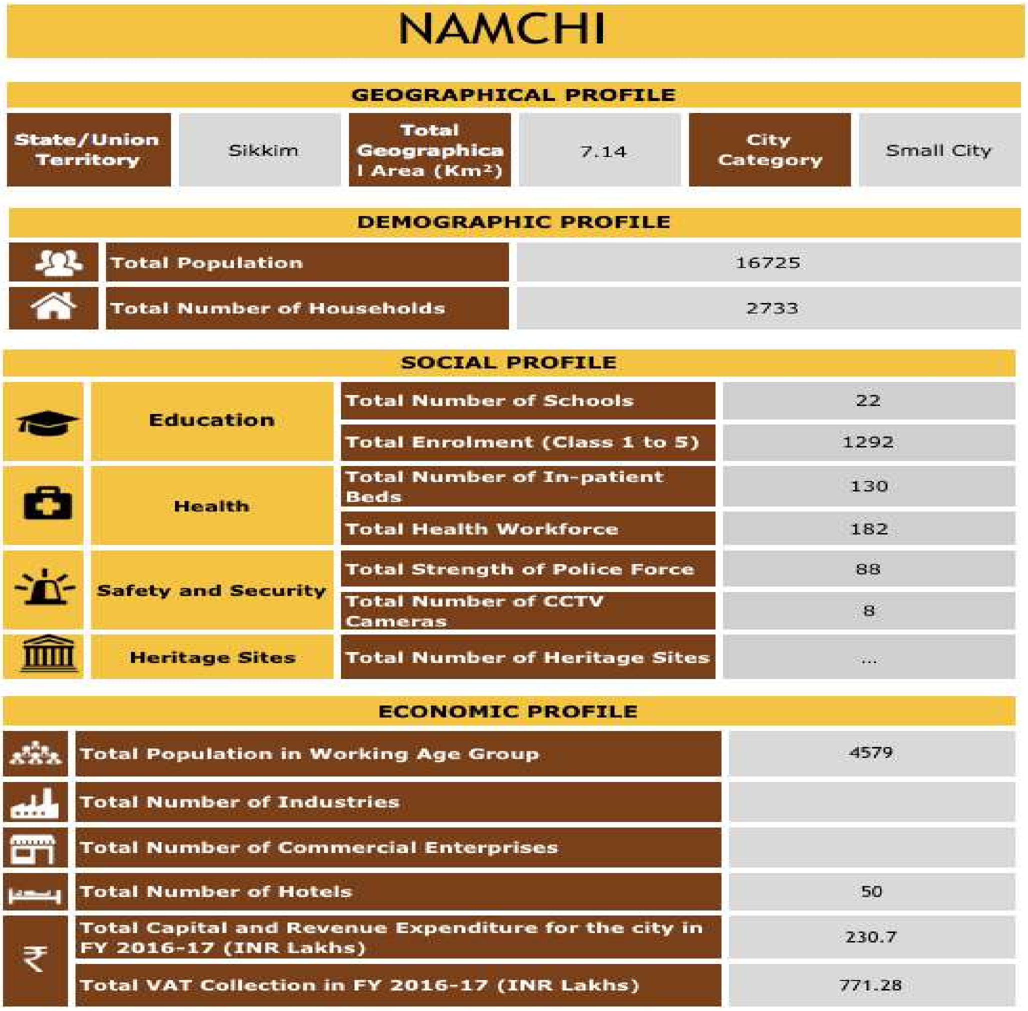

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of

the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NAMCHI

GEOGRAPHICAL PROFILE

State/Union Territory	Sikkim	**Total Geographical Area (Km²)**	7.14	**City Category**	Small City

DEMOGRAPHIC PROFILE

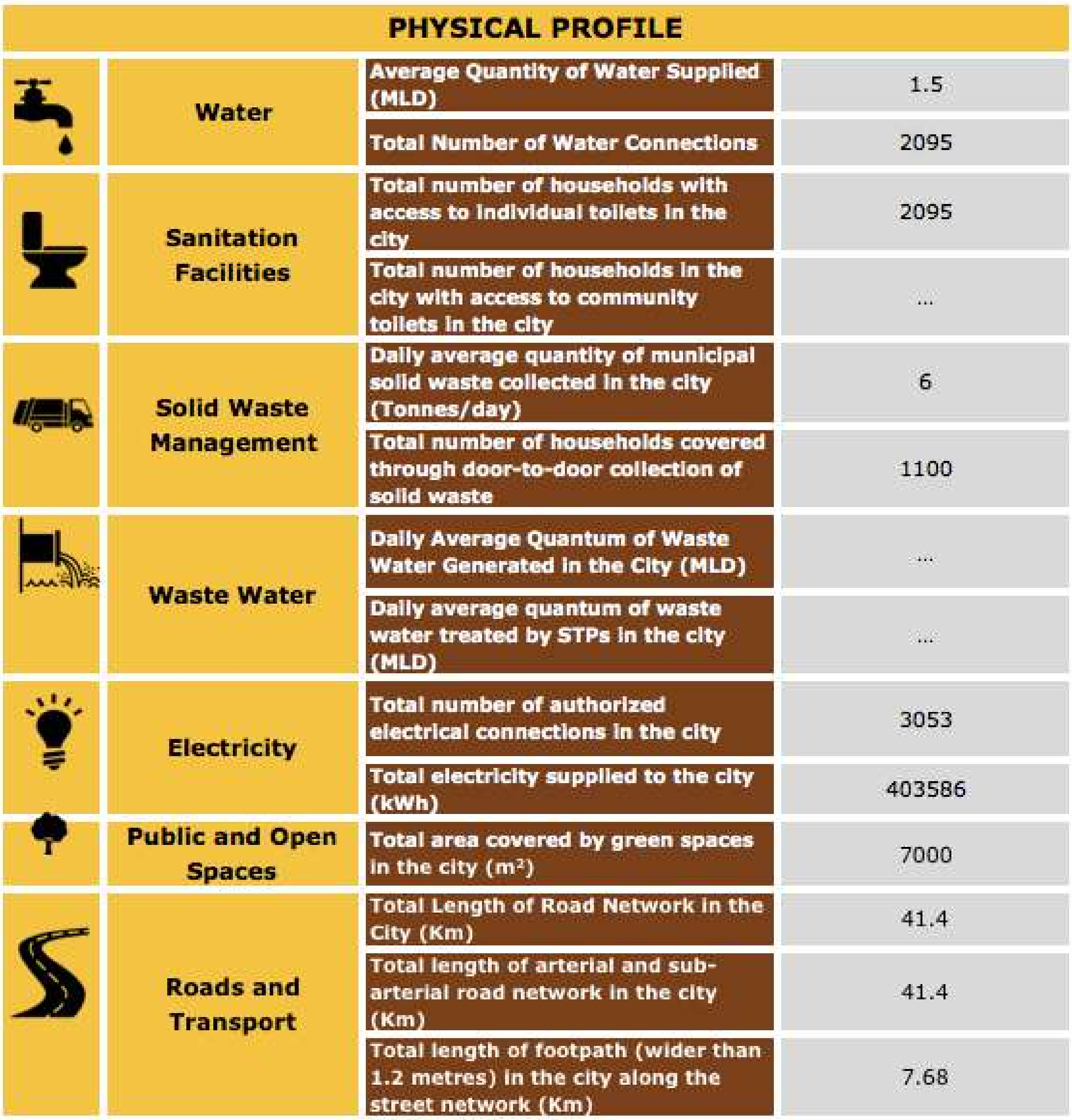
Total Population	16725
Total Number of Households	2733

SOCIAL PROFILE

Education	**Total Number of Schools**	22
	Total Enrolment (Class 1 to 5)	1292
Health	**Total Number of In-patient Beds**	130
	Total Health Workforce	182
Safety and Security	**Total Strength of Police Force**	88
	Total Number of CCTV Cameras	8
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	4579
Total Number of Industries	
Total Number of Commercial Enterprises	
Total Number of Hotels	50
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	230.7
Total VAT Collection in FY 2016-17 (INR Lakhs)	771.28



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	1.5
	Total Number of Water Connections	2095
Sanitation Facilities	Total number of households with access to individual toilets in the city	2095
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	6
	Total number of households covered through door-to-door collection of solid waste	1100
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	3053
	Total electricity supplied to the city (kWh)	403586
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7000
Roads and Transport	Total Length of Road Network in the City (Km)	41.4
	Total length of arterial and sub-arterial road network in the city (Km)	41.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.68

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population

Pillars of Comprehensive Development	Category	Indicators
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year

Pillars of Comprehensive Development	Category	Indicators
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities

Pillars of Comprehensive Development	Category	Indicators
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pol-	15.1 Concentration of SO_2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	lution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	**25 marks**	**5 marks**	**45 marks**
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal council Namchi
Urban Local Body	For Park and Recreation Related Questions	UD&HD (urban development and housing department)
Urban Local Body	For Water Supply and Drainage related questions	PHED (water security and public health engineering department)
Urban Local Body	For Heritage sites related data	Municipal council Namchi
Urban Local Body	For Ecological sites related data	Municipal council Namchi
Urban Local Body	For Housing related data	UD&HD (urban development and housing department)
Urban Local Body	For Building plan related data	UD&HD (urban development and housing department)
Urban Local Body	For Roads related data	UD&HD (urban development and housing department)
Urban Local Body	For Solid waste management related data	Municipal council namchi
Urban Local Body	For IT services related data	Municipal council namchi
Urban Local Body	For Vendor committee related data	Municipal council namchi
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Municipal council namchi
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State pollution control board Gangtok
Development Authority	Building Infrastructure	UD&HD (urban development and housing department)
	Construction planning	UD&HD (urban development and housing department)
	Green Building	UD&HD (urban development and housing department)

	Rain water harvesting	UD&HD (urban development and housing department)
	Universal Design Principle	UD&HD (urban development and housing department)
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Energy and power department namchi
State Disaster management authority		District collector office namchi
State Education Department		HRDD(human resource and development department) south
State Health Department	Health care professionals	Healthcare, human services and family welfare department namchi
	Citizen Services	Healthcare, human services and family welfare department namchi
	Disease Prevalence	Healthcare, human services and family welfare department namchi
	Health Infrastructure	Healthcare, human services and family welfare department namchi
State Renewable Energy Development Agency		SREDA GANGTOK
State Sales / Commercial Taxes Department		Sales and commercial tax Department Gangtok
Town and Country Planning Department	Land Use	UD&HD (urban development and housing department)
Traffic and Police Department		SNT (sikkim nationalised transport department) south
Transport Authorities	Buses	SNT (sikkim nationalised transport department) south
	Registered Vehicles	Motor vechile department south
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 7 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	6
Total	7

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators

(Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

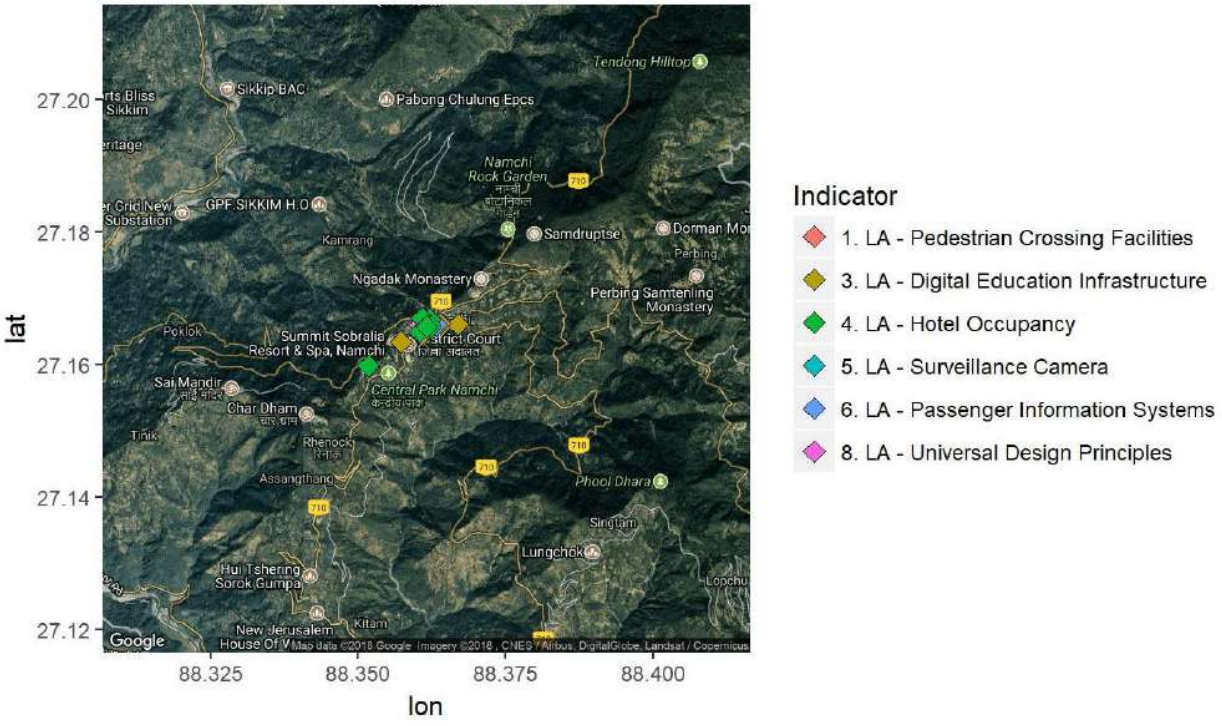
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
lon
27.20
27.18
27.16
27.14
27.12
88.325
88.350
88.375
88.400
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles
Tendong Hilltop
Sikkip BAC
Pabong Chulung Epcs
Namchi Rock Garden
GPF SIKKIM H.O
Kamrang
Samdruptse
Dorman Mo
Perbing
Ngadak Monastery
Perbing Samtenling Monastery
Poklok
Summit Sobralia Resort & Spa, Namchi
District Court
Sai Mandir
Central Park Namchi
Char Dham
Tinik
Rhenock
Assangthang
Phool Dhara
Singtam
Lungchok
Hui Tshering Sorok Gumpa
Lopchu
New Jerusalem House Of V
Kitam
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	30.02%
Identity & Culture	29%
Education	86%
Health	97%
Safety & Security	69%
Economy & Employment	45%
Housing & Inclusiveness	2%
Public Open Spaces	3%
Mixed Land Use & Compactness	0%
Power Supply	48%
Transport & Mobility	34%
Assured Water Supply	65%
Waste Water Management	35%
Solid Waste Management	53%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

NASHIK

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

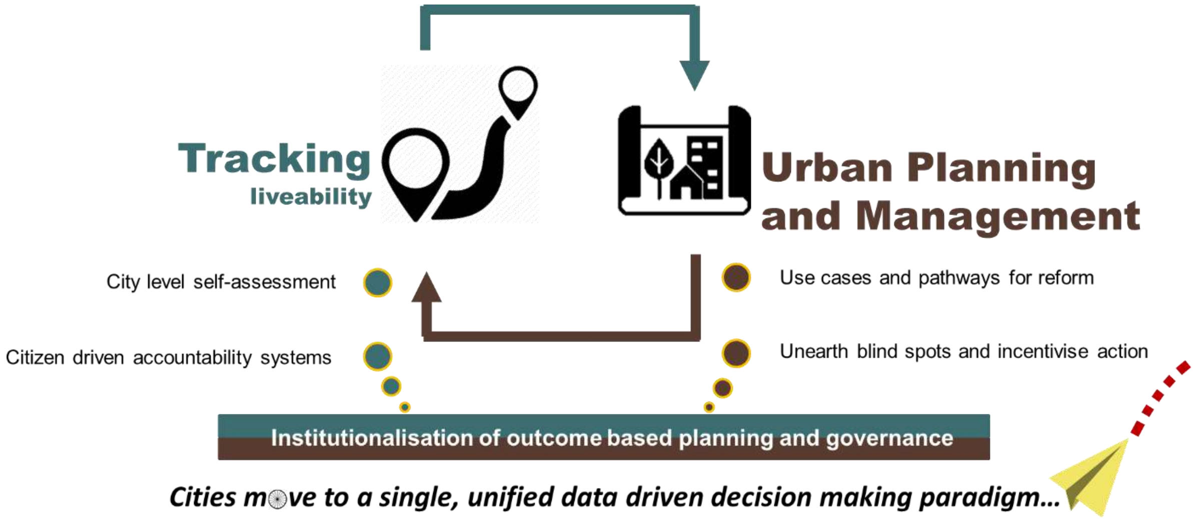
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

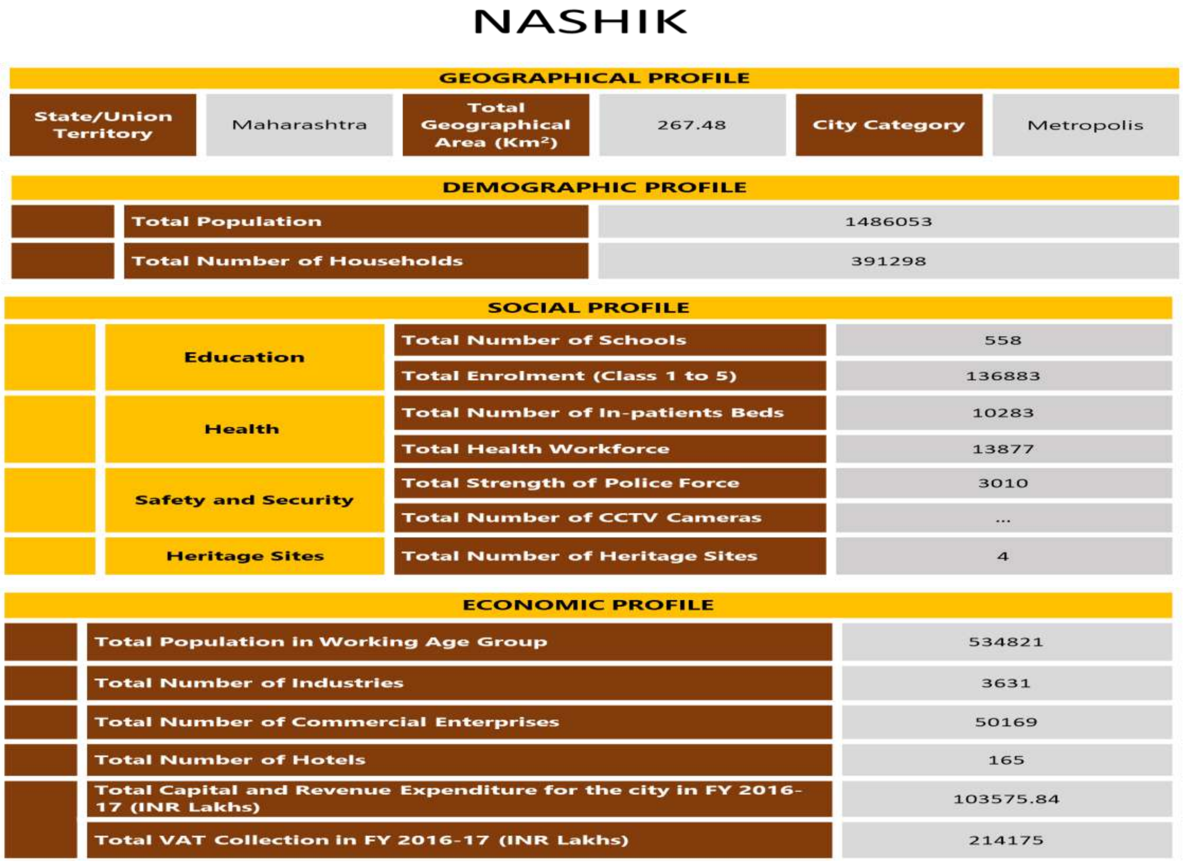
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



NASHIK

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km^2)	267.48	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1486053
Total Number of Households	391298

SOCIAL PROFILE

Education	Total Number of Schools	558
	Total Enrolment (Class 1 to 5)	136883
Health	Total Number of In-patients Beds	10283
	Total Health Workforce	13877
Safety and Security	Total Strength of Police Force	3010
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	534821
Total Number of Industries	3631
Total Number of Commercial Enterprises	50169
Total Number of Hotels	165
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	103575.84
Total VAT Collection in FY 2016-17 (INR Lakhs)	214175

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	410
		Total Number of Water Connections	193516
	Sanitation Facilities	Total number of households with access to individual toilets in the city	339018
		Total number of households in the city with access to community toilets in the city	38950
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	501
		Total number of households covered through door-to-door collection of solid waste	339018
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	288
		Daily average quantum of waste water treated by STPs in the city (MLD)	270
	Electricity	Total number of authorized electrical connections in the city	543289
		Total electricity supplied to the city (kWh)	1519800
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	7865100
	Roads and Transport	Total Length of Road Network in the City (Km)	1901
		Total length of arterial and sub-arterial road network in the city (Km)	120
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	65.6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

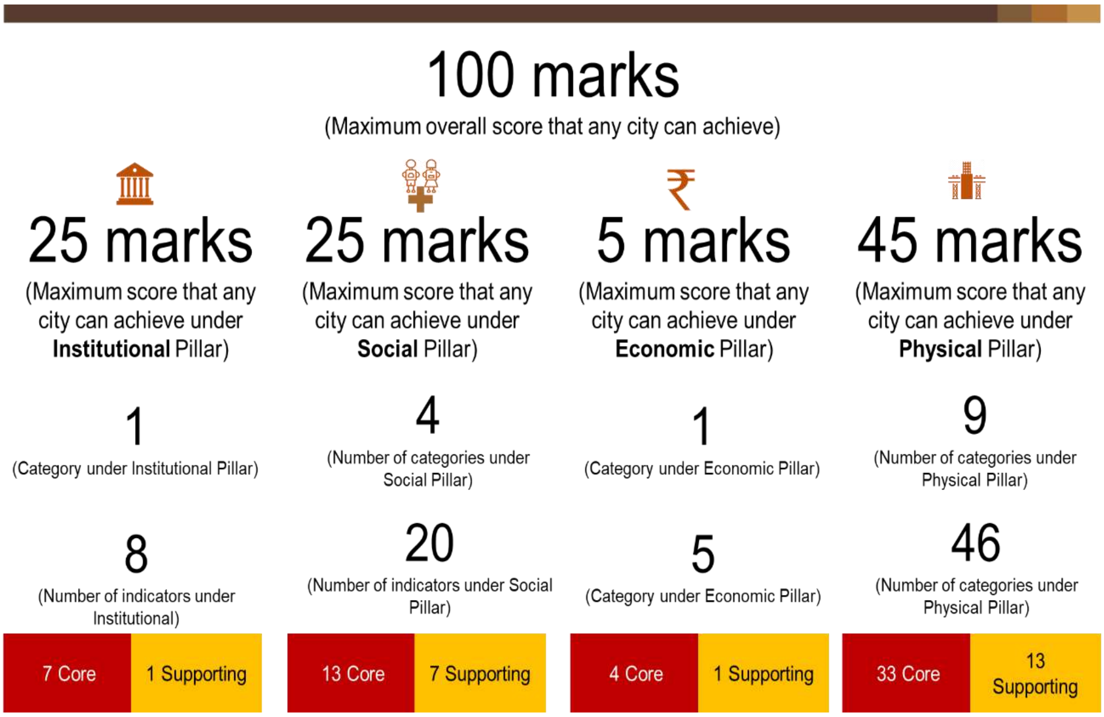
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, Nashik Municipal Corporation Excise Department
Urban Local Body	For Park and Recreation Related Questions	Town Planning, NMC District Collectorate office, NMC
Urban Local Body	For Water Supply and Drainage related questions	Maharashtra Industrial development Corporation, Nashik Public work department, Nashik Irrigation Department, Nashik
Urban Local Body	For Heritage sites related data	Tourism department
Urban Local Body	For Ecological sites related data	NMC
Urban Local Body	For Housing related data	Maharashtra Housing Development Corporation, Slum Department, NMC
Urban Local Body	For Building plan related data	Town Planning, NMC
Urban Local Body	For Roads related data	Town Planning, NMC
Urban Local Body	For Solid waste management related data	Waste Management Department, NMC
Urban Local Body	For IT services related data	IT Department, NMC
Urban Local Body	For Vendor committee related data	Nashik Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board
Development Authority	Building Infrastructure	Town Planning, NMC
	Construction planning	Town Planning, NMC
	Green Building	Town Planning, NMC

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Town Planning, NMC
	Universal Design Principle	Town Planning, NMC
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM, Nashik Maharashtra State Electricity Development Corporation
State Disaster management authority		Fire fight and disaster management unit, NMC
State Education Department		District Education Department Education Department, NMC
State Health Department	Health care professionals	Civil Hospital, Nashik
	Citizen Services	Civil Hospital, Nashik
	Disease Prevalence	Civil Hospital, Nashik
	Health Infrastructure	Civil Hospital, Nashik Road and Transport Department
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales Taxes department, Nashik
Town and Country Planning Department	Land Use	Town Planning, NMC
Traffic and Police Department		Commissioner of Police, Nashik
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Maharashtra State Transport department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 83 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**1**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**5**
Development Authority	**0**
Pollution Control Board	**5**
State Renewable Energy Department	**1**
Town and Country Planning	**0**
State Health Department	**4**
Transport Authority	**2**
Disaster Management	**1**
Urban Local Body	**62**
Total	**83***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	61.58%
Identity & Culture	40%
Education	86%
Health	92%
Safety & Security	65%
Economy & Employment	3%
Housing & Inclusiveness	16%
Public Open Spaces	23%
Mixed Land Use & Compactness	50%
Power Supply	60%
Transport & Mobility	30%
Assured Water Supply	63%
Waste Water Management	80%
Solid Waste Management	65%
Reduced Pollution	84%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

NAVI MUMBAI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

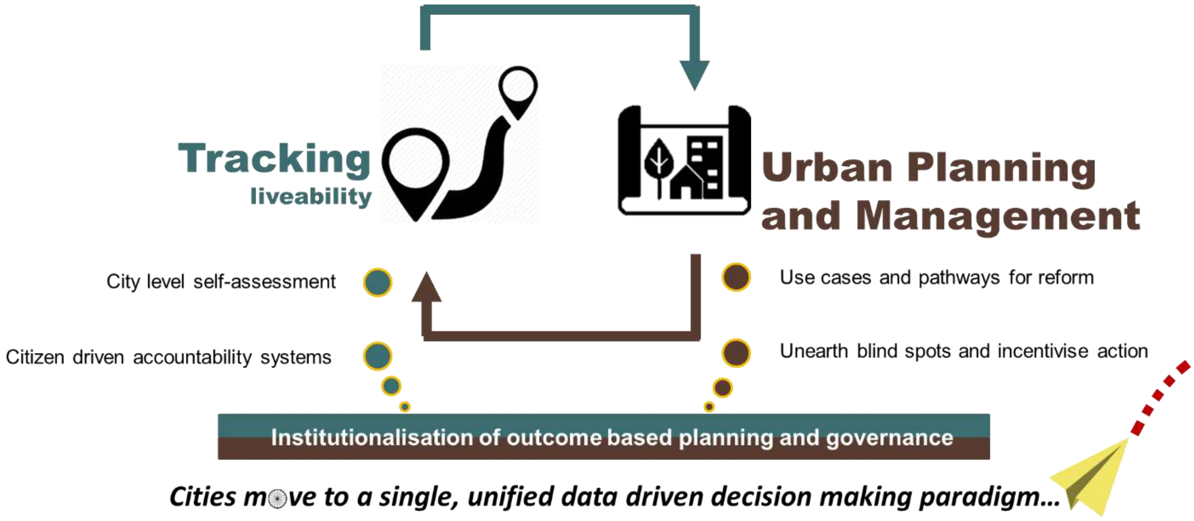
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

NAVI MUMBAI

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	109.59	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1120547
Total Number of Households	273626

SOCIAL PROFILE

Education	**Total Number of Schools**	418
	Total Enrolment (Class 1 to 5)	118884
Health	**Total Number of In-patients Beds**	5836
	Total Health Workforce	3219
Safety and Security	**Total Strength of Police Force**	4654
	Total Number of CCTV Cameras	282
Heritage Sites	**Total Number of Heritage Sites**	...

Total Population in Working Age Group	1262534
Total Number of Industries	4815
Total Number of Commercial Enterprises	51661
Total Number of Hotels	48
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	107125.34
Total VAT Collection in FY 2016-17 (INR Lakhs)	290978.53

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	392
		Total Number of Water Connections	134025
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	228420
		Total number of households in the city with access to community toilets in the city	45006
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	707.6
		Total number of households covered through door-to-door collection of solid waste	273626
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	257.15
		Daily average quantum of waste water treated by STPs in the city (MLD)	205
	Electricity	**Total number of authorized electrical connections in the city**	473766
		Total electricity supplied to the city (kWh)	3239774000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	37616598
	Roads and Transport	**Total Length of Road Network in the City (Km)**	506.12
		Total length of arterial and sub-arterial road network in the city (Km)	52.97
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	423.69

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

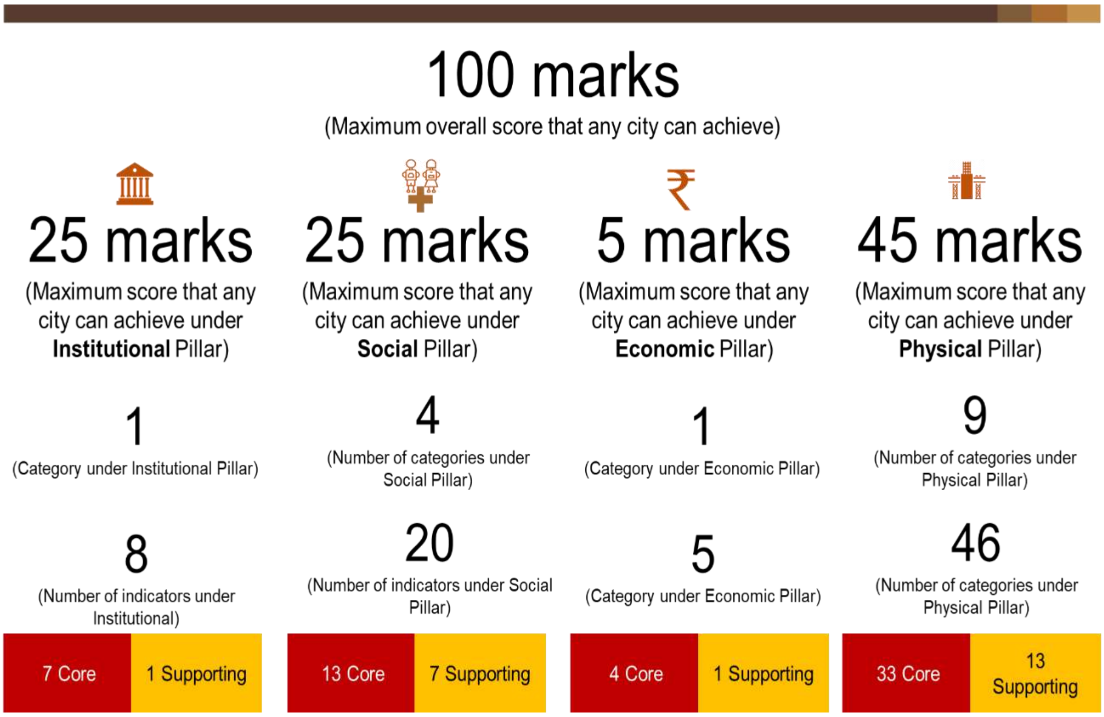
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Garden department
Urban Local Body	For Water Supply and Drainage	Water department

Designated data owners	Subcategories	Data owners at city level
	related questions	
Urban Local Body	For Heritage sites related data	License department
Urban Local Body	For Ecological sites related data	License department
Urban Local Body	For Housing related data	Town planning department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	License department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	City engineer department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Town planning department
State Sales / Commercial Taxes Department		Accounts department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department

Designated data owners	Subcategories	Data owners at city level
	Registered Vehicles	Transport department
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 318 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**20**
Traffic and Police Department	**16**
Development Authority	**38**
Pollution Control Board	**6**
State Renewable Energy Department	**3**
Town and Country Planning	**3**
State Health Department	**26**
Transport Authority	**18**
Disaster Management	**2**
Urban Local Body	**180**
Total	**318***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

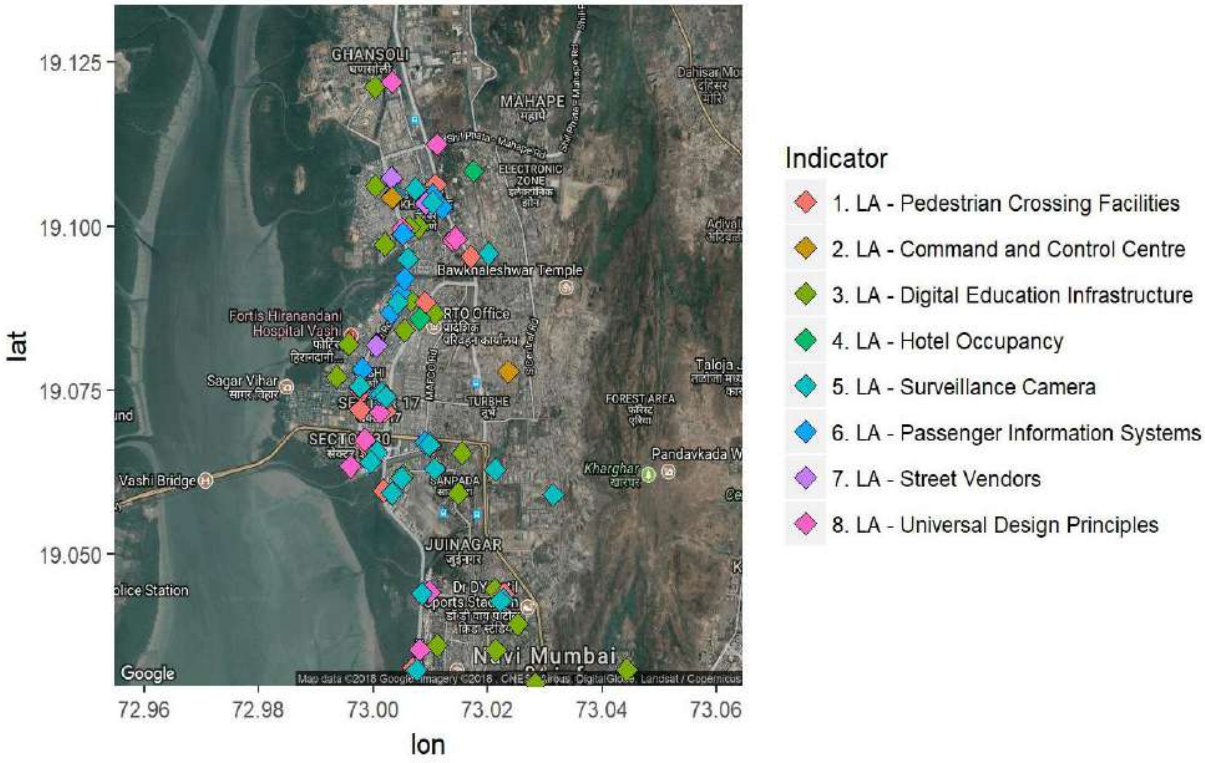
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Sagar Vihar
SECTOR 20
TURBHE
SANPADA
JUINAGAR
Dr DY Patil Sports Stadium
Navi Mumbai
Vashi Bridge
Kharghar
Pandavkada W
FOREST AREA
Taloja
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	68.51%
Identity & Culture	50%
Education	96%
Health	99%
Safety & Security	98%
Economy & Employment	21%
Housing & Inclusiveness	11%
Public Open Spaces	50%
Mixed Land Use & Compactness	21%
Power Supply	46%
Transport & Mobility	65%
Assured Water Supply	82%
Waste Water Management	77%
Solid Waste Management	84%
Reduced Pollution	90%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

PANAJI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.
An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.
For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed

and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.
The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.

#	Challenges	Proposed Solutions
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

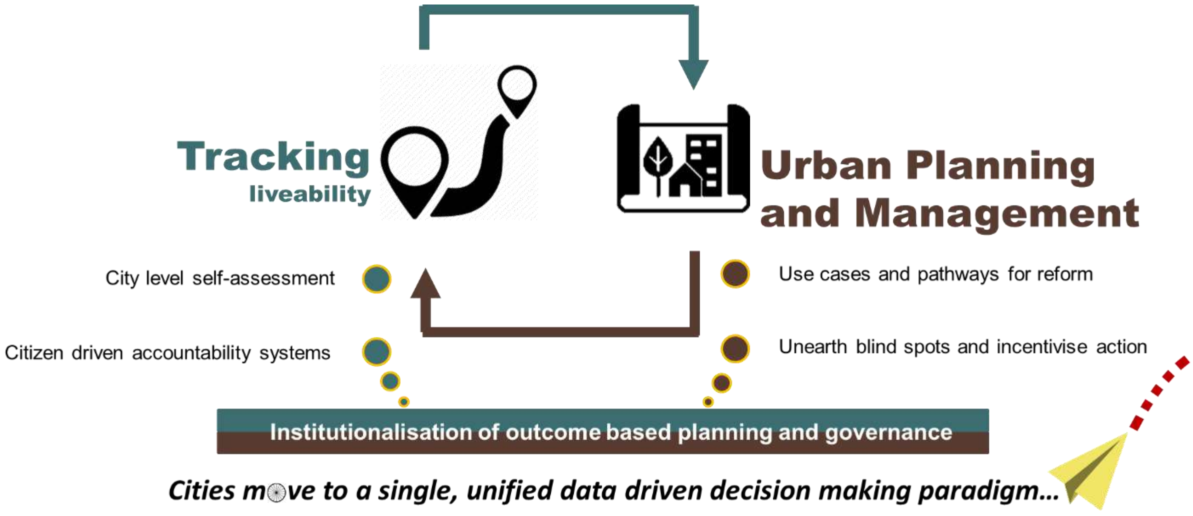
#	Challenges	Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

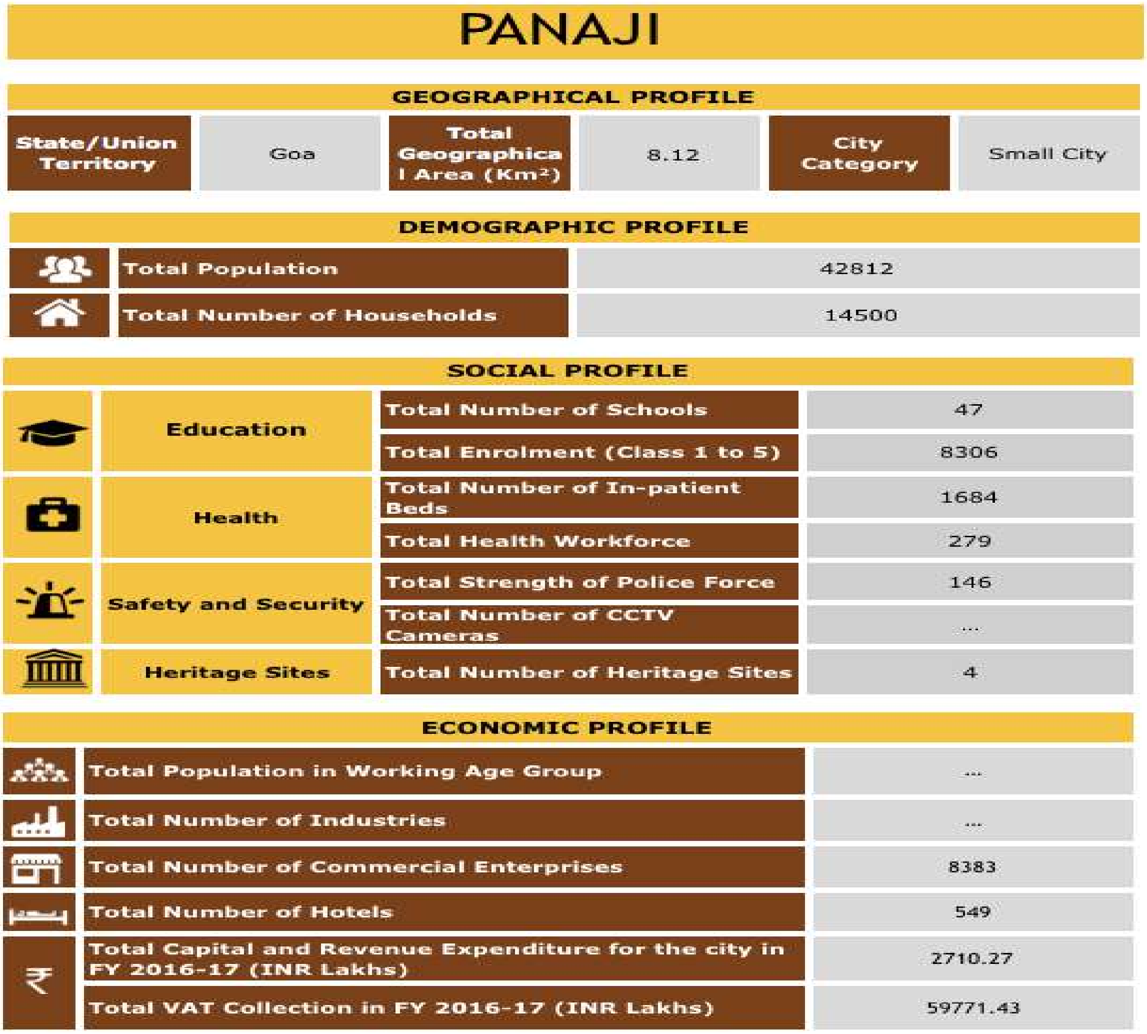
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PANAJI

GEOGRAPHICAL PROFILE

State/Union Territory	Goa	Total Geographical Area (Km²)	8.12	City Category	Small City

DEMOGRAPHIC PROFILE

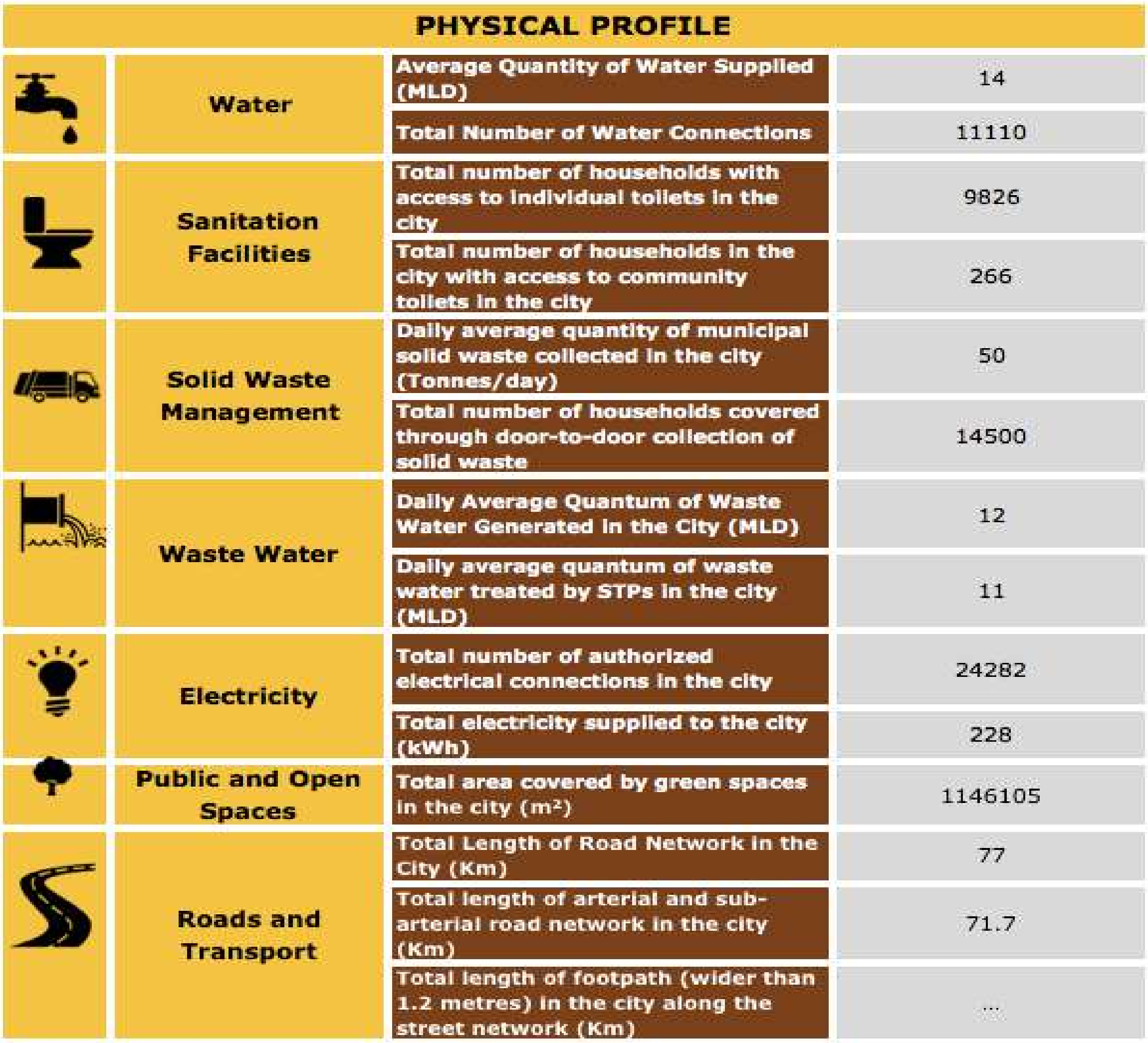
Total Population	42812
Total Number of Households	14500

SOCIAL PROFILE

Education	Total Number of Schools	47
	Total Enrolment (Class 1 to 5)	8306
Health	Total Number of In-patient Beds	1684
	Total Health Workforce	279
Safety and Security	Total Strength of Police Force	146
	Total Number of CCTV Cameras	...
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	...
Total Number of Industries	...
Total Number of Commercial Enterprises	8383
Total Number of Hotels	549
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	2710.27
Total VAT Collection in FY 2016-17 (INR Lakhs)	59771.43



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	14
	Total Number of Water Connections	11110
Sanitation Facilities	Total number of households with access to individual toilets in the city	9826
	Total number of households in the city with access to community toilets in the city	266
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	50
	Total number of households covered through door-to-door collection of solid waste	14500
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	12
	Daily average quantum of waste water treated by STPs in the city (MLD)	11
Electricity	Total number of authorized electrical connections in the city	24282
	Total electricity supplied to the city (kWh)	228
Public and Open Spaces	Total area covered by green spaces in the city (m²)	1146105
Roads and Transport	Total Length of Road Network in the City (Km)	77
	Total length of arterial and sub-arterial road network in the city (Km)	71.7
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	...

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive

development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollu-	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	tion	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core	13 Core	4 Core	33 Core
1 Supporting	7 Supporting	1 Supporting	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by

the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Corporation of City of Panaji
Urban Local Body	For Park and Recreation Related Questions	Corporation of City of Panaji
Urban Local Body	For Water Supply and Drainage related questions	Public Works Department
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related	North Goa Planning and Development Author-

Designated data owners	Subcategories	Data owners at city level
	data	ity
Urban Local Body	For Housing related data	Corporation of City of Panaji and North Goa Planning and Development Authority
Urban Local Body	For Building plan related data	Corporation of City of Panaji and North Goa Planning and Development Authority
Urban Local Body	For Roads related data	Transport Department
Urban Local Body	For Solid waste management related data	Corporation of City of Panaji
Urban Local Body	For IT services related data	Corporation of City of Panaji and Department of Information Technology
Urban Local Body	For Vendor committee related data	Corporation of City of Panaji
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Corporation of City of Panaji
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Goa Pollution Control Board
Development Authority	Building Infrastructure	Corporation of City of Panaji and North Goa Planning and Development Authority
	Construction planning	Corporation of City of Panaji
	Green Building	North Goa Planning and Development Authority
	Rain water harvesting	Water Resource Department
	Universal Design Principle	North Goa Planning and Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department
State Disaster management authority		
State Education De-		

Designated data owners	Subcategories	Data owners at city level
partment		
State Health Department	Health care professionals	Directorate of Health Services, Panaji
	Citizen Services	Directorate of Health Services, Panaji
	Disease Prevalence	Directorate of Health Services, Panaji
	Health Infrastructure	Directorate of Health Services, Panaji
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		Office of the Commissioner of Commercial Taxes
Town and Country Planning Department	Land Use	Town and Country Planning Department and North Goa Planning and Development Authority
Traffic and Police Department		
Transport Authorities	Buses	Directorate of Transport
	Registered Vehicles	Directorate of Transport
	Sub urban rail transport	Directorate of Transport
	Mono Rail Authority	Directorate of Transport
	Tramways	Directorate of Transport
	Marine Transport Authority	River Navigation Department

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 30 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	3
DISCOM/Electricity Department	2
Traffic and Police Department	3
Development Authority	2
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	1
Transport Authority	4
Disaster Management	0
Urban Local Body	13
Total	30

.

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

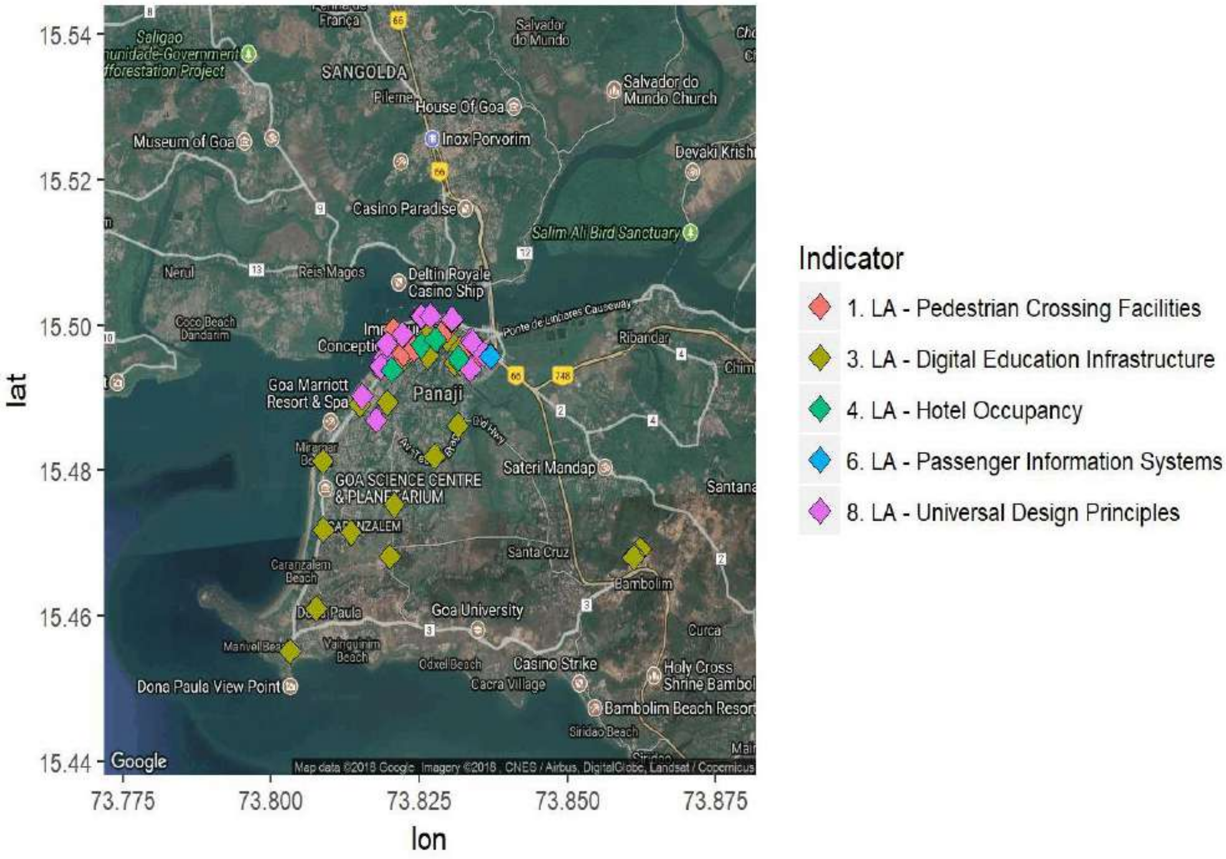
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


15.54
15.52
15.50
15.48
15.46
15.44
lat
73.775
73.800
73.825
73.850
73.875
lon
Panaji
SANGOLDA
Salvador do Mundo
Museum of Goa
Casino Paradise
Salim Ali Bird Sanctuary
Deltin Royale Casino Ship
Goa Marriott Resort & Spa
GOA SCIENCE CENTRE & PLANETARIUM
Sateri Mandap
Santa Cruz
Bambolim
Goa University
Dona Paula View Point
Casino Strike
Holy Cross Shrine Bambolim
Bambolim Beach Resort
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	52.22%
Identity & Culture	9%
Education	98%
Health	81%
Safety & Security	67%
Economy & Employment	33%
Housing & Inclusiveness	0%
Public Open Spaces	51%
Mixed Land Use & Compactness	0%
Power Supply	71%
Transport & Mobility	11%
Assured Water Supply	57%
Waste Water Management	55%
Solid Waste Management	68%
Reduced Pollution	64%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

PASIGHAT

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring

#	Challenges	Proposed Solutions
	of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

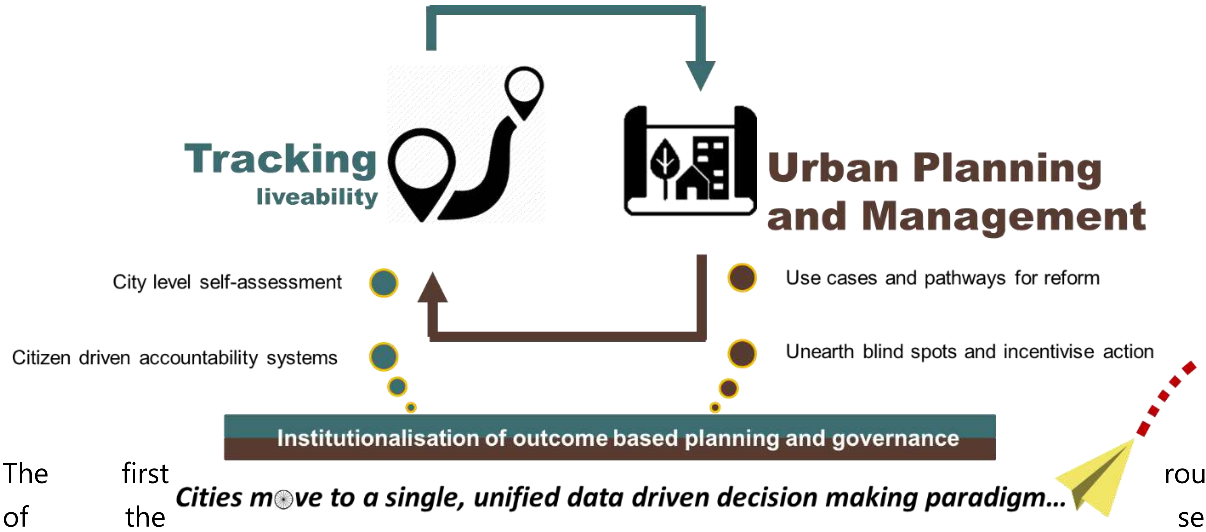
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more ‘liveable.’ The overarching goal of these initiatives is to move from an input-based approach to a ‘citizen centric-outcome based’ assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of ‘Liveability Standards’ relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an ‘Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

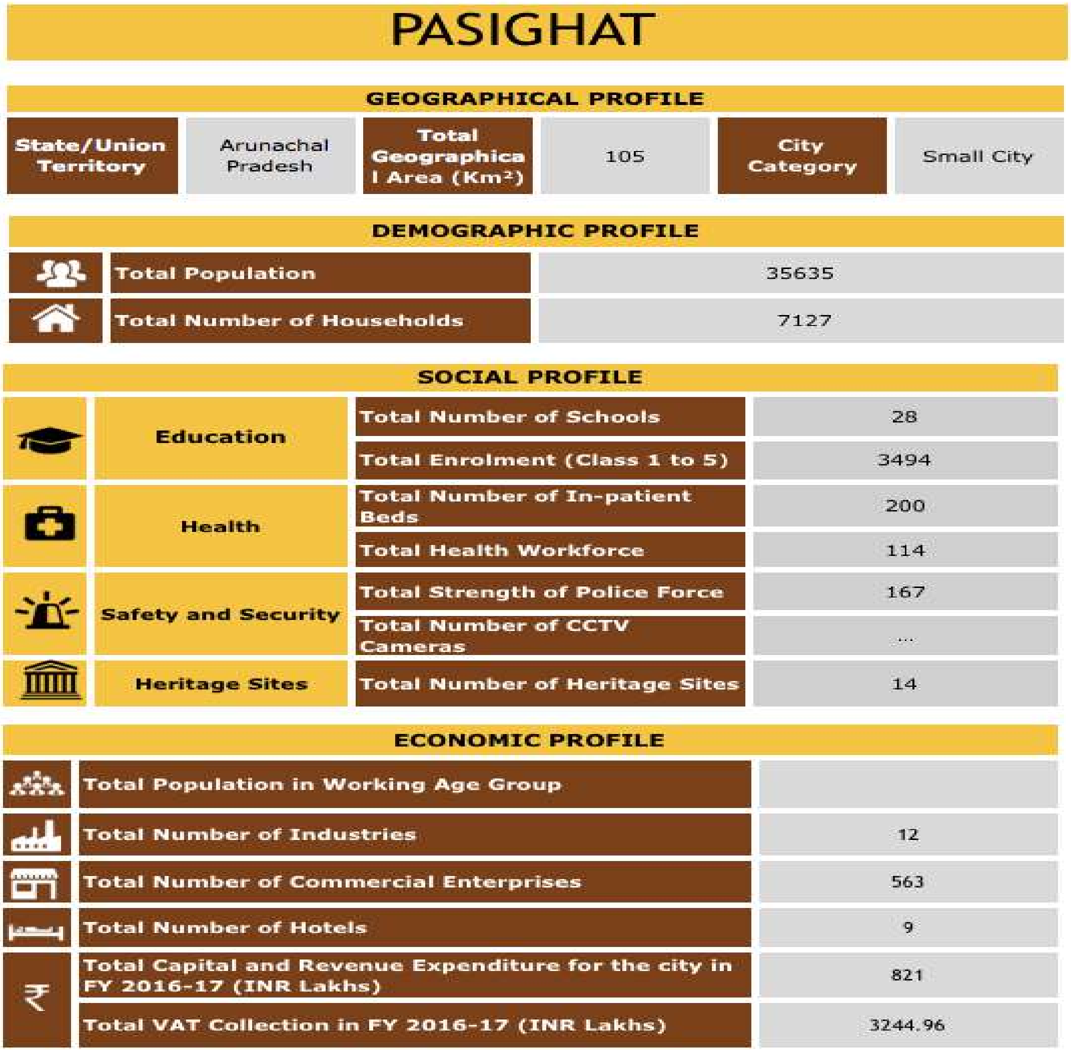
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city’s liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the sessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PASIGHAT

GEOGRAPHICAL PROFILE

State/Union Territory	Arunachal Pradesh	**Total Geographical Area (Km²)**	105	**City Category**	Small City

DEMOGRAPHIC PROFILE

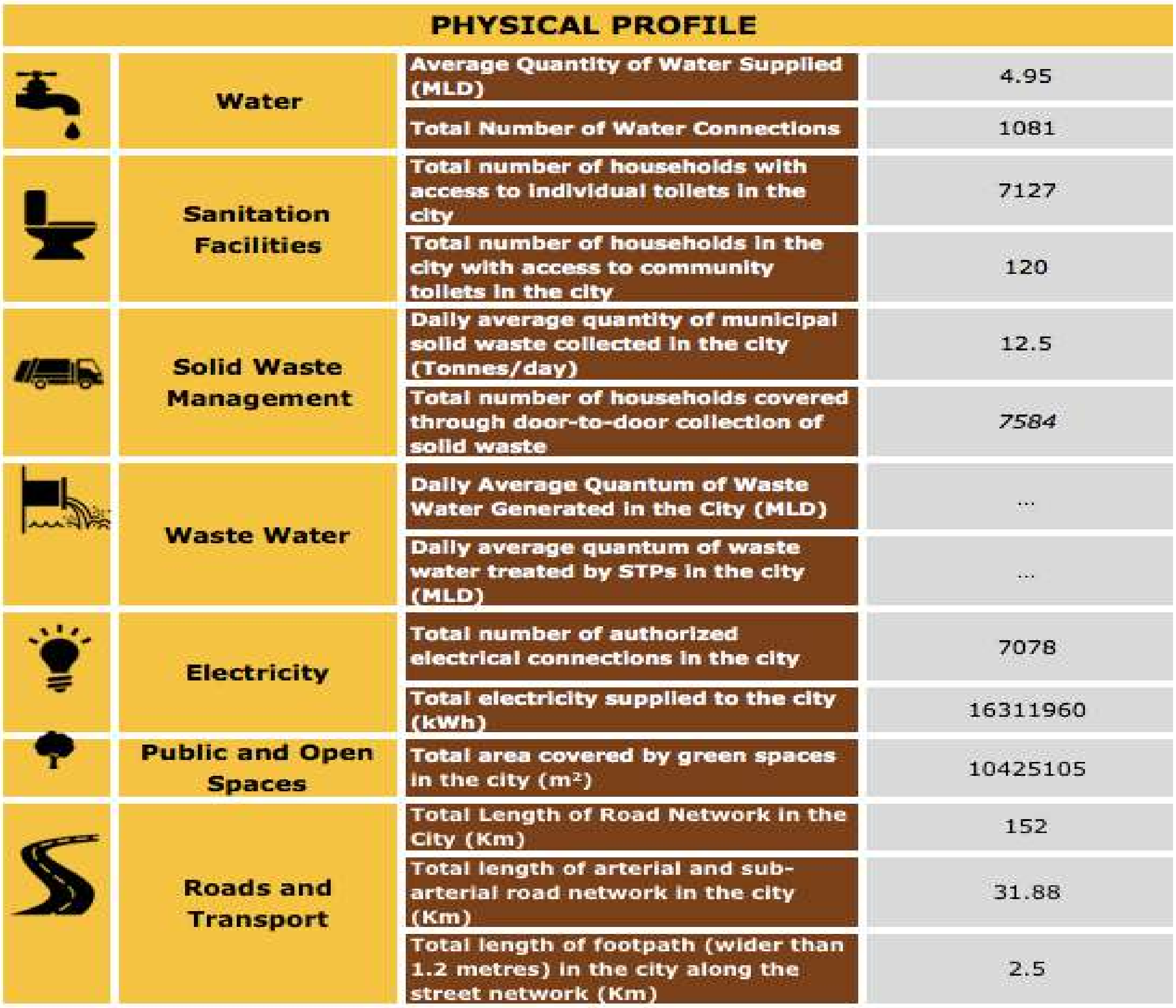
Total Population	35635
Total Number of Households	7127

SOCIAL PROFILE

Education	**Total Number of Schools**	28
	Total Enrolment (Class 1 to 5)	3494
Health	**Total Number of In-patient Beds**	200
	Total Health Workforce	114
Safety and Security	**Total Strength of Police Force**	167
	Total Number of CCTV Cameras	...
Heritage Sites	**Total Number of Heritage Sites**	14

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	12
Total Number of Commercial Enterprises	563
Total Number of Hotels	9
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	821
Total VAT Collection in FY 2016-17 (INR Lakhs)	3244.96



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	4.95
	Total Number of Water Connections	1081
Sanitation Facilities	Total number of households with access to individual toilets in the city	7127
	Total number of households in the city with access to community toilets in the city	120
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	12.5
	Total number of households covered through door-to-door collection of solid waste	*7584*
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	7078
	Total electricity supplied to the city (kWh)	16311960
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	10425105
Roads and Transport	Total Length of Road Network in the City (Km)	152
	Total length of arterial and sub-arterial road network in the city (Km)	31.88
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city

Pillars of Comprehensive Development	Category	Indicators
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year

Pillars of Comprehensive Development	Category	Indicators
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters

Pillars of Comprehensive Development	Category	Indicators
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains

Pillars of Comprehensive Development	Category	Indicators
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

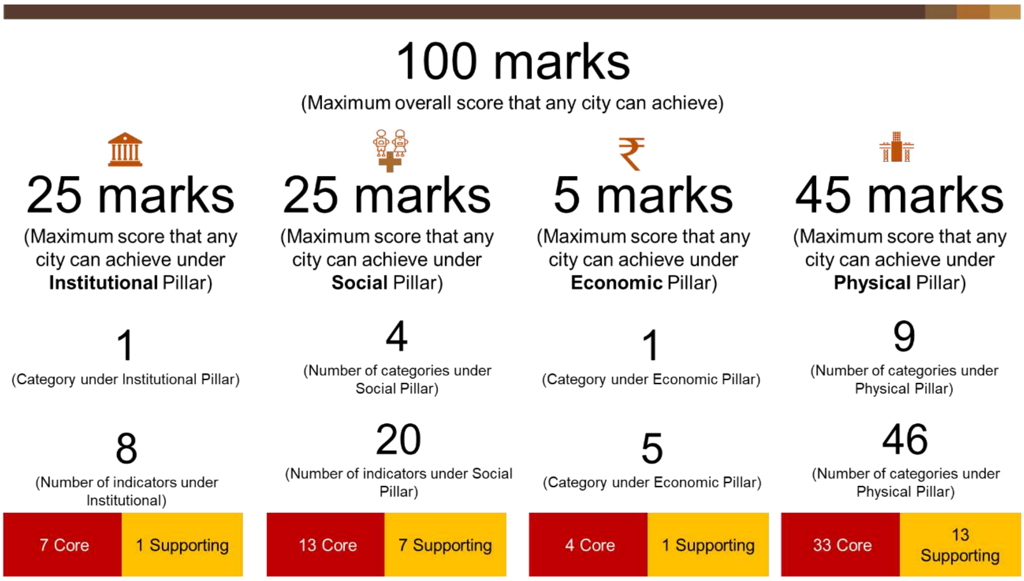
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal department
Urban Local Body	For Park and Recreation Related Questions	Municipal department
Urban Local Body	For Water Supply and Drainage related questions	Water department
Urban Local Body	For Heritage sites related data	Municipal council
Urban Local Body	For Ecological sites related data	Municipal council and town planning department
Urban Local Body	For Housing related data	Town planning department
Urban Local Body	For Building plan related data	Town planning department
Urban Local Body	For Roads related data	District Transport department
Urban Local Body	For Solid waste management related data	Municipal council
Urban Local Body	For IT services related data	Municipal council
Urban Local Body	For Vendor committee related data	Municipal council and town planning g Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	No
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Town planning department
	Construction planning	TownTown planning department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	Town planning department

DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	By Electrical department
State Disaster management authority		Filled data by district disaster management officer itself
State Education Department		Collected data from Udice education department
State Health Department	Health care professionals	Collected data from office of general hospital pasighat.
	Citizen Services	Collected data by district medical officer.
	Disease Prevalence	This data has taken from the Ashamed diagnostic lab pasighat by the nodel officer
	Health Infrastructure	Collected data from all the hospitals of pasighat city.
State Renewable Energy Development Agency		Data feed by project officer of Arunachal Pradesh energy Development Agency who itself is the nodal officer .
State Sales / Commercial Taxes Department		All the datas were feed by superintendent of tax and exice Development.
Town and Country Planning Department	Land Use	Data feed by secretary Municipal council .
Traffic and Police Department		
Transport Authorities	Buses	datas were feed by district transport officer.
	Registered Vehicles	Datas were feed by district transport officer.
	Sub urban rail transport	Rail service is not available in the pasigha.Confirmation given by district transport officer.
	Mono Rail Authority	Rail service is not available in Pasighat.Confirmation given by district transport officer.

	Tramways	Service not available.Confirmation given by district transport officer.
	Marine Transport Authority	Service not available.Confirmation given by district transport officer.

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 0 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

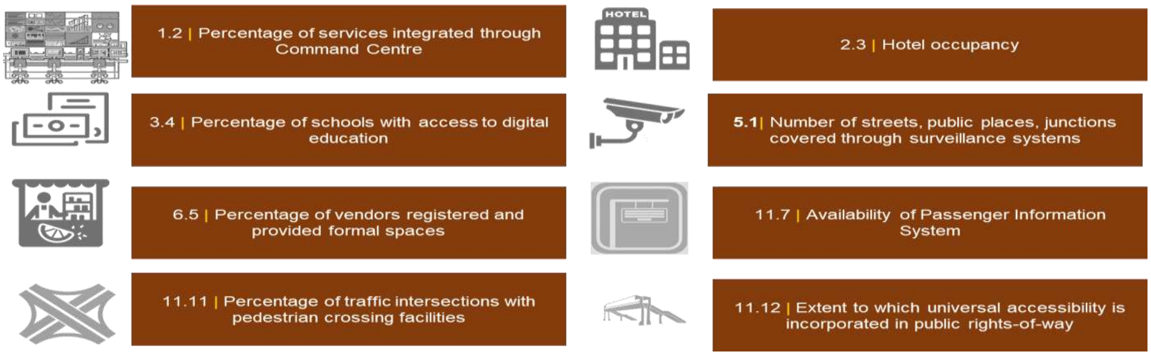
Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0

State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	0

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

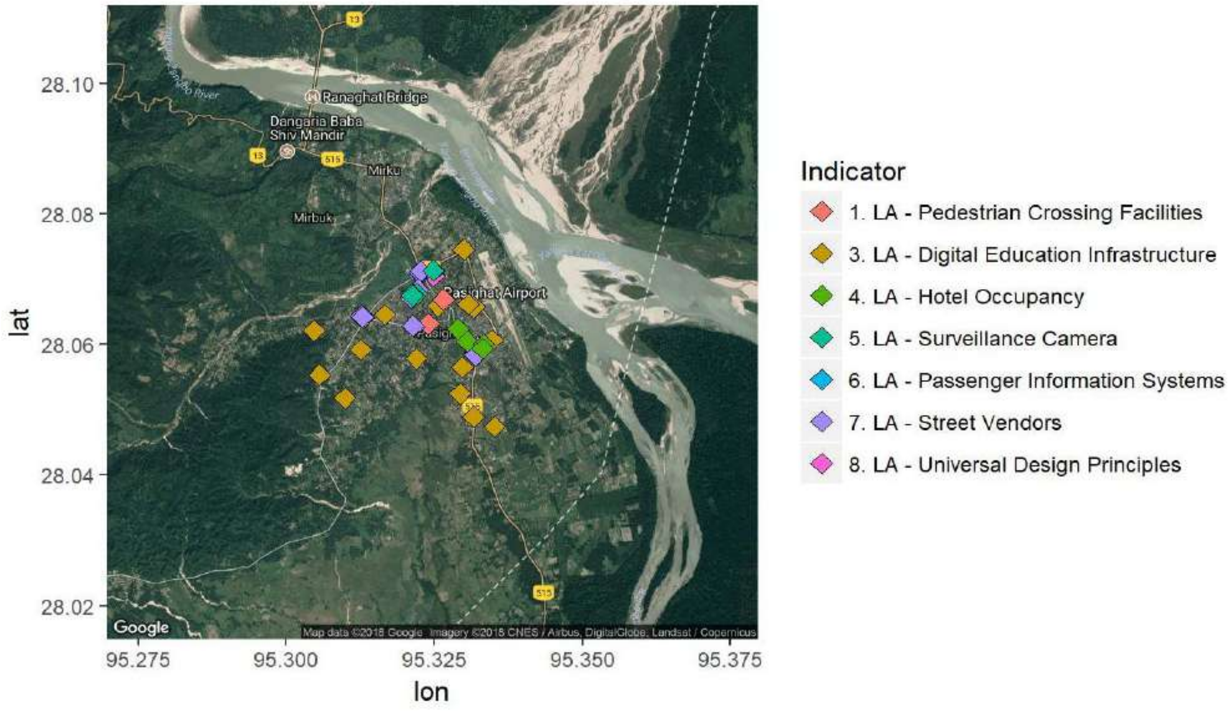
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Ranaghat Bridge
Dangaria Baba Shiv Mandir
Mirku
Mirbuk
Pasighat Airport
Pasighat
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
28.10
28.08
28.06
28.04
28.02
lon
95.275
95.300
95.325
95.350
95.375
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	40.40%
Identity & Culture	17%
Education	82%
Health	97%
Safety & Security	58%
Economy & Employment	25%
Housing & Inclusiveness	8%
Public Open Spaces	61%
Mixed Land Use & Compactness	0%
Power Supply	41%
Transport & Mobility	32%
Assured Water Supply	24%
Waste Water Management	20%
Solid Waste Management	63%
Reduced Pollution	5%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

PATNA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

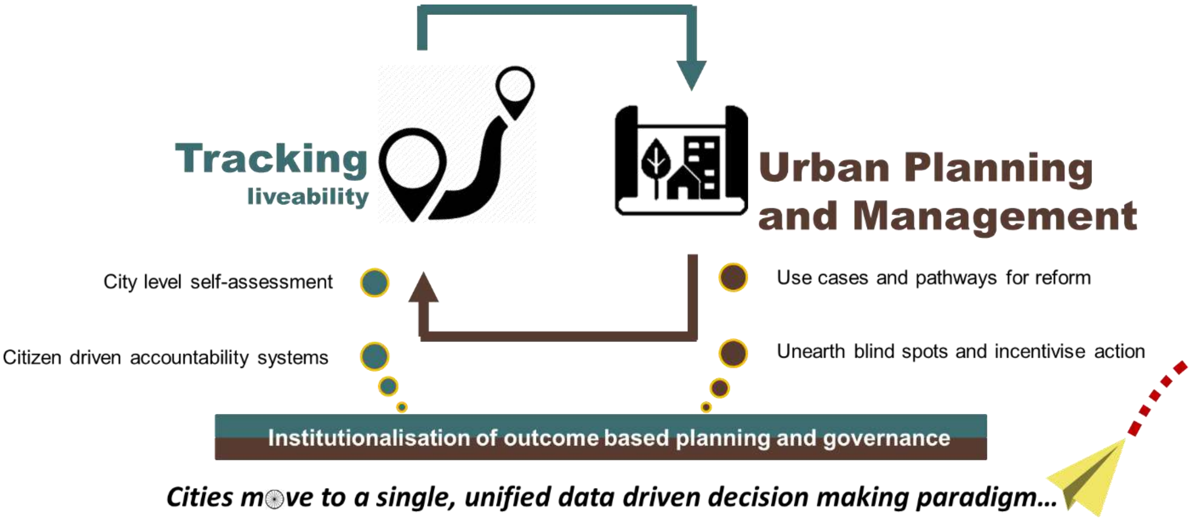
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PATNA

GEOGRAPHICAL PROFILE

State/Union Territory	Bihar	**Total Geographical Area (Km^2)**	109.218	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1852644
Total Number of Households	328296

SOCIAL PROFILE

Education	**Total Number of Schools**	501
	Total Enrolment (Class 1 to 5)	63523
Health	**Total Number of In-patient Beds**	10182
	Total Health Workforce	3560
Safety and Security	**Total Strength of Police Force**	11190
	Total Number of CCTV Cameras	412
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	139
Total Number of Commercial Enterprises	216
Total Number of Hotels	59
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29353.55
Total VAT Collection in FY 2016-17 (INR Lakhs)	...

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	132
	Total Number of Water Connections	179695
Sanitation Facilities	Total number of households with access to individual toilets in the city	205814
	Total number of households in the city with access to community toilets in the city	1275
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	754
	Total number of households covered through door-to-door collection of solid waste	94016
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	224.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	121
Electricity	Total number of authorized electrical connections in the city	433805
	Total electricity supplied to the city (kWh)	225143.19
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1660000
Roads and Transport	Total Length of Road Network in the City (Km)	2516
	Total length of arterial and sub-arterial road network in the city (Km)	53
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	26

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

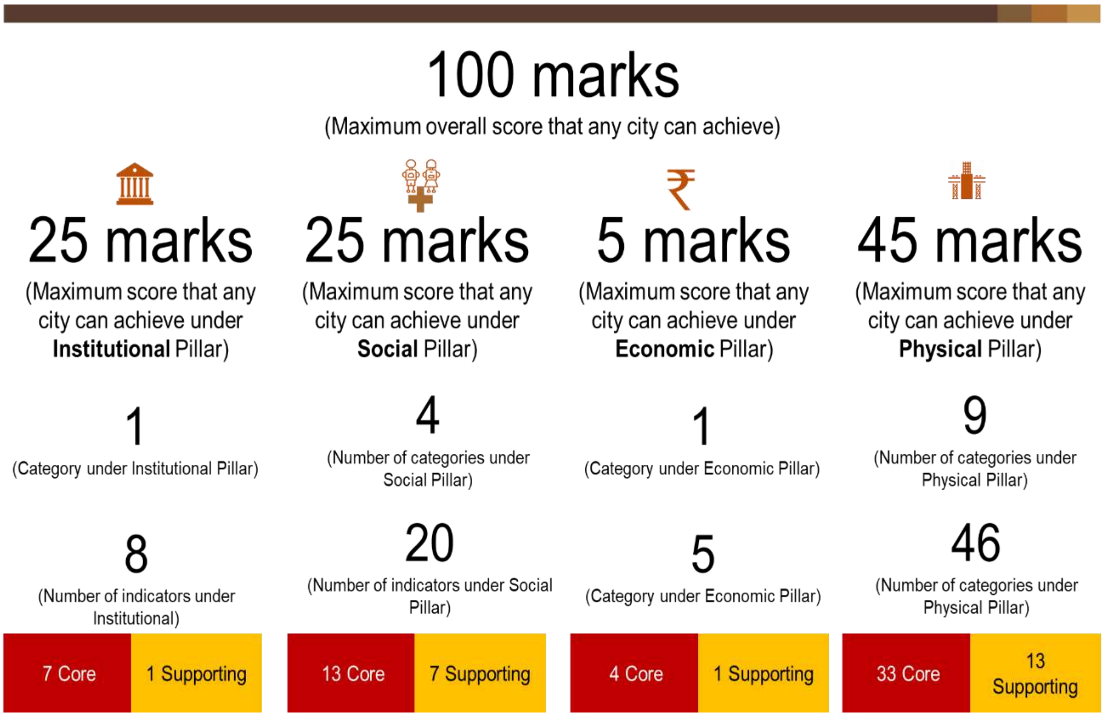
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department, Patna Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Heritage sites related data	Patna Municipal Corporation
Urban Local Body	For Ecological sites related data	Patna Municipal Corporation
Urban Local Body	For Housing related data	Social development Section, Patna Municipal Corporation
Urban Local Body	For Building plan related data	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Roads related data	Engineering Department, Patna Municipal Corporation
Urban Local Body	For Solid waste management related data	Patna Municipal Corporation
Urban Local Body	For IT services related data	IT section, Patna Municipal corporation
Urban Local Body	For Vendor committee related data	Social Development Section, Patna Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board, Bihar

Designated data owners	Subcategories	Data owners at city level
Development Authority	Building Infrastructure	Engineering Department, Patna Municipal Corporation
	Construction planning	Engineering Department, Patna Municipal Corporation
	Green Building	Engineering Department, Patna Municipal Corporation
	Rain water harvesting	Engineering Department, Patna Municipal Corporation
	Universal Design Principle	Engineering Department, Patna Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Bihar Power Distribution Corporation Limited
State Disaster management authority		District Collectorate Office
State Education Department		District Education Department
State Health Department	Health care professionals	Civil Surgeon Office
	Citizen Services	Civil Surgeon Office
	Disease Prevalence	State Health Mission
	Health Infrastructure	Civil Surgeon Office
State Renewable Energy Development Agency		Bihar Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Commercial and Tax department
Town and Country Planning Department	Land Use	Patna Municipal Corporation
Traffic and Police Department		Office of Senior Superintendent of Police
Transport Authorities	Buses	State Transport Authority, District Transport office
	Registered Vehicles	State Transport Authority, District Transport office
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 4 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	0
Total	4*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

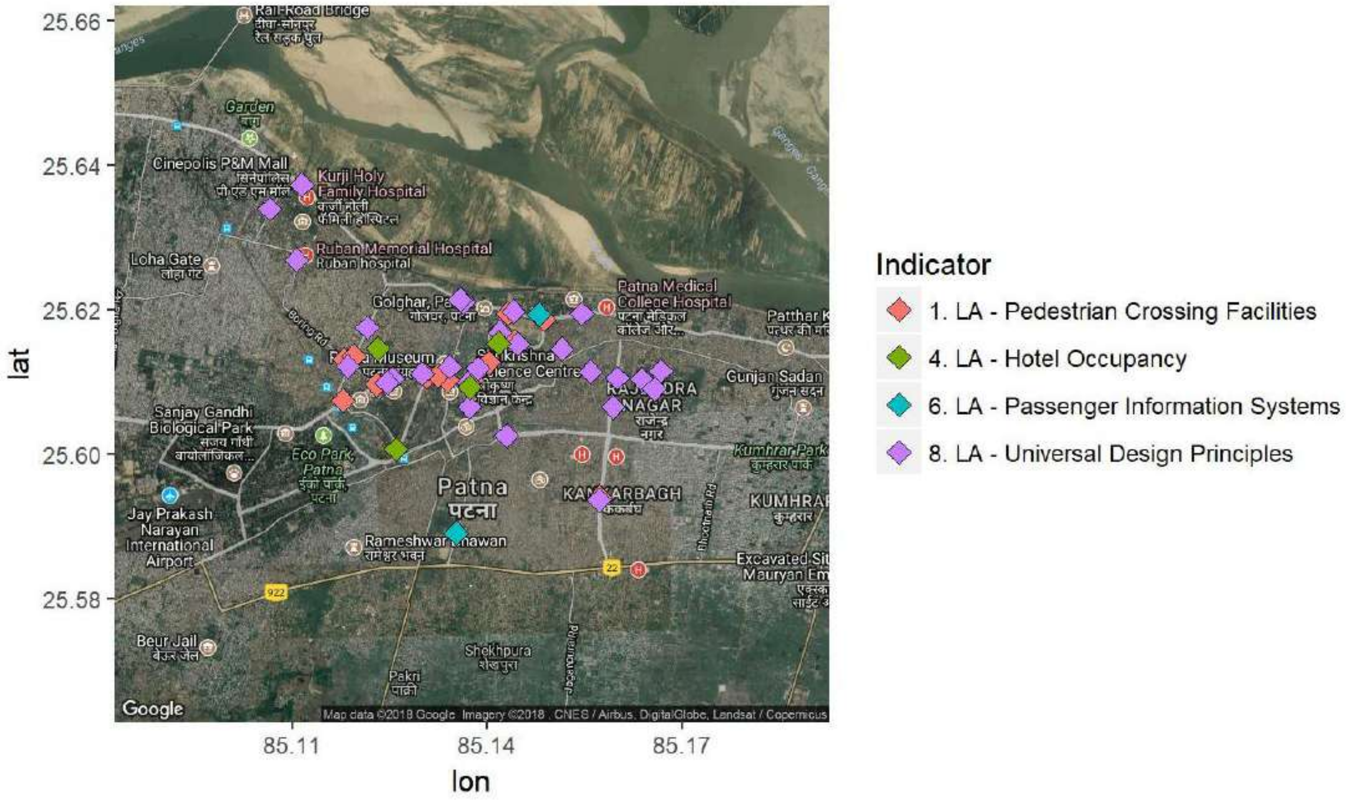
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


25.66
25.64
25.62
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lat
85.11
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85.17
lon
Rail-Road Bridge
Garden
Cinepolis P&M Mall
Kurji Holy Family Hospital
Ruban Memorial Hospital
Loha Gate
Golghar, Patna
Patna Medical College Hospital
Patna Museum
Shrikrishna Science Centre
RAJENDRA NAGAR
Gunjan Sadan
Sanjay Gandhi Biological Park
Eco Park, Patna
Patna
पटना
KANKARBAGH
Kumhrar Park
KUMHRAR
Jay Prakash Narayan International Airport
Rameshwar Bhawan
Excavated Site
Beur Jail
Shekhpura
Pakri
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	31.82%
Identity & Culture	26%
Education	43%
Health	85%
Safety & Security	63%
Economy & Employment	2%
Housing & Inclusiveness	9%
Public Open Spaces	5%
Mixed Land Use & Compactness	50%
Power Supply	56%
Transport & Mobility	37%
Assured Water Supply	43%
Waste Water Management	42%
Solid Waste Management	41%
Reduced Pollution	47%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

PIMPRI CHINWAD

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

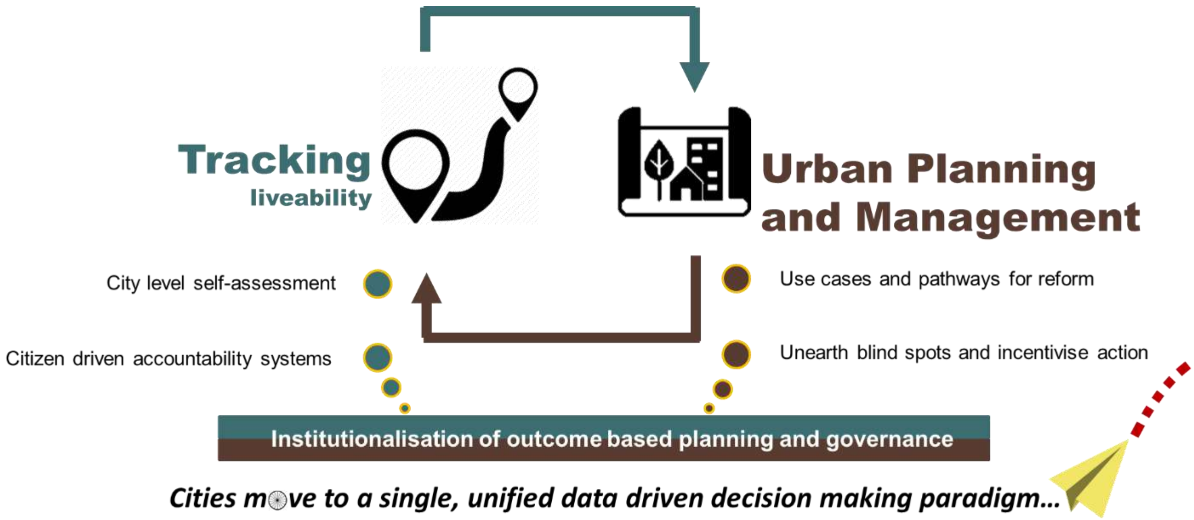
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PIMPRI CHINCHWAD

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	181	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1727692
Total Number of Households	419385

SOCIAL PROFILE

Education	**Total Number of Schools**	650
	Total Enrolment (Class 1 to 5)	173381
Health	**Total Number of In-patients Beds**	9948
	Total Health Workforce	8715
Safety and Security	**Total Strength of Police Force**	1565
	Total Number of CCTV Cameras	1035
Heritage Sites	**Total Number of Heritage Sites**	2

ECONOMIC PROFILE

Total Population in Working Age Group	1303617
Total Number of Industries	3417
Total Number of Commercial Enterprises	61320
Total Number of Hotels	143
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	176595.6554
Total VAT Collection in FY 2016-17 (INR Lakhs)	12073.4

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	450
		Total Number of Water Connections	119308
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	410845
		Total number of households in the city with access to community toilets in the city	22884
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	853.863
		Total number of households covered through door-to-door collection of solid waste	378861
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	280
		Daily average quantum of waste water treated by STPs in the city (MLD)	280
	Electricity	**Total number of authorized electrical connections in the city**	593455
		Total electricity supplied to the city (kWh)	3251718595
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	15895
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1148.628
		Total length of arterial and sub-arterial road network in the city (Km)	1148.628
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	271.17

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, PCMC Sales tax depårment
Urban Local Body	For Park and Recreation Related Questions	Garden Department, PCMC Civil Department, PCMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, PCMC
Urban Local Body	For Heritage sites related data	Town Planning Department, PCMC
Urban Local Body	For Ecological sites related data	Town Planning Department, PCMC
Urban Local Body	For Housing related data	Housing Department, PCMC
Urban Local Body	For Building plan related data	Building & Planning Department, PCMC
Urban Local Body	For Roads related data	Roads Department, PCMC
Urban Local Body	For Solid waste management related data	Waste management Department, PCMC Drainage Department, PCMC
Urban Local Body	For IT services related data	IT Department, PCMC
Urban Local Body	For Vendor committee related data	PCMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Environment Department, PCMC
Development Authority	Building Infrastructure	Building & Planning Department, PCMC
	Construction planning	Town Planning, PCMC
	Green Building	Building & Planning Department, PCMC
	Rain water harvesting	Building & Planning Department, PCMC
	Universal Design Principle	Building & Planning Department, PCMC

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department, PCMC Maharashtra Electricity Board,
State Disaster management authority		Disaster Department, PCMC
State Education Department		State Education Department Education Department, PCMC
State Health Department	Health care professionals	Health Department, PCMC
	Citizen Services	Health Department, PCMC
	Disease Prevalence	Health Department, PCMC
	Health Infrastructure	Health Department, PCMC
State Renewable Energy Development Agency		Maharashtra Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Sales and commercial Taxes department
Town and Country Planning Department	Land Use	Town Planning department, PCMC
Traffic and Police Department		Office of Sub-Commissioner of Police
Transport Authorities	Buses	Road and Transport Office
	Registered Vehicles	Road Transport system, PCMC
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 90 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**4**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**1**
Pollution Control Board	**0**
State Renewable Energy Department	**6**
Town and Country Planning	**0**
State Health Department	**2**
Transport Authority	**8**
Disaster Management	**0**
Urban Local Body	**66**
Total	**90***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

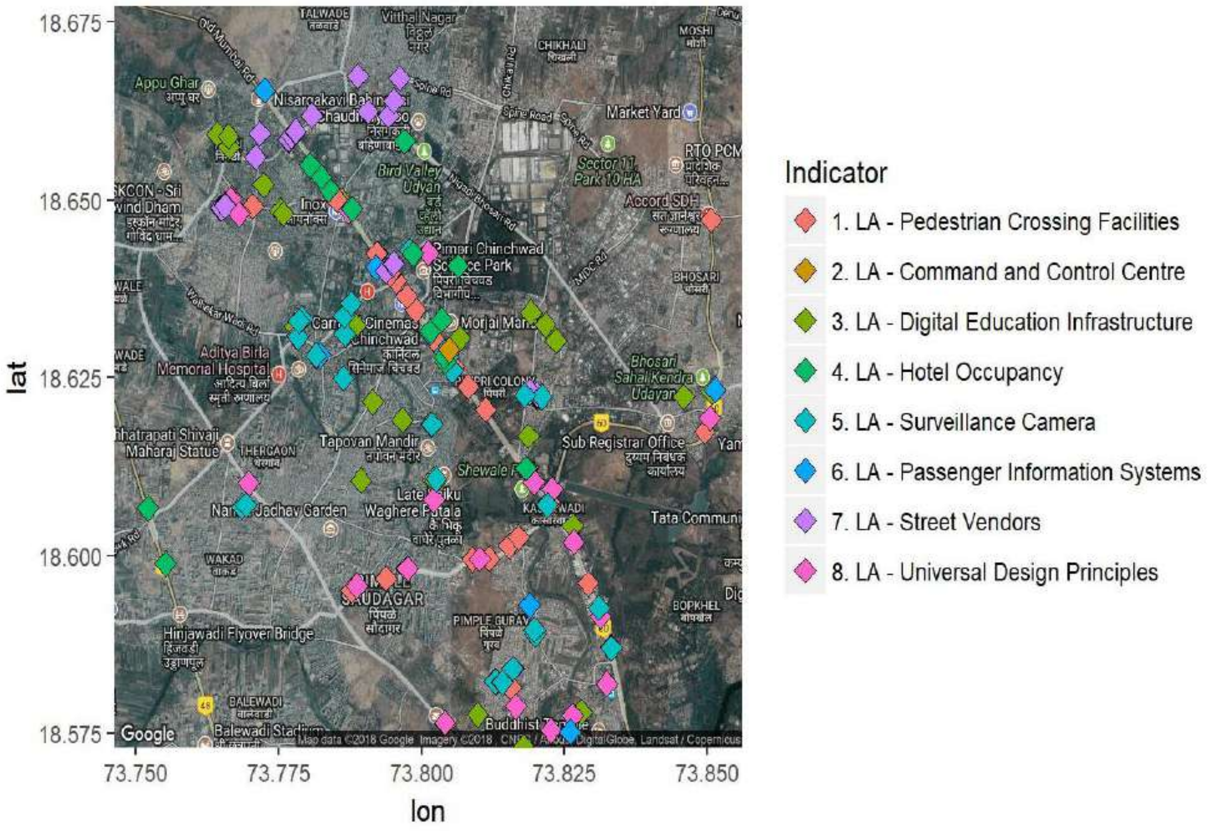
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


18.675
18.650
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lat
73.750
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73.825
73.850
lon
TALWADE
Vitthal Nagar
CHIKHALI
MOSHI
Appu Ghar
Nisargakavi Bahinabai Chaudhari Zoo
Market Yard
Bird Valley Udyan
RTO PCMC
Sector 11 Park 10 HA
Accord SDH
ISKCON - Sri Govind Dham
Inox
Pimpri Chinchwad Science Park
BHOSARI
Carnival Cinemas Chinchwad
Morjai Mandir
Aditya Birla Memorial Hospital
Bhosari Sahal Kendra Udyan
Chhatrapati Shivaji Maharaj Statue
THERGAON
Tapovan Mandir
Sub Registrar Office
Shewale Park
Nana Jadhav Garden
Waghere Putala
Tata Communi
WAKAD
PIMPLE SAUDAGAR
PIMPLE GURAV
BOPKHEL
Hinjawadi Flyover Bridge
BALEWADI
Balewadi Stadium
Buddhist Temple
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	52.98%
Identity & Culture	15%
Education	82%
Health	78%
Safety & Security	61%
Economy & Employment	11%
Housing & Inclusiveness	1%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	49%
Transport & Mobility	63%
Assured Water Supply	96%
Waste Water Management	73%
Solid Waste Management	74%
Reduced Pollution	80%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

PORT BLAIR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in

public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.

#	Challenges	Proposed Solutions
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.

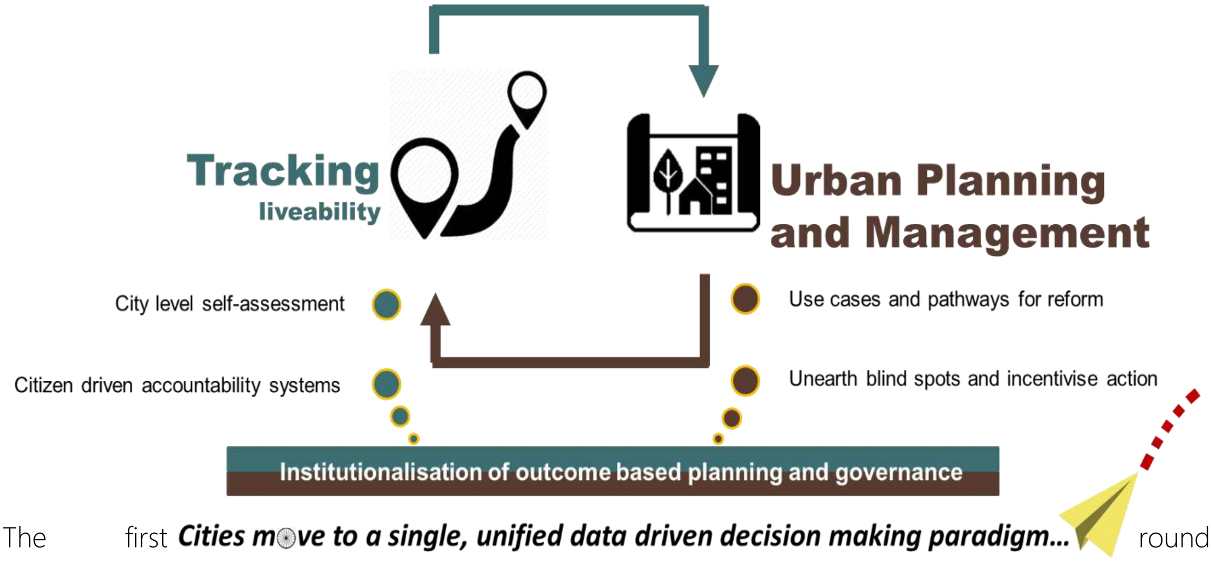
#	Challenges	Proposed Solutions
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

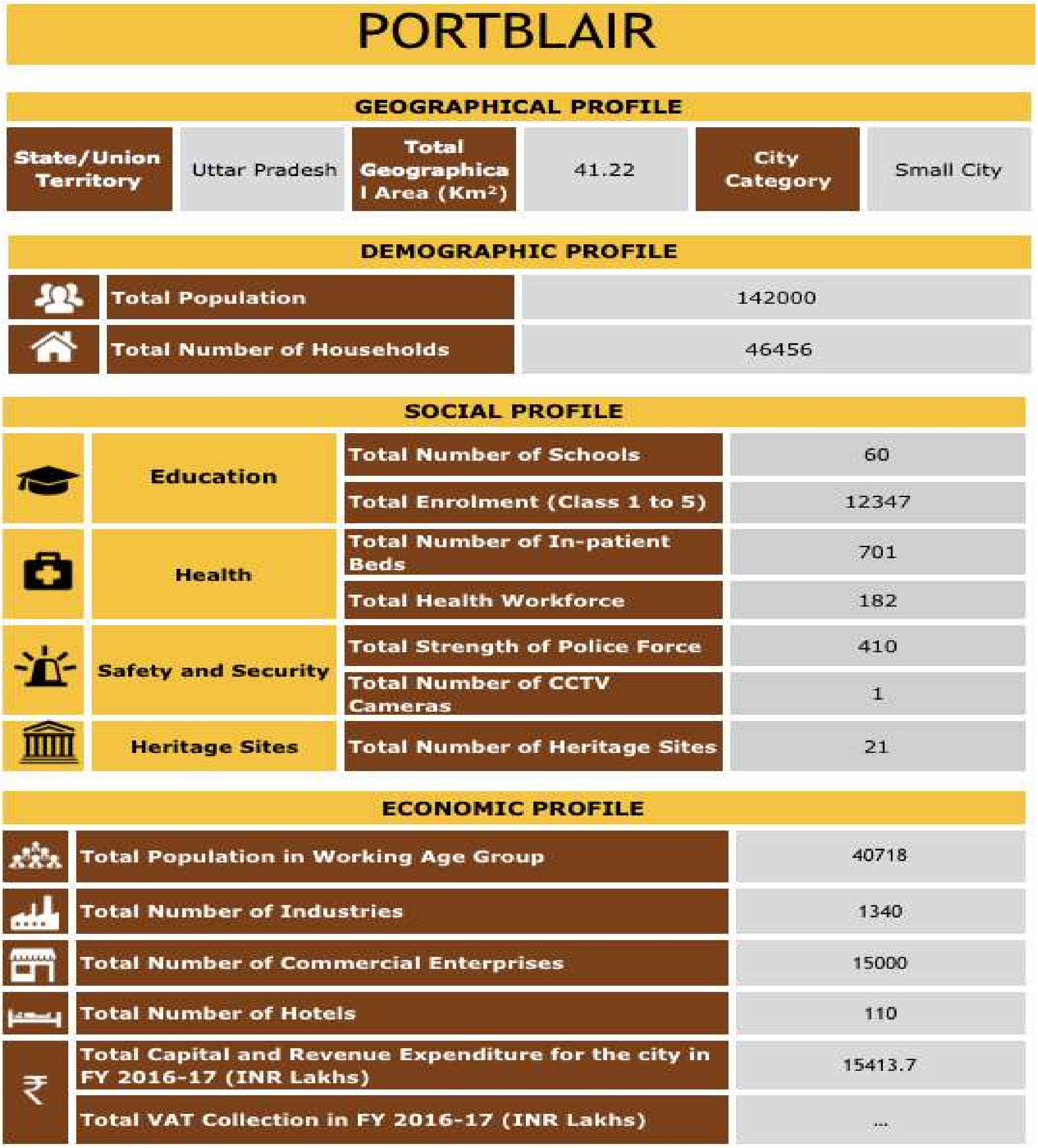

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities m⊙ve to a single, unified data driven decision making paradigm...

The first round

of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



PORTBLAIR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km²)	41.22	City Category	Small City

DEMOGRAPHIC PROFILE

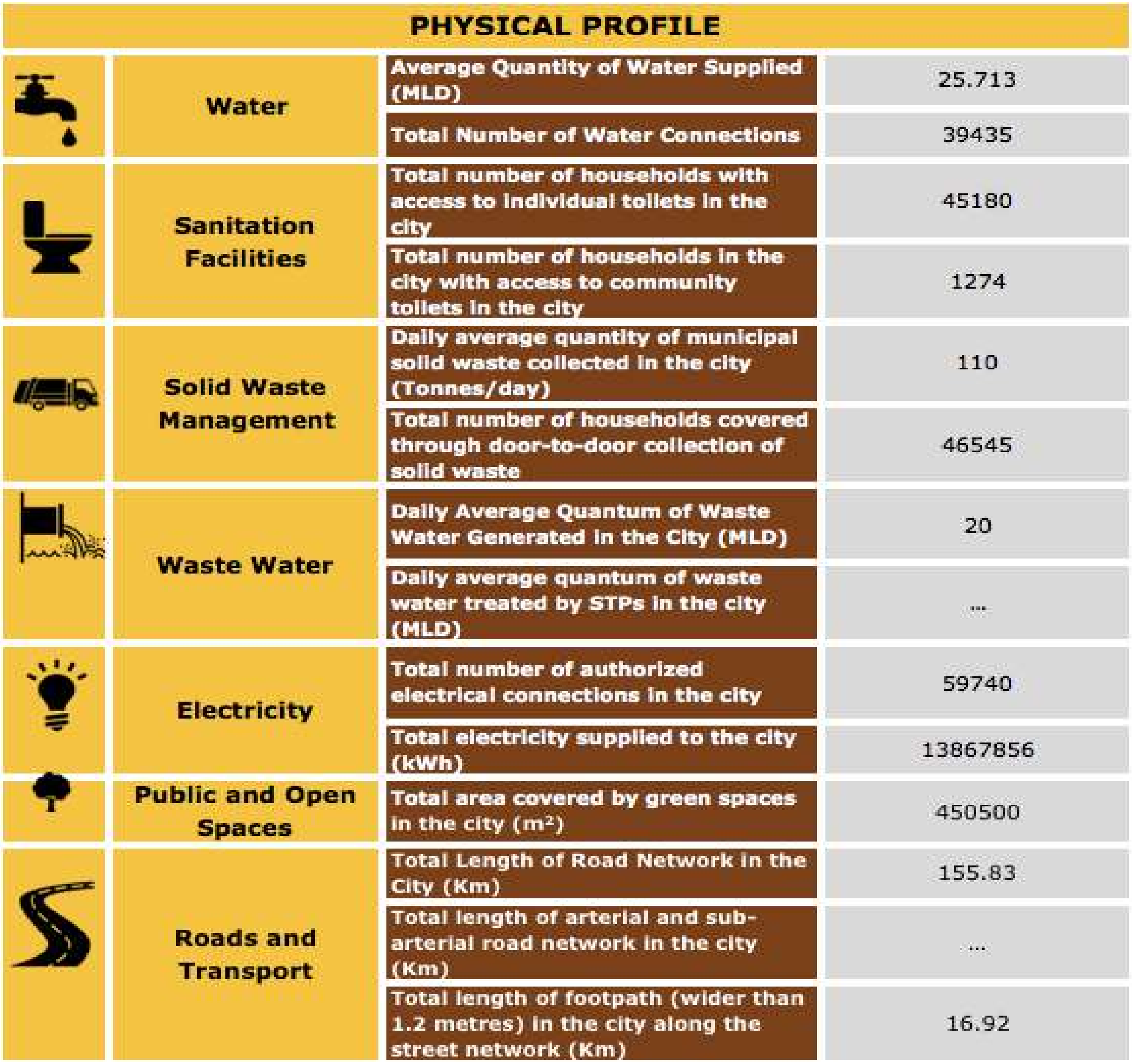
Total Population	142000
Total Number of Households	46456

SOCIAL PROFILE

Education	Total Number of Schools	60
	Total Enrolment (Class 1 to 5)	12347
Health	Total Number of In-patient Beds	701
	Total Health Workforce	182
Safety and Security	Total Strength of Police Force	410
	Total Number of CCTV Cameras	1
Heritage Sites	Total Number of Heritage Sites	21

ECONOMIC PROFILE

Total Population in Working Age Group	40718
Total Number of Industries	1340
Total Number of Commercial Enterprises	15000
Total Number of Hotels	110
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15413.7
Total VAT Collection in FY 2016-17 (INR Lakhs)	...



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	25.713
	Total Number of Water Connections	39435
Sanitation Facilities	Total number of households with access to individual toilets in the city	45180
	Total number of households in the city with access to community toilets in the city	1274
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	110
	Total number of households covered through door-to-door collection of solid waste	46545
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	20
	Daily average quantum of waste water treated by STPs in the city (MLD)	...
Electricity	Total number of authorized electrical connections in the city	59740
	Total electricity supplied to the city (kWh)	13867856
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	450500
Roads and Transport	Total Length of Road Network in the City (Km)	155.83
	Total length of arterial and sub-arterial road network in the city (Km)	...
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	16.92

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal

Pillars of Comprehensive Development	Category	Indicators
		spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water

Pillars of Comprehensive Development	Category	Indicators
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

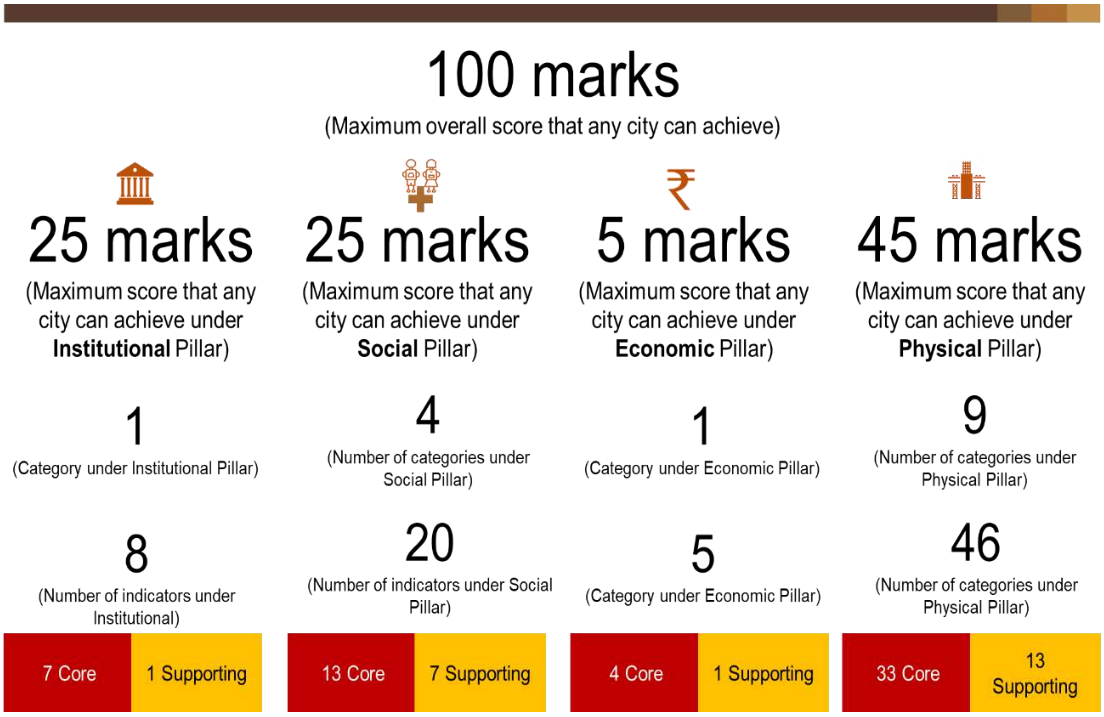
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions

on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Port Blair Municipal Council
Urban Local Body	For Park and Recreation Related Questions	Port Blair Municipal Council
Urban Local Body	For Water Supply and Drainage related questions	Port Blair Municipal Council
Urban Local Body	For Heritage sites related data	ART AND CULTURE
Urban Local Body	For Ecological sites related data	FOREST DEPARTMENT
Urban Local Body	For Housing related data	Port Blair Municipal Council
Urban Local Body	For Building plan related data	APWD/ Port Blair Municipal Council
Urban Local Body	For Roads related data	Port Blair Municipal Council
Urban Local Body	For Solid waste management related data	Port Blair Municipal Council
Urban Local Body	For IT services related data	Port Blair Municipal Council
Urban Local Body	For Vendor committee related data	Port Blair Municipal Council
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	HEALTH, EDUCATION,ELECTRICITY DEPARTMENT,POLLUTION CONTROL,DISASTER MANAGEMENT,APWD,PBMC,STATE TRANSPORT DEPARTMENT,POLICE DEPARTMENT.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	POLLUTION CONTROL / APWD
Development Authority	Building Infrastructure	APWD/ Port Blair Municipal Council
	Construction planning	APWD/ Port Blair Municipal Council
	Green Building	Port Blair Municipal Council

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Port Blair Municipal Council
	Universal Design Principle	APWD/ Port Blair Municipal Council
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ELECTRICITY DEPARTMENT
State Disaster management authority		DISASTER MANAGEMENT
State Education Department		DIRECTORATE OF EDUCATION DEPARTMENT
State Health Department	Health care professionals	DD HEALTH
	Citizen Services	DD,PLANNING
	Disease Prevalence	DD, HEALTH
	Health Infrastructure	NRHM & STATE HEALTH SOCIETY
State Renewable Energy Development Agency		ELECTRICITY DEPARTMENT
State Sales / Commercial Taxes Department		OFFICE OF DEPUTY COMMISSIONER
Town and Country Planning Department	Land Use	APWD
Traffic and Police Department		POLICE DEPARTMENT
Transport Authorities	Buses	STATE TRANSPORT DEPARMENT
	Registered Vehicles	STATE TRANSPORT DEPARMENT
	Sub urban rail transport	NOT APPLICABLE
	Mono Rail Authority	NOT APPLICABLE
	Tramways	NOT APPLICABLE
	Marine Transport Authority	MARINE DEPARTMENT

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 40 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	12
Development Authority	0
Pollution Control Board	12
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	1
Transport Authority	0
Disaster Management	1
Urban Local Body	12
Total	40

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

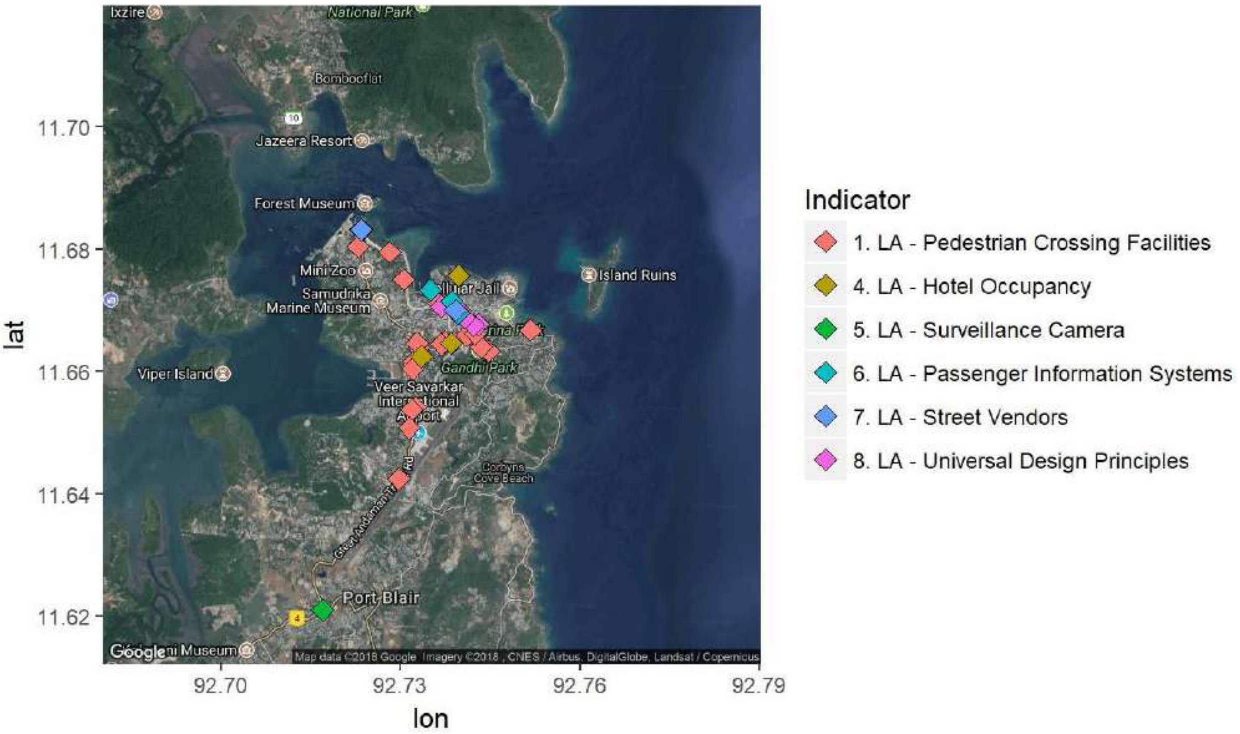
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


Ixzire
National Park
Bomboof lat
Jazeera Resort
Forest Museum
Mini Zoo
Samudrika Marine Museum
Cellular Jail
Marina Park
Island Ruins
Viper Island
Gandhi Park
Veer Savarkar International Airport
Corbyns Cove Beach
Port Blair
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
11.70
11.68
11.66
11.64
11.62
lon
92.70
92.73
92.76
92.79
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Category wise scores

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	42.36%
Identity & Culture	30%
Education	94%
Health	96%
Safety & Security	61%
Economy & Employment	19%
Housing & Inclusiveness	21%
Public Open Spaces	19%
Mixed Land Use & Compactness	39%
Power Supply	56%
Transport & Mobility	33%
Assured Water Supply	83%
Waste Water Management	41%
Solid Waste Management	77%
Reduced Pollution	98%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

PUDUCHERRY

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as

health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.
The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the con-	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the

#	Challenges	Proposed Solutions
	sortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

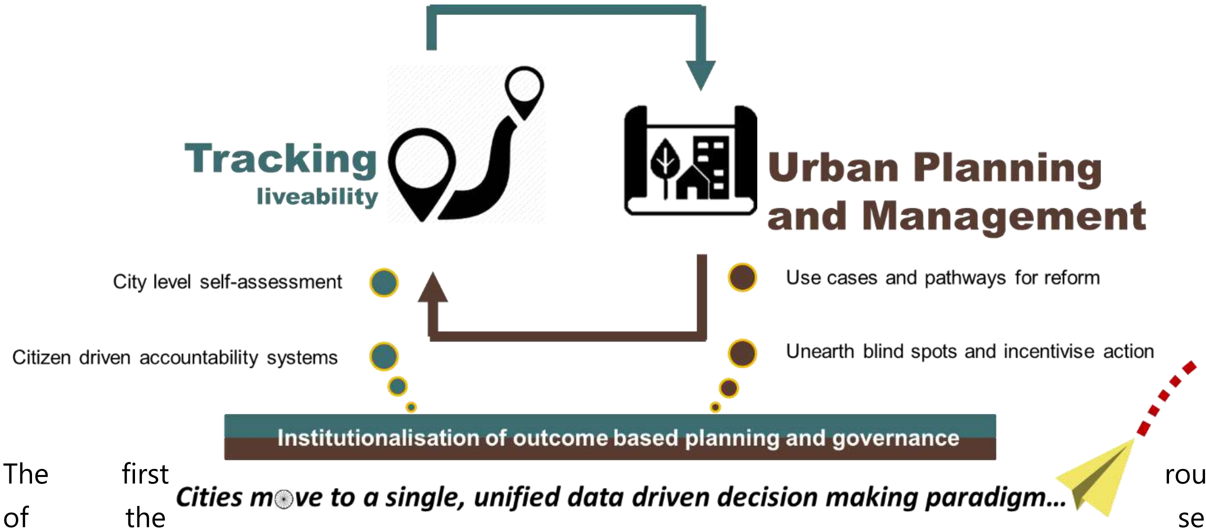
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the sessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PUDUCHERRY

GEOGRAPHICAL PROFILE

State/Union Territory	Puducherry	**Total Geographical Area (Km²)**	19.58	**City Category**	Small City

DEMOGRAPHIC PROFILE

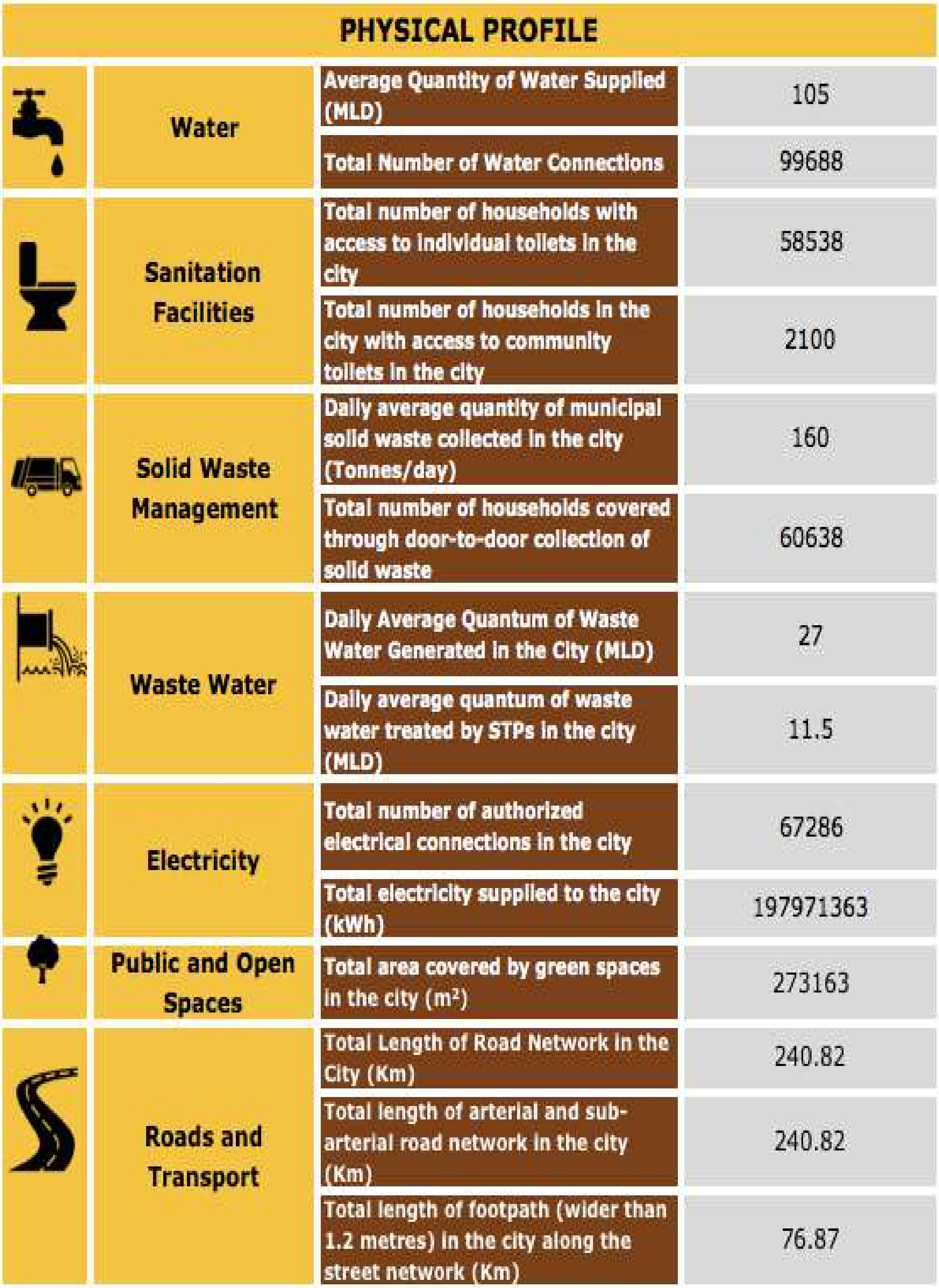
Total Population	244377
Total Number of Households	60638

SOCIAL PROFILE

Education	**Total Number of Schools**	101
	Total Enrolment (Class 1 to 5)	20746
Health	**Total Number of In-patients Beds**	947
	Total Health Workforce	709
Safety and Security	**Total Strength of Police Force**	1685
	Total Number of CCTV Cameras	168
Heritage Sites	**Total Number of Heritage Sites**	245

ECONOMIC PROFILE

Total Population in Working Age Group	185776
Total Number of Industries	5
Total Number of Commercial Enterprises	16000
Total Number of Hotels	141
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	4399.24
Total VAT Collection in FY 2016-17 (INR Lakhs)	24365.28



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	105
	Total Number of Water Connections	99688
Sanitation Facilities	Total number of households with access to individual toilets in the city	58538
	Total number of households in the city with access to community toilets in the city	2100
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	160
	Total number of households covered through door-to-door collection of solid waste	60638
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	27
	Daily average quantum of waste water treated by STPs in the city (MLD)	11.5
Electricity	Total number of authorized electrical connections in the city	67286
	Total electricity supplied to the city (kWh)	197971363
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	273163
Roads and Transport	Total Length of Road Network in the City (Km)	240.82
	Total length of arterial and sub-arterial road network in the city (Km)	240.82
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	76.87

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive

development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and**	6.1 Increase in VAT/GST collection

Pillars of Comprehensive Development	Category	Indicators
	Employment	6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms

Pillars of Comprehensive Development	Category	Indicators
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

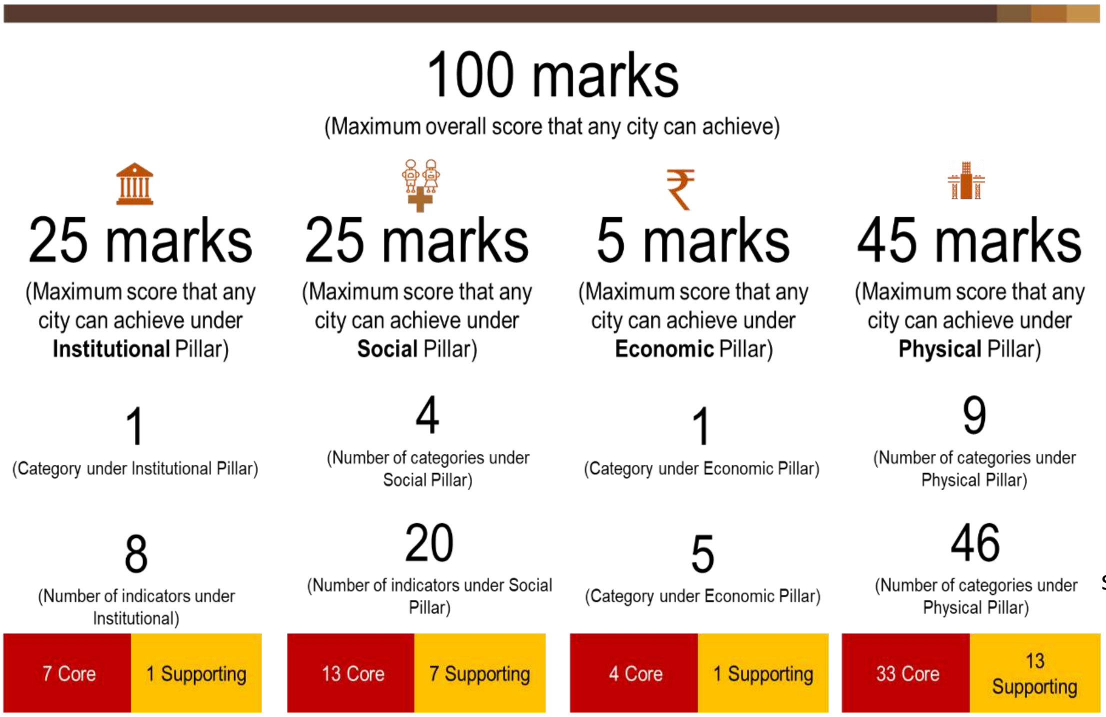
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Pondicherry Municipality
Urban Local Body	For Park and Recreation Related Questions	Pondicherry Municipality
Urban Local Body	For Water Supply and Drainage related questions	Public Works Department
Urban Local Body	For Heritage sites related data	Department of Art and Culture
Urban Local Body	For Ecological sites related data	Department of Forest and wildlife
Urban Local Body	For Housing related data	Puducherry Slum Clearance Board & Puducherry Planning Authority
Urban Local Body	For Building plan related data	Puducherry Planning Authority
Urban Local Body	For Roads related data	Pondicherry Municipality / Transport Department
Urban Local Body	For Solid waste management related data	Pondicherry Municipality/ Swatchitha Corporation
Urban Local Body	For IT services related data	Pondicherry Municipality IT wing
Urban Local Body	For Vendor committee related data	Pondicherry Municipality (Revenue Office)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Pondicherry Municipality
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board, Department of Science and Technology and Public Works Department-Water supply
Development Authority	Building Infrastructure	Puducherry Planning Authority
	Construction planning	Puducherry Planning Authority

	Green Building	Puducherry Planning Authority
	Rain water harvesting	Puducherry Planning Authority
	Universal Design Principle	Puducherry Planning Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Department
State Disaster management authority		Revenue Officer –Disaster Management, Puducherry Collectorate
State Education Department		Department of School Education
State Health Department	Health care professionals	Department of Health and Family Welfare
	Citizen Services	Department of Health and Family Welfare
	Disease Prevalence	Department of Health and Family Welfare
	Health Infrastructure	Department of Health and Family Welfare
State Renewable Energy Development Agency		Renewable Energy Agency, Puducherry
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Puducherry Planning Authority
Traffic and Police Department		Police/Police Department
Transport Authorities	Buses	Transport Department
	Registered Vehicles	Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA

	Tramways	NA
	Marine Transport Authority	NA

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 59 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	2
DISCOM/Electricity Department	1
Traffic and Police Department	7
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	2
Transport Authority	1
Disaster Management	0

Urban Local Body	39
Total	59

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

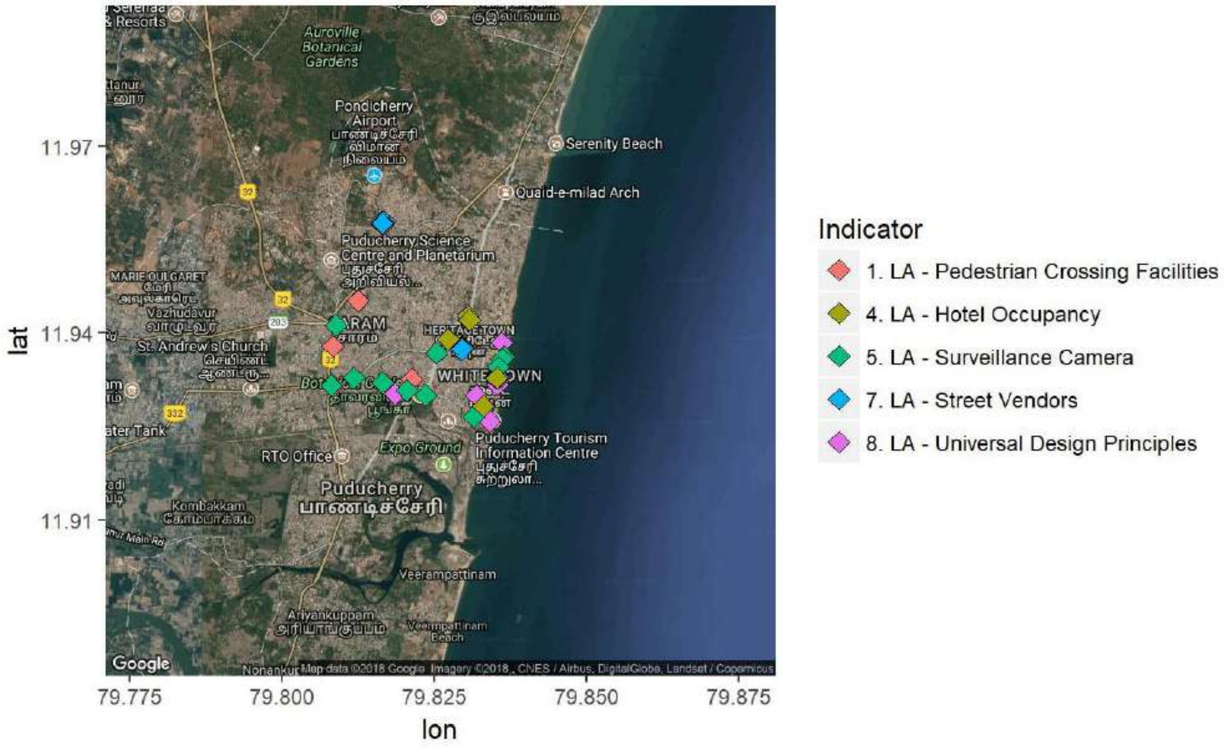
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
11.97
11.94
11.91
lon
79.775
79.800
79.825
79.850
79.875
Auroville Botanical Gardens
Pondicherry Airport
Serenity Beach
Quaid-e-milad Arch
Puducherry Science Centre and Planetarium
St. Andrew's Church
HERITAGE TOWN
WHITE TOWN
RTO Office
Expo Ground
Puducherry Tourism Information Centre
Puducherry
Kombakkam
Veerampattinam
Ariyankuppam
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Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	58.56%
Identity & Culture	37%
Education	92%
Health	94%
Safety & Security	53%
Economy & Employment	29%
Housing & Inclusiveness	4%
Public Open Spaces	6%
Mixed Land Use & Compactness	3%
Power Supply	46%
Transport & Mobility	41%
Assured Water Supply	79%
Waste Water Management	71%
Solid Waste Management	100%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

PUNE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

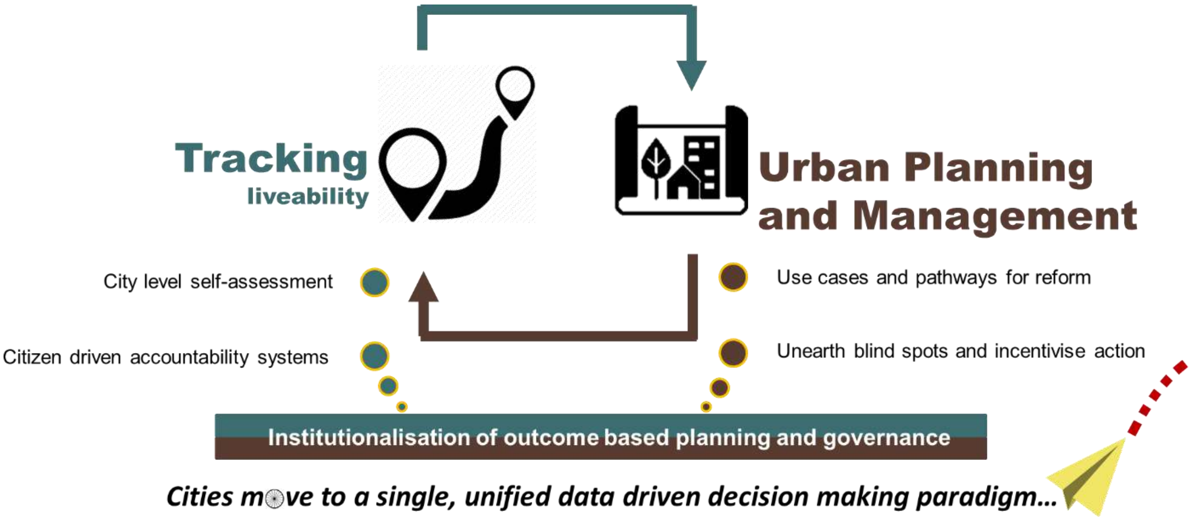
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more ‘liveable.’ The overarching goal of these initiatives is to move from an input-based approach to a ‘citizen centric-outcome based’ assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of ‘Liveability Standards’ relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an ‘Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city’s liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

PUNE

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	332.17	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	3124458
Total Number of Households	881529

SOCIAL PROFILE

Education	**Total Number of Schools**	1254
	Total Enrolment (Class 1 to 5)	270223
Health	**Total Number of In-patients Beds**	15929
	Total Health Workforce	35216
Safety and Security	**Total Strength of Police Force**	11245
	Total Number of CCTV Cameras	1322
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	1250100
Total Number of Industries	228
Total Number of Commercial Enterprises	110000
Total Number of Hotels	1390
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	392327
Total VAT Collection in FY 2016-17 (INR Lakhs)	12073.4

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	1300
		Total Number of Water Connections	160000
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	799680
		Total number of households in the city with access to community toilets in the city	72325
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1560.05
		Total number of households covered through door-to-door collection of solid waste	690692
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	744
		Daily average quantum of waste water treated by STPs in the city (MLD)	477
	Electricity	**Total number of authorized electrical connections in the city**	2086463
		Total electricity supplied to the city (kWh)	9341110000
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	24772500
	Roads and Transport	**Total Length of Road Network in the City (Km)**	2200
		Total length of arterial and sub-arterial road network in the city (Km)	1985
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	600

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Mrs. Ulka Kalaskar CAFO PMC
Urban Local Body	For Park and Recreation Related Questions	Mr. Ashok Ghorpade Superintendent garden dept.
Urban Local Body	For Water Supply and Drainage related questions	V. G. Kulkarni Chief Engg. (Water supply and sewerage), PMC and Mr. Mule A.E.(sewerage) PMC
Urban Local Body	For Heritage sites related data	Mrs. Harshada shinde EE, PMC
Urban Local Body	For Ecological sites related data	Mr. Mangesh Dighe (Environment Officer) PMC
Urban Local Body	For Housing related data	Mr. Dinesh Rokade Dept. director, PMAY, PMC
Urban Local Body	For Building plan related data	Mr.Nillesh Saitwal Building and plan permission
Urban Local Body	For Roads related data	Mr. Anoop Gajjalwar J.E. (project) Road Department.PMC.
Urban Local Body	For Solid waste management related data	Mr. Suresh Jagatap JMC (Solid Waste Management), PMC
Urban Local Body	For IT services related data	Mr. Rahul Jagtap HOD, IT, PMC
Urban Local Body	For Vendor committee related data	Mr. Madhav Jagtap DMC (encroachment), PMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Sarv Siksha Abhiyan department, Sport Department,Health Department, STP Department,electricity department ,ward office ,D.P cell, property tax department, bhavan department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Mr.Mangesh Dighe HOD Enviornment Dept
Development	Building Infrastructure	Mr.Nillesh Saitwal

Designated data owners	Subcategories	Data owners at city level
Authority		Building and plan permission Department
	Construction planning	Building and plan permission Department
	Green Building	
	Rain water harvesting	Building and plan permission Department
	Universal Design Principle	Building and plan permission Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Distribution Company, Rasta peth, pune.
State Disaster management authority		Disaster Management Cell Pune Municipal Corpporation.
State Education Department		Sarv Shiksha Abhiyan Department
State Health Department	Health care professionals	Health Department,Pune Municipal Corporaton.
	Citizen Services	Health Department,Pune Municipal Corporaton.
	Disease Prevalence	Health Department,Pune Municipal Corporaton.
	Health Infrastructure	Health Department,Pune Municipal Corporaton.
State Renewable Energy Development Agency		Maharashtra State Electricity Distribution Company, Rasta peth, pune and Maharashtra Energy Development Agency,Pune.
State Sales / Commercial Taxes Department		Sales Tax Office,Pune.
Town and Country Planning Department	Land Use	Development Plan cell,Pune Municipal Corporation.
Traffic and Police Department		Traffic head Office and Commissioner of Police Office,pune.
Transport Authorities	Buses	Pune Mhanagar ParivahanMahamandal Limited,, Pune.
	Registered Vehicles	RTO, Pune
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 168 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**7**
DISCOM/Electricity Department	**4**
Traffic and Police Department	**11**
Development Authority	**12**
Pollution Control Board	**5**
State Renewable Energy Department	**2**
Town and Country Planning	**10**
State Health Department	**9**
Transport Authority	**10**
Disaster Management	**2**
Urban Local Body	**94**
Total	**168***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

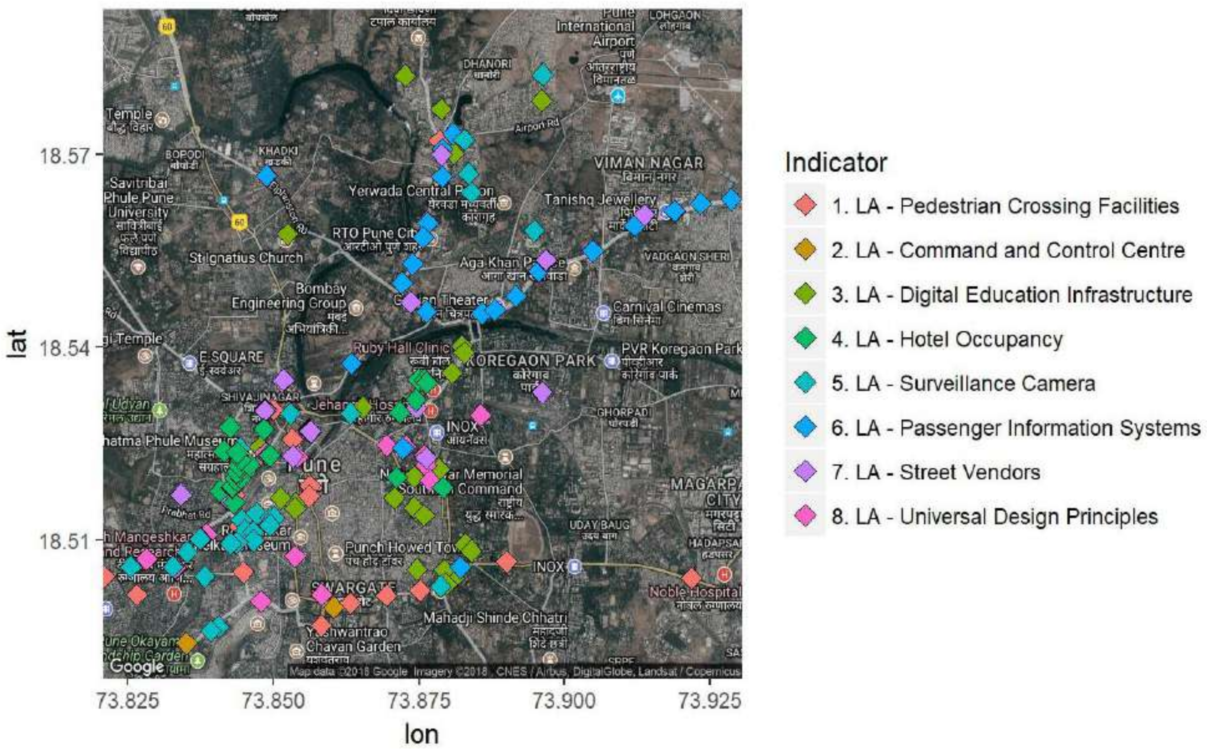
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1| Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
18.57
18.54
18.51
lon
73.825
73.850
73.875
73.900
73.925
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus

City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	61.10%
Identity & Culture	41%
Education	90%
Health	93%
Safety & Security	59%
Economy & Employment	35%
Housing & Inclusiveness	18%
Public Open Spaces	33%
Mixed Land Use & Compactness	3%
Power Supply	50%
Transport & Mobility	30%
Assured Water Supply	91%
Waste Water Management	74%
Solid Waste Management	92%
Reduced Pollution	89%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

RAEBARELI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

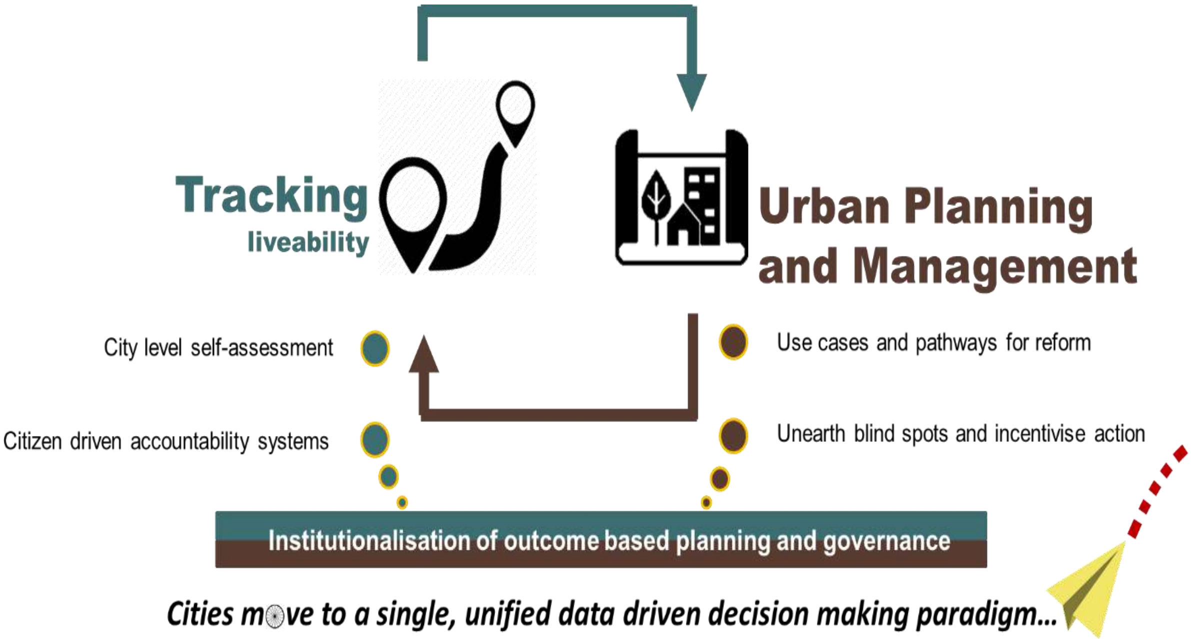
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

RAR BARELI

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	43.28	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	210870
Total Number of Households	18467

SOCIAL PROFILE

Education	**Total Number of Schools**	188
	Total Enrolment (Class 1 to 5)	2988
Health	**Total Number of In-patient Beds**	1149
	Total Health Workforce	665
Safety and Security	**Total Strength of Police Force**	119
	Total Number of CCTV Cameras	32
Heritage Sites	**Total Number of Heritage Sites**	47

ECONOMIC PROFILE

Total Population in Working Age Group	60578
Total Number of Industries	91
Total Number of Commercial Enterprises	84
Total Number of Hotels	44
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	124.79
Total VAT Collection in FY 2016-17 (INR Lakhs)	30295

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	85
		Total Number of Water Connections	34920
	Sanitation Facilities	Total number of households with access to individual toilets in the city	35801
		Total number of households in the city with access to community toilets in the city	895
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	50
		Total number of households covered through door-to-door collection of solid waste	19228
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	13
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	Total number of authorized electrical connections in the city	411537
		Total electricity supplied to the city (kWh)	1153580
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	142090
	Roads and Transport	Total Length of Road Network in the City (Km)	364
		Total length of arterial and sub-arterial road network in the city (Km)	364
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	30

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

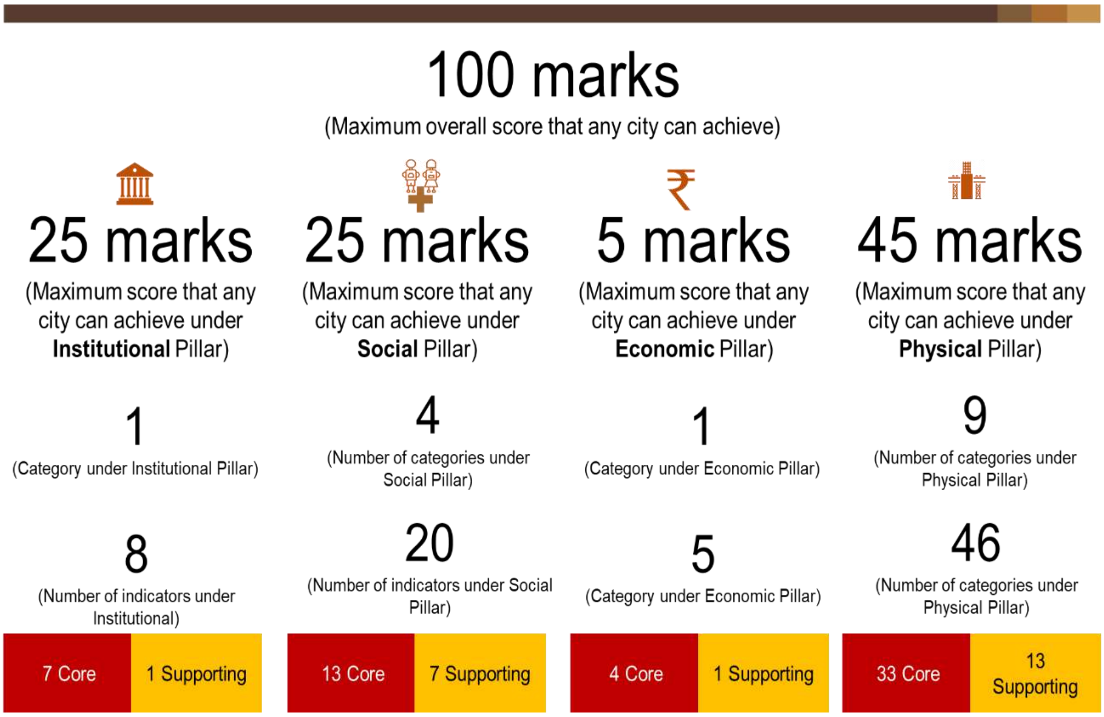
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account department, Raebareli Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Nirman vibhag, Raebareli Nagar Nigam
Urban Local Body	For Water Supply and Drainage related questions	Jal kal vibhag, Raebareli Nagar Nigam
Urban Local Body	For Heritage sites related data	----
Urban Local Body	For Ecological sites related data	-----
Urban Local Body	For Housing related data	Jan gadana
Urban Local Body	For Building plan related data	Raebareli Development Authority
Urban Local Body	For Roads related data	Nirman vibhag, Raebareli Nagar Nigam
Urban Local Body	For Solid waste management related data	Health department, Raebareli Nagar Nigam
Urban Local Body	For IT services related data	Health department, tax Department
Urban Local Body	For Vendor committee related data	Revenue Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Account, light, jal kal public work construction
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Regional office of state Pollution control Board
Development Authority	Building Infrastructure	Raebareli Development authority
	Construction planning	Raebareli Development authority

Designated data owners	Subcategories	Data owners at city level
	Green Building	Raebareli Development authority
	Rain water harvesting	Raebareli Development authority
	Universal Design Principle	Raebareli Development authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Office of the Executive Engineer vidut vitreren khend - first
State Disaster management authority		Office of additional district mejistret finance and Revenue
State Education Department		Office of basic shiksha adhikari
State Health Department	Health care professionals	Office of chief medical officer
	Citizen Services	Office of chief medical officer
	Disease Prevalence	Office of chief medical officer
	Health Infrastructure	Office of chief medical officer
State Renewable Energy Development Agency	Renewable Energy	District Renewable Energy Development Agency
State Sales / Commercial Taxes Department		District sales/ Commercial Taxes Department
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		
Transport Authorities	Buses	Office of Road ways
	Registered Vehicles	Office of Road Transport officer
	Sub urban rail transport	--
	Mono Rail Authority	--
	Tramways	--
	Marine Transport Authority	--

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**0**
State Education Department	**0**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**0**
Transport Authority	**0**
Disaster Management	**0**
Urban Local Body	**9**
Total	**12***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

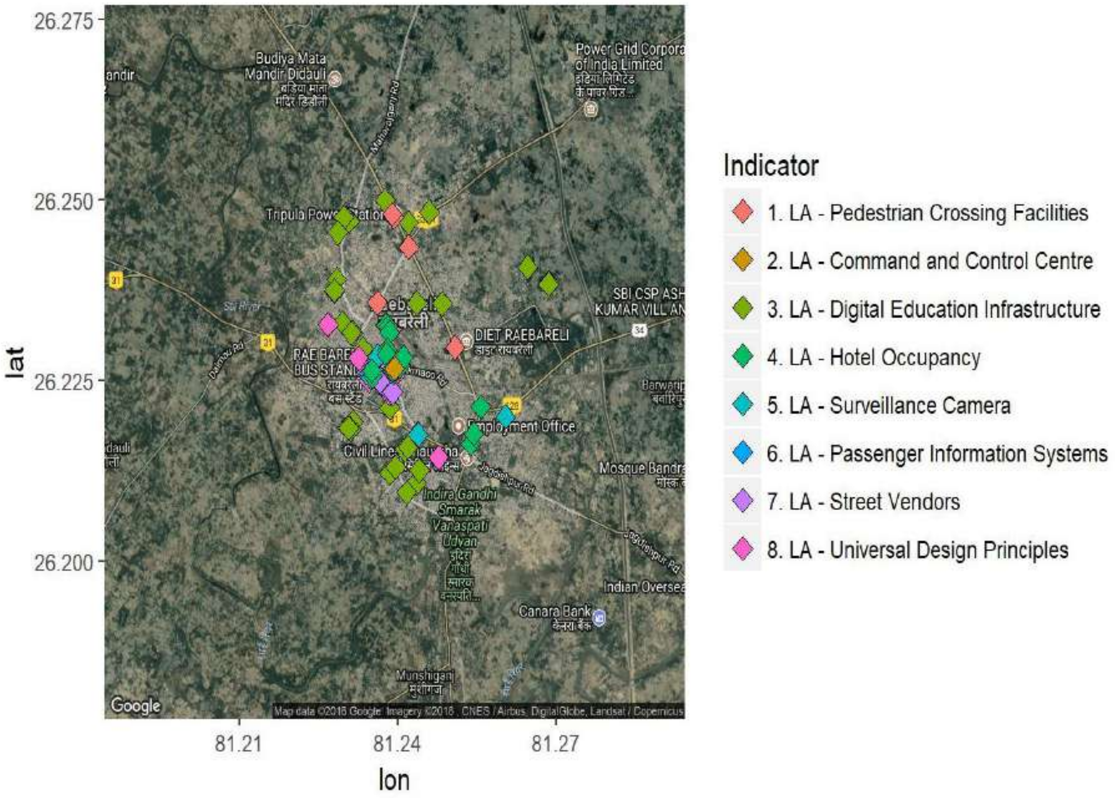
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


26.275
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Power Grid Corporation of India Limited
SBI CSP ASH KUMAR VILL AN
DIET RAEBAREL
RAE BARELI BUS STAND
Employment Office
Civil Lines
Indira Gandhi Smarak Vanaspati Udyan
Mosque Bandra
Indian Overseas
Canara Bank
Munshiganj
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	50.18%
Identity & Culture	18%
Education	26%
Health	97%
Safety & Security	60%
Economy & Employment	26%
Housing & Inclusiveness	0%
Public Open Spaces	5%
Mixed Land Use & Compactness	33%
Power Supply	49%
Transport & Mobility	13%
Assured Water Supply	73%
Waste Water Management	43%
Solid Waste Management	85%
Reduced Pollution	59%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

RAIPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

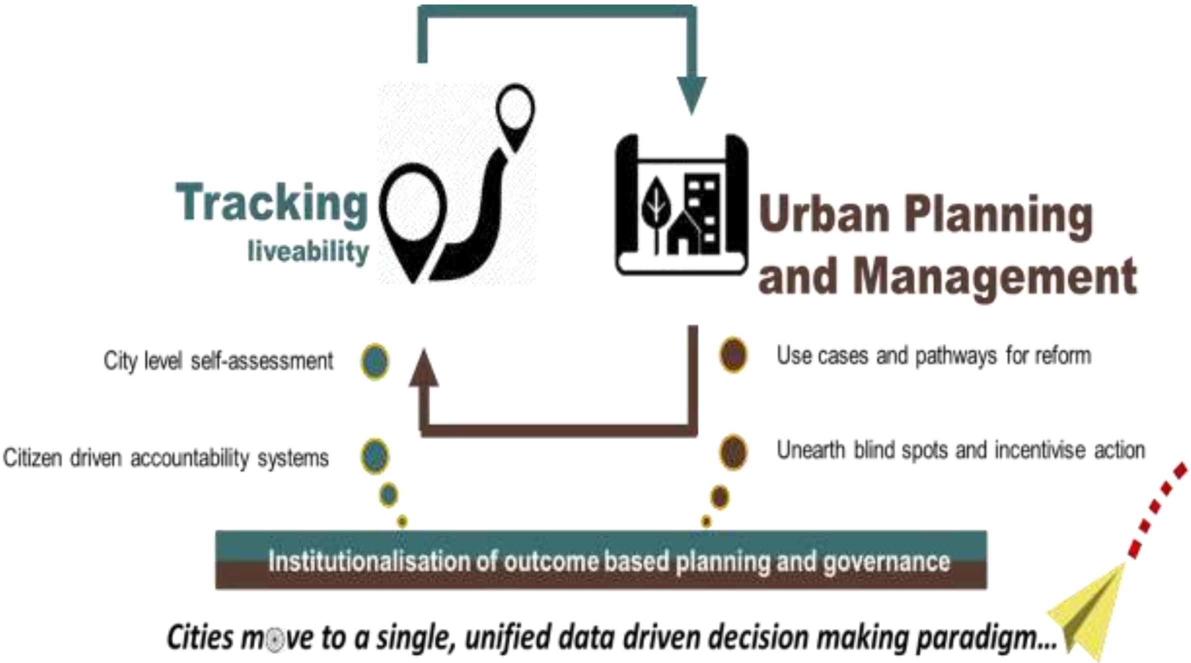
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

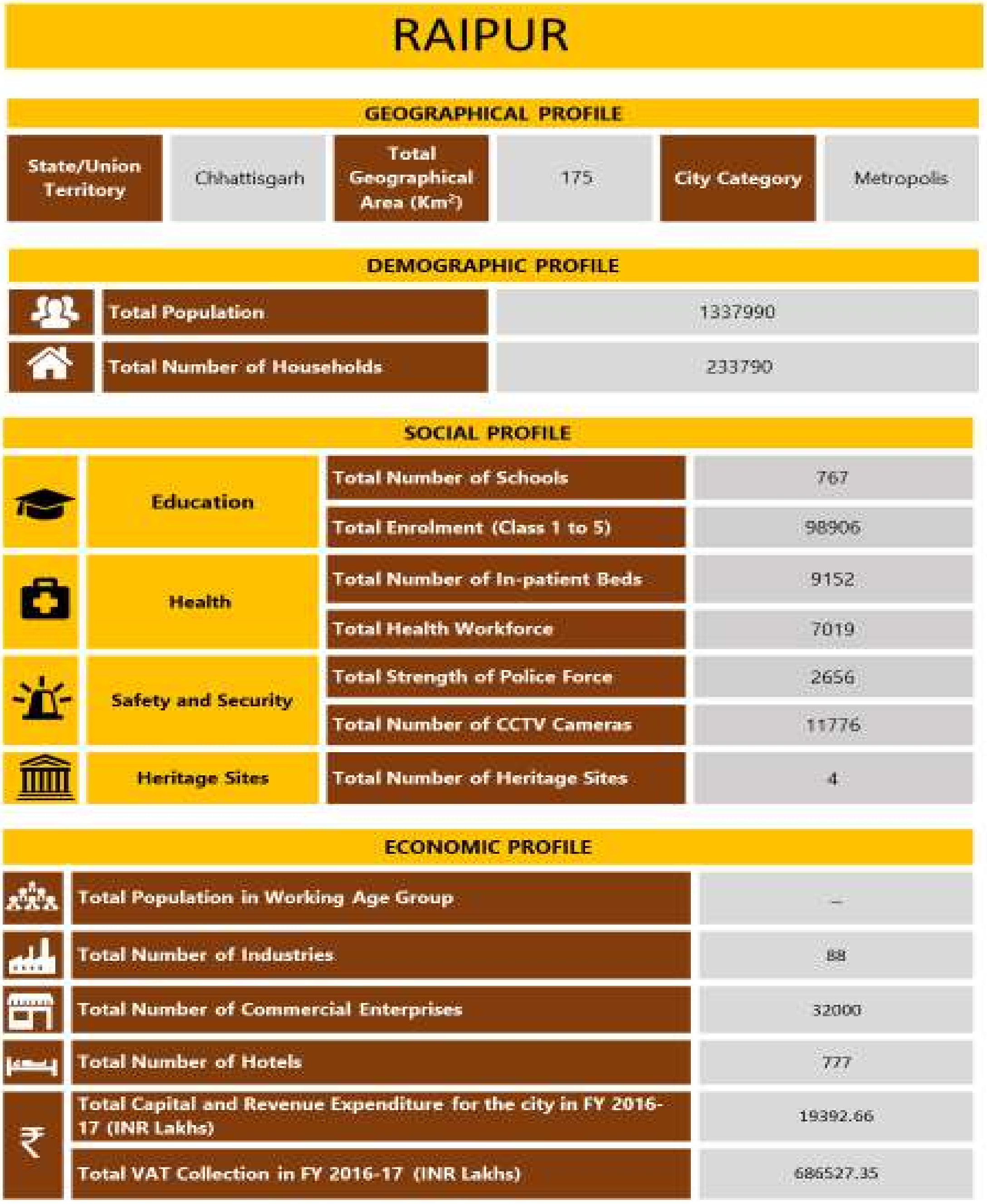
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Chhattisgarh	Total Geographical Area (Km²)	175	City Category	Metropolis

DEMOGRAPHIC PROFILE

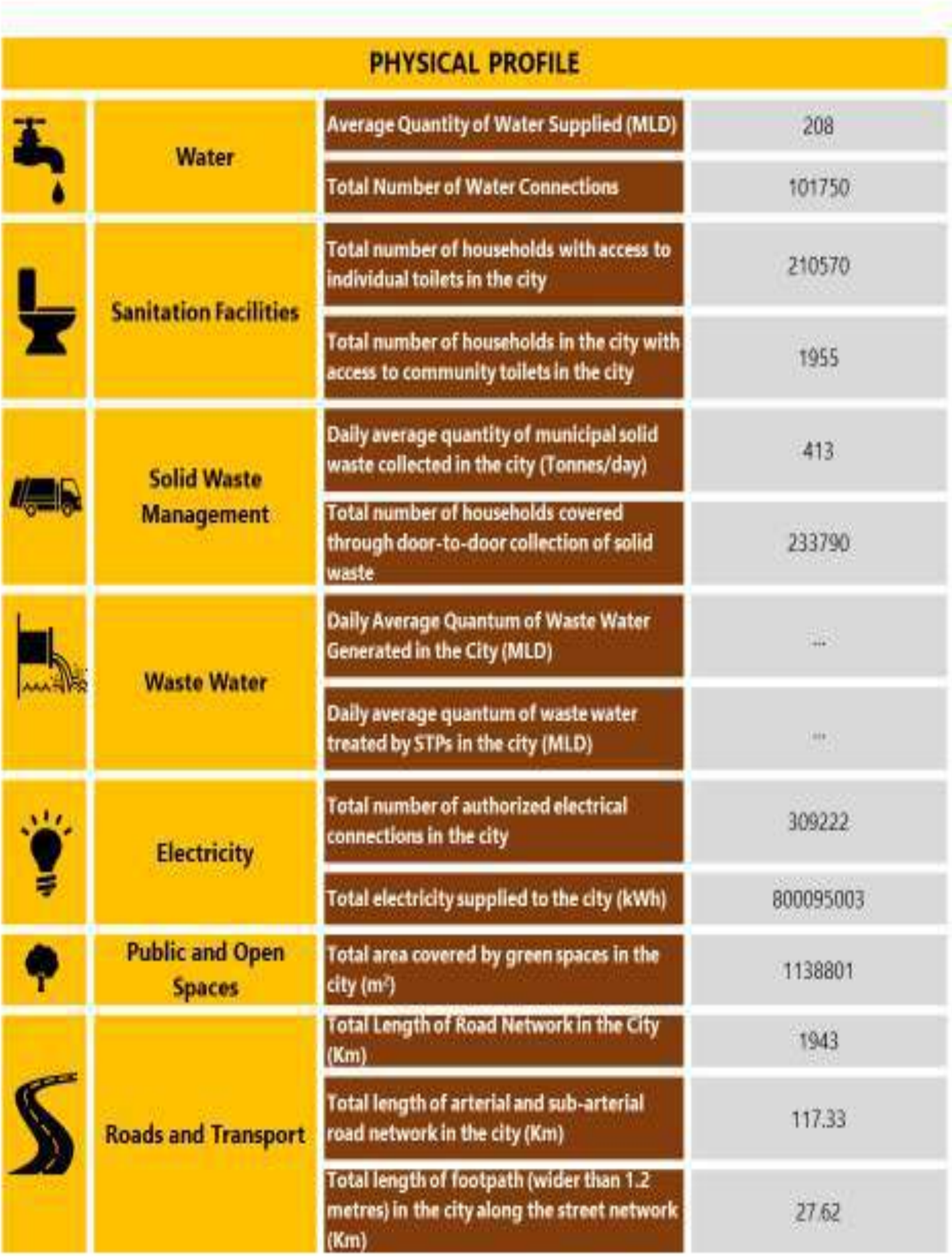
Total Population	1337990
Total Number of Households	233790

SOCIAL PROFILE

Education	Total Number of Schools	767
	Total Enrolment (Class 1 to 5)	98906
Health	Total Number of In-patient Beds	9152
	Total Health Workforce	7019
Safety and Security	Total Strength of Police Force	2656
	Total Number of CCTV Cameras	11776
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	–
Total Number of Industries	88
Total Number of Commercial Enterprises	32000
Total Number of Hotels	777
₹ Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	19392.66
Total VAT Collection in FY 2016-17 (INR Lakhs)	686527.35



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	208
	Total Number of Water Connections	101750
Sanitation Facilities	Total number of households with access to individual toilets in the city	210570
	Total number of households in the city with access to community toilets in the city	1955
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	413
	Total number of households covered through door-to-door collection of solid waste	233790
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	---
	Daily average quantum of waste water treated by STPs in the city (MLD)	---
Electricity	Total number of authorized electrical connections in the city	309222
	Total electricity supplied to the city (kWh)	800095003
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1138801
Roads and Transport	Total Length of Road Network in the City (Km)	1943
	Total length of arterial and sub-arterial road network in the city (Km)	117.33
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	27.62

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

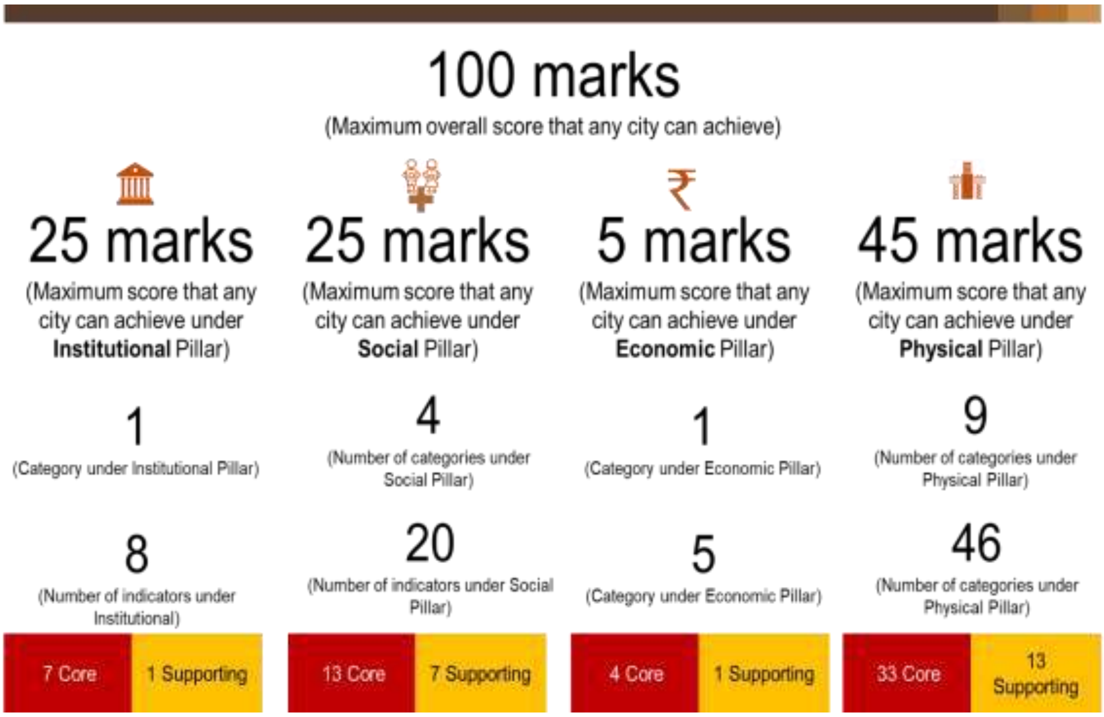
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department, RMC
Urban Local Body	For Park and Recreation Related Questions	AMRUT, RMC
Urban Local Body	For Water Supply and Drainage related questions	Water Supply Department, RMC
Urban Local Body	For Heritage sites related data	Indian National Trust for Art and Culture Heritage
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	Raipur Municipal Corporation
Urban Local Body	For Building plan related data	Raipur Development Authority
Urban Local Body	For Roads related data	Raipur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Department, Raipur Municipal Corporation
Urban Local Body	For IT services related data	IT Section, RMC
Urban Local Body	For Vendor committee related data	Bazar Bibhag, RMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment Exchange, Census Department
For questions under Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Chhattisgarh Pollution Control Board
Development Authority	Building Infrastructure	Raipur Development Authority Raipur Municipal Corporation

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Raipur Development Authority Raipur Municipal Corporation
	Green Building	Raipur Development Authority Raipur Municipal Corporation
	Rain water harvesting	Raipur Development Authority Raipur Municipal Corporation
	Universal Design Principle	Raipur Development Authority Raipur Municipal Corporation
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Chhattisgarh State Power Distribution Corporation Limited
State Disaster management authority		Raipur Smart City Limited
State Education Department		District Education Department
State Health Department	Health care professionals	Chhattisgarh Medical and Health organization
State Health Department	Citizen Services	Chhattisgarh Medical and Health organization
State Health Department	Disease Prevalence	Chhattisgarh Medical and Health organization
State Health Department	Health Infrastructure	Chhattisgarh Medical and Health organization
State Renewable Energy Development Agency		Chhattisgarh Renewable Energy Development Authority
State Sales / Commercial Taxes Department		State Sale Tax department
Town and Country Planning Department	Land Use	Town and country planning department, Raipur
Traffic and Police Department		Police department, Raipur
Transport Authorities	Buses	City Bus In charge, RMC
Transport Authorities	Registered Vehicles	Road and Transport organization
Transport Authorities	Sub urban rail transport	

Designated data owners	Subcategories	Data owners at city level
Transport Authorities	Mono Rail Authority	
Transport Authorities	Tramways	
Transport Authorities	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 189 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

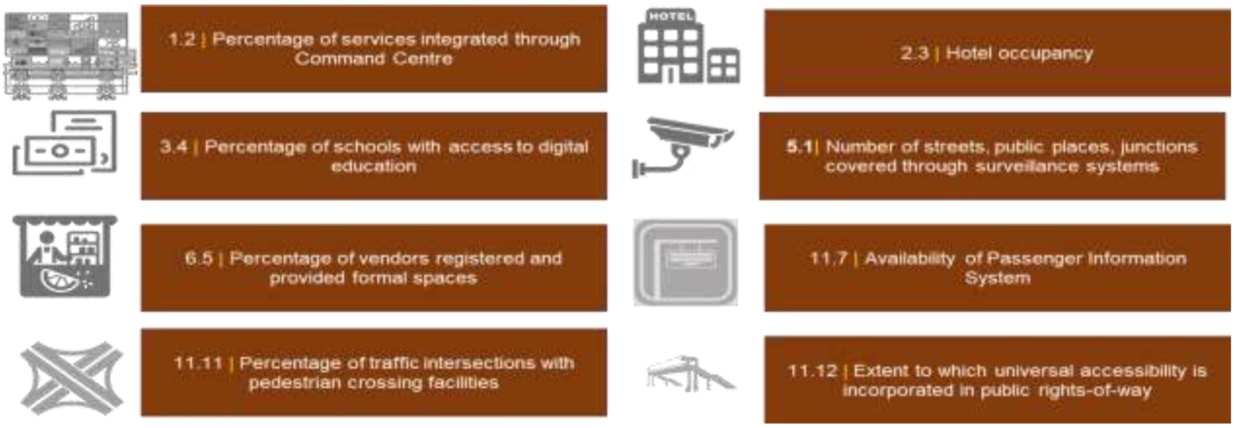
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	4
DISCOM/Electricity Department	16
Traffic and Police Department	25
Development Authority	3
Pollution Control Board	10
State Renewable Energy Department	2
Town and Country Planning	4
State Health Department	24
Transport Authority	9
Disaster Management	1
Urban Local Body	89
Total	189

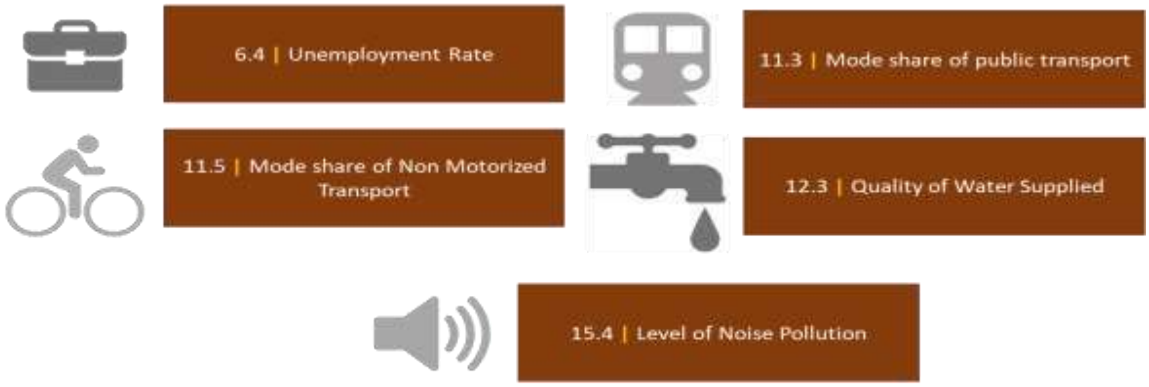
4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

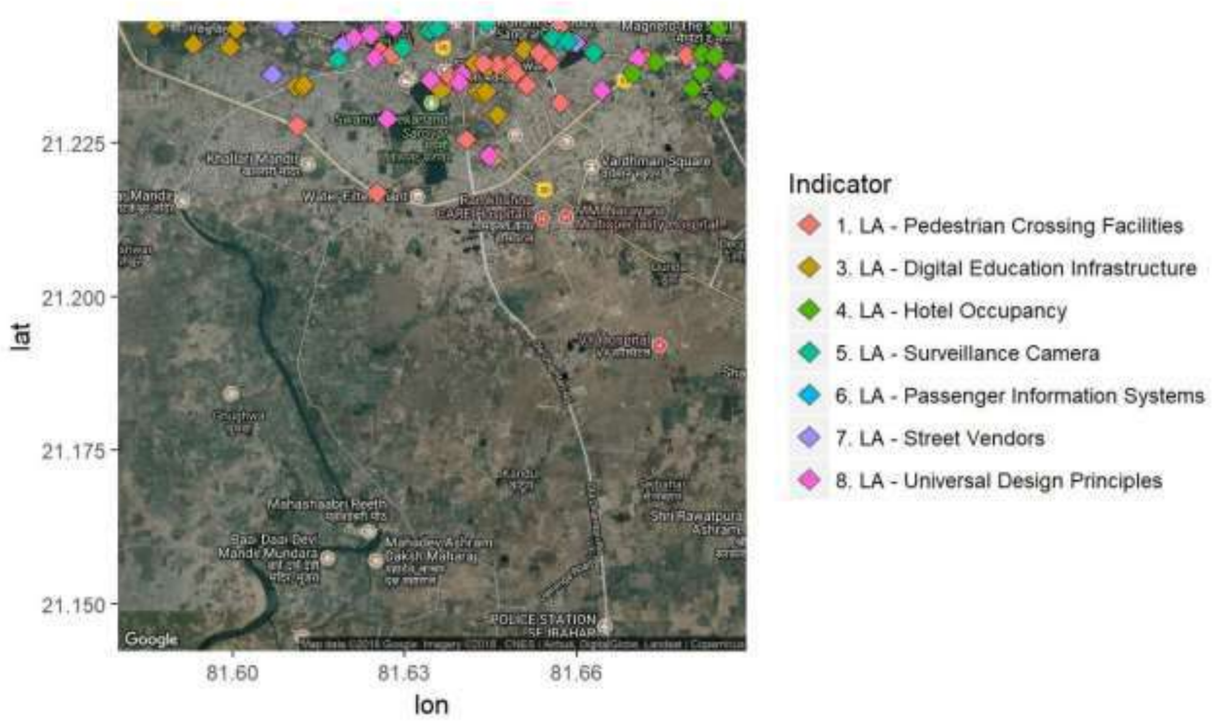

1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1 | Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.


6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


21.225
21.200
21.175
21.150
lat
81.60
81.63
81.66
lon
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	61.49%
Identity & Culture	29%
Education	82%
Health	96%
Safety & Security	62%
Economy & Employment	13%
Housing & Inclusiveness	33%
Public Open Spaces	5%
Mixed Land Use & Compactness	19%
Power Supply	55%
Transport & Mobility	42%
Assured Water Supply	80%
Waste Water Management	58%
Solid Waste Management	89%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

RAJKOT

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

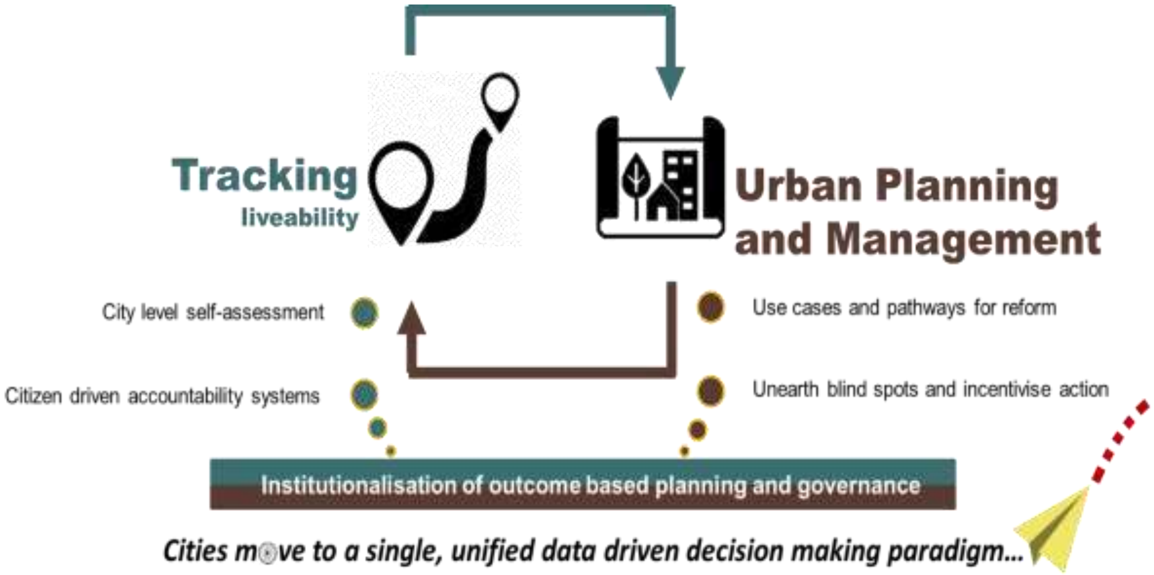
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

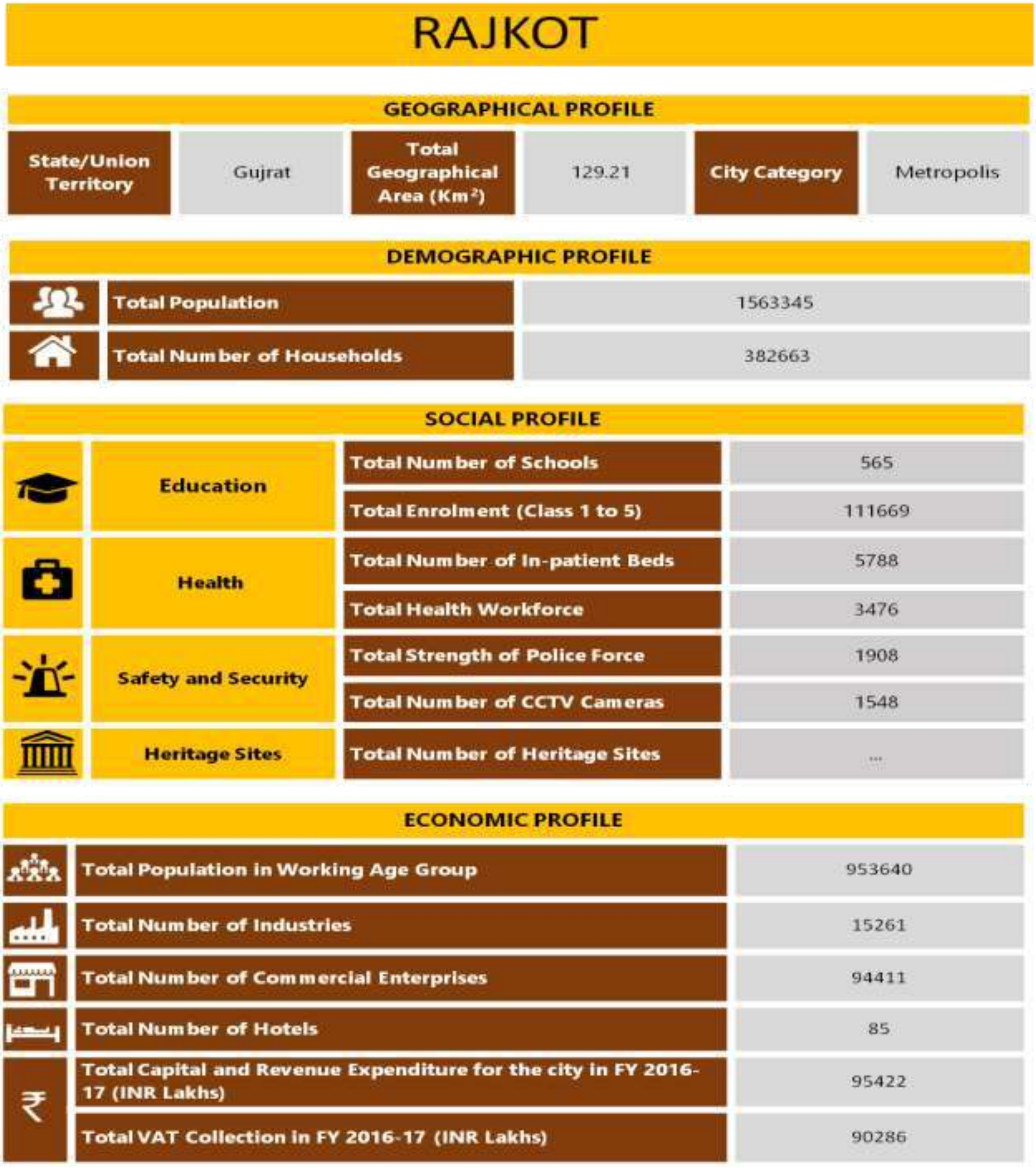
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAJKOT

GEOGRAPHICAL PROFILE

State/Union Territory	Gujrat	**Total Geographical Area (Km²)**	129.21	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

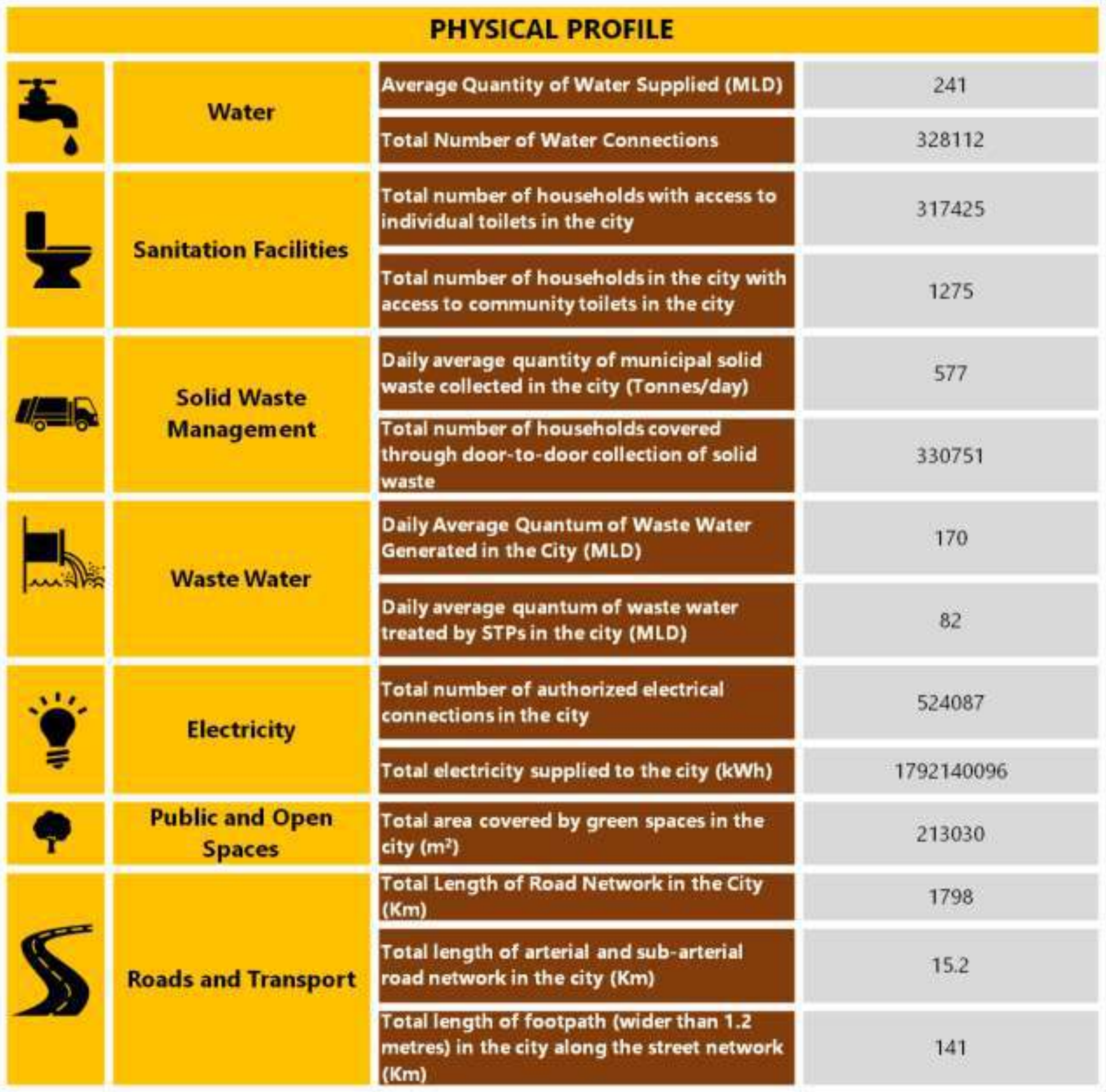
Total Population	1563345
Total Number of Households	382663

SOCIAL PROFILE

Education	**Total Number of Schools**	565
	Total Enrolment (Class 1 to 5)	111669
Health	**Total Number of In-patient Beds**	5788
	Total Health Workforce	3476
Safety and Security	**Total Strength of Police Force**	1908
	Total Number of CCTV Cameras	1548
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	953640
Total Number of Industries	15261
Total Number of Commercial Enterprises	94411
Total Number of Hotels	85
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	95422
Total VAT Collection in FY 2016-17 (INR Lakhs)	90286



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	241
	Total Number of Water Connections	328112
Sanitation Facilities	Total number of households with access to individual toilets in the city	317425
	Total number of households in the city with access to community toilets in the city	1275
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	577
	Total number of households covered through door-to-door collection of solid waste	330751
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	170
	Daily average quantum of waste water treated by STPs in the city (MLD)	82
Electricity	Total number of authorized electrical connections in the city	524087
	Total electricity supplied to the city (kWh)	1792140096
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	213030
Roads and Transport	Total Length of Road Network in the City (Km)	1798
	Total length of arterial and sub-arterial road network in the city (Km)	15.2
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	141

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

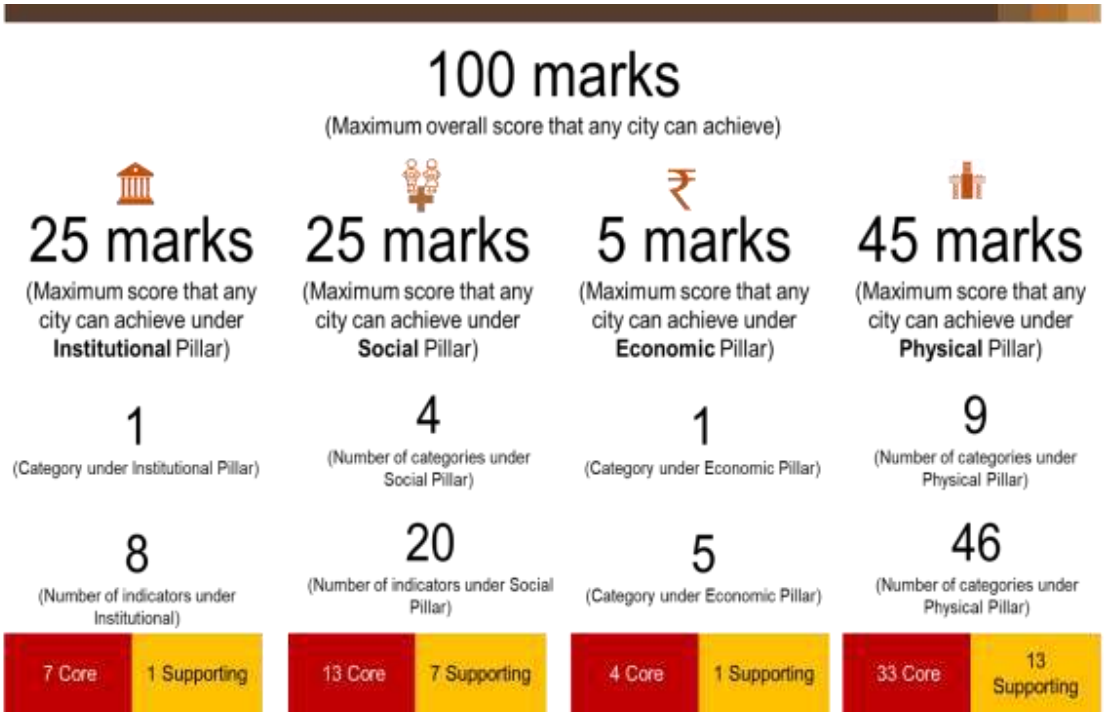
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core | 1 Supporting

25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core | 7 Supporting

5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core | 1 Supporting

45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Park and recreation
Urban Local Body	For Water Supply and Drainage related questions	Drainage department
Urban Local Body	For Heritage sites related data	-
Urban Local Body	For Ecological sites related data	-
Urban Local Body	For Housing related data	-
Urban Local Body	For Building plan related data	Town development
Urban Local Body	For Roads related data	
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	
Urban Local Body	For Vendor committee related data	
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department
Development Authority	Building Infrastructure	
	Construction planning	
	Green Building	

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	
	Universal Design Principle	
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Pgvcl
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	Health department
	Citizen Services	
	Disease Prevalence	
	Health Infrastructure	
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	
Traffic and Police Department		
Transport Authorities	Buses	
	Registered Vehicles	R.T.O
	Sub urban rail transport	Railway department
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 25 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	3
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	0
Urban Local Body	14
Total	25*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

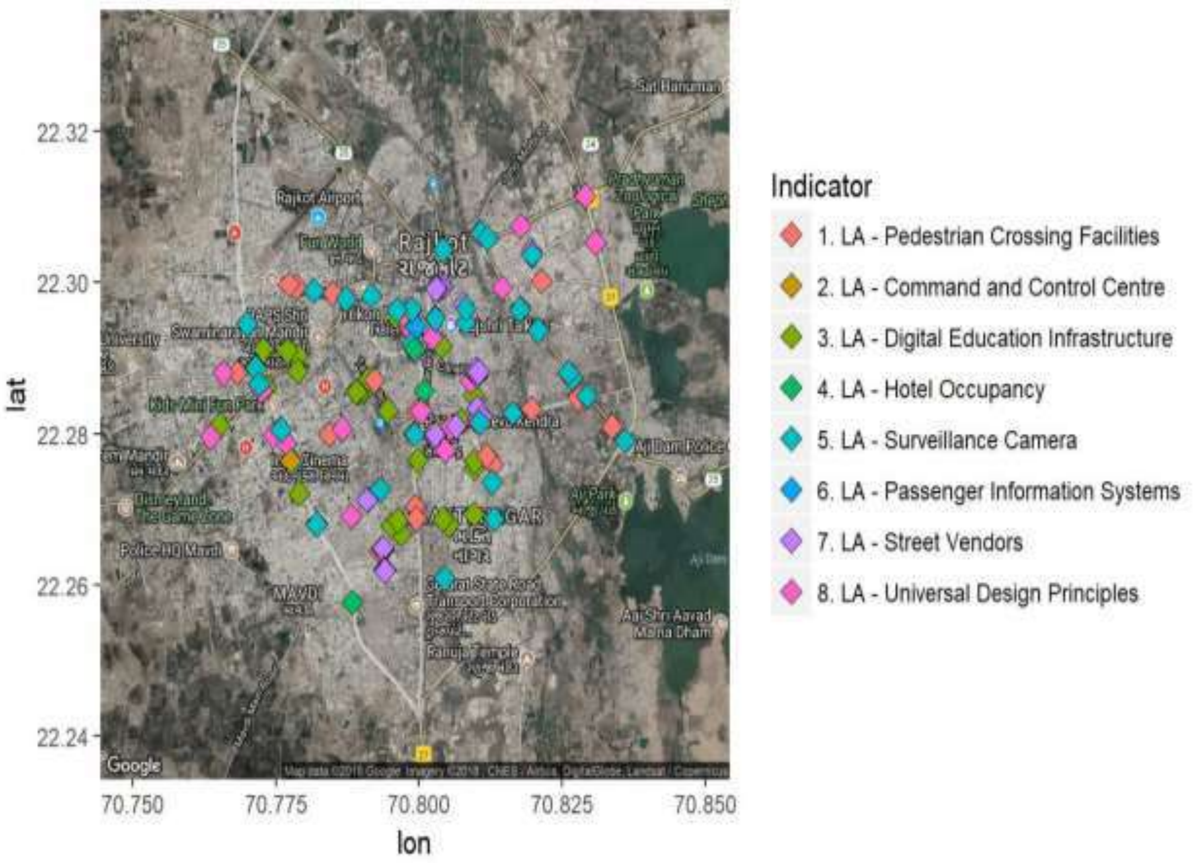
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Indicator
🟥 1. LA - Pedestrian Crossing Facilities
🟧 2. LA - Command and Control Centre
🟩 3. LA - Digital Education Infrastructure
🟩 4. LA - Hotel Occupancy
🟦 5. LA - Surveillance Camera
🟦 6. LA - Passenger Information Systems
🟪 7. LA - Street Vendors
🟪 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	56.12%
Identity & Culture	44%
Education	85%
Health	93%
Safety & Security	61%
Economy & Employment	25%
Housing & Inclusiveness	2%
Public Open Spaces	1%
Mixed Land Use & Compactness	37%
Power Supply	53%
Transport & Mobility	40%
Assured Water Supply	83%
Waste Water Management	72%
Solid Waste Management	68%
Reduced Pollution	86%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

RAMPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

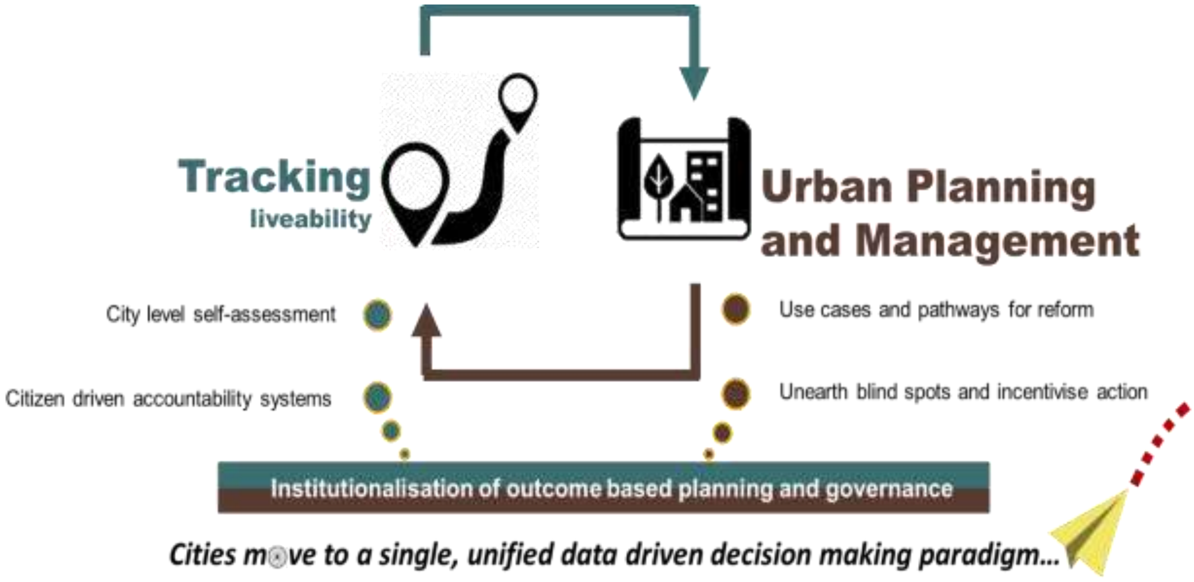
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

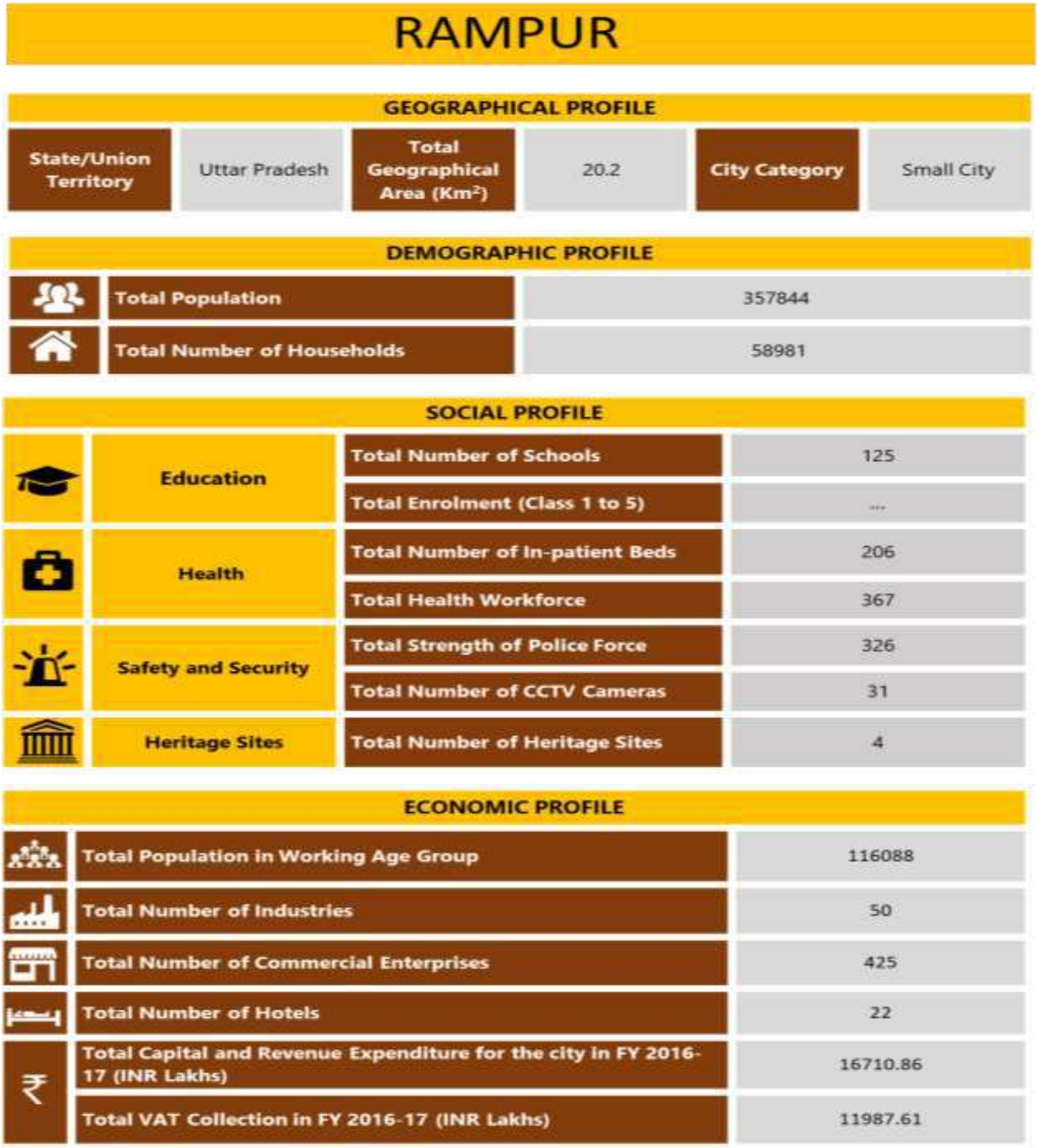
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



RAMPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	Total Geographical Area (Km^2)	20.2	City Category	Small City

DEMOGRAPHIC PROFILE

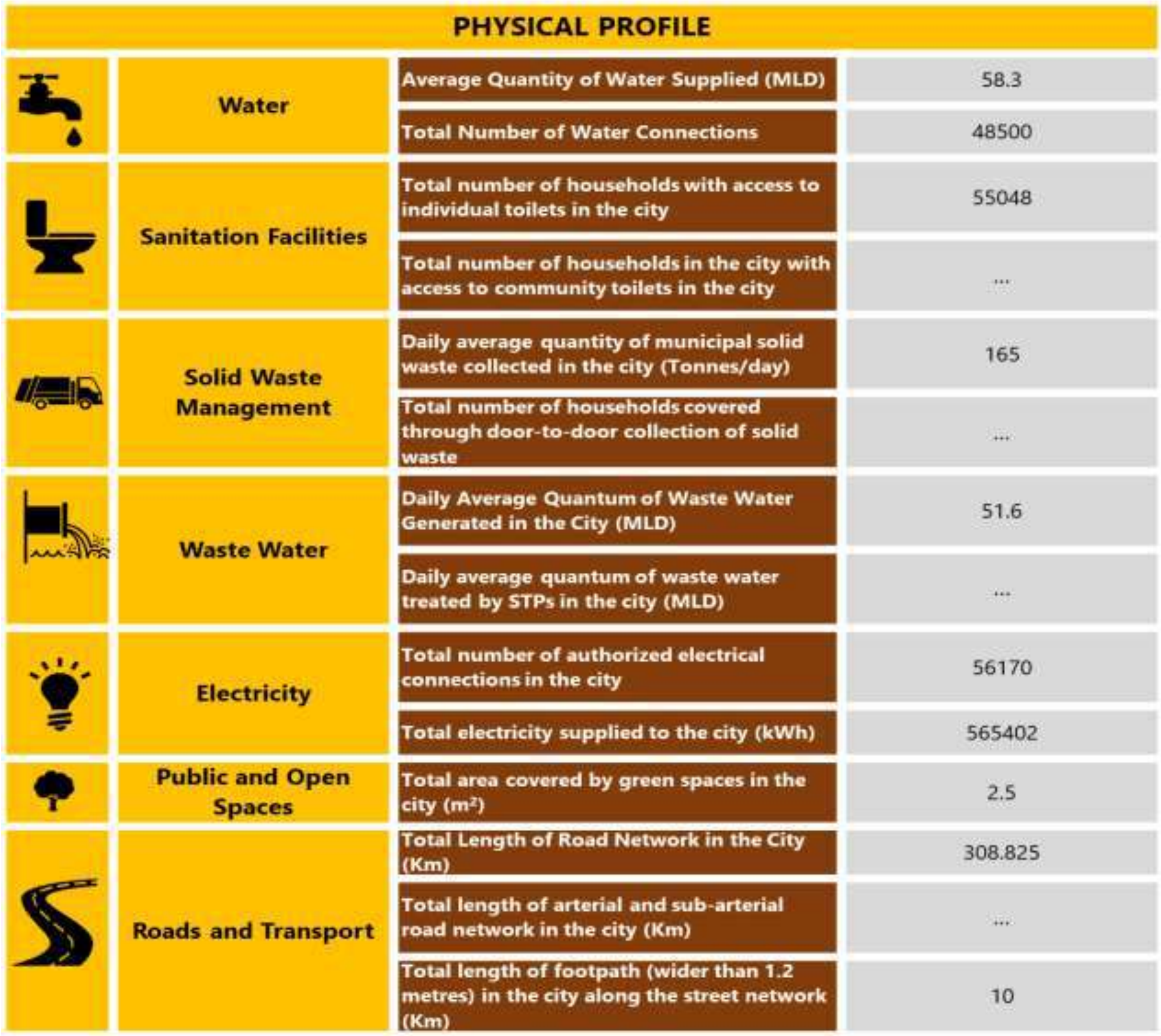
Total Population	357844
Total Number of Households	58981

SOCIAL PROFILE

Education	Total Number of Schools	125
	Total Enrolment (Class 1 to 5)	...
Health	Total Number of In-patient Beds	206
	Total Health Workforce	367
Safety and Security	Total Strength of Police Force	326
	Total Number of CCTV Cameras	31
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	116088
Total Number of Industries	50
Total Number of Commercial Enterprises	425
Total Number of Hotels	22
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	16710.86
Total VAT Collection in FY 2016-17 (INR Lakhs)	11987.61



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	58.3
	Total Number of Water Connections	48500
Sanitation Facilities	Total number of households with access to individual toilets in the city	55048
	Total number of households in the city with access to community toilets in the city	…
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	165
	Total number of households covered through door-to-door collection of solid waste	…
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	51.6
	Daily average quantum of waste water treated by STPs in the city (MLD)	…
Electricity	Total number of authorized electrical connections in the city	56170
	Total electricity supplied to the city (kWh)	565402
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	2.5
Roads and Transport	Total Length of Road Network in the City (Km)	308.825
	Total length of arterial and sub-arterial road network in the city (Km)	…
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	10

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies

Pillars of Comprehensive Development	Category	Indicators
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita

Pillars of Comprehensive Development	Category	Indicators
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced	15.1 Concentration of SO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
	Pollution	15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

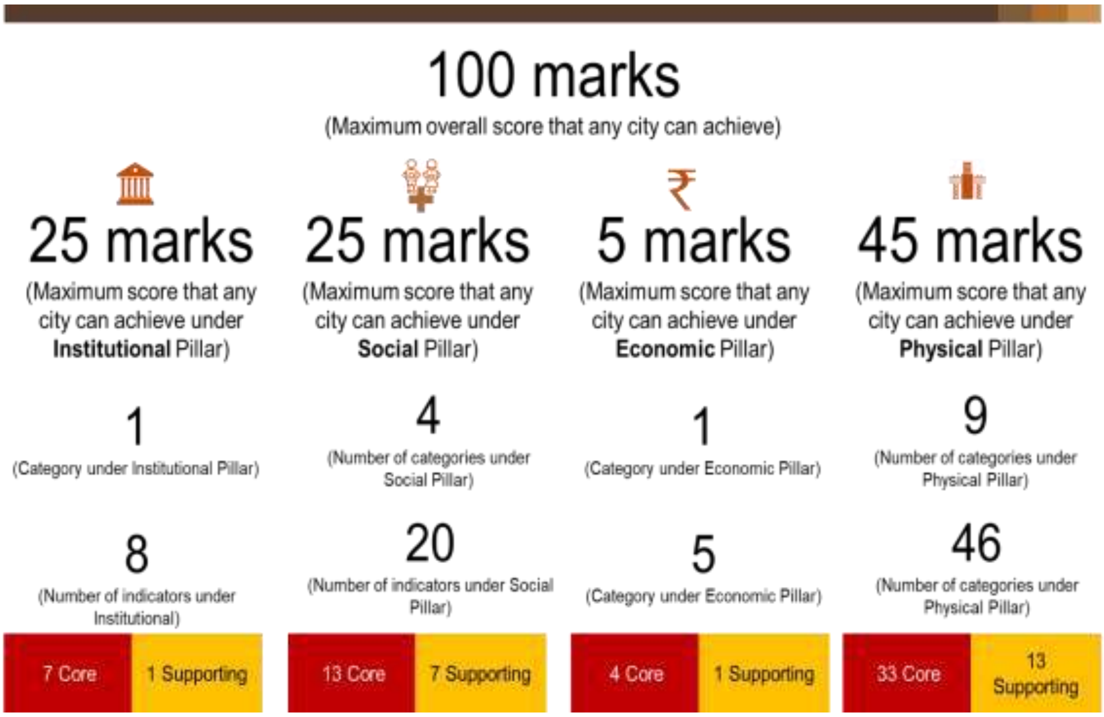
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar Palika Parishad Rampur
Urban Local Body	For Park and Recreation Related Questions	Civil department Nagar Palika Parishad Rampur
Urban Local Body	For Water Supply and Drainage related questions	Jalkal vibhag Nagar Palika Parishad Rampur
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Civil Department Rampur
Urban Local Body	For Housing related data	Moradabad Development Authority / properties tax department Nagar Palika Parishad Rampur
Urban Local Body	For Building plan related data	Rampur Development Authority Rampur
Urban Local Body	For Roads related data	Public Works Department / civil department rampur
Urban Local Body	For Solid waste management related data	Health Department Nagar Palika Parishad Rampur
Urban Local Body	For IT services related data	IT department (main office) Nagar palika parishad Rampur
Urban Local Body	For Vendor committee related data	Tex department ULB Rampur
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Rampur
Central / state	Water Quality, Air	Uttar Pradesh pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Pollution control Board	Quality, Noise Quality	Moradabad
Development Authority	Building Infrastructure	Rampur development Authority Rampur
	Construction planning	Rampur development Authority Rampur
	Green Building	Rampur development Authority Rampur
	Rain water harvesting	Rampur development Authority Rampur
	Universal Design Principle	Rampur development Authority Rampur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Rampur
State Disaster management authority		State Disaster Management Rampur [in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Rampur (DIOS)
State Health Department	Health care professionals	UP State Health Department Rampur (CMO)
	Citizen Services	UP State Health Department Rampur (CMO)
	Disease Prevalence	UP State Health Department Rampur (CMO)
	Health Infrastructure	UP State Health Department Rampur (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Rampur
Town and Country Planning Department	Land Use	Town and Country Planning Department Moradabad
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Rampur
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Rampur
	Registered Vehicles	Regional Transport Office Rampur
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 45 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

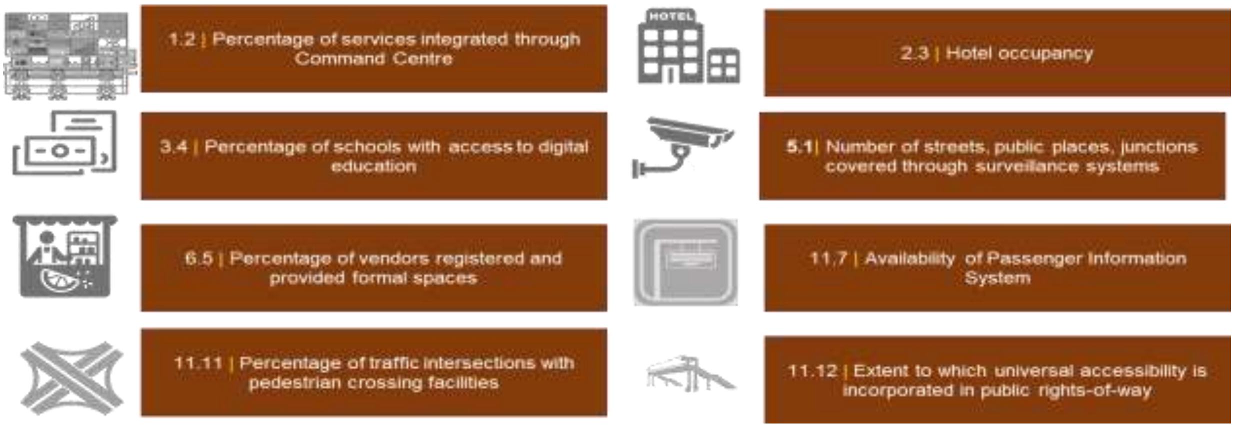
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**3**
Traffic and Police Department	**1**
Development Authority	**1**
Pollution Control Board	**1**
State Renewable Energy Department	**3**
Town and Country Planning	**1**
State Health Department	**3**
Transport Authority	**1**
Disaster Management	**1**
Urban Local Body	**28**
Total	**45***

4.4 Data Verification

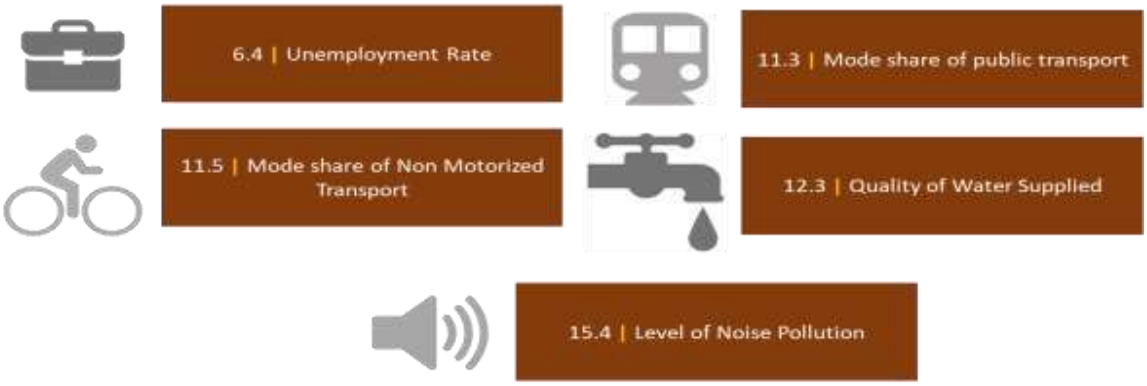
A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

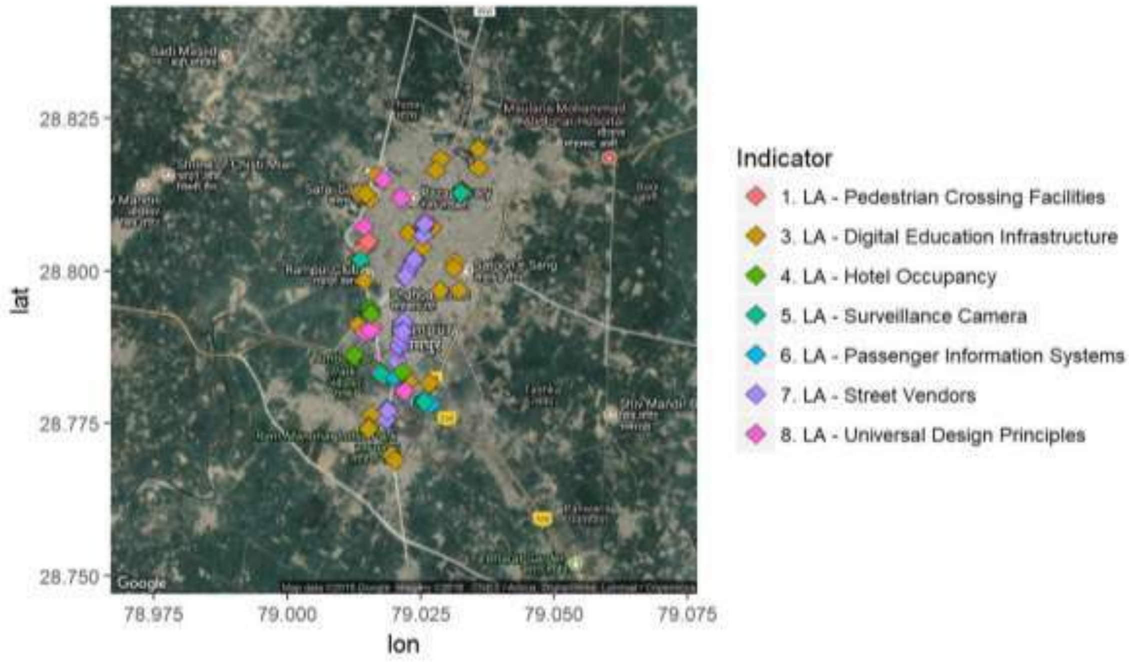
For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


28.825
28.800
28.775
28.750
lat
78.975
79.000
79.025
79.050
79.075
lon
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: category wise scores

Categories	Scores in Percentage
Governance	44.26%
Identity & Culture	11%
Education	0%
Health	58%
Safety & Security	63%
Economy & Employment	58%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	57%
Transport & Mobility	27%
Assured Water Supply	40%
Waste Water Management	19%
Solid Waste Management	33%
Reduced Pollution	0%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
DRAFT REPORT

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

RANCHI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

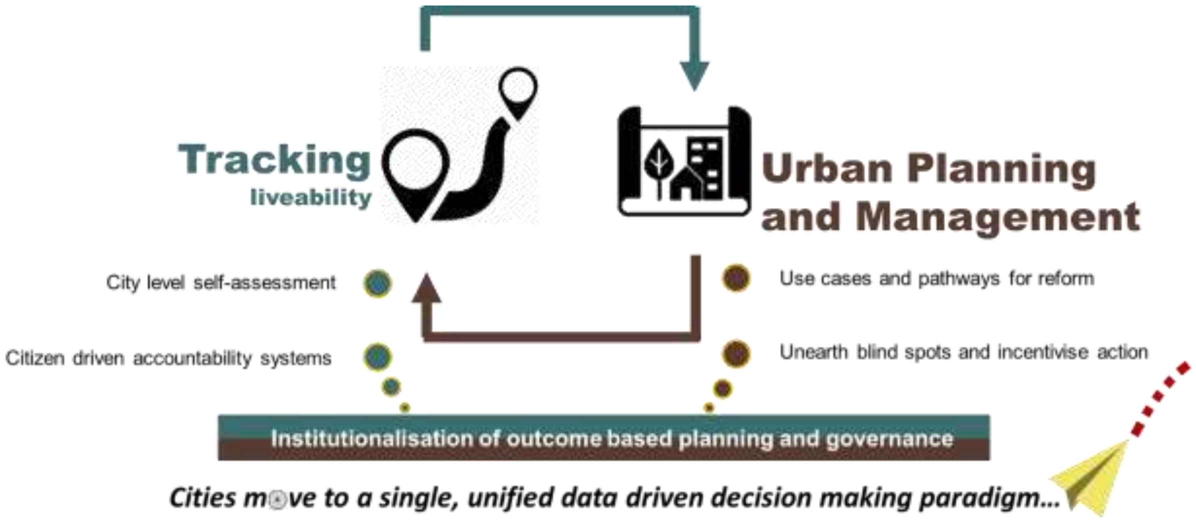
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Jharkhand	**Total Geographical Area (Km^2)**	175	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1073427
Total Number of Households	239239

SOCIAL PROFILE

Education	**Total Number of Schools**	319
	Total Enrolment (Class 1 to 5)	80333
Health	**Total Number of In-patient Beds**	43
	Total Health Workforce	4422
Safety and Security	**Total Strength of Police Force**	4254
	Total Number of CCTV Cameras	180
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	558688
Total Number of Industries	7
Total Number of Commercial Enterprises	26000
Total Number of Hotels	340
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	18593
Total VAT Collection in FY 2016-17 (INR Lakhs)	513159

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	217
	Total Number of Water Connection	43098
Sanitation Facilities	Total number of households with access to individual toilets in the city	163229
	Total number of households in the city with access to community toilets in the city	1875
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	160
	Total number of households covered through door-to-door collection of solid waste	123863
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	5
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	297409
	Total electricity supplied to the city (kWh)	1084552698
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1011980000
Roads and Transport	Total Length of Road Network in the City (Km)	143
	Total length of arterial and sub-arterial road network in the city (Km)	55
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	171

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities

Pillars of Comprehensive Development	Category	Indicators
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal

Pillars of Comprehensive Development	Category	Indicators
		spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle

Pillars of Comprehensive Development	Category	Indicators
		tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

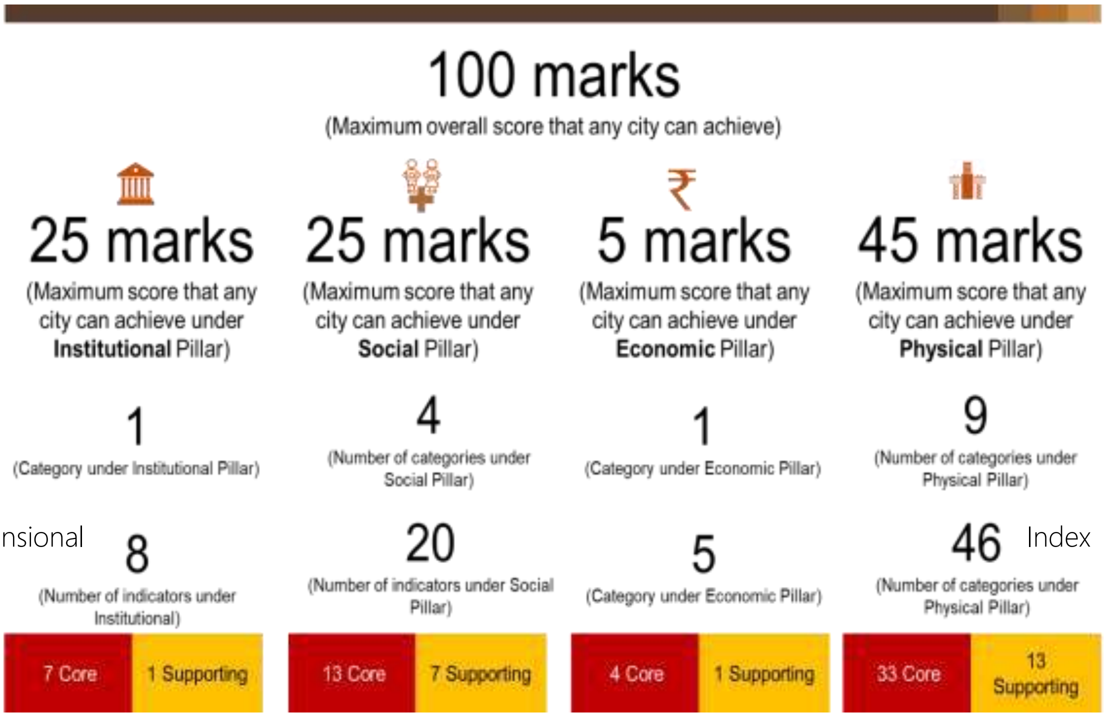
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the

questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Ranchi Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Ranchi Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Ranchi Municipal Corporation
Urban Local Body	For Heritage sites related data	Ranchi Municipal Corporation
Urban Local Body	For Ecological sites related data	Ranchi Municipal Corporation
Urban Local Body	For Housing related data	Ranchi Municipal Corporation
Urban Local Body	For Building plan related data	Ranchi Municipal Corporation
Urban Local Body	For Roads related data	Ranchi Municipal Corporation
Urban Local Body	For Solid waste management related data	Ranchi Municipal Corporation
Urban Local Body	For IT services related data	Ranchi Municipal Corporation
Urban Local Body	For Vendor committee related data	Ranchi Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism department, Excise and taxes department, architecture department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	JharkhandState Pollution Control Board
Development Authority	Building Infrastructure	Greater Ranchi Development Authority
	Construction planning	Greater Ranchi Development Authority
	Green Building	Greater Ranchi Development Authority
	Rain water harvesting	Greater Ranchi Development Authority
	Universal Design Principle	Greater Ranchi Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tripura State Electricity Corporation Limited
State Disaster management authority		District Disaster management Office, Ranchi
State Education Department		District Education Department, Ranchi

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	Civil Surgeon, Ranchi
	Citizen Services	Civil Surgeon, Ranchi
	Disease Prevalence	Civil Surgeon, Ranchi
	Health Infrastructure	Civil Surgeon, Ranchi
State Renewable Energy Development Agency		Jharkhand Renewable Energy Development Agency, Ranchi
State Sales / Commercial Taxes Department		Commercial Taxes department, Ranchi
Town and Country Planning Department	Land Use	Town Planning Department, Ranchi
Traffic and Police Department		Office of Commissioner of Police, Ranchi
Transport Authorities	Buses	District Transport Office, Ranchi
	Registered Vehicles	District Transport Office, Ranchi
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 09 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

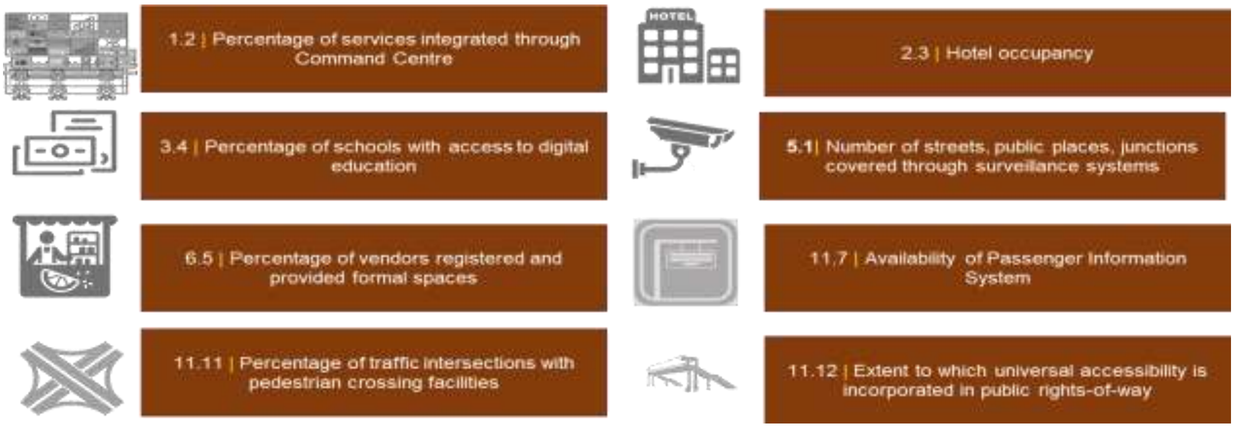
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	1
Transport Authority	0
Disaster Management	0
Urban Local Body	6
Total	09*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

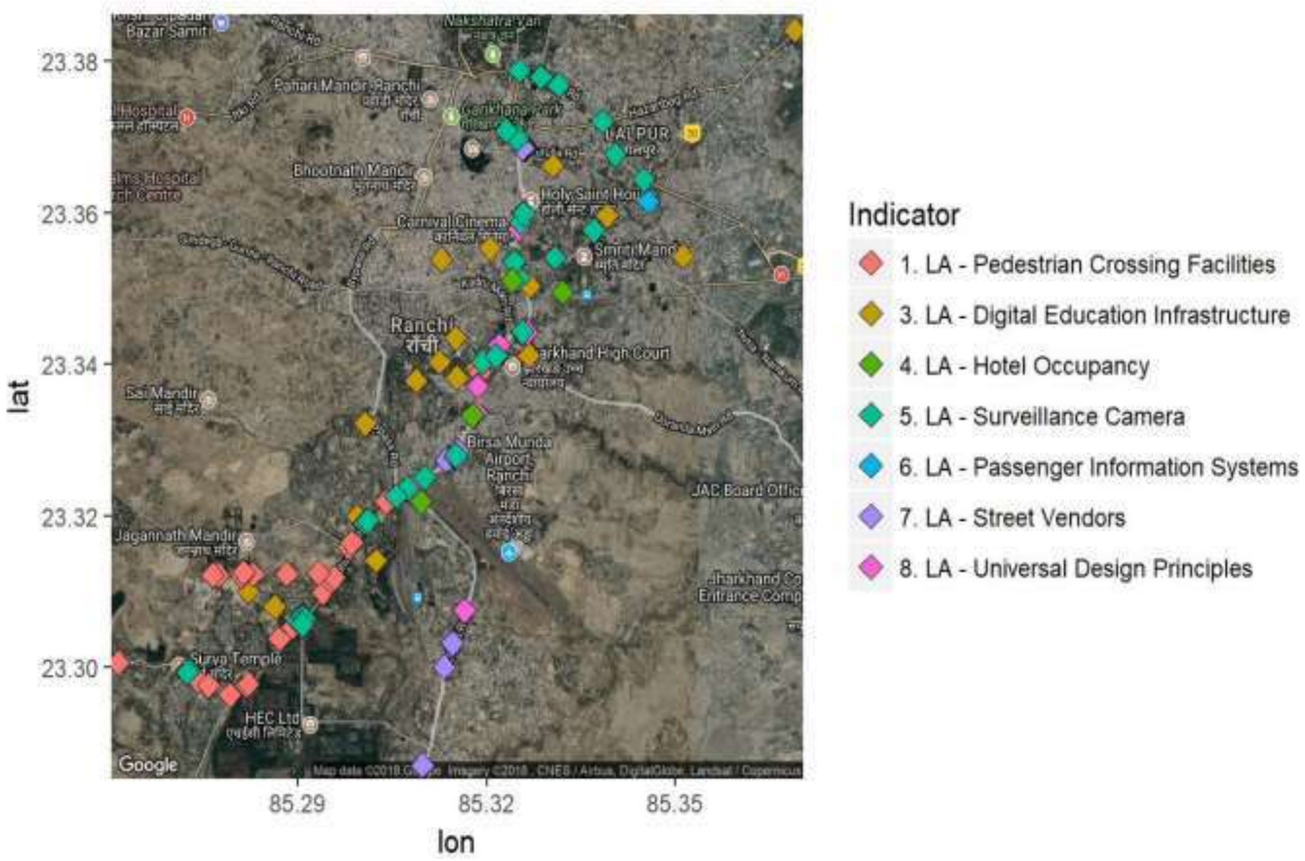
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


23.38
23.36
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23.30
lat
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lon
Ranchi
Birsa Munda Airport Ranchi
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	71.46%
Identity & Culture	49%
Education	68%
Health	71%
Safety & Security	47%
Economy & Employment	16%
Housing & Inclusiveness	26%
Public Open Spaces	7%
Mixed Land Use & Compactness	11%
Power Supply	62%
Transport & Mobility	22%
Assured Water Supply	62%
Waste Water Management	40%
Solid Waste Management	30%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

ROURKELA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

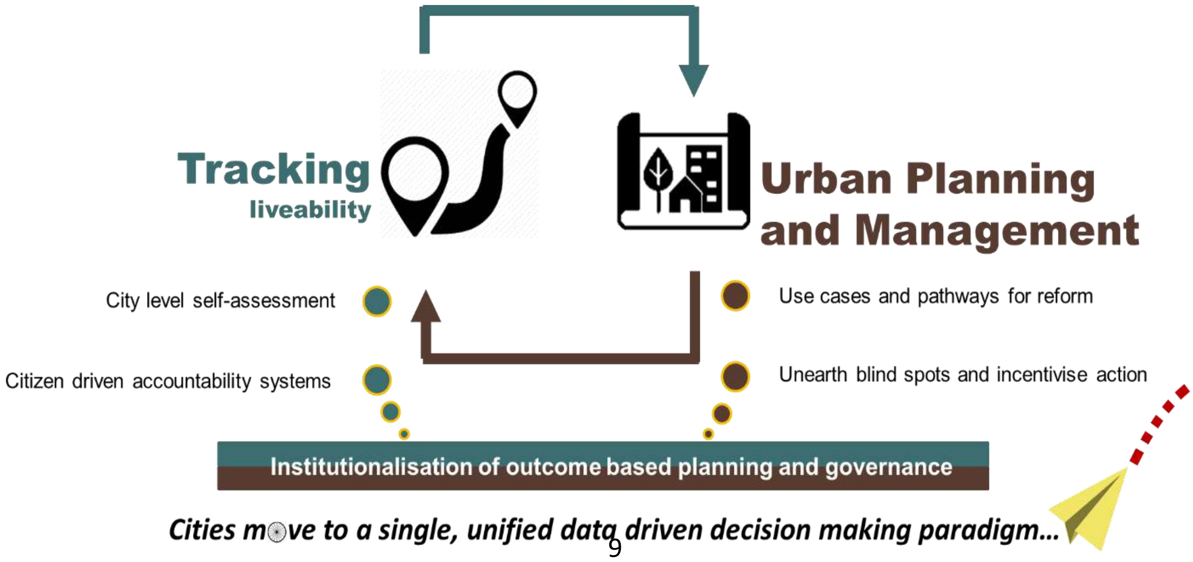
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

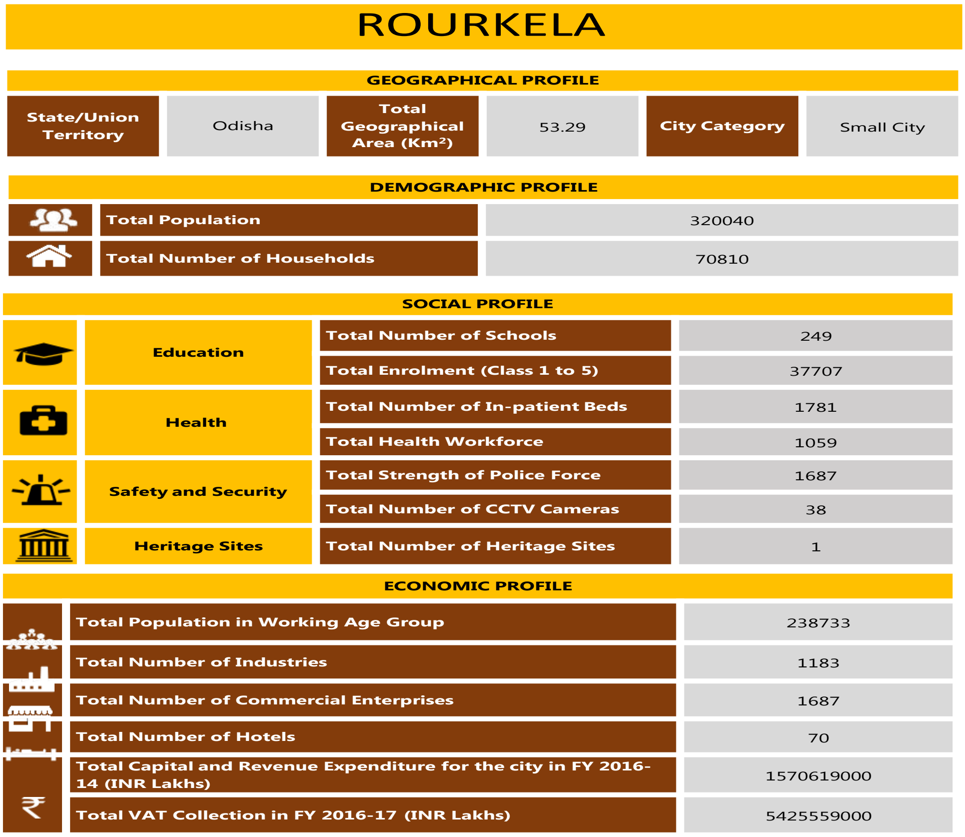
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



ROURKELA

GEOGRAPHICAL PROFILE

State/Union Territory	Odisha	Total Geographical Area (Km²)	53.29	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	320040
Total Number of Households	70810

SOCIAL PROFILE

Education	Total Number of Schools	249
	Total Enrolment (Class 1 to 5)	37707
Health	Total Number of In-patient Beds	1781
	Total Health Workforce	1059
Safety and Security	Total Strength of Police Force	1687
	Total Number of CCTV Cameras	38
Heritage Sites	Total Number of Heritage Sites	1

ECONOMIC PROFILE

Total Population in Working Age Group	238733
Total Number of Industries	1183
Total Number of Commercial Enterprises	1687
Total Number of Hotels	70
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	1570619000
Total VAT Collection in FY 2016-17 (INR Lakhs)	5425559000

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	52.6
	Total Number of Water Connection	23895
Sanitation Facilities	Total number of households with access to individual toilets in the city	57534
	Total number of households in the city with access to community toilets in the city	2800
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	10200
	Total number of households covered through door-to-door collection of solid waste	61413
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	48
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	79629
	Total electricity supplied to the city (kWh)	288780000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	787540.7
Roads and Transport	Total Length of Road Network in the City (Km)	524.47
	Total length of arterial and sub-arterial road network in the city (Km)	78.268
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	30

3.Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections

Pillars of Comprehensive Development	Category	Indicators
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

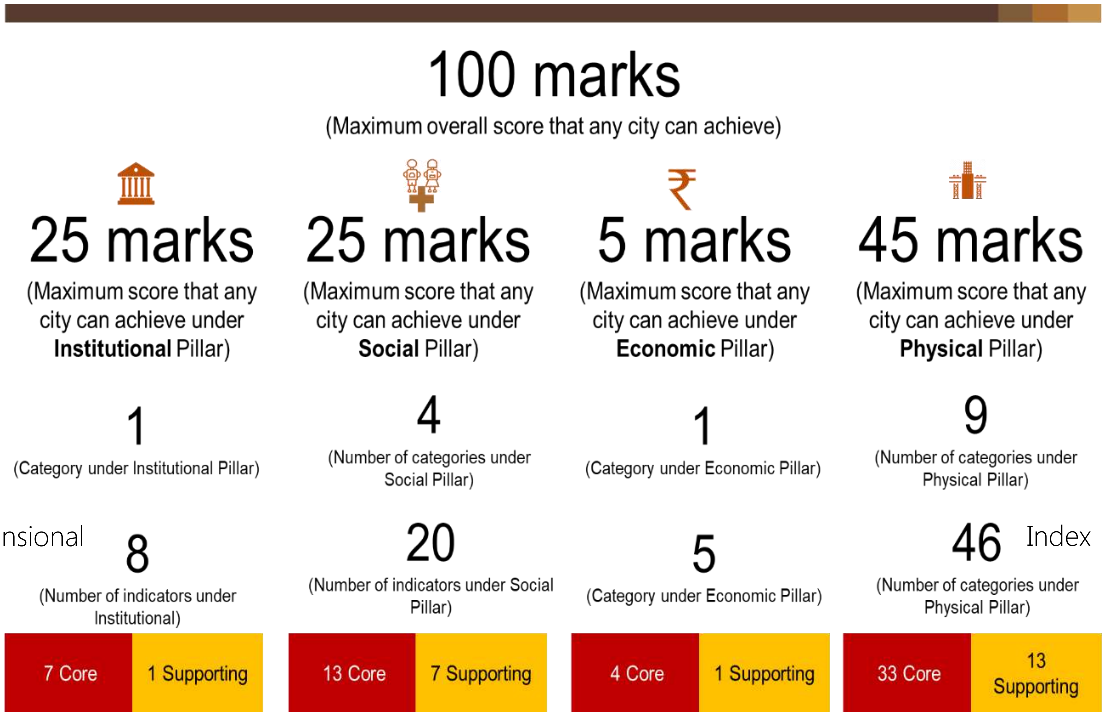
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Rourkela Municipal Corporation Revenue Deptt., Sub-Collector Office
Urban Local Body	For Park and Recreation Related Questions	Rourkela Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Rourkela Municipal Corporation
Urban Local Body	For Heritage sites related data	District Tourist Office, Dept. of Tourism Rourkela Municipal Corporation
Urban Local Body	For Ecological sites related data	Rourkela Municipal Corporation
Urban Local Body	For Housing related data	Rourkela Municipal Corporation Rourkela Development Authority
Urban Local Body	For Building plan related data	Rourkela Municipal Corporation Rourkela Development Authority
Urban Local Body	For Roads related data	Rourkela Municipal Corporation Road & Building Superintendent Engineer
Urban Local Body	For Solid waste management related data	Rourkela Municipal Corporation
Urban Local Body	For IT services related data	Rourkela Municipal Corporation
Urban Local Body	For Vendor committee related data	Rourkela Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Public Health Officer, Odisha State Pollution Control Board
Development Authority	Building Infrastructure	Rourkela Municipal Corporation RDA/Smart City
	Construction planning	Rourkela Municipal Corporation RDA/Smart City
	Green Building	Rourkela Municipal Corporation RDA/Smart City
	Rain water harvesting	Department of Water Resources RDA/Smart City

Designated data owners	Subcategories	Data owners at city level
	Universal Design Principle	Rourkela Municipal Corporation RDA/Smart City
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	WESCO, Rourkela
State Disaster management authority		Odisha State Disaster Management Authority
State Education Department		BEO Office, Rourkela
State Health Department	Health care professionals	IGH, SAIL, Rourkela Steel Plant RGH, Rourkela
	Citizen Services	IGH, SAIL, Rourkela Steel Plant NUHM RGH, Rourkela
	Disease Prevalence	IGH, SAIL, Rourkela Steel Plant NUHM RGH, Rourkela
	Health Infrastructure	IGH, SAIL, Rourkela Steel Plant RGH, Rourkela
State Renewable Energy Development Agency		Odisha Renewable Energy Development Agency
State Sales / Commercial Taxes Department		Commercial Tax Department, Rourkela
Town and Country Planning Department	Land Use	SAIL, Rourkela Steel PlantRDA/Smart City
Traffic and Police Department		Office of the Superintendent of Police, Rourkela
Transport Authorities	Buses	Road Transport Office
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 06 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping

of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	0
Transport Authority	1
Disaster Management	0
Urban Local Body	1
Total	6*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

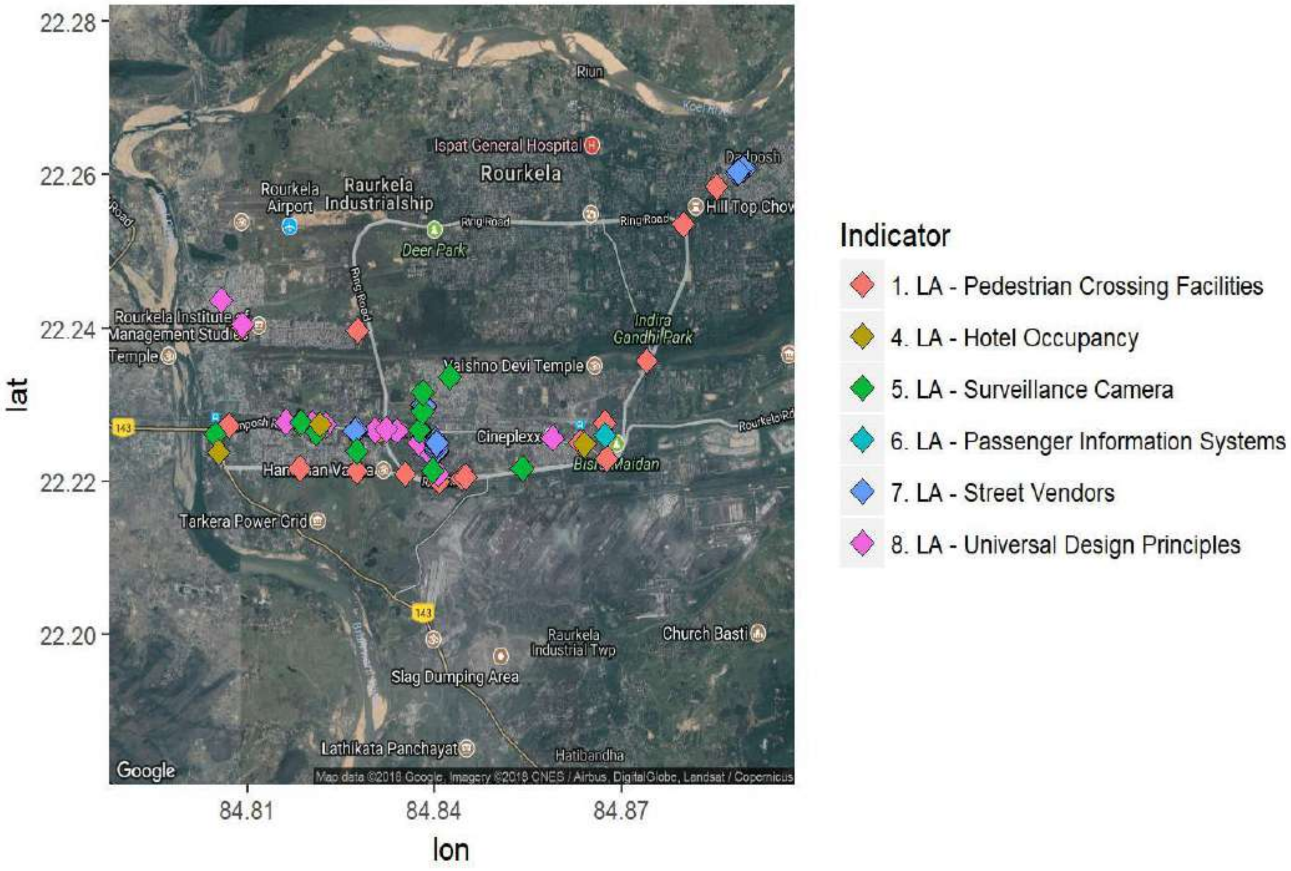
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.28
22.26
22.24
22.22
22.20
lat
84.81
84.84
84.87
lon
Riun
Ispat General Hospital
Rourkela
Rourkela Airport
Raurkela Industrialship
Deer Park
Ring Road
Hill Top Chow
Indira Gandhi Park
Rourkela Institute of Management Studies
Temple
Vaishno Devi Temple
Cineplexx
Bisra Maidan
Tarkera Power Grid
Raurkela Industrial Twp
Church Basti
Slag Dumping Area
Lathikata Panchayat
Hatibandha
Google
Map data ©2018 Google, Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	26.56%
Identity & Culture	21%
Education	91%
Health	99%
Safety & Security	58%
Economy & Employment	15%
Housing & Inclusiveness	8%
Public Open Spaces	13%
Mixed Land Use & Compactness	0%
Power Supply	52%
Transport & Mobility	40%
Assured Water Supply	56%
Waste Water Management	38%
Solid Waste Management	57%
Reduced Pollution	65%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SAGAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

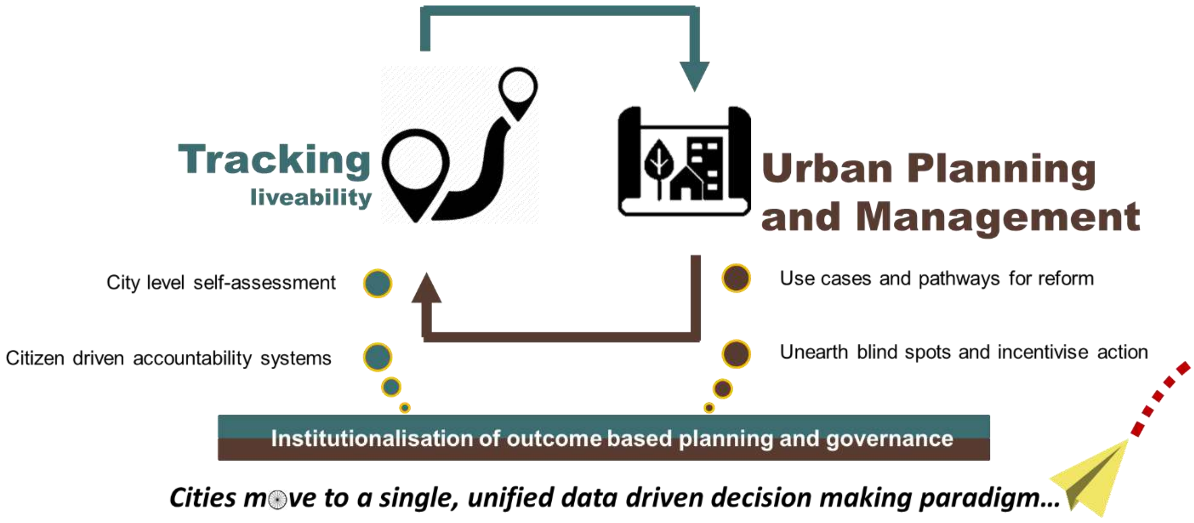
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

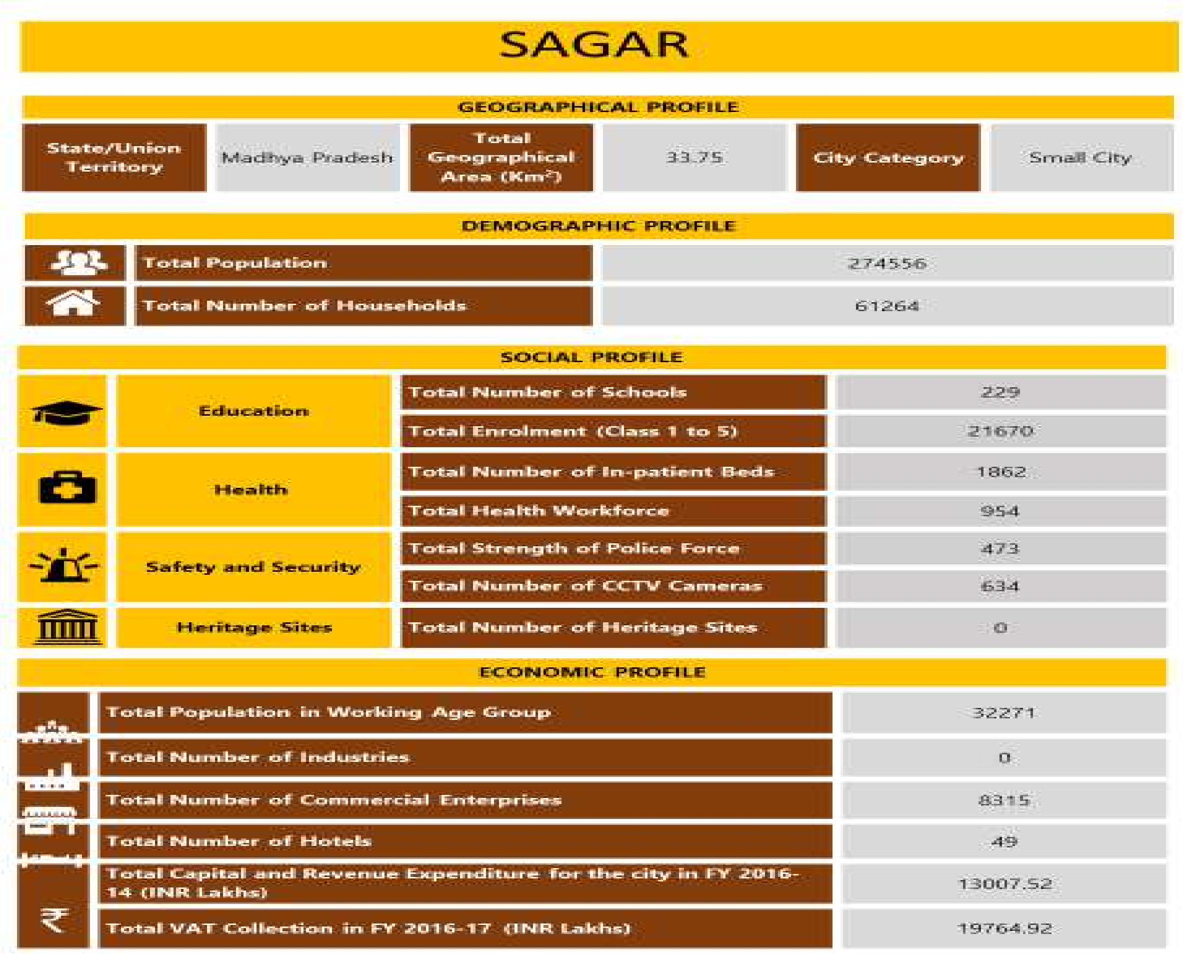

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	Total Geographical Area (Km²)	33.75	City Category	Small City

DEMOGRAPHIC PROFILE

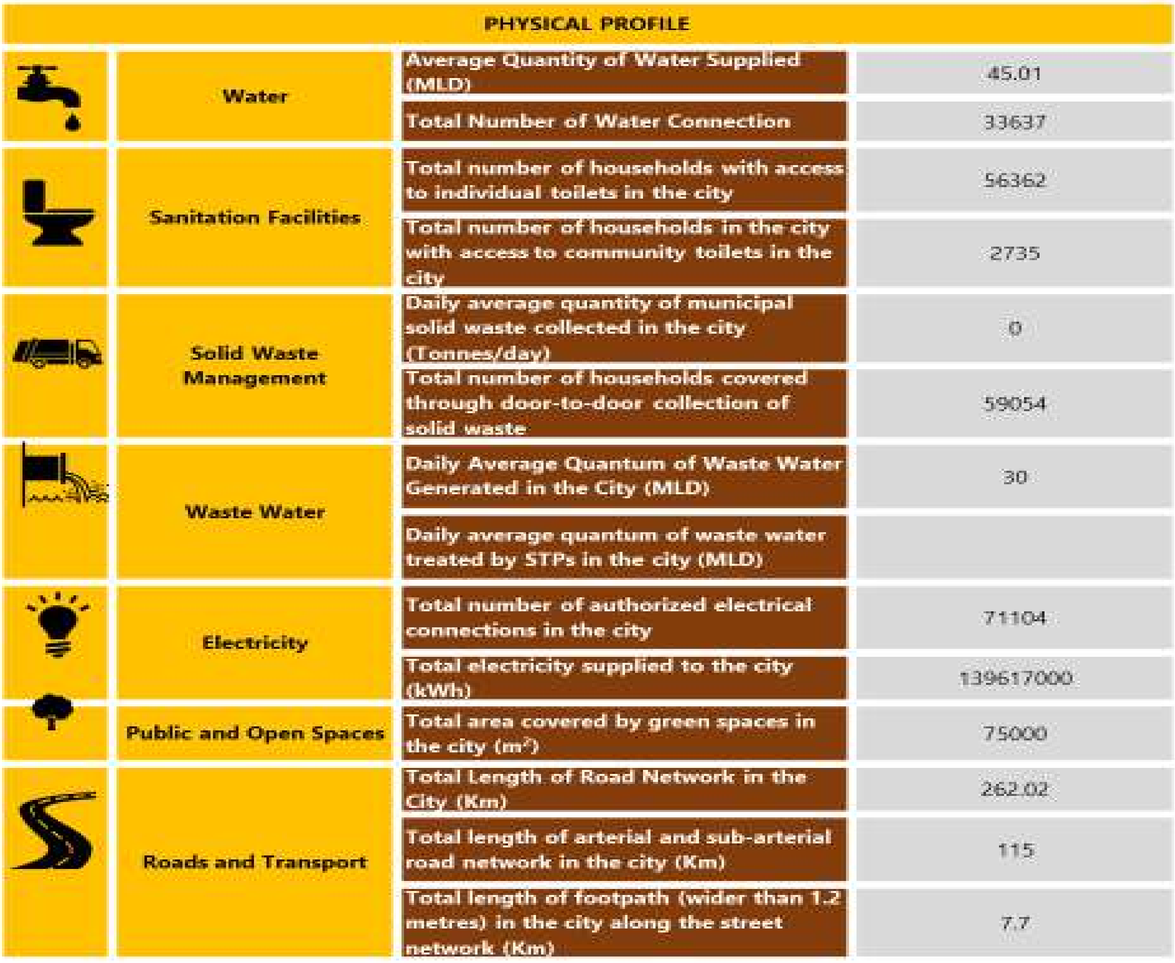
Total Population	274556
Total Number of Households	61264

SOCIAL PROFILE

Education	Total Number of Schools	229
	Total Enrolment (Class 1 to 5)	21670
Health	Total Number of In-patient Beds	1862
	Total Health Workforce	954
Safety and Security	Total Strength of Police Force	473
	Total Number of CCTV Cameras	634
Heritage Sites	Total Number of Heritage Sites	0

ECONOMIC PROFILE

Total Population in Working Age Group	32271
Total Number of Industries	0
Total Number of Commercial Enterprises	8315
Total Number of Hotels	49
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	13007.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	19764.92



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	45.01
	Total Number of Water Connection	33637
Sanitation Facilities	Total number of households with access to individual toilets in the city	56362
	Total number of households in the city with access to community toilets in the city	2735
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0
	Total number of households covered through door-to-door collection of solid waste	59054
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	30
	Daily average quantum of waste water treated by STPs in the city (MLD)	
Electricity	Total number of authorized electrical connections in the city	71104
	Total electricity supplied to the city (kWh)	139617000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	75000
Roads and Transport	Total Length of Road Network in the City (Km)	262.02
	Total length of arterial and sub-arterial road network in the city (Km)	115
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

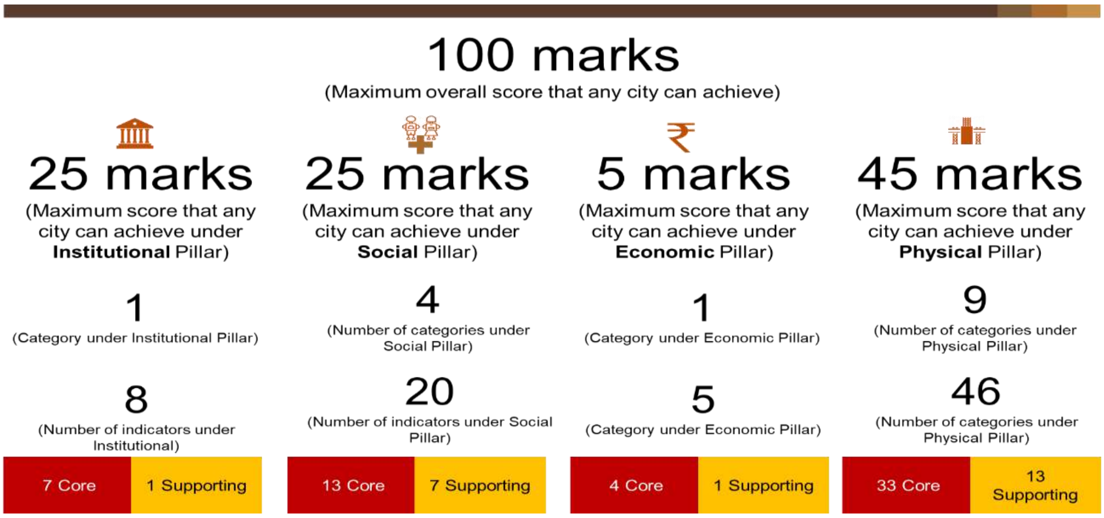
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	**25 marks** (Maximum score that any city can achieve under **Social** Pillar)	**5 marks** (Maximum score that any city can achieve under **Economic** Pillar)	**45 marks** (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounts Department, Sagar Municipal Corporation
	Park and Recreation	Sagar Municipal Corporation
	Water Supply and Drainage	Water Supply department, Sagar Municipal Corporation
	Heritage sites	Sagar Municipal Corporation
	Ecological sites	Sagar Municipal Corporation
	Housing	Housing section, Sagar Municipal Corporation
	Building plan	Sagar Municipal Corporation
	Roads	Lokakram Sakha, Sagar Municipal Corporation
	Solid waste management	Sagar Municipal Corporation
	IT services	IT Section, Sagar Municipal

Designated data owners	Sub categories	Data owners at city level
		Corporation
	Vendor committee	Bazar Sakha, Sagar Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	MP Housing and Infrastructure development board
	Construction planning	MP Housing and Infrastructure development board
	Green Building	MP Housing and Infrastructure development board
	Rain water harvesting	MP Housing and Infrastructure development board
	Universal Design Principle	MP Housing and Infrastructure development board
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Sagar
	Buses	Regional Transport Office

Designated data owners	Sub categories	Data owners at city level
Transport Authorities	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 92 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	1
DISCOM/Electricity Department	3
Traffic and Police Department	5
Development Authority	1
Pollution Control Board	3
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	72
Total	92

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

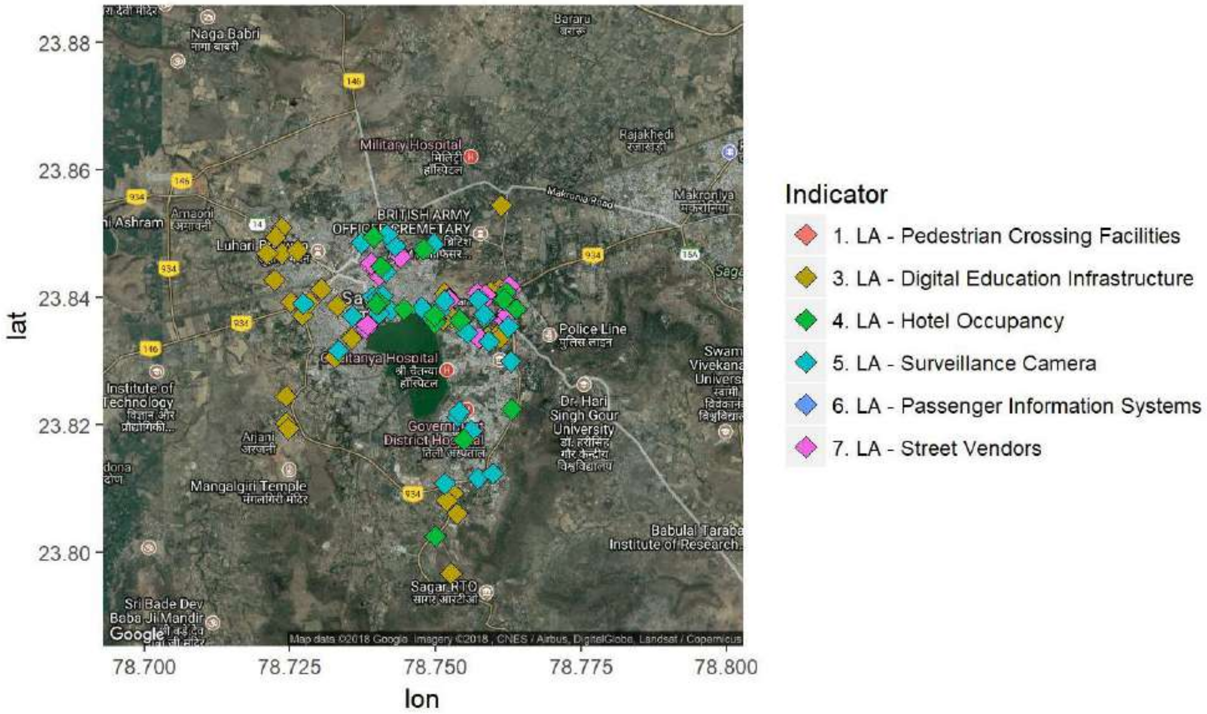
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
23.88
23.86
23.84
23.82
23.80
lon
78.700
78.725
78.750
78.775
78.800
Naga Babri
Bararu
Military Hospital
Rajakhedi
Makroniya
Makronia Road
BRITISH ARMY OFFICER CREMETARY
Amaoni
Luhari
Police Line
Chaitanya Hospital
Institute of Technology
Dr. Hari Singh Gour University
Government District Hospital
Arjani
Mangalgiri Temple
Babulal Tarabai Institute of Research
Sagar RTO
Sri Bade Dev Baba Ji Mandir
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	56.51%
Identity & Culture	27%
Education	68%
Health	99%
Safety & Security	55%
Economy & Employment	30%
Housing & Inclusiveness	19%
Public Open Spaces	1%
Mixed Land Use & Compactness	0%
Power Supply	41%
Transport & Mobility	13%
Assured Water Supply	77%
Waste Water Management	45%
Solid Waste Management	33%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SAHARANPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

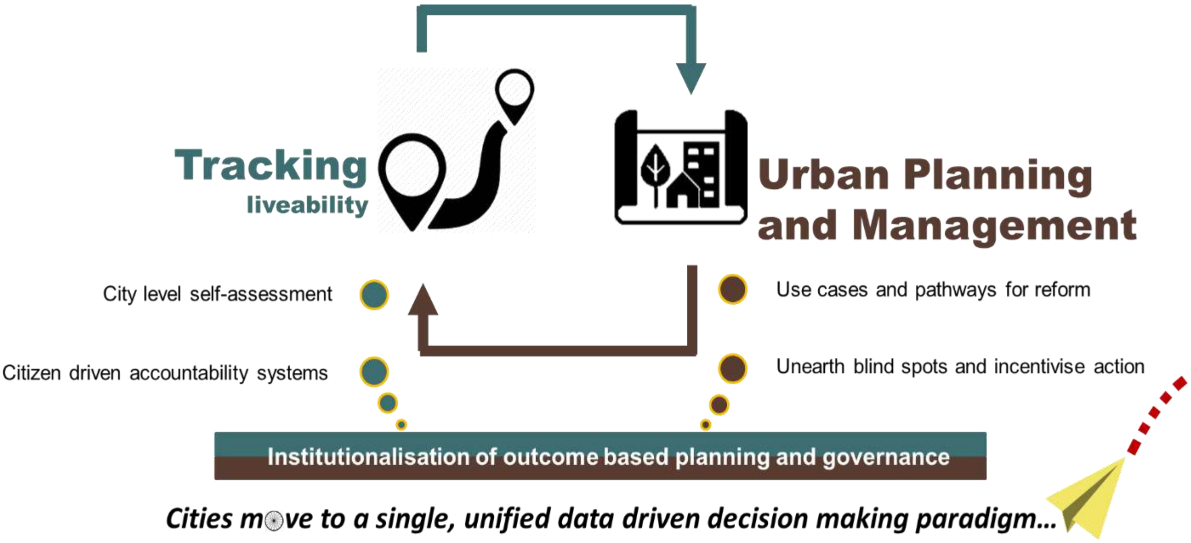
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

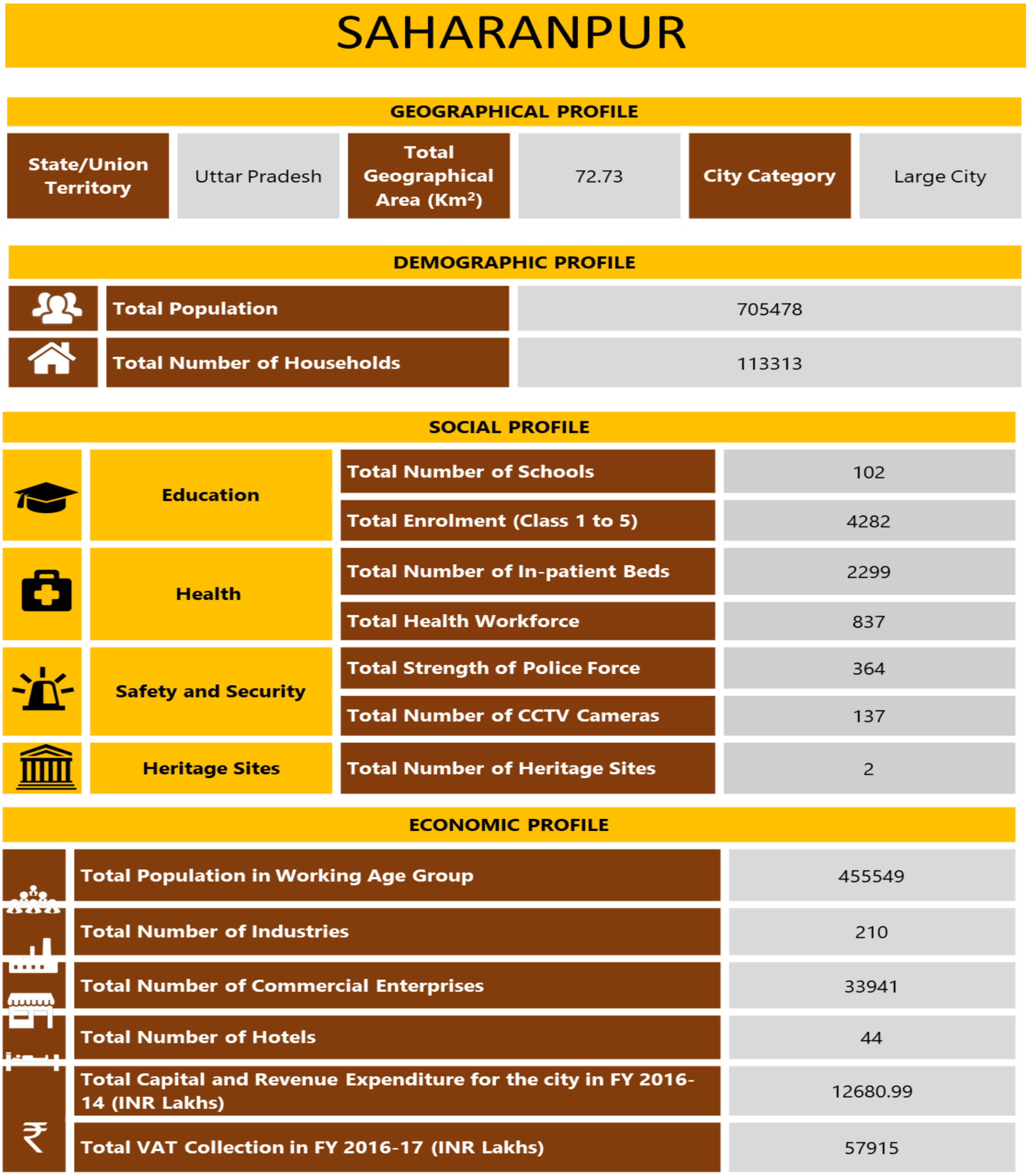

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SAHARANPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km²)**	72.73	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	705478
Total Number of Households	113313

SOCIAL PROFILE

Education	**Total Number of Schools**	102
	Total Enrolment (Class 1 to 5)	4282
Health	**Total Number of In-patient Beds**	2299
	Total Health Workforce	837
Safety and Security	**Total Strength of Police Force**	364
	Total Number of CCTV Cameras	137
Heritage Sites	**Total Number of Heritage Sites**	2

ECONOMIC PROFILE

Total Population in Working Age Group	455549
Total Number of Industries	210
Total Number of Commercial Enterprises	33941
Total Number of Hotels	44
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	12680.99
Total VAT Collection in FY 2016-17 (INR Lakhs)	57915

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	105
		Total Number of Water Connection	78427
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	111625
		Total number of households in the city with access to community toilets in the city	
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	272
		Total number of households covered through door-to-door collection of solid waste	40260
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	84
		Daily average quantum of waste water treated by STPs in the city (MLD)	40
	Electricity	**Total number of authorized electrical connections in the city**	119399
		Total electricity supplied to the city (kWh)	614.344
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1859.5
		Total length of arterial and sub-arterial road network in the city (Km)	
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education

Pillars of Comprehensive Development	Category	Indicators
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage

Pillars of Comprehensive Development	Category	Indicators
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department Nagar nigam Shaharanpur
Urban Local Body	For Park and Recreation Related Questions	Udyan vibhag Nagar nigam Shaharanpur
Urban Local Body	For Water Supply and Drainage related questions	Jal Nigam/Jalkal vibhag Nagar nigam Shaharanpur
Urban Local Body	For Heritage sites related data	Archeological survey of India /in charge in ULB
Urban Local Body	For Ecological sites related data	Forest Department Shaharanpur
Urban Local Body	For Housing related data	Development Authority / Nirmaan Vibhag Nagar Nigam Shaharanpur
Urban Local Body	For Building plan related data	Development Authority Shaharanpur
Urban Local Body	For Roads related data	Public Works Department / Nirmaan Vibhag Nagar Nigam Shaharanpur
Urban Local Body	For Solid waste management related data	Health Department Nagar Nigam Shaharanpur
Urban Local Body	For IT services related data	Computer Department. Nagar Nigam Shaharanpur
Urban Local Body	For Vendor committee related data	District Urban Development Agency(DUDA) Shaharanpur
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public Works Department ,Employment Exchange, District urban development Agency Shaharanpur
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Uttar Pradesh pollution Control Board Shaharanpur
Development Authority	Building Infrastructure	Moradabad development Authority Shaharanpur
	Construction planning	Moradabad development Authority Shaharanpur
	Green Building	Moradabad development Authority

Designated data owners	Subcategories	Data owners at city level
		Shaharanpur
	Rain water harvesting	Moradabad development Authority Shaharanpur
	Universal Design Principle	Moradabad development Authority Shaharanpur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Uttar Pradesh Power Corporation Ltd Shaharanpur
State Disaster management authority		Shaharanpur Disaster Management in UP ADM (FR]
State Education Department		Basic Siksha Adhikari/district inspector of school Shaharanpur (DIOS)
State Health Department	Health care professionals	UP State Health Department Shaharanpur (CMO)
	Citizen Services	UP State Health Department Shaharanpur (CMO)
	Disease Prevalence	UP State Health Department Shaharanpur (CMO)
	Health Infrastructure	UP State Health Department Shaharanpur (CMO)
State Renewable Energy Development Agency	Renewable Energy	State Renewable Energy Develop. Agency(NEDA)
State Sales / Commercial Taxes Department		Commercial Taxes Department Shaharanpur Zone
Town and Country Planning Department	Land Use	Town and Country Planning Department Shaharanpur
Traffic and Police Department		Traffic police, Civil police & Grand Railway police Shaharanpur
Transport Authorities	Buses	Uttar Pradesh State transport Corporation & Regional Transport Office Shaharanpur
	Registered Vehicles	Regional Transport Office Shaharanpur
	Sub urban rail transport	N A
	Mono Rail Authority	N A
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 12 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	1
Total	12*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

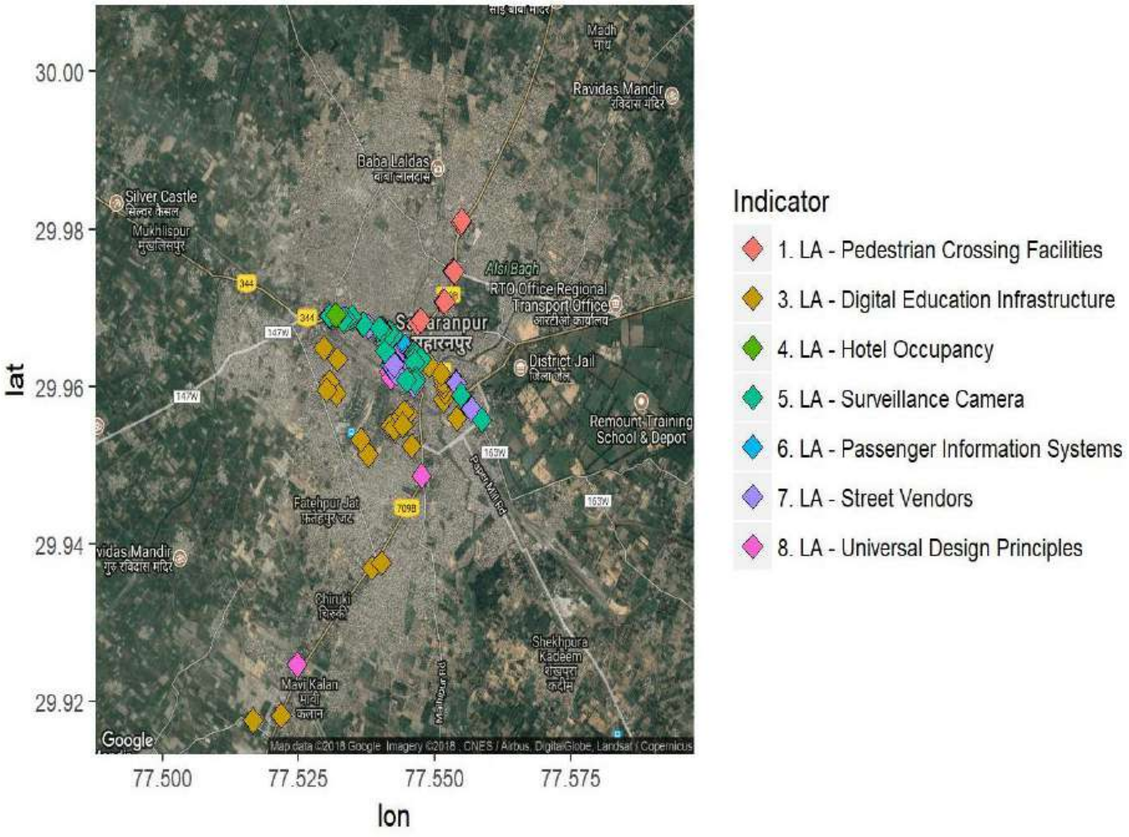
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
30.00
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Saharanpur
Baba Laldas
Silver Castle
Mukhlispur
Alsi Bagh
RTO Office Regional Transport Office
District Jail
Remount Training School & Depot
Ravidas Mandir
Fatehpur Jat
Chilkana
Mavi Kalan
Shekhpura Kadeem
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	41.79%
Identity & Culture	0%
Education	26%
Health	90%
Safety & Security	60%
Economy & Employment	7%
Housing & Inclusiveness	4%
Public Open Spaces	0%
Mixed Land Use & Compactness	17%
Power Supply	75%
Transport & Mobility	27%
Assured Water Supply	49%
Waste Water Management	41%
Solid Waste Management	43%
Reduced Pollution	56%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SALEM

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

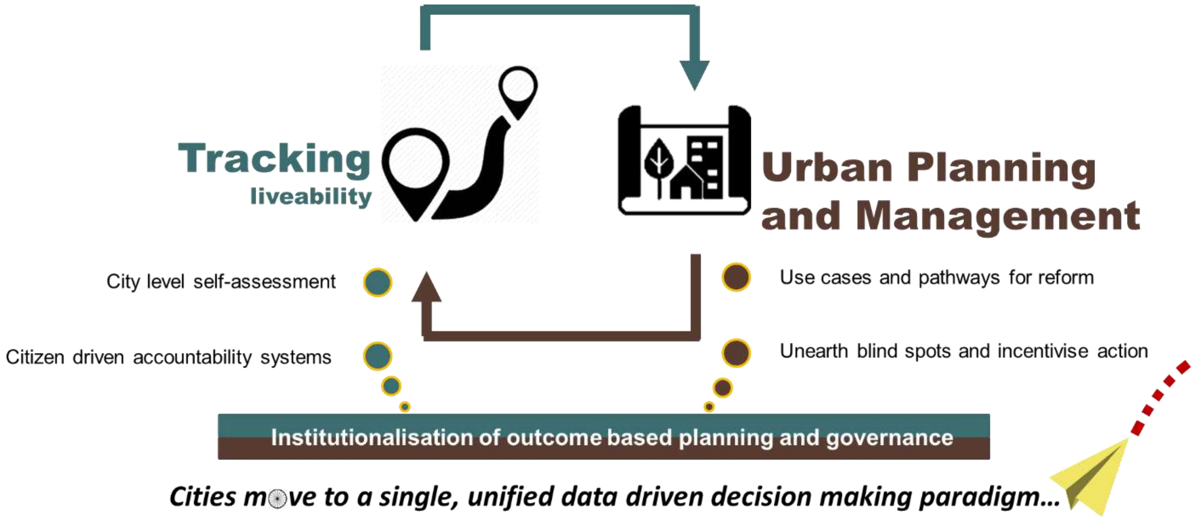
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

SALEM

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km^2)	91.34	City Category	Large City

DEMOGRAPHIC PROFILE

Total Population	829267
Total Number of Households	215747

SOCIAL PROFILE

Education	Total Number of Schools	318
	Total Enrolment (Class 1 to 5)	59898
Health	Total Number of In-patients Beds	5385
	Total Health Workforce	1985
Safety and Security	Total Strength of Police Force	1406
	Total Number of CCTV Cameras	961
Heritage Sites	Total Number of Heritage Sites	2

ECONOMIC PROFILE

Total Population in Working Age Group	480976
Total Number of Industries	584
Total Number of Commercial Enterprises	19501
Total Number of Hotels	82
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	29968.19
Total VAT Collection in FY 2016-17 (INR Lakhs)	39736.95

PHYSICAL PROFILE

	Water	**Average Quantity of Water Supplied (MLD)**	121
		Total Number of Water Connections	105298
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	210570
		Total number of households in the city with access to community toilets in the city	24054
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	400
		Total number of households covered through door-to-door collection of solid waste	234624
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	91
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	**Total number of authorized electrical connections in the city**	443312
		Total electricity supplied to the city (kWh)	836895092
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	76621.82
	Roads and Transport	**Total Length of Road Network in the City (Km)**	848.63
		Total length of arterial and sub-arterial road network in the city (Km)	234
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	2.87

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

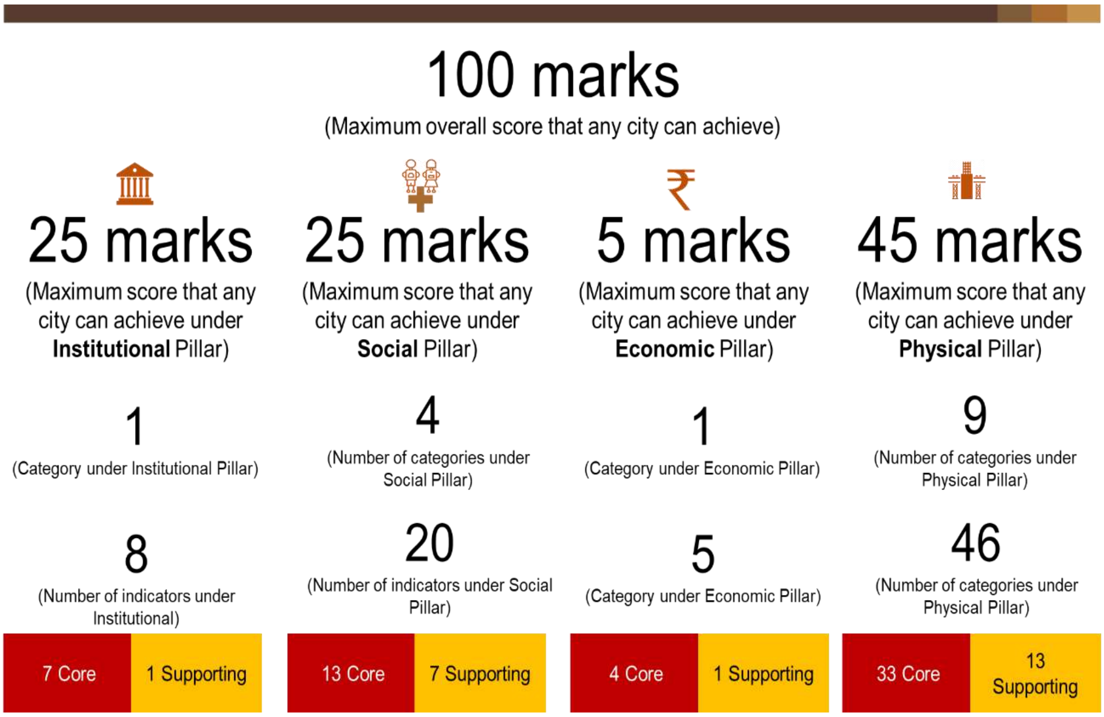
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Urban Local Body accounts department
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body Town planning
Urban Local Body	For Water Supply and Drainage related questions	Urban Local Body Engineering section
Urban Local Body	For Heritage sites related data	Urban Local Body
Urban Local Body	For Ecological sites related data	Urban Local Body
Urban Local Body	For Housing related data	Slum Control Board and Health section
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Urban Local Body Engineering section
Urban Local Body	For Solid waste management related data	Public Health section
Urban Local Body	For IT services related data	IT Section
Urban Local Body	For Vendor committee related data	Public Health section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	No
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	Pollution control Board

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority
	Green Building	Development Authority
	Rain water harvesting	Development Authority
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	DISCOM/Electricity Board
State Disaster management authority		State Disaster management authority
State Education Department		State Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		DISCOM/Electricity Board
State Sales / Commercial Taxes Department		State Sales / Commercial Taxes Department
Town and Country Planning Department	Land Use	Town and Country Planning Department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Transport Authorities
	Registered Vehicles	Transport Authorities
	Sub urban rail transport	Nil
	Mono Rail Authority	Nil
	Tramways	Nil
	Marine Transport Authority	Nil

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 117 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	2
State Education Department	5
DISCOM/Electricity Department	12
Traffic and Police Department	8
Development Authority	1
Pollution Control Board	7
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	12
Transport Authority	3
Disaster Management	1
Urban Local Body	64
Total	117*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

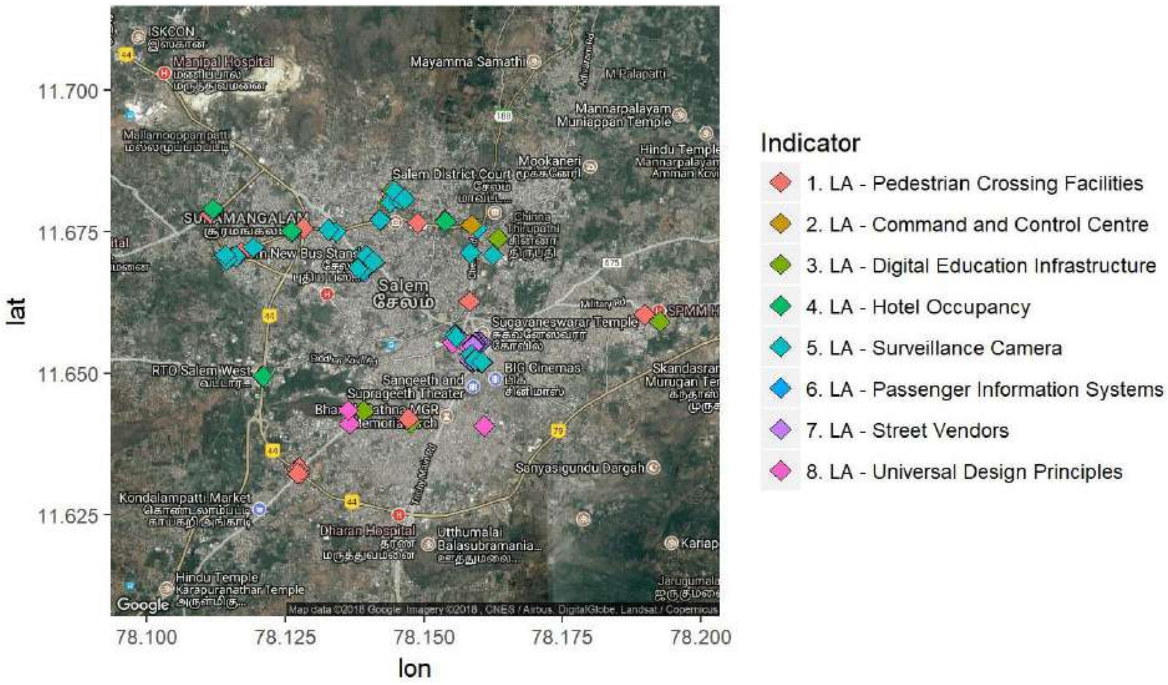
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
lat
11.700
11.675
11.650
11.625
lon
78.100
78.125
78.150
78.175
78.200
ISKCON
Manipal Hospital
Mayamma Samathi
M Palapatti
Mannarpalayam Muniappan Temple
Mallamooppampatti
Hindu Temple Mannarpalayam Amman Kovil
Mookaneri
Salem District Court
SURAMANGALAM
New Bus Stand
China Tirupathi
Salem
Sugavaneswarar Temple
SPMM H
RTO Salem West
BIG Cinemas
Skandasram Murugan Temple
Sangeeth and Suprageeth Theater
MGR Memorial Arch
Sonyasigundu Dargah
Kondalampatti Market
Dharan Hospital
Utthumalai Balasubramania
Kariap
Hindu Temple Karapuranathar Temple
Jarugumalai
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	57.09%
Identity & Culture	69%
Education	85%
Health	99%
Safety & Security	64%
Economy & Employment	33%
Housing & Inclusiveness	36%
Public Open Spaces	0%
Mixed Land Use & Compactness	37%
Power Supply	56%
Transport & Mobility	11%
Assured Water Supply	66%
Waste Water Management	55%
Solid Waste Management	69%
Reduced Pollution	77%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

**Ministry of Housing
and Urban Affairs**

Government of India

SATNA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

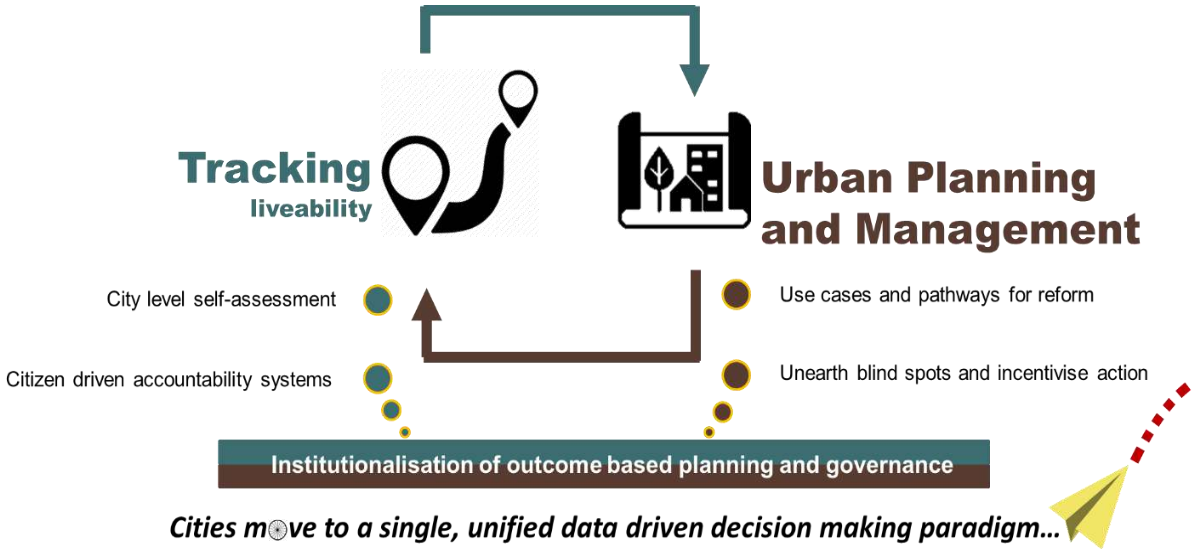
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

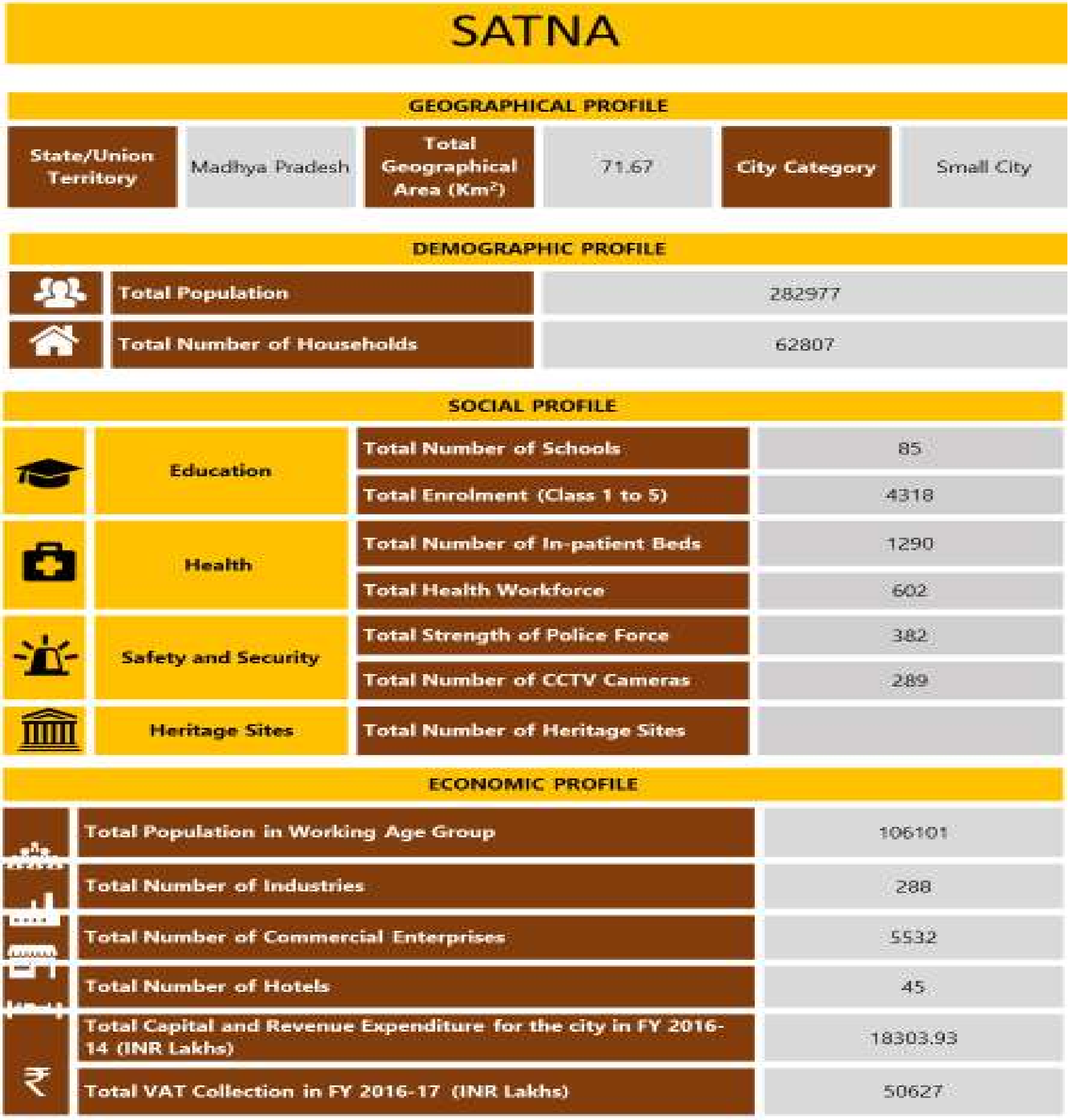
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SATNA

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	**Total Geographical Area (Km²)**	71.67	**City Category**	Small City

DEMOGRAPHIC PROFILE

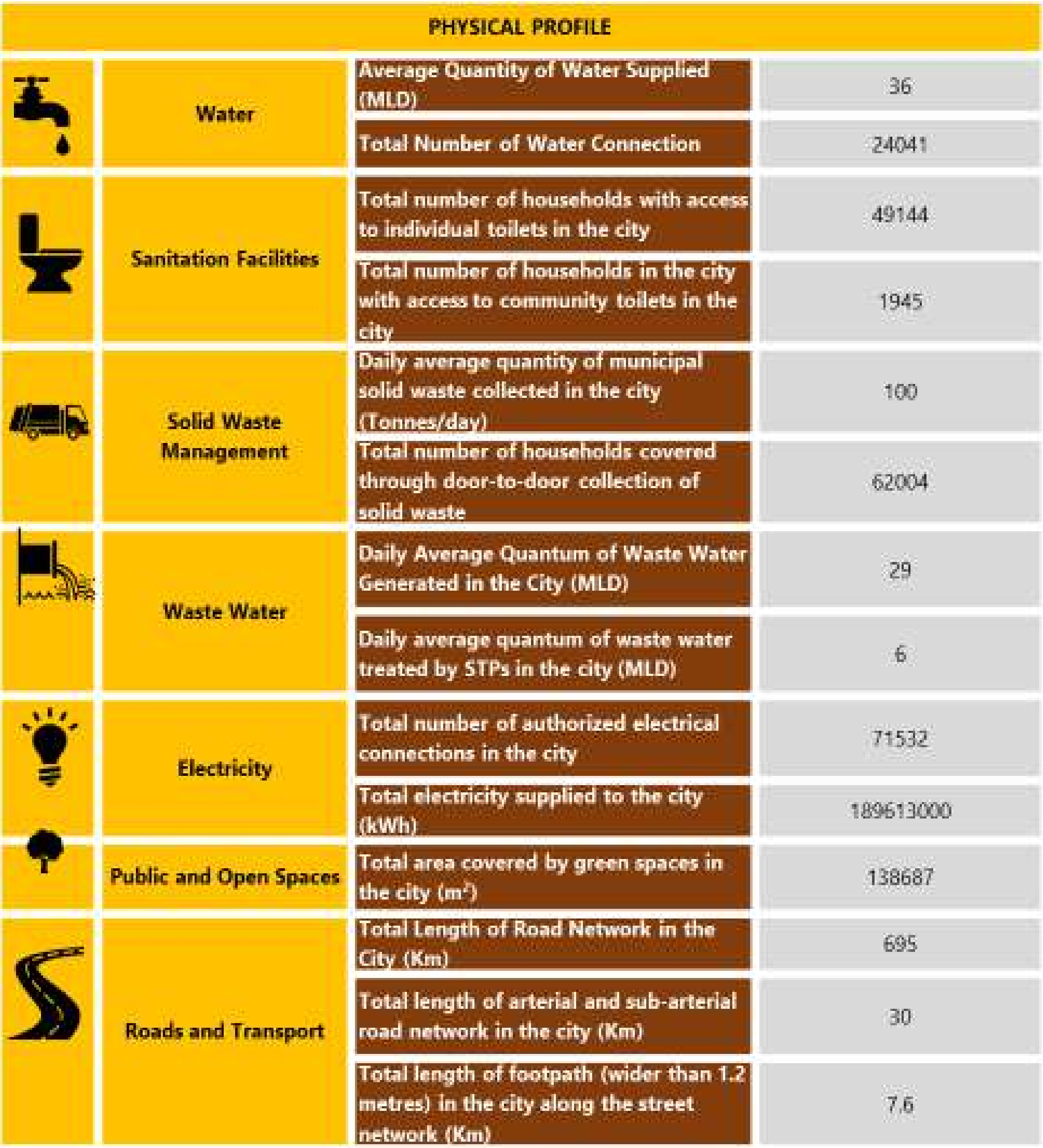
Total Population	282977
Total Number of Households	62807

SOCIAL PROFILE

Education	**Total Number of Schools**	85
	Total Enrolment (Class 1 to 5)	4318
Health	**Total Number of In-patient Beds**	1290
	Total Health Workforce	602
Safety and Security	**Total Strength of Police Force**	382
	Total Number of CCTV Cameras	289
Heritage Sites	**Total Number of Heritage Sites**	

ECONOMIC PROFILE

Total Population in Working Age Group	106101
Total Number of Industries	288
Total Number of Commercial Enterprises	5532
Total Number of Hotels	45
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	18303.93
Total VAT Collection in FY 2016-17 (INR Lakhs)	50627



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	36
	Total Number of Water Connection	24041
Sanitation Facilities	Total number of households with access to individual toilets in the city	49144
	Total number of households in the city with access to community toilets in the city	1945
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	100
	Total number of households covered through door-to-door collection of solid waste	62004
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	29
	Daily average quantum of waste water treated by STPs in the city (MLD)	6
Electricity	Total number of authorized electrical connections in the city	71532
	Total electricity supplied to the city (kWh)	189613000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	138687
Roads and Transport	Total Length of Road Network in the City (Km)	695
	Total length of arterial and sub-arterial road network in the city (Km)	30
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7.6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered

Pillars of Comprehensive Development	Category	Indicators
		through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility

Pillars of Comprehensive Development	Category	Indicators
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Accounts	Accounting Department, Satna Municipal Corporation
	Park and Recreation	Satna Municipal Corporation
	Water Supply and Drainage	Engineering Department, Satna Municipal Corporation
	Heritage sites	Satna Municipal Corporation
	Ecological sites	Satna Municipal Corporation
	Housing	Housing section, Satna Municipal Corporation
	Building plan	Satna Municipal Corporation
	Roads	Roads section, Satna Municipal Corporation
	Solid waste management	Satna Municipal Corporation
	IT services	IT Section, Satna Municipal Corporation
	Vendor committee	Satna Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	MP Housing and Infrastructure development board
	Construction planning	MP Housing and Infrastructure development board
	Green Building	MP Housing and Infrastructure development board
	Rain water harvesting	MP Housing and Infrastructure development board
	Universal Design Principle	MP Housing and Infrastructure development board
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office

Designated data owners	Sub categories	Data owners at city level
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police Department		Traffic and Police Department, Satna
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 118 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	2
Traffic and Police Department	1
Development Authority	6
Pollution Control Board	5
State Renewable Energy Department	1
Town and Country Planning	2
State Health Department	3
Transport Authority	7
Disaster Management	2
Urban Local Body	88
Total	118

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

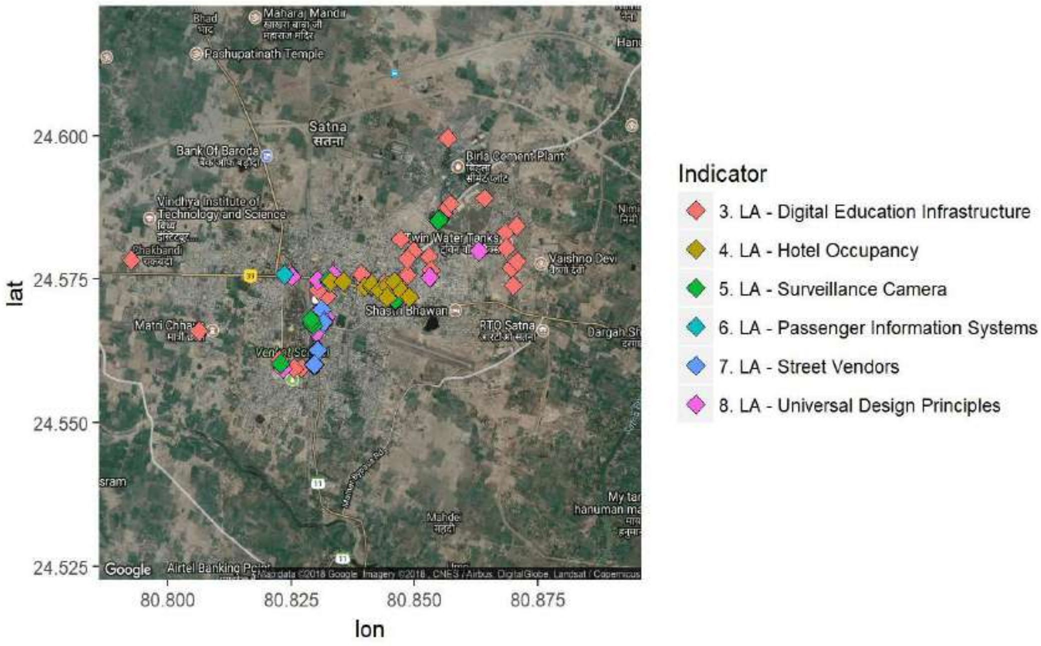
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Satna
सतना
Birla Cement Plant
Pashupatinath Temple
Maharaj Mandir
Bank Of Baroda
Vindhya Institute of Technology and Science
Chakbandi
Twin Water Tanks
Vaishno Devi
Shastri Bhawan
RTO Satna
Matri Chhaya
Dargah Sharif
Google
Airtel Banking Point
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
24.600
24.575
24.550
24.525
lat
80.800
80.825
80.850
80.875
lon
Indicator
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	49.40%
Identity & Culture	61%
Education	54%
Health	98%
Safety & Security	66%
Economy & Employment	48%
Housing & Inclusiveness	12%
Public Open Spaces	2%
Mixed Land Use & Compactness	0%
Power Supply	56%
Transport & Mobility	65%
Assured Water Supply	76%
Waste Water Management	57%
Solid Waste Management	99%
Reduced Pollution	72%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SHILLONG

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

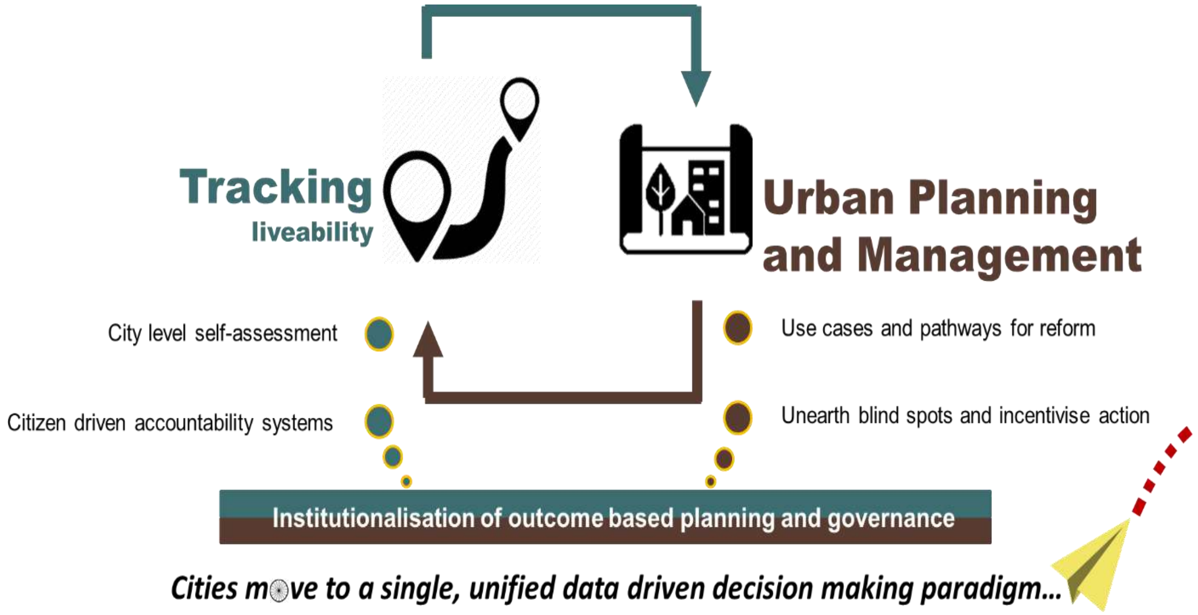
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

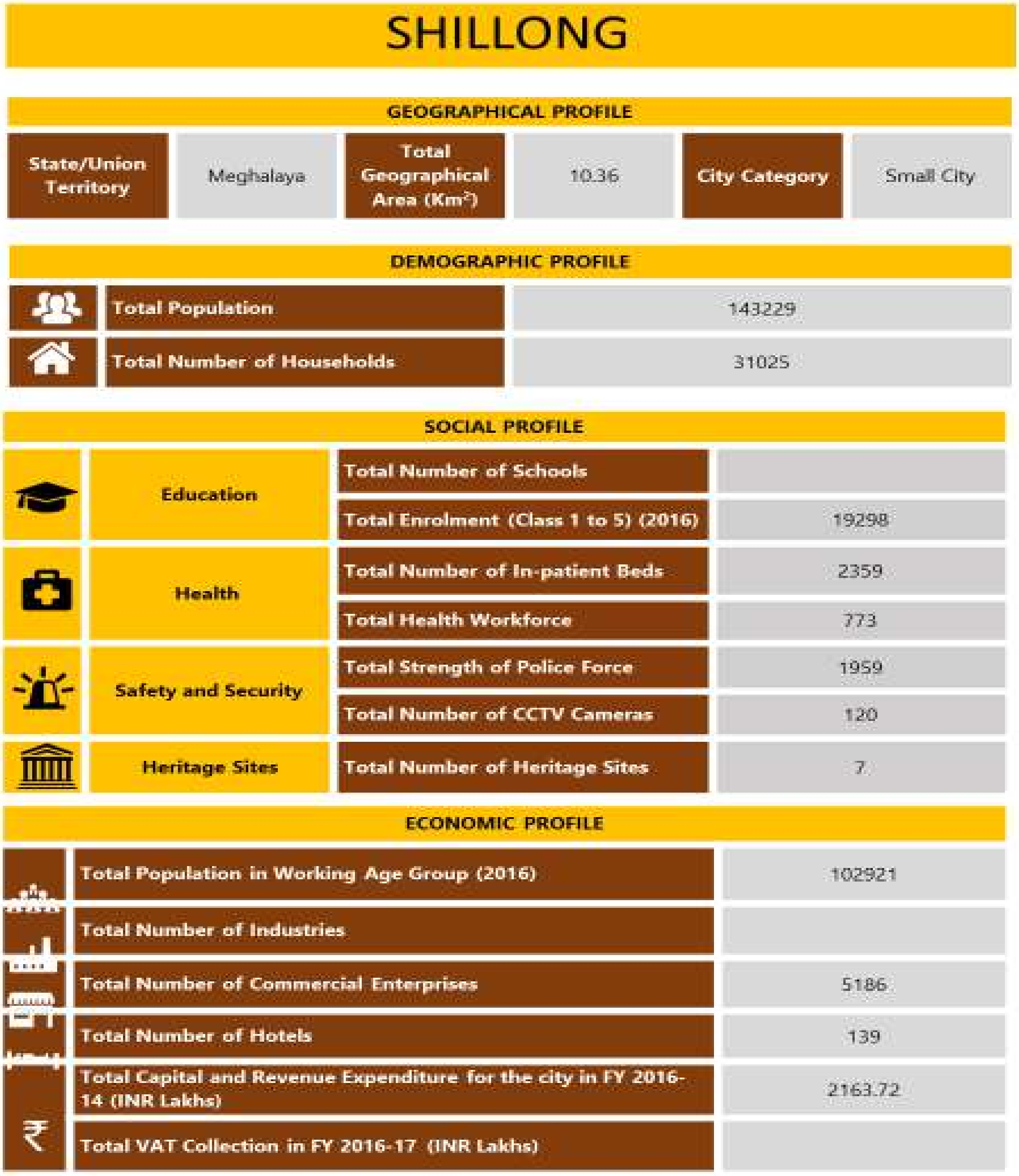

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SHILLONG

GEOGRAPHICAL PROFILE

State/Union Territory	Meghalaya	Total Geographical Area (Km²)	10.36	City Category	Small City

DEMOGRAPHIC PROFILE

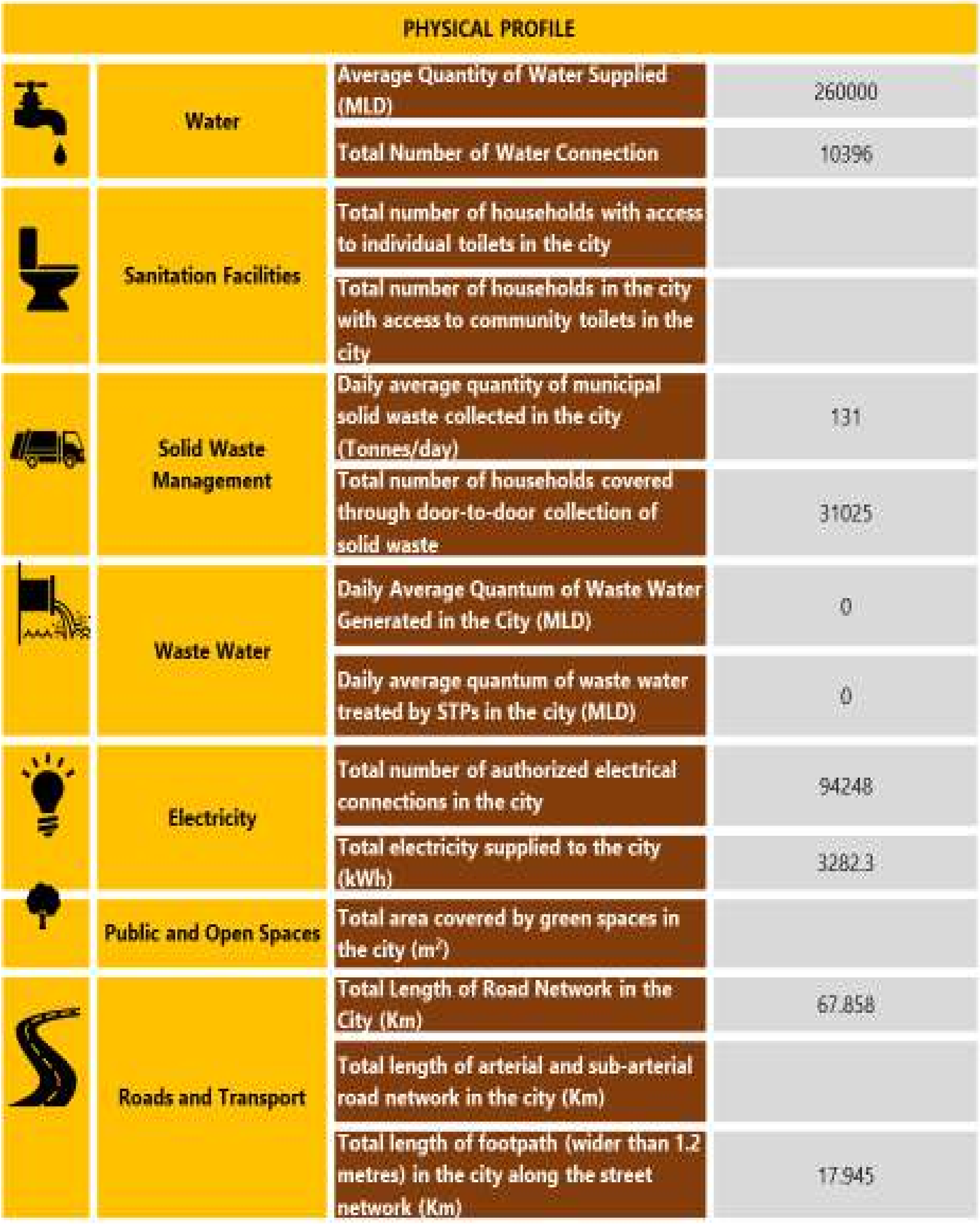
Total Population	143229
Total Number of Households	31025

SOCIAL PROFILE

Education	Total Number of Schools	
	Total Enrolment (Class 1 to 5) (2016)	19298
Health	Total Number of In-patient Beds	2359
	Total Health Workforce	773
Safety and Security	Total Strength of Police Force	1959
	Total Number of CCTV Cameras	120
Heritage Sites	Total Number of Heritage Sites	7

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	102921
Total Number of Industries	
Total Number of Commercial Enterprises	5186
Total Number of Hotels	139
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	2163.72
Total VAT Collection in FY 2016-17 (INR Lakhs)	



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	260000
	Total Number of Water Connection	10396
Sanitation Facilities	Total number of households with access to individual toilets in the city	
	Total number of households in the city with access to community toilets in the city	
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	131
	Total number of households covered through door-to-door collection of solid waste	31025
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	0
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	94248
	Total electricity supplied to the city (kWh)	3282.3
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
Roads and Transport	Total Length of Road Network in the City (Km)	67.858
	Total length of arterial and sub-arterial road network in the city (Km)	
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	17.945

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy

Pillars of Comprehensive Development	Category	Indicators
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax

Pillars of Comprehensive Development	Category	Indicators
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11.	11.1 Geographical coverage of public transport

Pillars of Comprehensive Development	Category	Indicators
	Transportation and Mobility	11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage

Pillars of Comprehensive Development	Category	Indicators
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

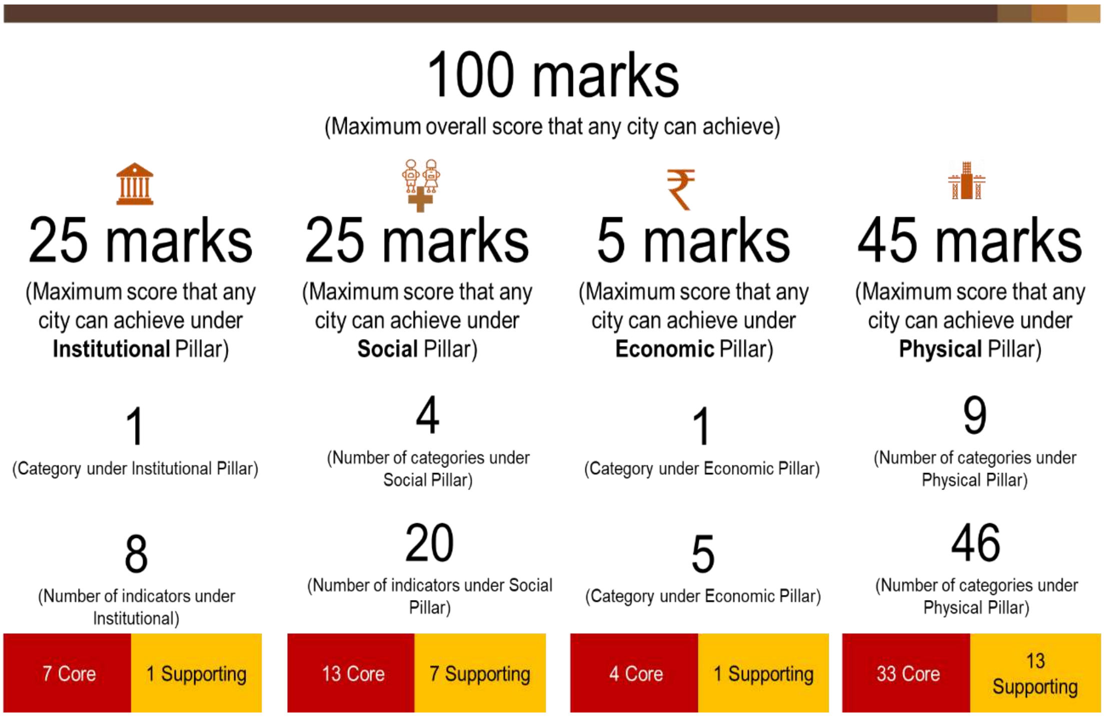
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB
Urban Local Body	For Park and Recreation Related Questions	ULB
Urban Local Body	For Water Supply and Drainage related questions	ULB & PHE
Urban Local Body	For Heritage sites related data	NIL
Urban Local Body	For Ecological sites related data	NIL
Urban Local Body	For Housing related data	ULB & Meghalaya Urban Development Authority
Urban Local Body	For Building plan related data	ULB & Directorate of Urban Affair, Meghalaya Urban Development Authority
Urban Local Body	For Roads related data	ULB &PWD
Urban Local Body	For Solid waste management related data	ULB
Urban Local Body	For IT services related data	ULB
Urban Local Body	For Vendor committee related data	ULB and Directorate of Urban Affair
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	PWD, PHE, Directorate of Urban Affair, Meghalaya Urban Development Authority
For questions under Central / state Pollution control	Water Quality, Air Quality, Noise Quality	MEGHALAYA STATE POLLUTION CONTROL BOARD

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	MUDA
	Construction planning	MUDA
	Green Building	MUDA
	Rain water harvesting	MUDA
	Universal Design Principle	MUDA
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Meghalaya Power Distribution Corporation LTD.
State Disaster management authority		State disaster management authority
State Education Department		Directorate of school education and literacy
State Health Department	Health care professionals	Directorate of health complex and services, Shillong
State Health Department	Citizen Services	DO
State Health Department	Disease Prevalence	DO
State Health Department	Health Infrastructure	DO
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	Urban Affairs Department
Traffic and Police Department		Shillong Police (traffic)
Transport Authorities	Buses	District Transport Office
Transport Authorities	Registered Vehicles	District Transport Office
Transport Authorities	Sub urban rail transport	NIL
Transport Authorities	Mono Rail Authority	NIL
Transport Authorities	Tramways	NIL
Transport Authorities	Marine Transport Authority	NIL

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 24 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	3
Traffic and Police Department	1
Development Authority	1
Pollution Control Board	5
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	1
Transport Authority	1
Disaster Management	1
Urban Local Body	7
Total	24

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the

field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

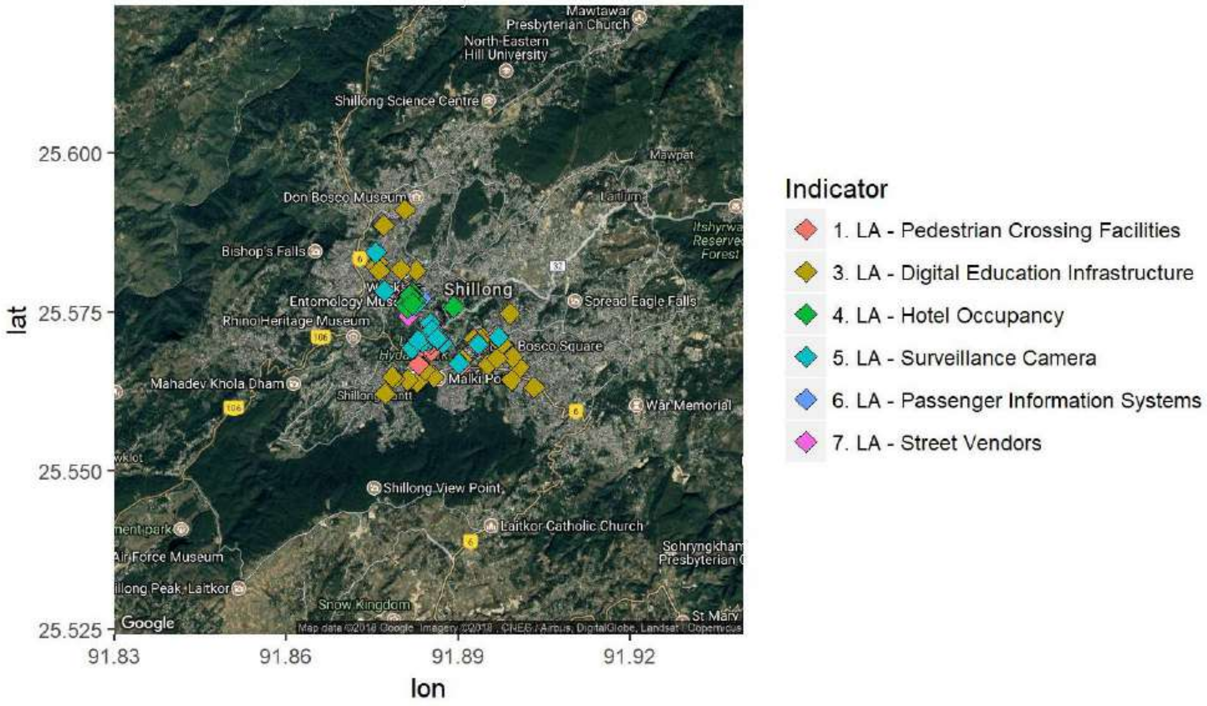
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Mawtawar Presbyterian Church
North-Eastern Hill University
Shillong Science Centre
Mawpat
Don Bosco Museum
Laitlum
Itshyrwa Reserved Forest
Bishop's Falls
Shillong
Entomology Mus
Spread Eagle Falls
Rhino Heritage Museum
Bosco Square
Malki Po
Mahadev Khola Dham
War Memorial
Shillong Cantt
Shillong View Point
Laitkor Catholic Church
Air Force Museum
Shillong Peak Laitkor
Sohryngkham Presbyterian
Snow Kingdom
St Mary
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
lat
25.600
25.575
25.550
25.525
lon
91.83
91.86
91.89
91.92
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	21.12%
Identity & Culture	11%
Education	0%
Health	99%
Safety & Security	57%
Economy & Employment	16%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	52%
Transport & Mobility	21%
Assured Water Supply	37%
Waste Water Management	0%
Solid Waste Management	63%
Reduced Pollution	63%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SHIMLA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

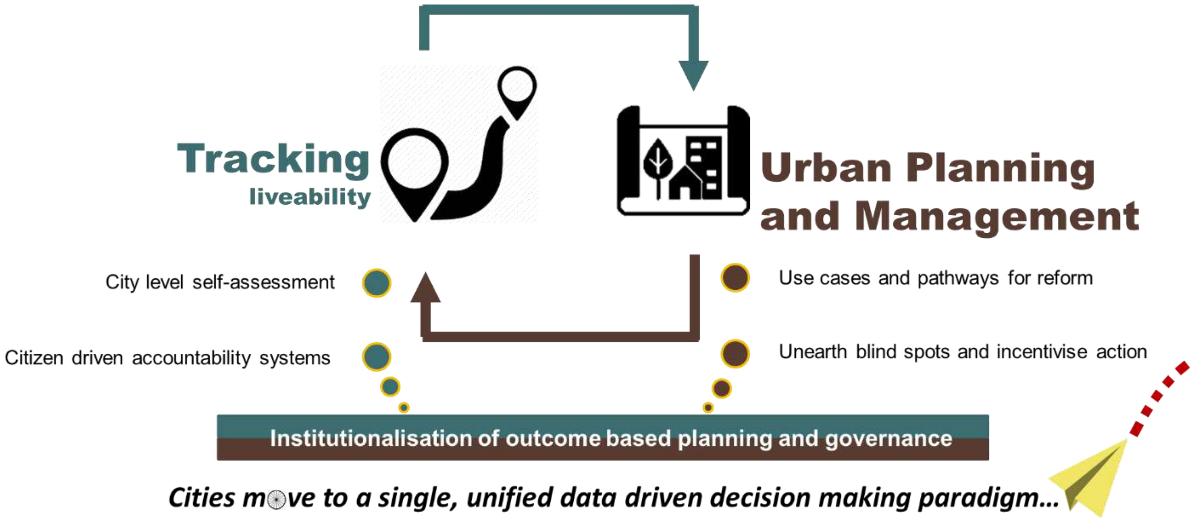
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

SHIMLA

GEOGRAPHICAL PROFILE

State/Union Territory	Himachal Pradesh	**Total Geographical Area (Km²)**	35.34	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	169578
Total Number of Households	25952

SOCIAL PROFILE

Education	**Total Number of Schools**	146
	Total Enrolment (Class 1 to 5)	13917
Health	**Total Number of In-patient Beds**	259
	Total Health Workforce	328
Safety and Security	**Total Strength of Police Force**	203
	Total Number of CCTV Cameras	111
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	128294
Total Number of Industries	0
Total Number of Commercial Enterprises	
Total Number of Hotels	253
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	13388.5
Total VAT Collection in FY 2016-17 (INR Lakhs)	2028836539

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	33
	Total Number of Water Connection	30995
Sanitation Facilities	Total number of households with access to individual toilets in the city	30995
	Total number of households in the city with access to community toilets in the city	1499
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	70
	Total number of households covered through door-to-door collection of solid waste	34992
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	24
	Daily average quantum of waste water treated by STPs in the city (MLD)	7.358
Electricity	Total number of authorized electrical connections in the city	39360
	Total electricity supplied to the city (kWh)	1333867563
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
Roads and Transport	Total Length of Road Network in the City (Km)	142.636
	Total length of arterial and sub-arterial road network in the city (Km)	0
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	73.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

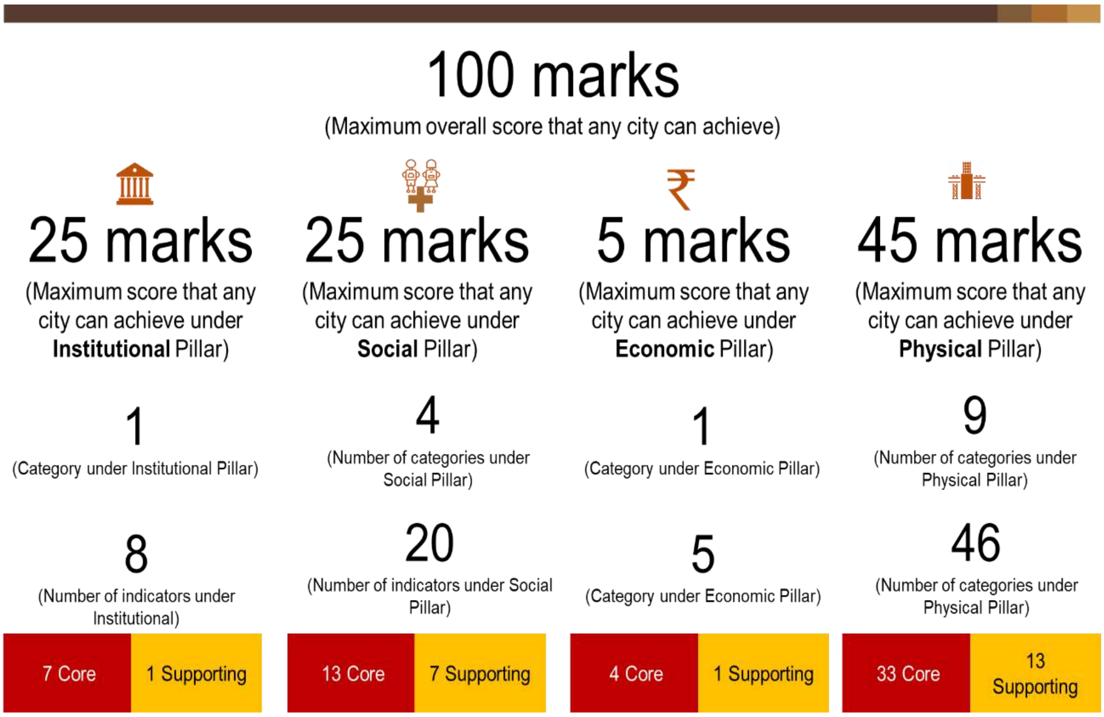
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	MC Shimla
Urban Local Body	For Park and Recreation Related Questions	MC Shimla
Urban Local Body	For Water Supply and Drainage related questions	MC Shimla
Urban Local Body	For Heritage sites related data	Tourism Department
Urban Local Body	For Ecological sites related data	MC Shimla
Urban Local Body	For Housing related data	MC Shimla
Urban Local Body	For Building plan related data	MC Shimla
Urban Local Body	For Roads related data	Public Work Department
Urban Local Body	For Solid waste management related data	MC Shimla
Urban Local Body	For IT services related data	IT Shimla
Urban Local Body	For Vendor committee related data	MC Shimla
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, PWD, Education, RTO and electricity board.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board Department
Development Authority	Building Infrastructure	MC Shimla
	Construction planning	MC Shimla
	Green Building	MC Shimla

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	MC Shimla
	Universal Design Principle	MC Shimla
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board Department
State Disaster management authority		State disaster management department
State Education Department		Directory of state elementary
State Health Department	Health care professionals	Chief Medical Officer
	Citizen Services	CMO
	Disease Prevalence	CMO
	Health Infrastructure	CMO
State Renewable Energy Development Agency		Renewable Energy Development department
State Sales / Commercial Taxes Department		Taxation Department
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		Police Department
Transport Authorities	Buses	Regional transportation Office
	Registered Vehicles	RTO
	Sub urban rail transport	RTO
	Mono Rail Authority	RTO
	Tramways	RTO
	Marine Transport Authority	RTO

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 31 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	3
Transport Authority	1
Disaster Management	0
Urban Local Body	18
Total	31*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

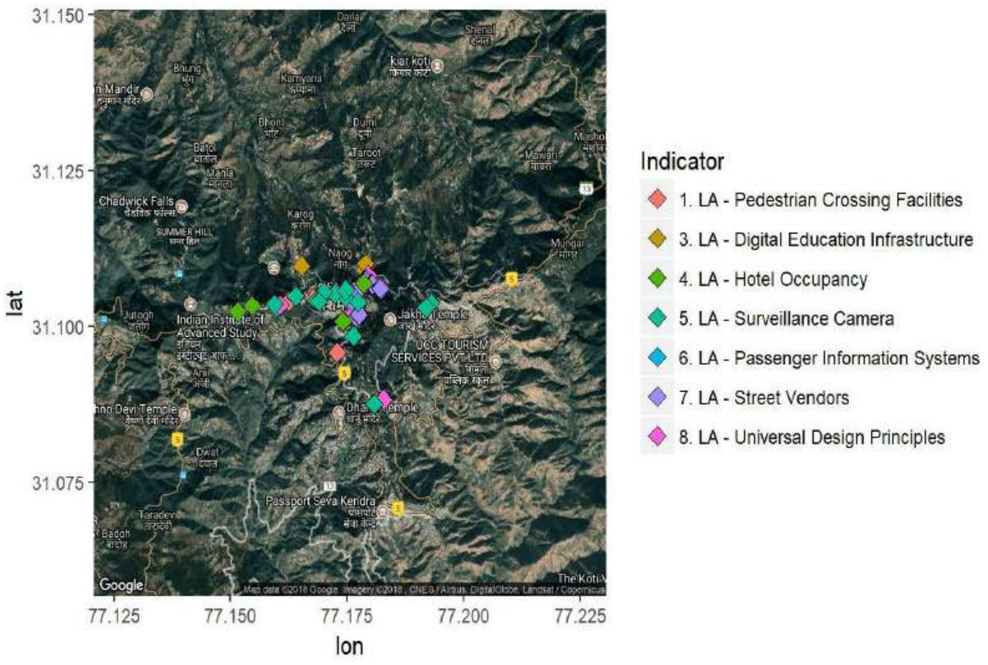
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


31.150
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SUMMER HILL
Indian Institute of Advanced Study
Jakhu Temple
UCC TOURISM SERVICES PVT LTD
Passport Seva Kendra
Kiar koti
Karog
Naog
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	32.20%
Identity & Culture	13%
Education	89%
Health	80%
Safety & Security	66%
Economy & Employment	15%
Housing & Inclusiveness	3%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	32%
Transport & Mobility	28%
Assured Water Supply	57%
Waste Water Management	31%
Solid Waste Management	83%
Reduced Pollution	83%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SHIVAMOGGA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

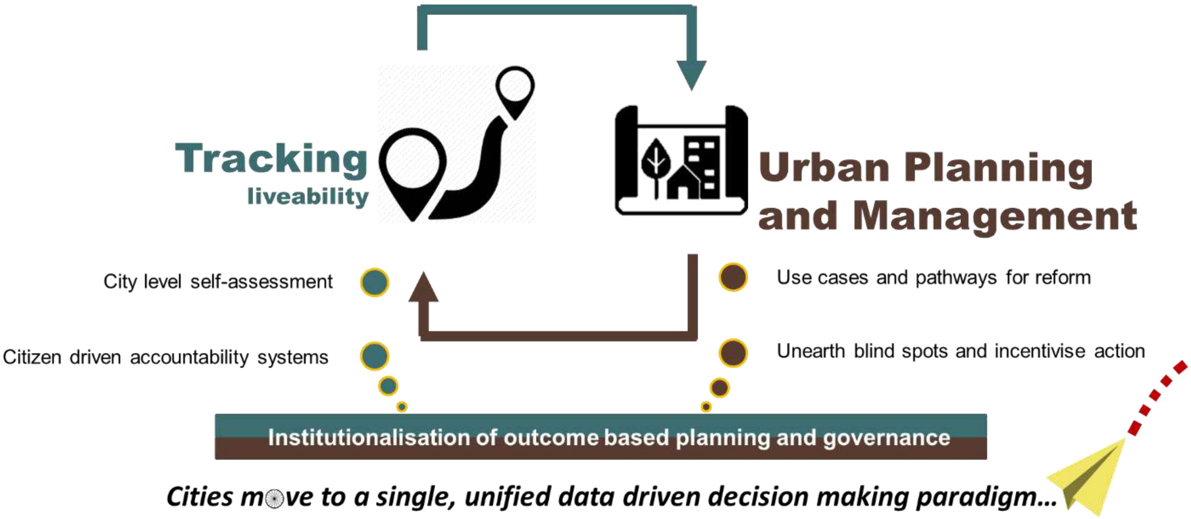
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

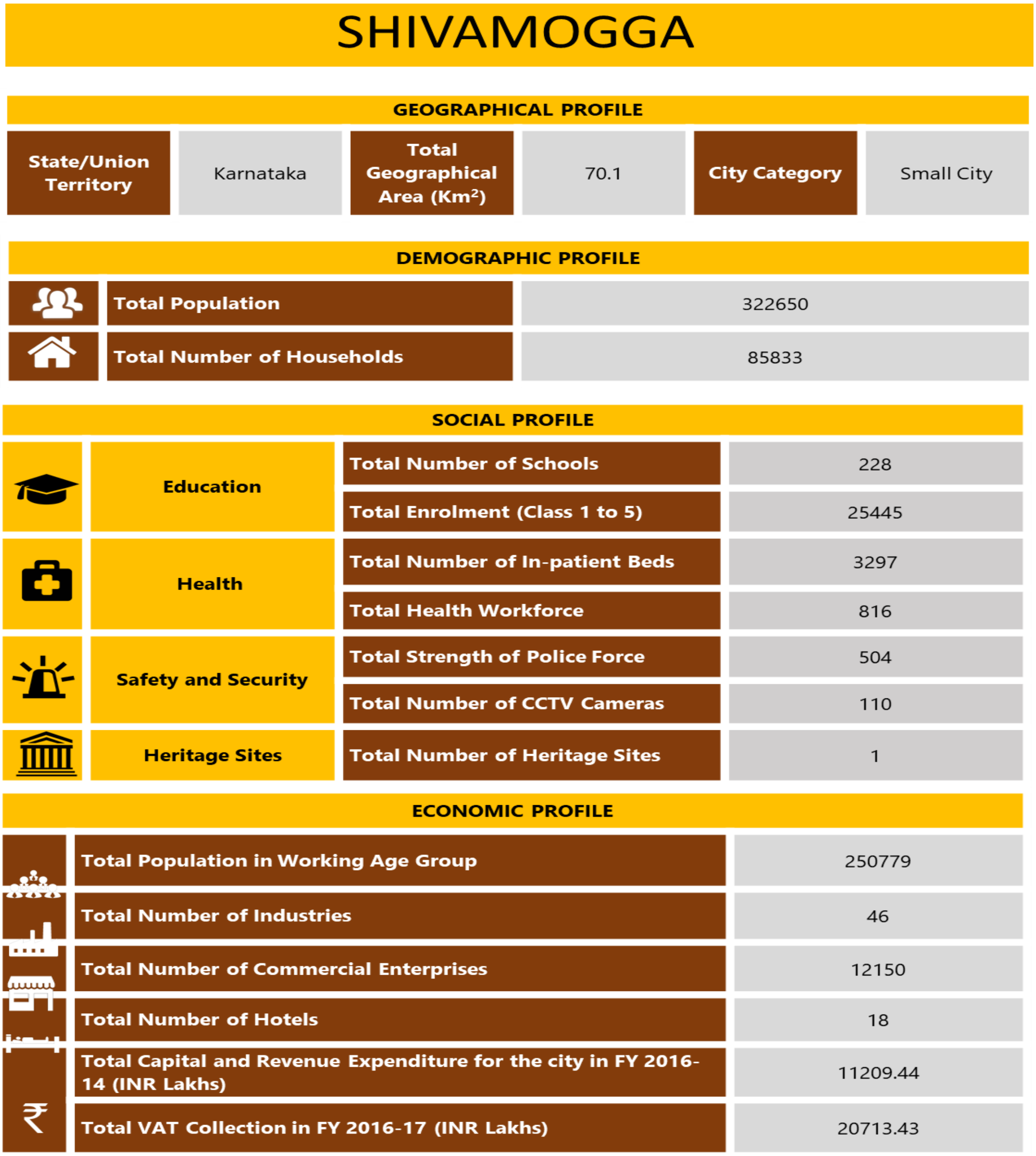
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SHIVAMOGGA

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km²)**	70.1	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	322650
Total Number of Households	85833

SOCIAL PROFILE

Education	**Total Number of Schools**	228
	Total Enrolment (Class 1 to 5)	25445
Health	**Total Number of In-patient Beds**	3297
	Total Health Workforce	816
Safety and Security	**Total Strength of Police Force**	504
	Total Number of CCTV Cameras	110
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	250779
Total Number of Industries	46
Total Number of Commercial Enterprises	12150
Total Number of Hotels	18
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	11209.44
Total VAT Collection in FY 2016-17 (INR Lakhs)	20713.43

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	84
	Total Number of Water Connection	42346
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	67694
	Total number of households in the city with access to community toilets in the city	1147
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	112
	Total number of households covered through door-to-door collection of solid waste	62700
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	12.32
	Daily average quantum of waste water treated by STPs in the city (MLD)	12.32
Electricity	**Total number of authorized electrical connections in the city**	130059
	Total electricity supplied to the city (kWh)	221458095
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	1202000
Roads and Transport	**Total Length of Road Network in the City (Km)**	917
	Total length of arterial and sub-arterial road network in the city (Km)	35.75
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	9.3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from

Pillars of Comprehensive Development	Category	Indicators
		renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or

Pillars of Comprehensive Development	Category	Indicators
		septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

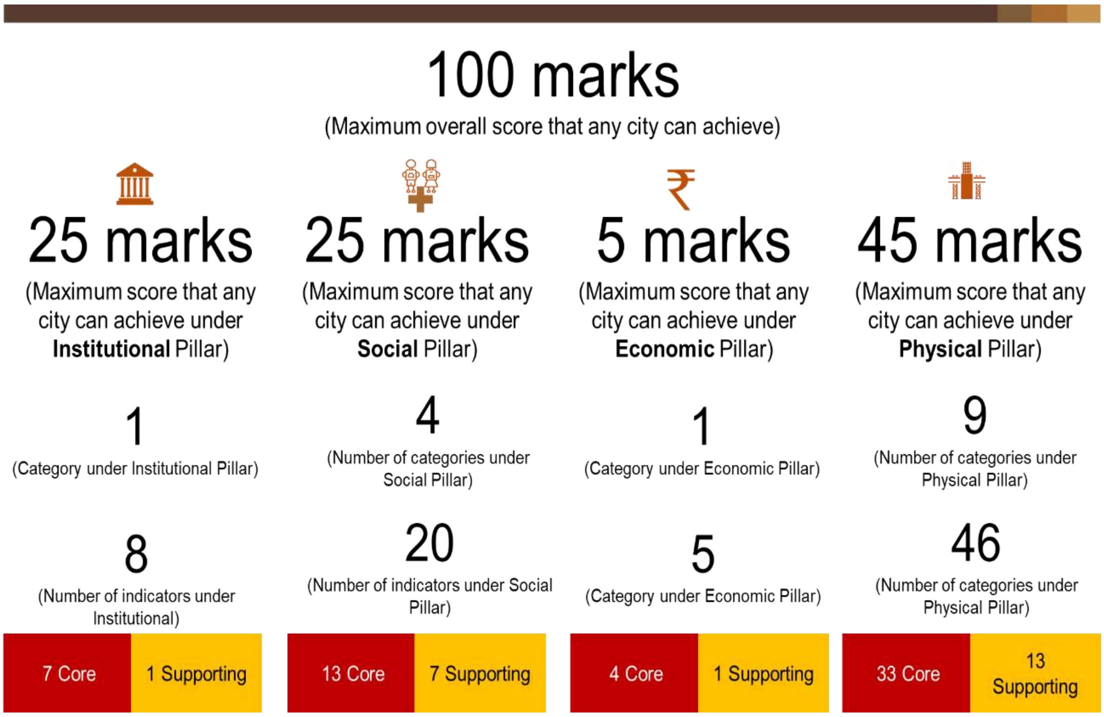
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core
1 Supporting
25 marks
(Maximum score that any city can achieve under Social Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core
7 Supporting
5 marks
(Maximum score that any city can achieve under Economic Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core
1 Supporting
45 marks
(Maximum score that any city can achieve under Physical Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department Shivamogga Smart City Limited (SSCL)
Urban Local Body	For Park and Recreation Related Questions	Town Planning Department SSCL
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department SSCL
Urban Local Body	For Heritage sites related data	Town Planning Department SSCL
Urban Local Body	For Ecological sites related data	Department of forest, ecology and environment
Urban Local Body	For Housing related data	Rajiv Gandhi rural housing corporation limited. SSCL
Urban Local Body	For Building plan related data	Town Planning Department SSCL
Urban Local Body	For Roads related data	Engineering Department SSCL
Urban Local Body	For Solid waste management related data	Environment Department
Urban Local Body	For IT services related data	IT Department
Urban Local Body	For Vendor committee related data	Urban Poverty Alleviation Cell Deendayal Antyodaya Yojana National Urban Livelihood Mission. (DAY_NULM)
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Commercial Tax Department (Professional Tax related queries), Education Department (Population of age group between 6-14), Revenue Department, PMAY, District Employment Exchange, Development Authority, DULT (CMP related), KMDS (No. of Hits in the online service portals), Health Department, Pollution Department
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	State Pollution department

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Development Authority
	Construction planning	Development Authority and Town Planning Department, SSCL
	Green Building	Town Planning Department, SSCL
	Rain water harvesting	Town Planning Department, SSCL
	Universal Design Principle	Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Mangalore Electricity Supply Company Limited
State Disaster management authority		Deputy Commissioner Office
State Education Department		Coordinator – SSA
State Health Department	Health care professionals	District Health Office / Taluk Health Office
	Citizen Services	District Health Office / Taluk Health Office
	Disease Prevalence	District Health Office / Taluk Health Office
	Health Infrastructure	District Health Office / Taluk Health Office
State Renewable Energy Development Agency	Renewable Energy	Mangalore Electricity Supply Company Limited
State Sales / Commercial Taxes Department		Assistant Commissioner, Commercial Tax Office
Town and Country Planning Department	Land Use	Development Authority
Traffic and Police Department		Deputy Police Commissioner’s Office
Transport Authorities	Buses	Regional Transport Officer Office
	Registered Vehicles	Regional Transport Officer Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 131 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**5**
Traffic and Police Department	**2**
Development Authority	**8**
Pollution Control Board	**2**
State Renewable Energy Department	**3**
Town and Country Planning	**1**
State Health Department	**6**
Transport Authority	**4**
Disaster Management	**1**
Urban Local Body	**93**
Total	**131***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

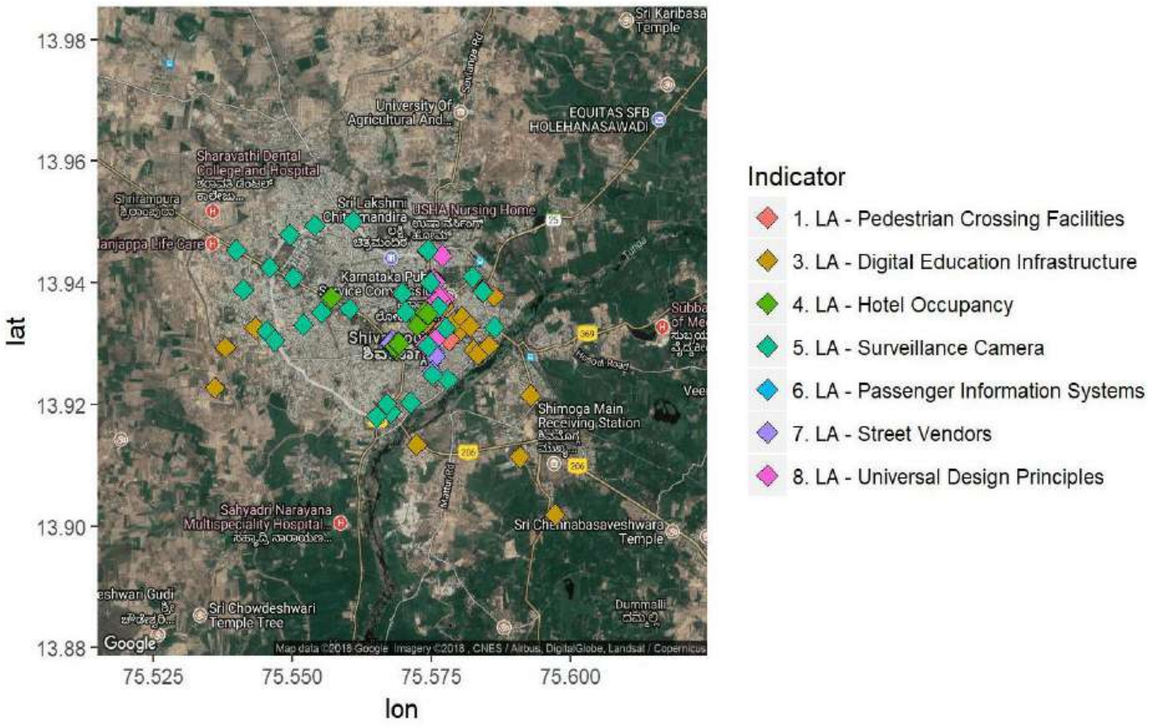
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.98
13.96
13.94
13.92
13.90
13.88
lat
75.525
75.550
75.575
75.600
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	52.11%
Identity & Culture	2%
Education	78%
Health	99%
Safety & Security	60%
Economy & Employment	28%
Housing & Inclusiveness	4%
Public Open Spaces	25%
Mixed Land Use & Compactness	14%
Power Supply	53%
Transport & Mobility	27%
Assured Water Supply	73%
Waste Water Management	54%
Solid Waste Management	56%
Reduced Pollution	10%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SILVASSA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the con-	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the

#	Challenges	Proposed Solutions
	sortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

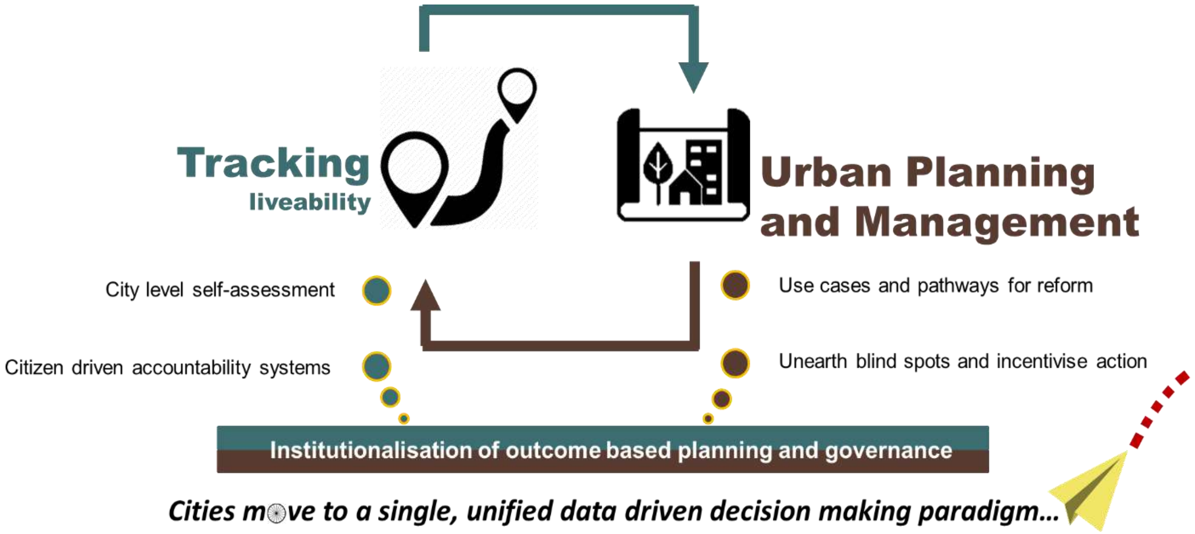
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

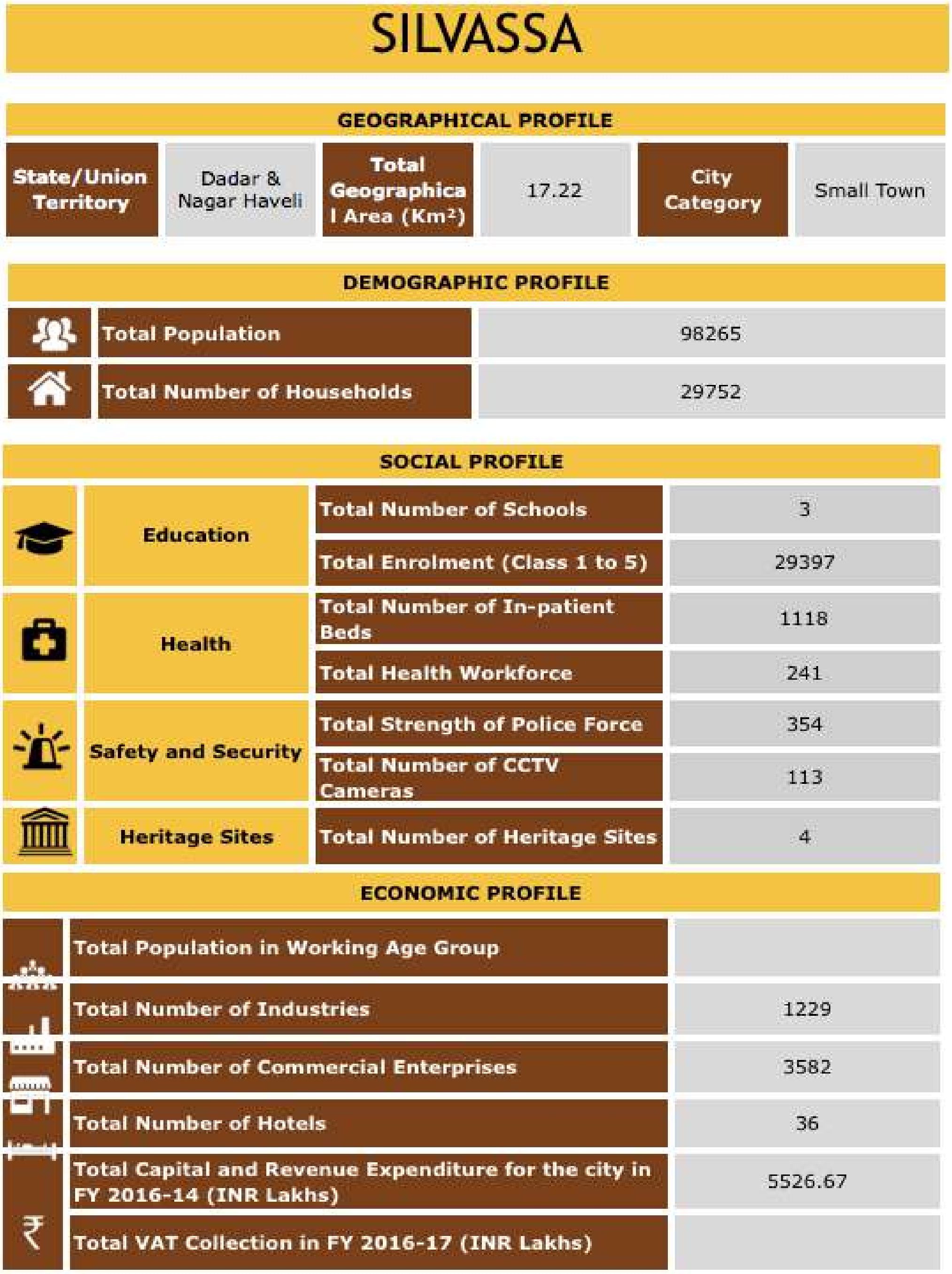
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SILVASSA

GEOGRAPHICAL PROFILE

State/Union Territory	Dadar & Nagar Haveli	**Total Geographical Area (Km²)**	17.22	**City Category**	Small Town

DEMOGRAPHIC PROFILE

Total Population	98265
Total Number of Households	29752

SOCIAL PROFILE

Education	**Total Number of Schools**	3
	Total Enrolment (Class 1 to 5)	29397
Health	**Total Number of In-patient Beds**	1118
	Total Health Workforce	241
Safety and Security	**Total Strength of Police Force**	354
	Total Number of CCTV Cameras	113
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	
Total Number of Industries	1229
Total Number of Commercial Enterprises	3582
Total Number of Hotels	36
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	5526.67
Total VAT Collection in FY 2016-17 (INR Lakhs)	

PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	15
	Total Number of Water Connection	5874
Sanitation Facilities	Total number of households with access to individual toilets in the city	98265
	Total number of households in the city with access to community toilets in the city	
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	46
	Total number of households covered through door-to-door collection of solid waste	0
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	0
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	0
	Total electricity supplied to the city (kWh)	637483825
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	
Roads and Transport	Total Length of Road Network in the City (Km)	83.38
	Total length of arterial and sub-arterial road network in the city (Km)	6.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	13.58

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indica

tors). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive

development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1. Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration

Pillars of Comprehensive Development	Category	Indicators
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population

Pillars of Comprehensive Development	Category	Indicators
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting

Pillars of Comprehensive Development	Category	Indicators
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters

Pillars of Comprehensive Development	Category	Indicators
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2. Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

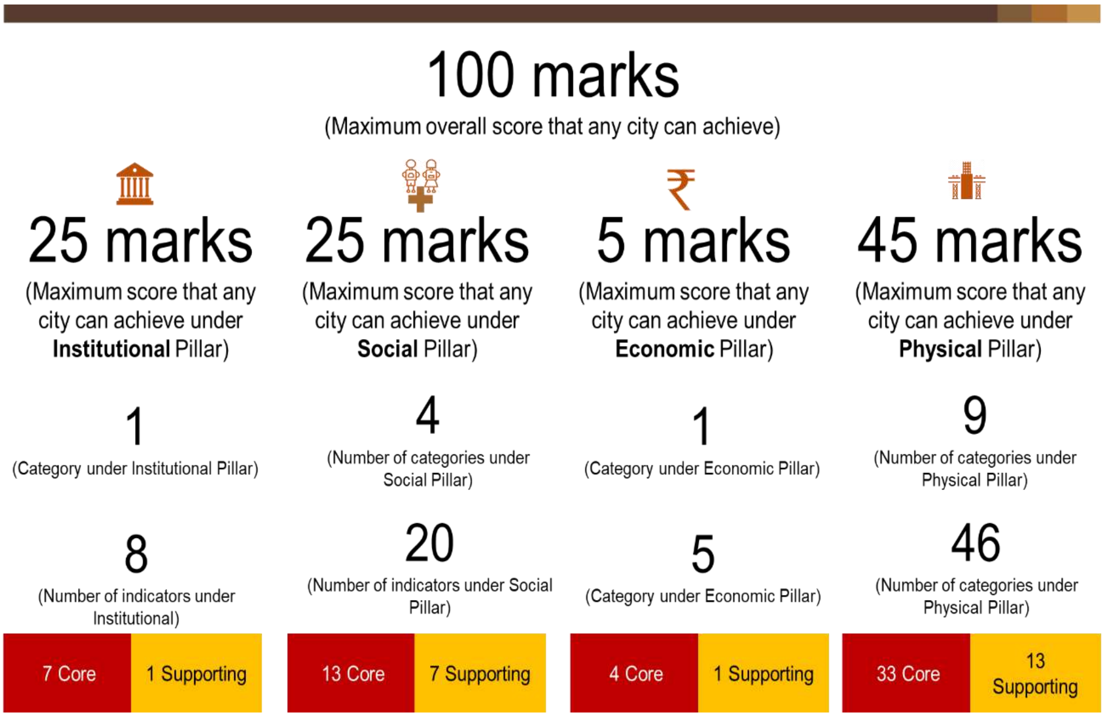
Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million

Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3. Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4. Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicatorvalueforthecity - indicatorvaluefortheworstperformingcity}{benchmark - indicatorvaluefortheworstperformingcity}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1. Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2. Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and de-

velopment agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Department (Silvassa Municipal Council)
Urban Local Body	For Park and Recreation Related Questions	Forest Department-Silvassa
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage Department Silvassa Municipal Council-Silvassa
Urban Local Body	For Heritage sites related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For Ecological sites related data	Tourism Department-Silvassa
Urban Local Body	For Housing related data	Housing Department –SMC-Silvassa
Urban Local Body	For Building plan related data	Housing Department –SMC-Silvassa
Urban Local Body	For Roads related data	PWD and Silvassa Municipal Council-Silvassa
Urban Local Body	For Solid waste management related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For IT services related data	Silvassa Municipal Council-Silvassa
Urban Local Body	For Vendor committee related data	Silvassa Municipal Council-Silvassa
Urban Local Body	Any other departments involved in providing data	ULB/SMC-Silvassa

	for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board-Silvassa
Development Authority	Building Infrastructure	Silvassa Municipal Council- Silvassa
	Construction planning	Silvassa Municipal Council- Silvassa
	Green Building	Silvassa Municipal Council- Silvassa
	Rain water harvesting	Silvassa Municipal Council- Silvassa
	Universal Design Principle	Silvassa Municipal Council- Silvassa
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity Board, 66 KV Road-Silvassa
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Citizen Services	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Disease Prevalence	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
	Health Infrastructure	Shri. Vinoba Bhave Civil Hospital-Silvassa (Health Department)
State Renewable Energy Development Agency		State Renewable Energy Development Agency 66 KV Road, Silvassa
State Sales / Commercial Taxes Department		Commercial Tax Department- Silvassa
Town and Country Planning Department	Land Use	Town and Country Planning Department, Silvassa
Traffic and Police De-		

partment		
Transport Authorities	Buses	Transport /RTO- Silvassa, D & NH
	Registered Vehicles	Transport /RTO- Silvassa, D & NH
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Transport /RTO- Silvassa, D & NH

4.3. List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 17 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	3
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	0
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	3
Transport Authority	1
Disaster Management	1

Urban Local Body	3
Total	17

4.4. Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

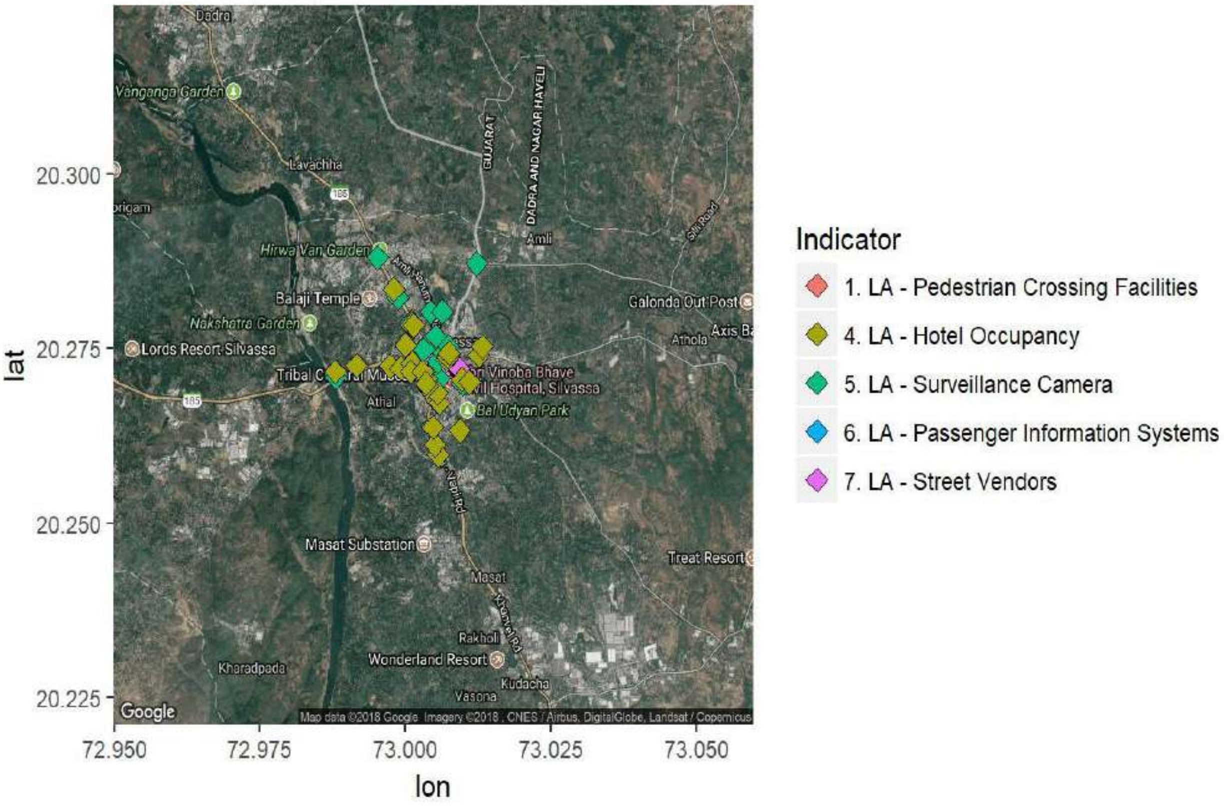
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5. Physical Audit

The following map presents the indicators audited at city level.


lat
20.300
20.275
20.250
20.225
lon
72.950
72.975
73.000
73.025
73.050
Dadra
Vanganga Garden
Lavachha
GUJARAT
DADRA AND NAGAR HAVELI
Amli
Hirwa Van Garden
Balaji Temple
Nakshatra Garden
Lords Resort Silvassa
Tribal Cultural Museum
Athal
Vinoba Bhave Civil Hospital, Silvassa
Bal Udyan Park
Galonda Out Post
Athola
Masat Substation
Treat Resort
Masat
Rakholi
Wonderland Resort
Kharadpada
Kudacha
Vasona
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 1: Category wise scores

Categories	Scores in Percentage
Governance	55.57%
Identity & Culture	52%
Education	64%
Health	37%
Safety & Security	63%
Economy & Employment	18%
Housing & Inclusiveness	0%
Public Open Spaces	0%
Mixed Land Use & Compactness	50%
Power Supply	15%
Transport & Mobility	15%
Assured Water Supply	59%
Waste Water Management	9%
Solid Waste Management	33%
Reduced Pollution	53%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

SOLAPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

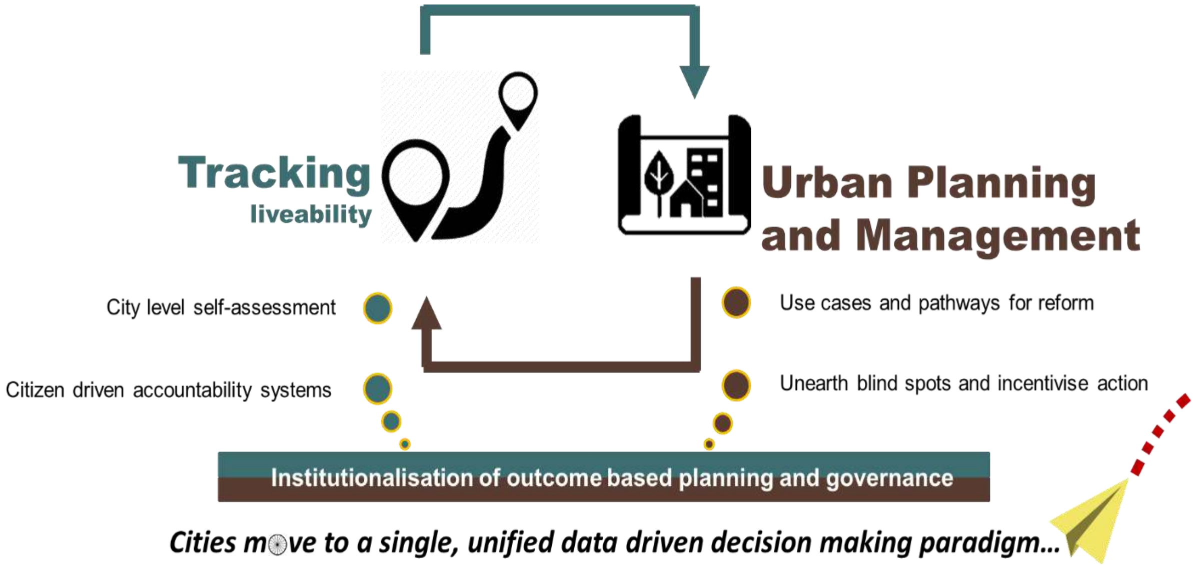
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

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GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km²)**	178.57	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	951558
Total Number of Households	188503

SOCIAL PROFILE

Education	**Total Number of Schools**	420
	Total Enrolment (Class 1 to 5)	70236
Health	**Total Number of In-patients Beds**	6291
	Total Health Workforce	4845
Safety and Security	**Total Strength of Police Force**	2178
	Total Number of CCTV Cameras	14
Heritage Sites	**Total Number of Heritage Sites**	750

ECONOMIC PROFILE

Total Population in Working Age Group	323669
Total Number of Industries	12202
Total Number of Commercial Enterprises	22754
Total Number of Hotels	26
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7737.54168
Total VAT Collection in FY 2016-17 (INR Lakhs)	31743

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	89.96
		Total Number of Water Connections	104583
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	15663
		Total number of households in the city with access to community toilets in the city	9600
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	250
		Total number of households covered through door-to-door collection of solid waste	151000
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	93.5
		Daily average quantum of waste water treated by STPs in the city (MLD)	60
	Electricity	**Total number of authorized electrical connections in the city**	193475
		Total electricity supplied to the city (kWh)	505977288.6
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	63483400
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1903
		Total length of arterial and sub-arterial road network in the city (Km)	1903
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	37.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases

Pillars of Comprehensive Development	Category	Indicators
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation	11.1 Geographical coverage of public transport
		11.2 Availability of public transport

Pillars of Comprehensive Development	Category	Indicators
	and Mobility	11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	**25 marks** (Maximum score that any city can achieve under **Social** Pillar)	**5 marks** (Maximum score that any city can achieve under **Economic** Pillar)	**45 marks** (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Dept
Urban Local Body	For Park and Recreation Related Questions	Garden Dept
Urban Local Body	For Water Supply and Drainage related questions	Water Supply and Drainage Dept
Urban Local Body	For Heritage sites related data	Smart City Office
Urban Local Body	For Ecological sites related data	Smart City Office
Urban Local Body	For Housing related data	City Engineer Dept
Urban Local Body	For Building plan related data	City Engineer Dept
Urban Local Body	For Roads related data	City Engineer Dept
Urban Local Body	For Solid waste management related data	Solid Waste Management, SMC
Urban Local Body	For IT services related data	Computer Dept., SMC
Urban Local Body	For Vendor committee related data	Market Dept., SMC
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Light Dept., Health Dept., Property Tax Dept., Town Planning Dept., Swachh Maharashtra Mission Office, Land & Real Estate Dept., Sports Officer, Transport Dept., SMC School Board, etc.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Maharashtra Pollution Control Board, Solapur.
Development Authority	Building Infrastructure	Building Permission Dept.
	Construction planning	Building Permission Dept.
	Green Building	Building Permission Dept.
	Rain water harvesting	Building Permission Dept.
	Universal Design Principle	Building Permission Dept.
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Maharashtra State Electricity Distribution Corporation Limited, Solapur.
State Disaster		Collector Office, Solapur.

Designated data owners	Subcategories	Data owners at city level
management authority		
State Education Department		SMC School Board
State Health Department	Health care professionals	Health Dept., SMC.
	Citizen Services	Health Dept., SMC.
	Disease Prevalence	Health Dept., SMC.
	Health Infrastructure	Health Dept., SMC.
State Renewable Energy Development Agency		Maharashtra State Electricity Distribution Corporation Limited, Solapur.
State Sales / Commercial Taxes Department		GST Office, Solapur.
Town and Country Planning Department	Land Use	Town Planning Dept., SMC
Traffic and Police Department		Commissioner of Police Office, Solapur.
Transport Authorities	Buses	Transport Dept., SMC
	Registered Vehicles	RTO
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 74 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	7
Traffic and Police Department	2
Development Authority	0
Pollution Control Board	2
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	4
Transport Authority	2
Disaster Management	1
Urban Local Body	54
Total	74*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

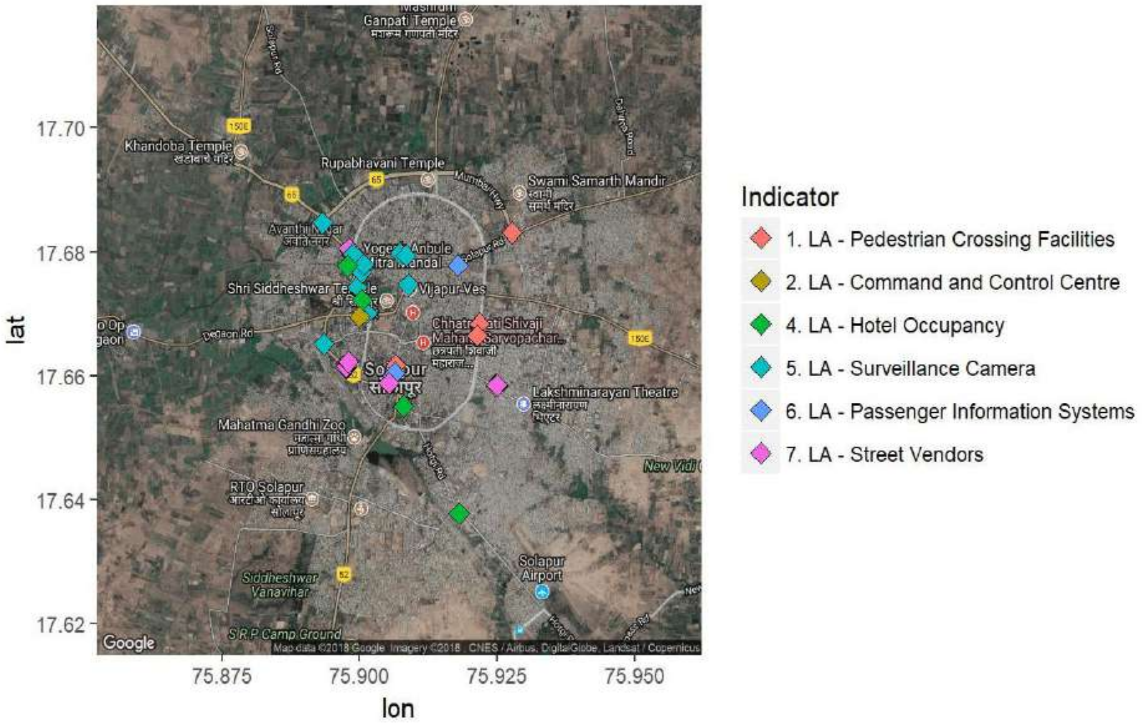
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


17.70
17.68
17.66
17.64
17.62
lat
75.875
75.900
75.925
75.950
lon
Ganpati Temple
Khandoba Temple
Rupabhavani Temple
Swami Samarth Mandir
Avanthi Nagar
Shri Siddheshwar Temple
Vijapur Ves
Chhatrapati Shivaji Maharaj Sarvopachar
Solapur
Lakshminarayan Theatre
Mahatma Gandhi Zoo
RTO Solapur
Siddheshwar Vanavihar
Solapur Airport
S R P Camp Ground
Google
Map data ©2018 Google Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	53.89%
Identity & Culture	23%
Education	75%
Health	99%
Safety & Security	56%
Economy & Employment	41%
Housing & Inclusiveness	0%
Public Open Spaces	55%
Mixed Land Use & Compactness	0%
Power Supply	51%
Transport & Mobility	33%
Assured Water Supply	49%
Waste Water Management	41%
Solid Waste Management	55%
Reduced Pollution	65%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

SRINAGAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

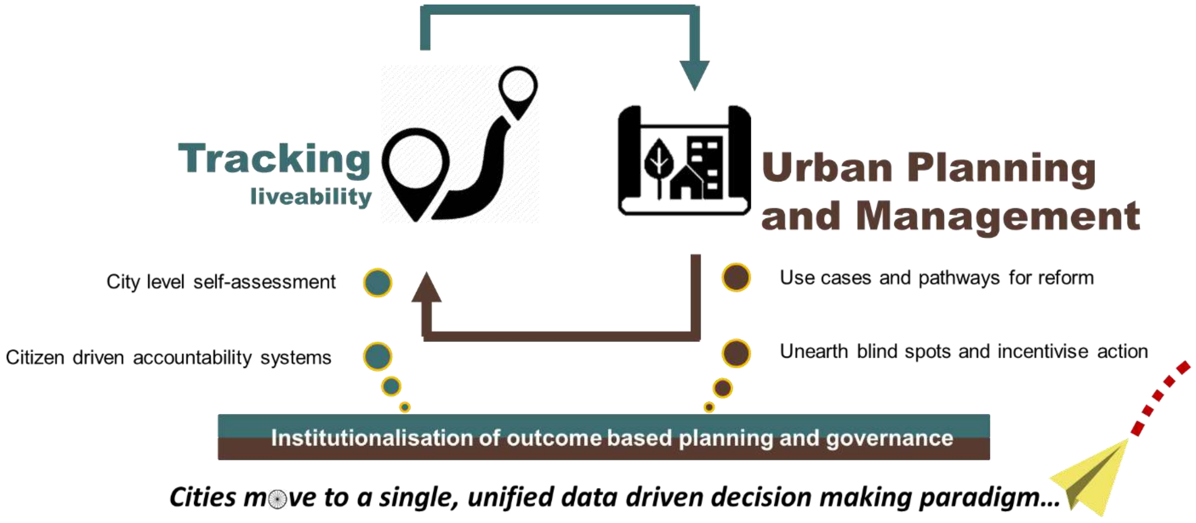
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

SRINAGAR

GEOGRAPHICAL PROFILE

State/Union Territory	Jammu and Kashmir	Total Geographical Area (Km^2)	276	City Category	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1206419
Total Number of Households	206080

SOCIAL PROFILE

Education	Total Number of Schools	67
	Total Enrolment (Class 1 to 5)	10419
Health	Total Number of In-patient Beds	3886
	Total Health Workforce	9986
Safety and Security	Total Strength of Police Force	4670
	Total Number of CCTV Cameras	323
Heritage Sites	Total Number of Heritage Sites	4

ECONOMIC PROFILE

Total Population in Working Age Group	411091
Total Number of Industries	5829
Total Number of Commercial Enterprises	77056
Total Number of Hotels	419
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	15595.04
Total VAT Collection in FY 2016-17 (INR Lakhs)	98411.01

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	113.21
	Total Number of Water Connection	129551
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	1175918
	Total number of households in the city with access to community toilets in the city	30
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	0
	Total number of households covered through door-to-door collection of solid waste	142400
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	53.7
	Daily average quantum of waste water treated by STPs in the city (MLD)	53.7
Electricity	**Total number of authorized electrical connections in the city**	199993
	Total electricity supplied to the city (kWh)	1048025481
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	132480
Roads and Transport	**Total Length of Road Network in the City (Km)**	1908
	Total length of arterial and sub-arterial road network in the city (Km)	560
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

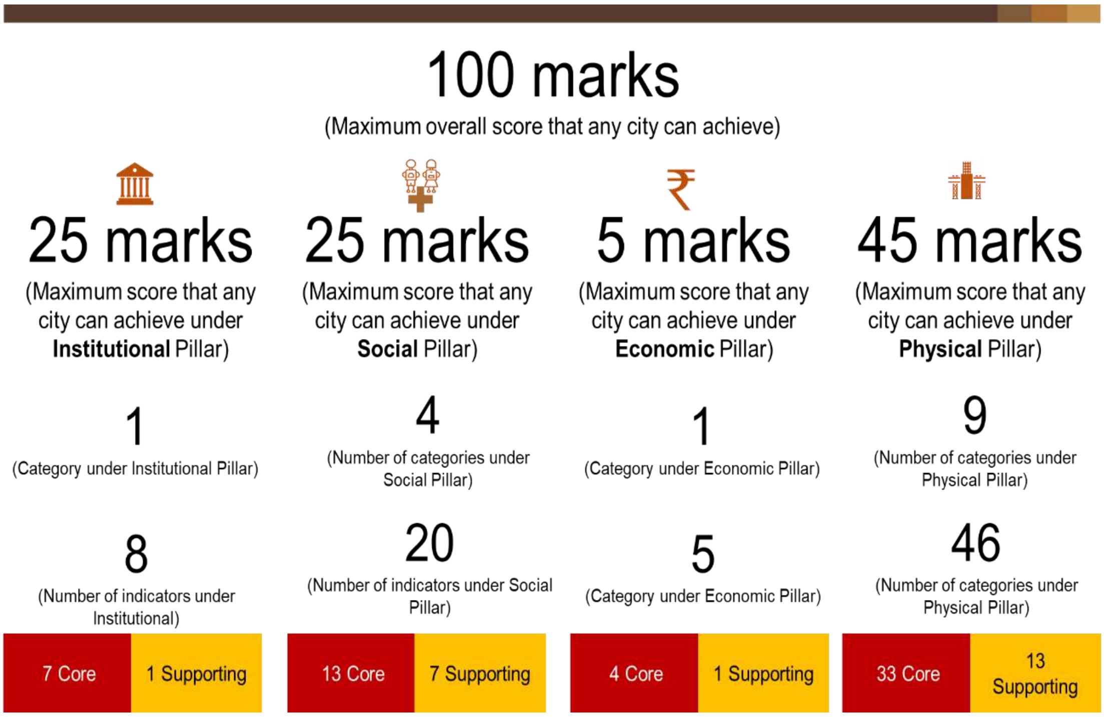
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section, Srinagar Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Srinagar Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Srinagar Municipal corporation
Urban Local Body	For Heritage sites related data	Srinagar Municipal Corporation
Urban Local Body	For Ecological sites related data	Srinagar Municipal Corporation
Urban Local Body	For Housing related data	Srinagar Municipal Corporation
Urban Local Body	For Building plan related data	Building Plan Section, Srinagar Municipal Corporation
Urban Local Body	For Roads related data	Public Work section, Srinagar Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid Waste Management Section, Srinagar Municipal Corporation
Urban Local Body	For IT services related data	IT Section, Srinagar Municipal Corporation
Urban Local Body	For Vendor committee related data	Srinagar Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	J & KState Pollution Control Board

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	Srinagar development authority
	Construction planning	Srinagar development authority
	Green Building	Srinagar development authority
	Rain water harvesting	Srinagar development authority
	Universal Design Principle	Srinagar development authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	J & K State Power Development Corporation
State Disaster management authority		J & K State Disaster Management Authority
State Education Department		District Education Department
State Health Department	Health care professionals	Health Section, Srinagar Municipal Corporation State Health Department
	Citizen Services	Health Section, Srinagar Municipal Corporation
	Disease Prevalence	Health Section, Srinagar Municipal Corporation State Health Department
	Health Infrastructure	State Health Department
State Renewable Energy Development Agency		J & K Energy Development Agency
State Sales / Commercial Taxes Department		Commercial taxes, Kashmir Division
Town and Country Planning Department	Land Use	Town Planning, SMC
Traffic and Police Department		J & K Police department, Srinagar
Transport Authorities	Buses	Transport Department, J & K
	Registered Vehicles	Transport Department, J & K
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA

Designated data owners	Subcategories	Data owners at city level
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 32 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	1
Traffic and Police Department	1
Development Authority	2
Pollution Control Board	2
State Renewable Energy Department	1
Town and Country Planning	1
State Health Department	2
Transport Authority	1
Disaster Management	0
Urban Local Body	18
Total	32*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of

data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

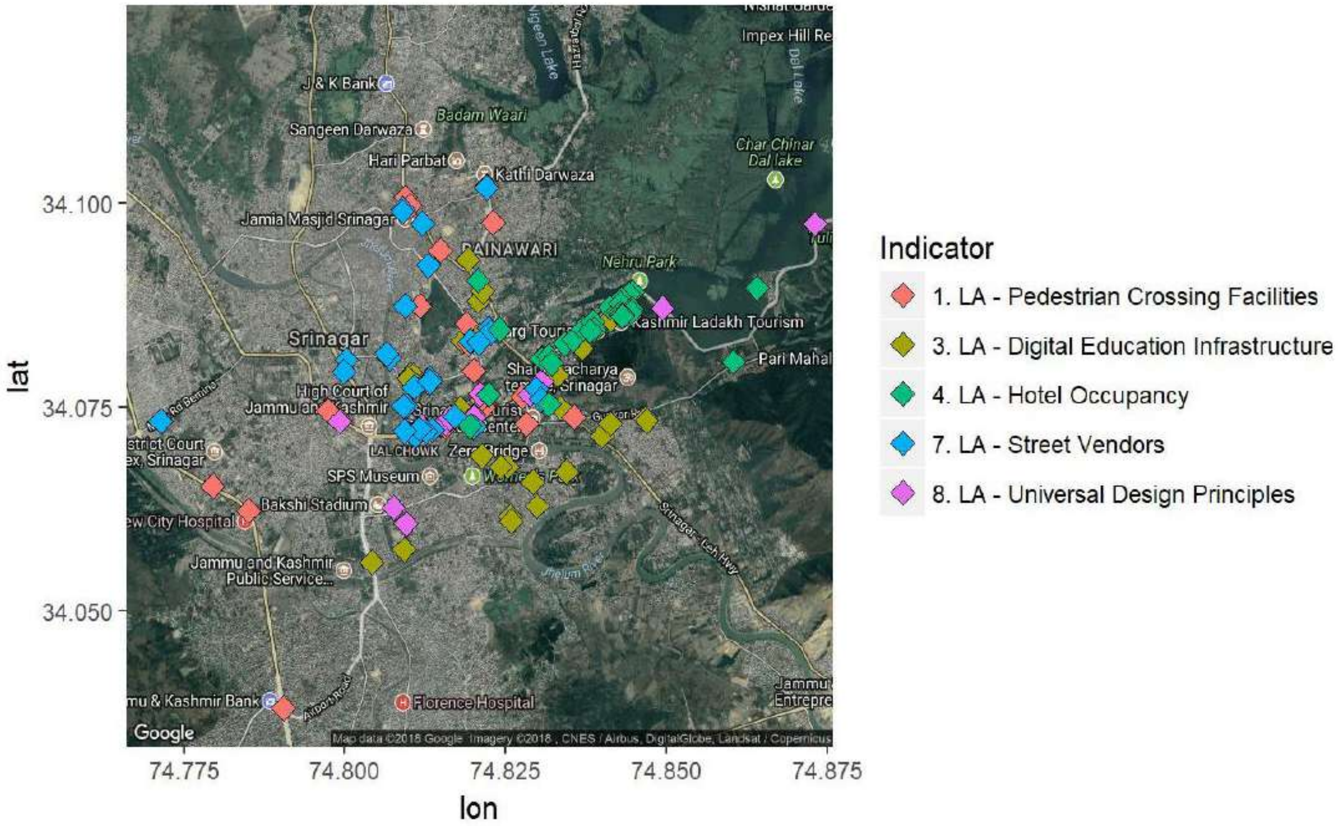
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- **5.1**| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


J & K Bank
Badam Waari
Sangeen Darwaza
Hari Parbat
Kathi Darwaza
Jamia Masjid Srinagar
RAINAWARI
Nehru Park
Char Chinar Dal lake
Impex Hill Re
Srinagar
Kashmir Ladakh Tourism
Pari Mahal
High Court of Jammu and Kashmir
Shankaracharya Srinagar
LAL CHOWK
Zero Bridge
SPS Museum
Bakshi Stadium
Jammu and Kashmir Public Service...
Florence Hospital
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
34.100
34.075
34.050
lat
74.775
74.800
74.825
74.850
74.875
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	35.68%
Identity & Culture	0%
Education	44%
Health	88%
Safety & Security	69%
Economy & Employment	7%
Housing & Inclusiveness	6%
Public Open Spaces	4%
Mixed Land Use & Compactness	0%
Power Supply	23%
Transport & Mobility	37%
Assured Water Supply	58%
Waste Water Management	50%
Solid Waste Management	27%
Reduced Pollution	28%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

SURAT

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

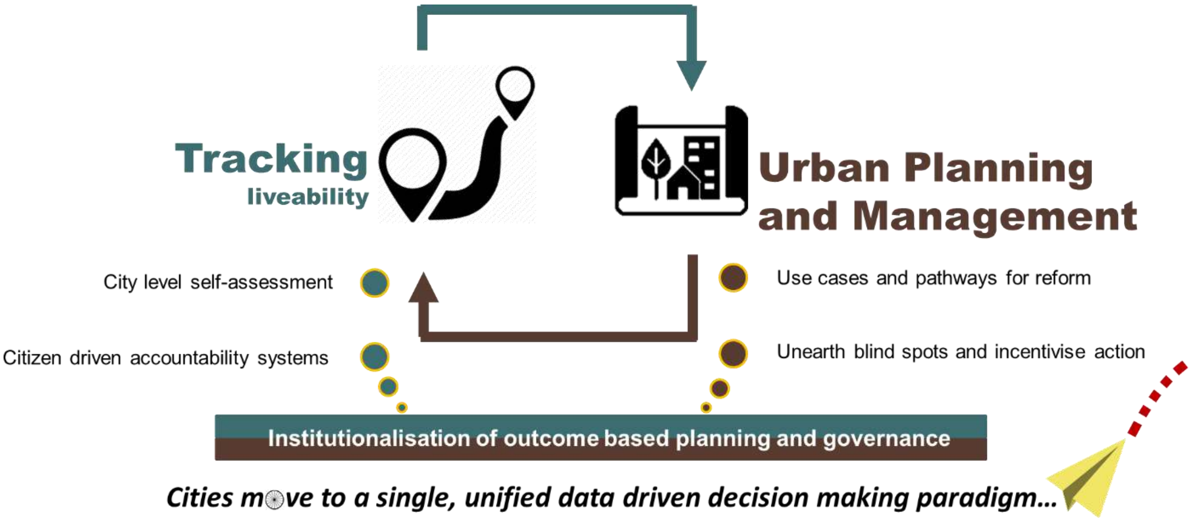
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

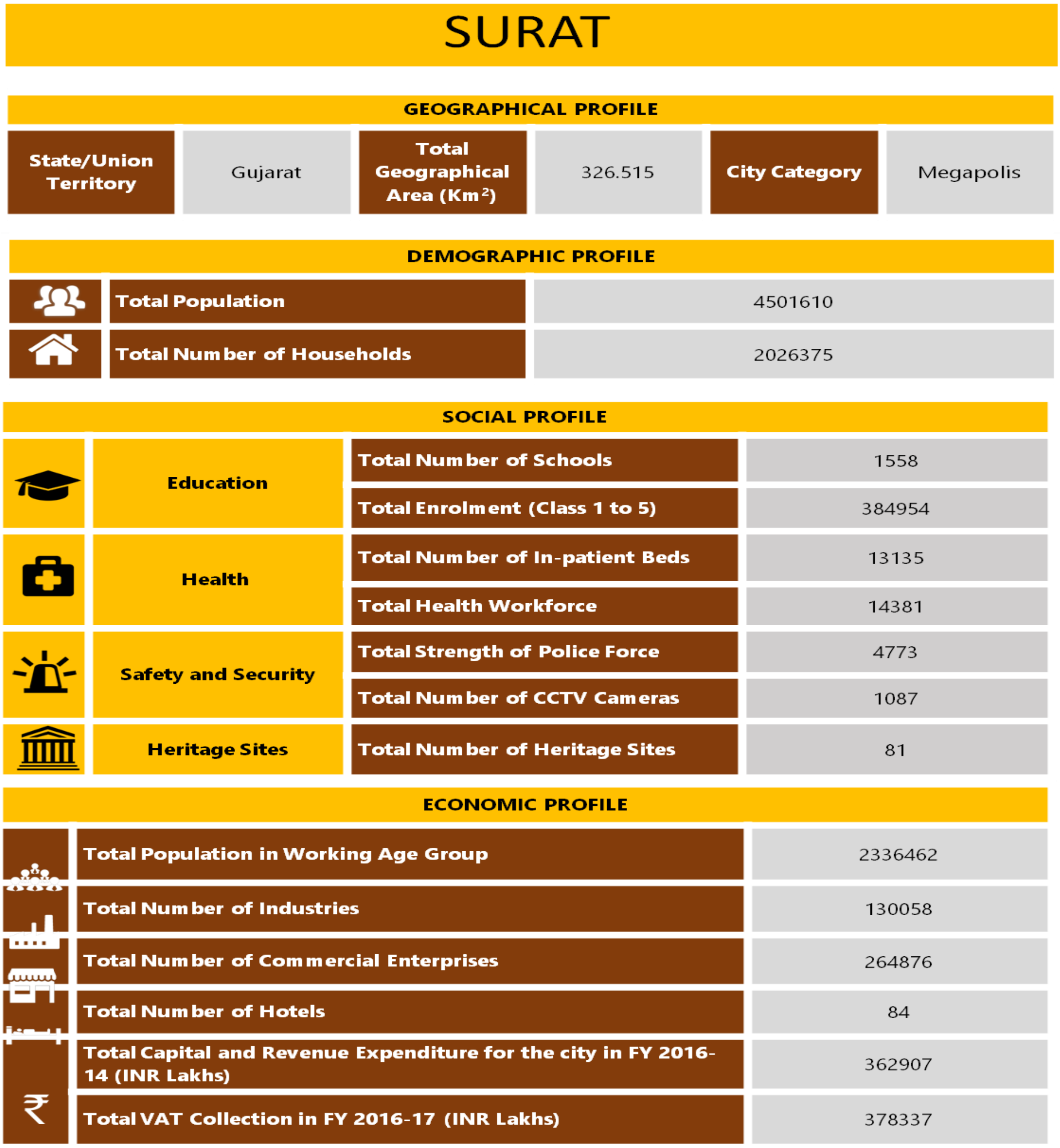
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



SURAT

GEOGRAPHICAL PROFILE

State/Union Territory	Gujarat	**Total Geographical Area (Km^2)**	326.515	**City Category**	Megapolis

DEMOGRAPHIC PROFILE

Total Population	4501610
Total Number of Households	2026375

SOCIAL PROFILE

Education	**Total Number of Schools**	1558
	Total Enrolment (Class 1 to 5)	384954
Health	**Total Number of In-patient Beds**	13135
	Total Health Workforce	14381
Safety and Security	**Total Strength of Police Force**	4773
	Total Number of CCTV Cameras	1087
Heritage Sites	**Total Number of Heritage Sites**	81

ECONOMIC PROFILE

Total Population in Working Age Group	2336462
Total Number of Industries	130058
Total Number of Commercial Enterprises	264876
Total Number of Hotels	84
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	362907
Total VAT Collection in FY 2016-17 (INR Lakhs)	378337

PHYSICAL PROFILE

Water	**Average Quantity of Water Supplied (MLD)**	1065
	Total Number of Water Connection	384266
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	1309286
	Total number of households in the city with access to community toilets in the city	10200
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	1995
	Total number of households covered through door-to-door collection of solid waste	1311433
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	756.2
	Daily average quantum of waste water treated by STPs in the city (MLD)	752
Electricity	**Total number of authorized electrical connections in the city**	1312509
	Total electricity supplied to the city (kWh)	6149199231
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	31452977.17
Roads and Transport	**Total Length of Road Network in the City (Km)**	3983.287
	Total length of arterial and sub-arterial road network in the city (Km)	765.132
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	306.897

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in

Pillars of Comprehensive Development	Category	Indicators
		schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through

Pillars of Comprehensive Development	Category	Indicators
		meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

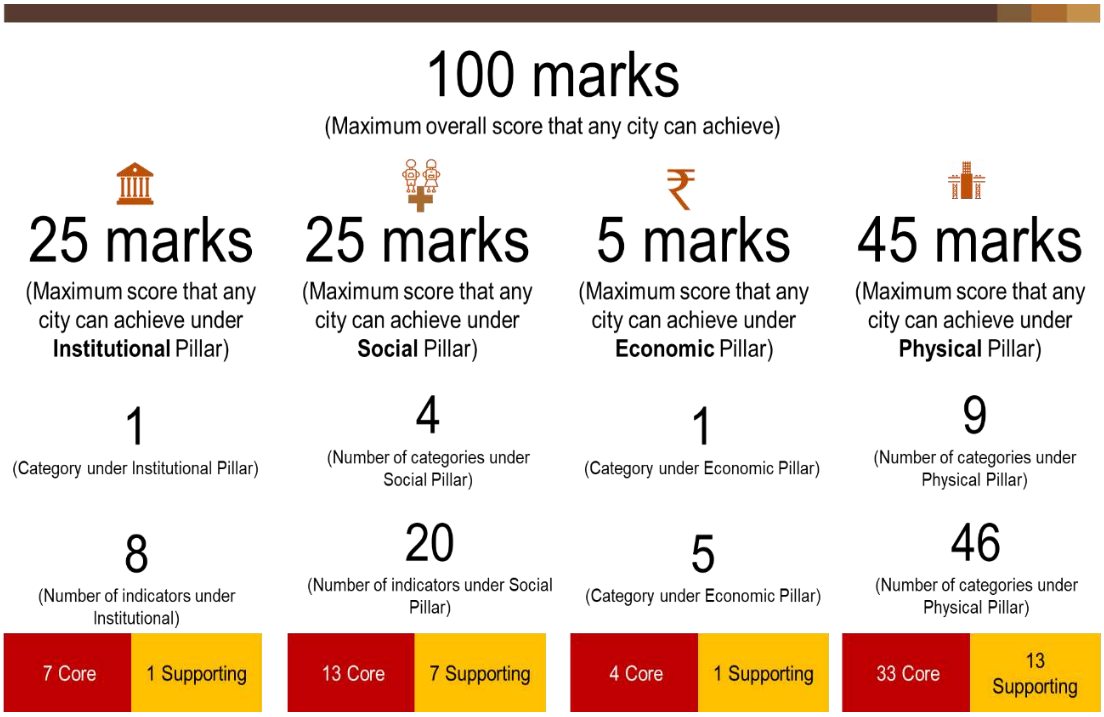
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account
Urban Local Body	For Park and Recreation Related Questions	Garden
Urban Local Body	For Water Supply and Drainage related questions	Drainage department/ hydraulic
Urban Local Body	For Heritage sites related data	Heritage/chief curator
Urban Local Body	For Ecological sites related data	Drainage department
Urban Local Body	For Housing related data	Slum upgradation cell
Urban Local Body	For Building plan related data	TDO
Urban Local Body	For Roads related data	Road development department
Urban Local Body	For Solid waste management related data	Health department
Urban Local Body	For IT services related data	ISD
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Gujarat pollution control Board
Development Authority	Building Infrastructure	TDO
	Construction planning	TDO

Designated data owners	Subcategories	Data owners at city level
	Green Building	TDO
	Rain water harvesting	TDO
	Universal Design Principle	TDO
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Torrent power and Dakshin Gujarat Vij Company Limited
State Disaster management authority		CFO
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		EEC
State Sales / Commercial Taxes Department		state tax joint commissioner office
Town and Country Planning Department	Land Use	Town planning
Traffic and Police Department		Traffic cell
Transport Authorities	Buses	BRTS, sitelink
	Registered Vehicles	Traffic
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 95 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register,

signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	1
DISCOM/Electricity Department	3
Traffic and Police Department	3
Development Authority	13
Pollution Control Board	3
State Renewable Energy Department	2
Town and Country Planning	0
State Health Department	9
Transport Authority	1
Disaster Management	1
Urban Local Body	58
Total	95*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

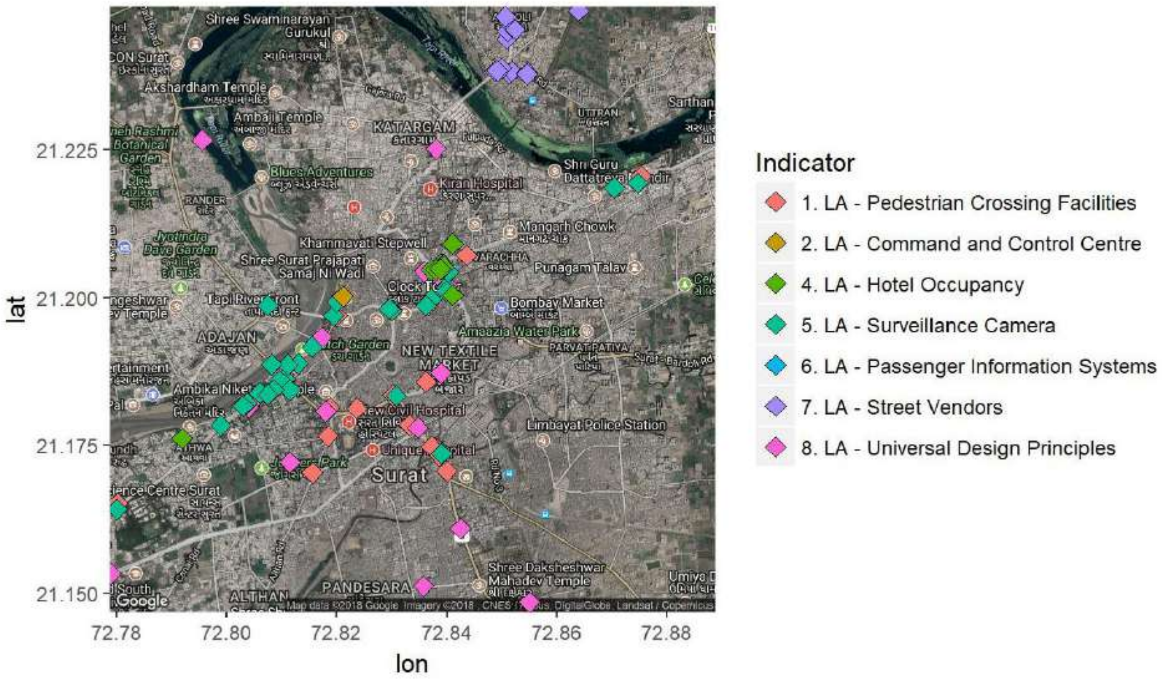
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
21.225
21.200
21.175
21.150
72.78
72.80
72.82
72.84
72.86
72.88
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Surat
KATARGAM
ADAJAN
NEW TEXTILE MARKET
PANDESARA
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	75.17%
Identity & Culture	51%
Education	82%
Health	75%
Safety & Security	56%
Economy & Employment	41%
Housing & Inclusiveness	59%
Public Open Spaces	31%

Mixed Land Use & Compactness	38%
Power Supply	37%
Transport & Mobility	34%
Assured Water Supply	89%
Waste Water Management	73%
Solid Waste Management	81%
Reduced Pollution	78%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs

Government of India

THANE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

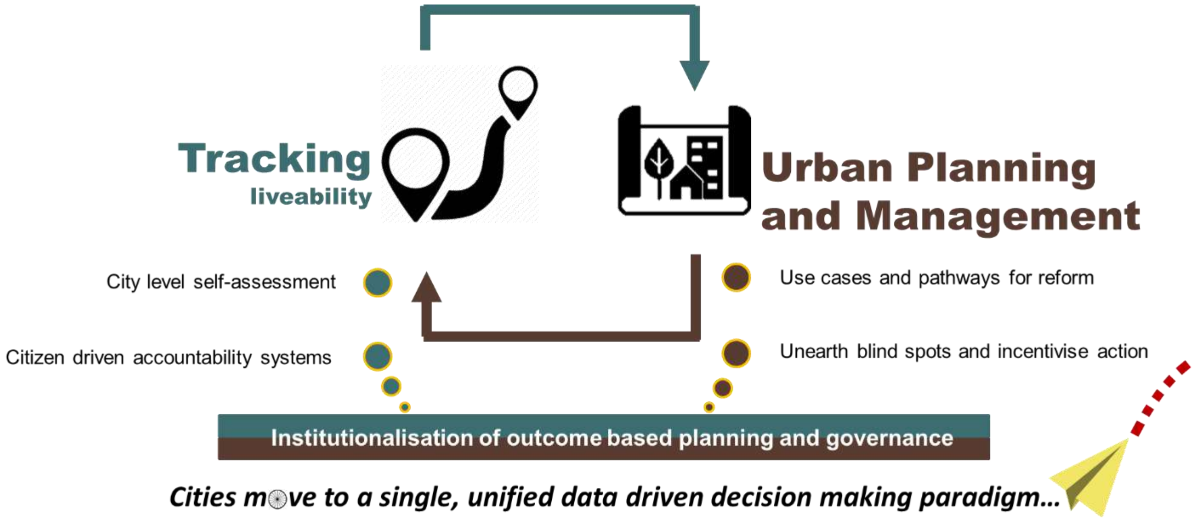
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

THANE

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	**Total Geographical Area (Km^2)**	128.23	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1841488
Total Number of Households	513225

SOCIAL PROFILE

Education	**Total Number of Schools**	818
	Total Enrolment (Class 1 to 5)	171583
Health	**Total Number of In-patients Beds**	6341
	Total Health Workforce	8168
Safety and Security	**Total Strength of Police Force**	1751
	Total Number of CCTV Cameras	92
Heritage Sites	**Total Number of Heritage Sites**	7

ECONOMIC PROFILE

	Total Population in Working Age Group	1667269
	Total Number of Industries	16962
	Total Number of Commercial Enterprises	40341
	Total Number of Hotels	22
₹	**Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)**	200661.86
	Total VAT Collection in FY 2016-17 (INR Lakhs)	96747.03681

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	480
		Total Number of Water Connections	134773
	Sanitation Facilities	Total number of households with access to individual toilets in the city	409394
		Total number of households in the city with access to community toilets in the city	71009
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	696
		Total number of households covered through door-to-door collection of solid waste	430336
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	325
		Daily average quantum of waste water treated by STPs in the city (MLD)	66
	Electricity	Total number of authorized electrical connections in the city	950723
		Total electricity supplied to the city (kWh)	3531520000
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	512593
	Roads and Transport	Total Length of Road Network in the City (Km)	427.512
		Total length of arterial and sub-arterial road network in the city (Km)	51.27
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	634.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 🟥 | 1 Supporting 🟨	13 Core 🟥 | 7 Supporting 🟨	4 Core 🟥 | 1 Supporting 🟨	33 Core 🟥 | 13 Supporting 🟨

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Garden department
Urban Local Body	For Water Supply and Drainage related questions	Water supply department
Urban Local Body	For Heritage sites related data	Town planning department
Urban Local Body	For Ecological sites related data	Garden department
Urban Local Body	For Housing related data	Housing department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department/ pwd dept
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	Encroachment department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment exchange department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department, mpcb
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	Pwd department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM/Electricity	Electrical Connection/	Electricity department

Designated data owners	Subcategories	Data owners at city level
Board	Grievance Redressal/ Power supply	
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Electricity department
State Sales / Commercial Taxes Department		Sales tax department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department
	Registered Vehicles	Transport department (rto)
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 200 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**7**
DISCOM/Electricity Department	**0**
Traffic and Police Department	**14**
Development Authority	**2**
Pollution Control Board	**11**
State Renewable Energy Department	**2**
Town and Country Planning	**1**
State Health Department	**14**
Transport Authority	**28**
Disaster Management	**0**
Urban Local Body	**119**
Total	**200***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

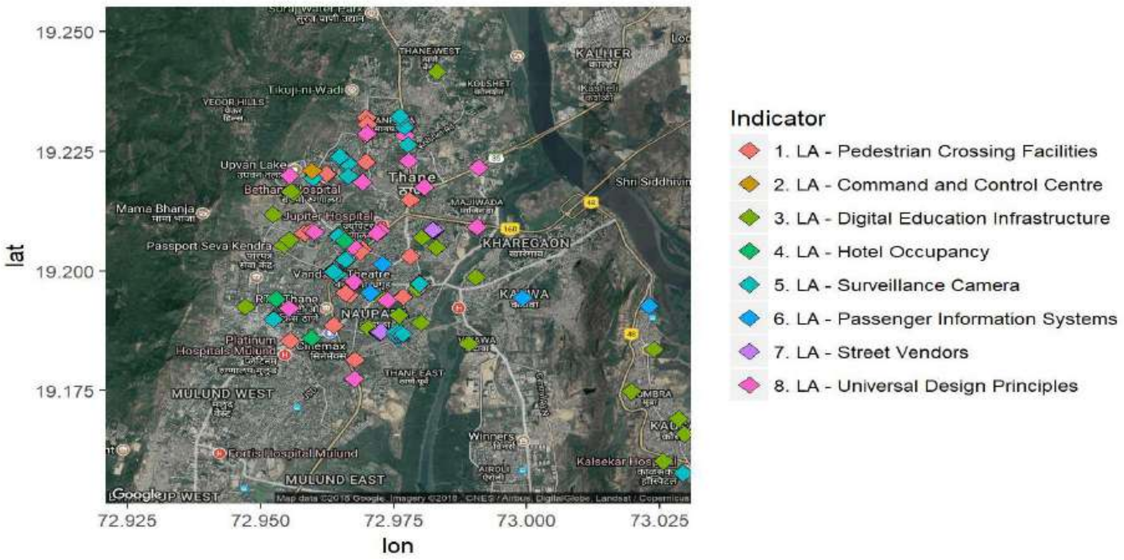
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Jupiter Hospital
Passport Seva Kendra
Mama Bhanja
Yeoor Hills
Tikuji-ni-Wadi
Platinum Hospitals Mulund
Fortis Hospital Mulund
Cinemax
Shri Siddhivinayak
Kalsekar Hospital
Winners
Google
Map data ©2018 Google, Imagery ©2018, CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use &

compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	53.10%
Identity & Culture	57%
Education	89%
Health	93%
Safety & Security	58%
Economy & Employment	39%
Housing & Inclusiveness	49%
Public Open Spaces	1%
Mixed Land Use & Compactness	12%
Power Supply	59%
Transport & Mobility	87%
Assured Water Supply	90%
Waste Water Management	74%
Solid Waste Management	81%
Reduced Pollution	75%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

सत्यमेव जयते

Ministry of Housing
and Urban Affairs
Government of India

THANJAVUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.

#	Challenges	Proposed Solutions
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.

#	Challenges	Proposed Solutions
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.

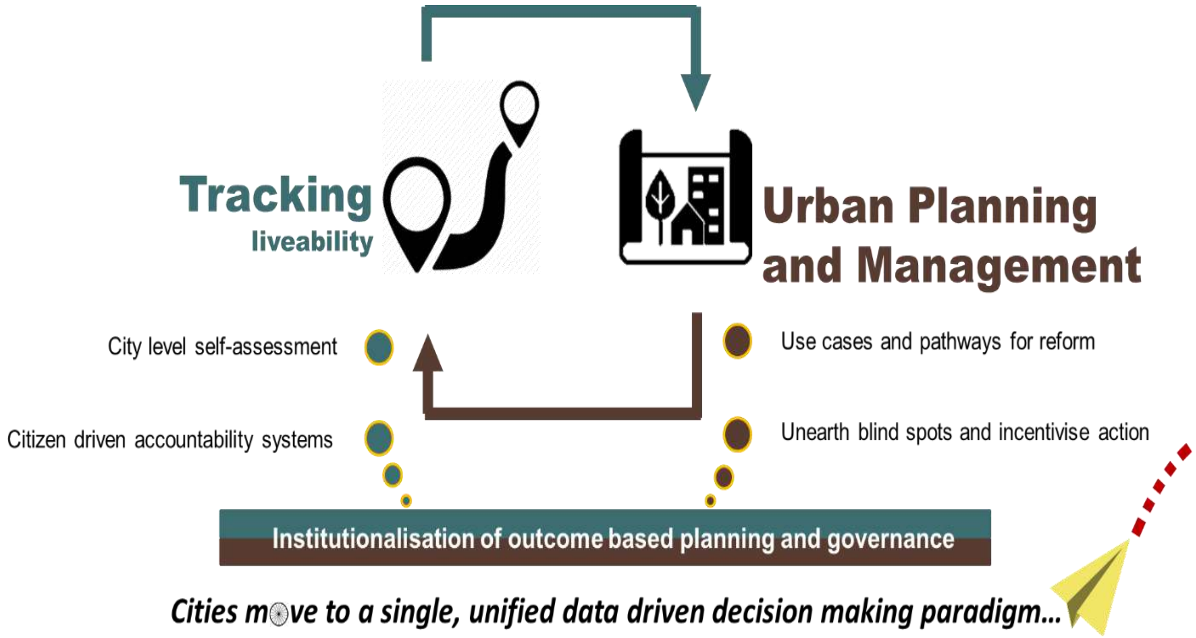
#	Challenges	Proposed Solutions
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

THANJAVUR

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	36.33	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	222943
Total Number of Households	46671

SOCIAL PROFILE

Education	**Total Number of Schools**	122
	Total Enrolment (Class 1 to 5)	16821
Health	**Total Number of In-patients Beds**	2407
	Total Health Workforce	16
Safety and Security	**Total Strength of Police Force**	202
	Total Number of CCTV Cameras	442
Heritage Sites	**Total Number of Heritage Sites**	35

ECONOMIC PROFILE

Total Population in Working Age Group	159277
Total Number of Industries	...
Total Number of Commercial Enterprises	8995
Total Number of Hotels	58
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	7902.75
Total VAT Collection in FY 2016-17 (INR Lakhs)	8273.28

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	27
		Total Number of Water Connections	27961
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	50146
		Total number of households in the city with access to community toilets in the city	1336
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	119
		Total number of households covered through door-to-door collection of solid waste	50263
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	16
		Daily average quantum of waste water treated by STPs in the city (MLD)	16
	Electricity	**Total number of authorized electrical connections in the city**	81578
		Total electricity supplied to the city (kWh)	82410
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	…
	Roads and Transport	**Total Length of Road Network in the City (Km)**	320.441
		Total length of arterial and sub-arterial road network in the city (Km)	320.441
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	…

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

Pillars of Comprehensive Development	Category	Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

Pillars of Comprehensive Development	Category	Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

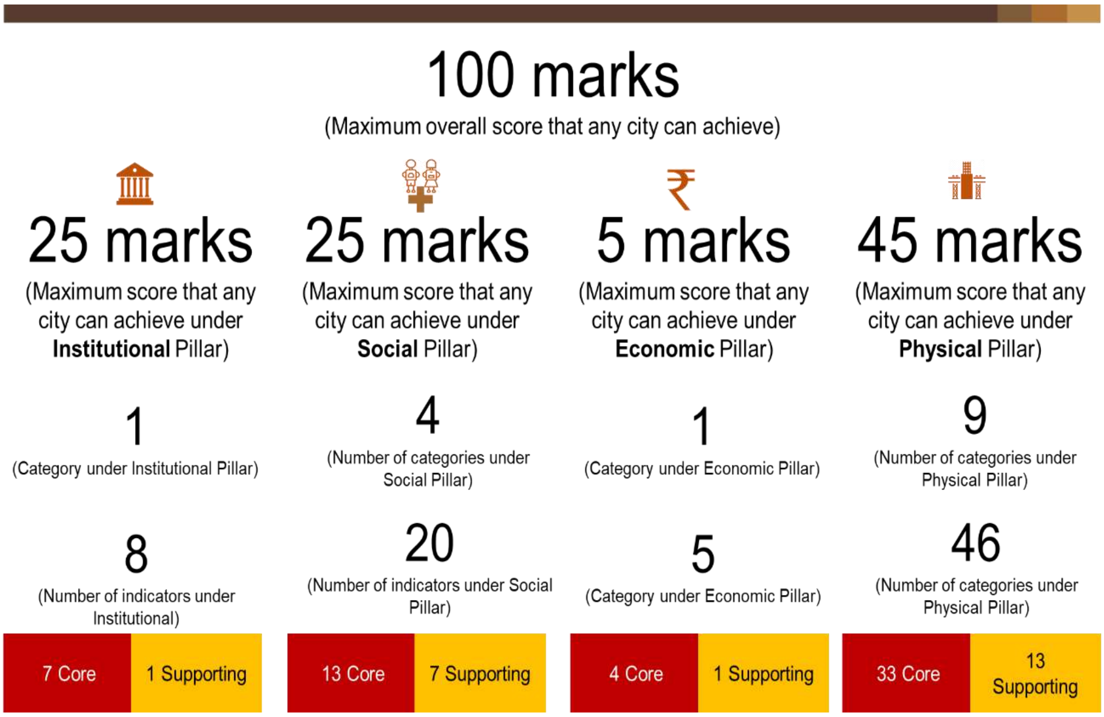
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department, Thanjavur Corporation
Urban Local Body	For Park and Recreation Related Questions	Engineering Section Thanjavur Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section, Thanjavur Corporation
Urban Local Body	For Heritage sites related data	
Urban Local Body	For Ecological sites related data	District Forest Department
Urban Local Body	For Housing related data	Town planning, Thanjavur Corporation
Urban Local Body	For Building plan related data	Town planning, Thanjavur Corporation
Urban Local Body	For Roads related data	Engineering Section, Public Work Department
Urban Local Body	For Solid waste management related data	Health Department , ULB , Thanjavur corporation
Urban Local Body	For IT services related data	IT department, Thanjavur Corporation
Urban Local Body	For Vendor committee related data	Town planning, Thanjavur Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section Thanjavur Corporation
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	
Development Authority	Building Infrastructure	Local Planning Authority
	Construction planning	Local Planning Authority
	Green Building	Local Planning Authority
	Rain water harvesting	Local Planning Authority
	Universal Design Principle	Local Planning Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board , Thanjavur
State Disaster management authority		District Disaster Management Department
State Education Department		District Education Department , Thanjavur

Designated data owners	Subcategories	Data owners at city level
State Health Department	Health care professionals	Joint Director, Health Services, Thanjavur
	Citizen Services	Joint Director, Health Services, Thanjavur
	Disease Prevalence	Joint Director, Health Services, Thanjavur
	Health Infrastructure	Joint Director, Health Services, Thanjavur
State Renewable Energy Development Agency		
State Sales / Commercial Taxes Department		District Commercial Tax Department, Thanjavur
Town and Country Planning Department	Land Use	Town planning, Thanjavur Corporation
Traffic and Police Department		Police Department, Thanjavur
Transport Authorities	Buses	Tamilnadu State Transport Corporation, Thanjavur
	Registered Vehicles	Regional Transport Office, Thanjavur
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 114 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

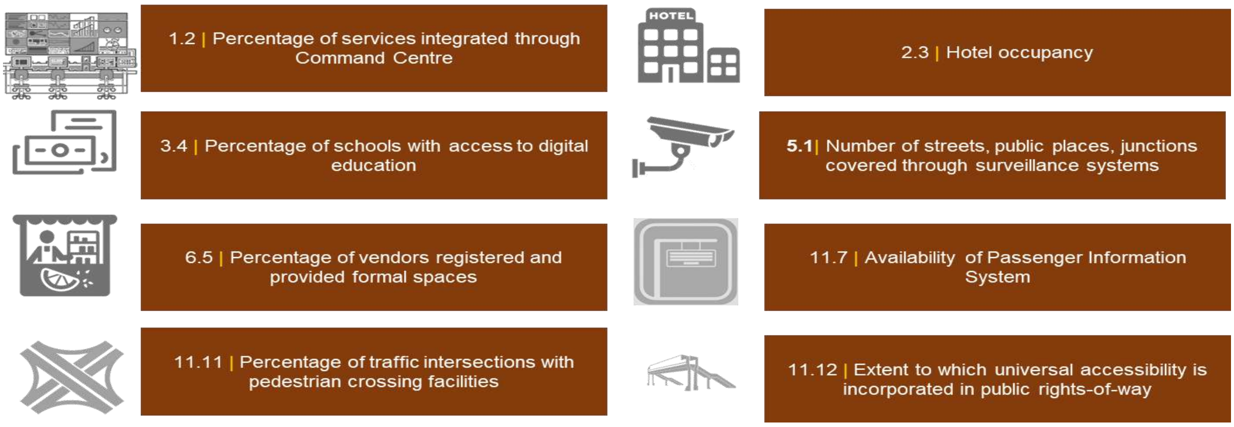
Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**3**
DISCOM/Electricity Department	**6**
Traffic and Police Department	**3**
Development Authority	**5**

Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**4**
State Health Department	**0**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**89**
Total	**114***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

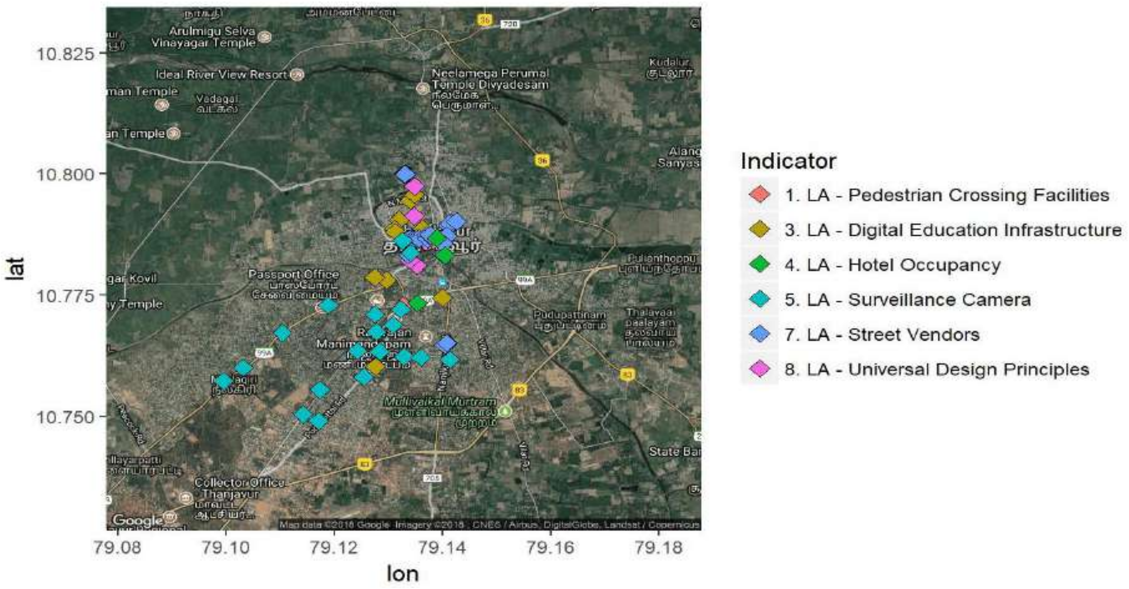
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
10.825
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lon
79.08
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79.18
Arulmigu Selva Vinayagar Temple
Ideal River View Resort
Neelamega Perumal Temple Divyadesam
Vadagal
Kudalur
Passport Office
Manimandapam
Pudupattinam
Thalavai paalayam
Mullivaikal Murram
Collector Office Thanjavur
State Bar
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	53.19%
Identity & Culture	8%
Education	90%
Health	88%
Safety & Security	70%
Economy & Employment	33%
Housing & Inclusiveness	2%
Public Open Spaces	3%
Mixed Land Use & Compactness	34%
Power Supply	55%
Transport & Mobility	38%
Assured Water Supply	75%
Waste Water Management	65%
Solid Waste Management	63%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

TIRUCHIRAPALLI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

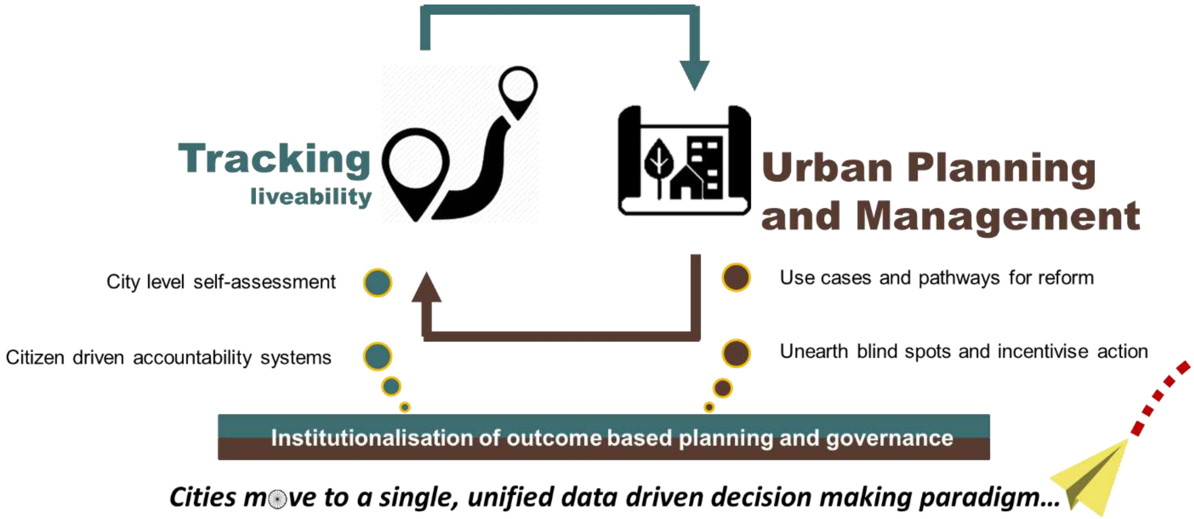
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

TIRUCHIRAPPALLI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	167.23	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	847387
Total Number of Households	227675

SOCIAL PROFILE

Education	**Total Number of Schools**	367
	Total Enrolment (Class 1 to 5)	169009
Health	**Total Number of In-patients Beds**	6212
	Total Health Workforce	5918
Safety and Security	**Total Strength of Police Force**	1648
	Total Number of CCTV Cameras	560
Heritage Sites	**Total Number of Heritage Sites**	1

ECONOMIC PROFILE

Total Population in Working Age Group	61552
Total Number of Industries	935
Total Number of Commercial Enterprises	21128
Total Number of Hotels	151
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	55480.3
Total VAT Collection in FY 2016-17 (INR Lakhs)	100259.84

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	110
		Total Number of Water Connections	108445
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	160456
		Total number of households in the city with access to community toilets in the city	55626
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	450
		Total number of households covered through door-to-door collection of solid waste	230033
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	58
		Daily average quantum of waste water treated by STPs in the city (MLD)	58
	Electricity	**Total number of authorized electrical connections in the city**	392566
		Total electricity supplied to the city (kWh)	293.69
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	341876.48
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1411.97
		Total length of arterial and sub-arterial road network in the city (Km)	183.24
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	38.74

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

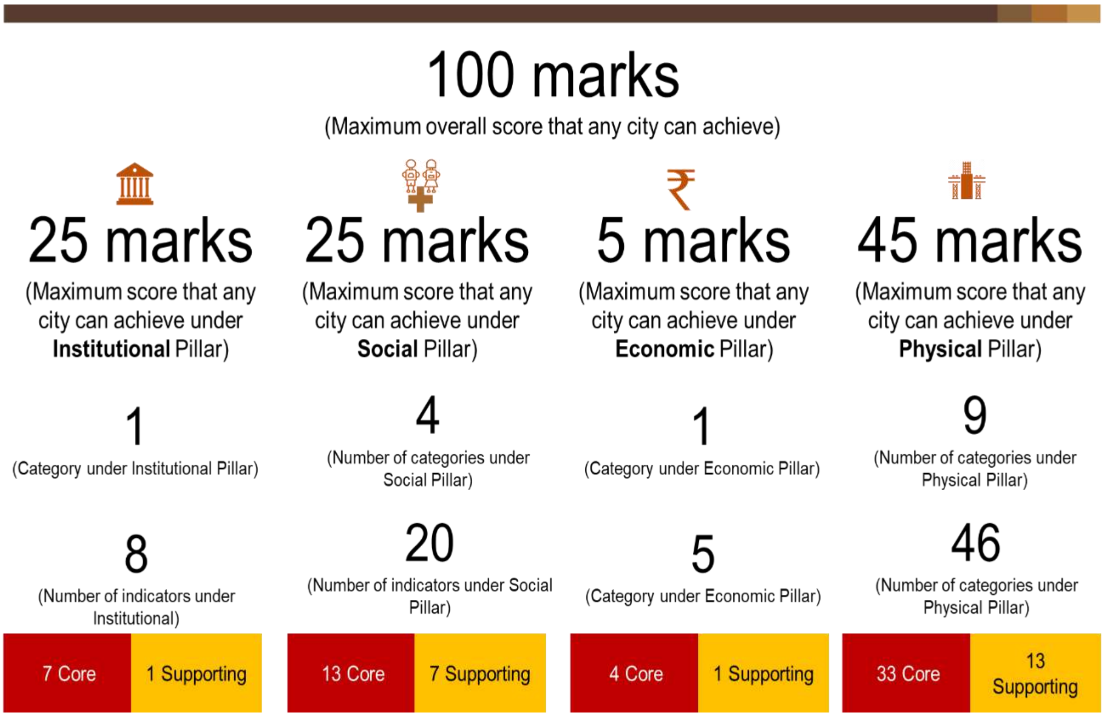
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core | 1 Supporting	13 Core | 7 Supporting	4 Core | 1 Supporting	33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Engineering Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering Section
Urban Local Body	For Heritage sites related data	Town planning
Urban Local Body	For Ecological sites related data	Town planning
Urban Local Body	For Housing related data	Town planning
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Engineering Section
Urban Local Body	For Solid waste management related data	Health Department
Urban Local Body	For IT services related data	IT department
Urban Local Body	For Vendor committee related data	Town planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue Section
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board, Collectorate, Tiruchirappalli.
Development Authority	Building Infrastructure	Town planning

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Town planning
	Green Building	Town planning
	Rain water harvesting	Town planning
	Universal Design Principle	Engineering Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Revenue and Disaster Management Department
State Education Department		Education Department
State Health Department	Health care professionals	City Health Office
	Citizen Services	City Health Office
	Disease Prevalence	City Health Office
	Health Infrastructure	City Health Office
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District Commercial Tax Department
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		Police Department
Transport Authorities	Buses	Tamilnadu State Transport Corporation
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 170 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**4**
DISCOM/Electricity Department	**8**
Traffic and Police Department	**1**
Development Authority	**12**
Pollution Control Board	**1**
State Renewable Energy Department	**1**
Town and Country Planning	**3**
State Health Department	**8**
Transport Authority	**9**
Disaster Management	**1**
Urban Local Body	**63**
Total	**113***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

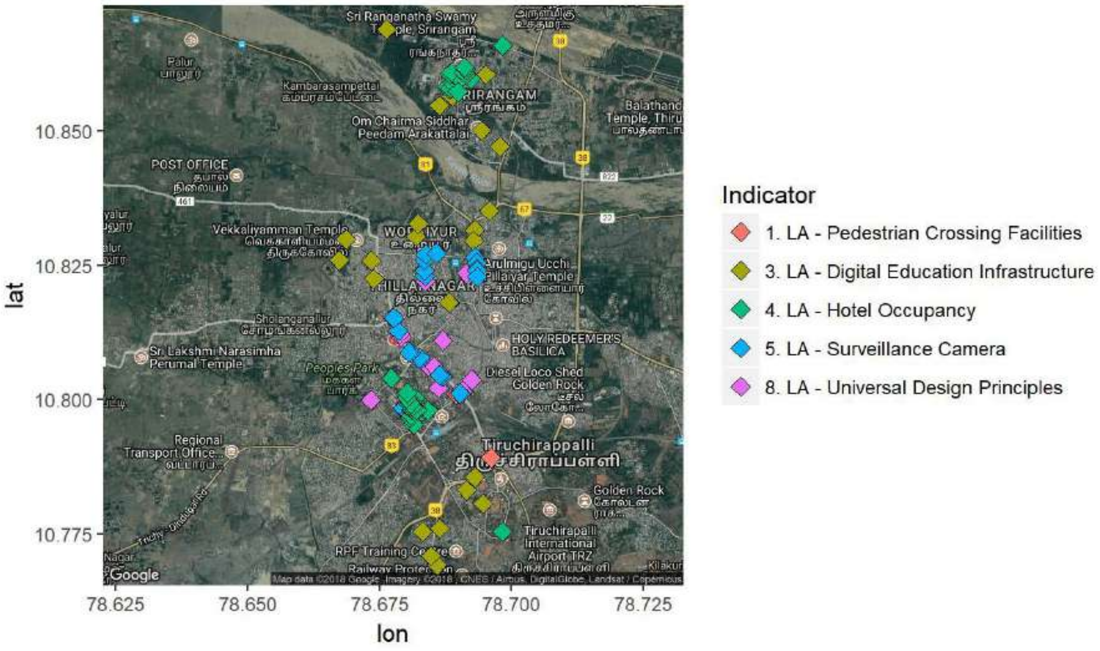
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


Sri Ranganatha Swamy Temple, Srirangam
SRIRANGAM
Palur
Kambarasampettai
Om Chairma Siddhar Peedam Arakattalai
Balathandi Temple, Thiru
POST OFFICE
Vekkaliyamman Temple
WORAIYUR
Arulmigu Ucchi Pillaiyar Temple
THILLAI NAGAR
Sholanganallur
Sri Lakshmi Narasimha Perumal Temple
Peoples Park
HOLY REDEEMER'S BASILICA
Diesel Loco Shed Golden Rock
Regional Transport Office
Tiruchirappalli
Golden Rock
Tiruchirapalli International Airport TRZ
RPF Training Centre
Railway Protection
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
10.850
10.825
10.800
10.775
lat
78.625
78.650
78.675
78.700
78.725
lon
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	44.38%
Identity & Culture	76%
Education	81%
Health	99%
Safety & Security	62%
Economy & Employment	28%
Housing & Inclusiveness	21%
Public Open Spaces	3%
Mixed Land Use & Compactness	22%
Power Supply	65%
Transport & Mobility	30%
Assured Water Supply	81%
Waste Water Management	56%
Solid Waste Management	99%
Reduced Pollution	99%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

TIRUNELVELI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

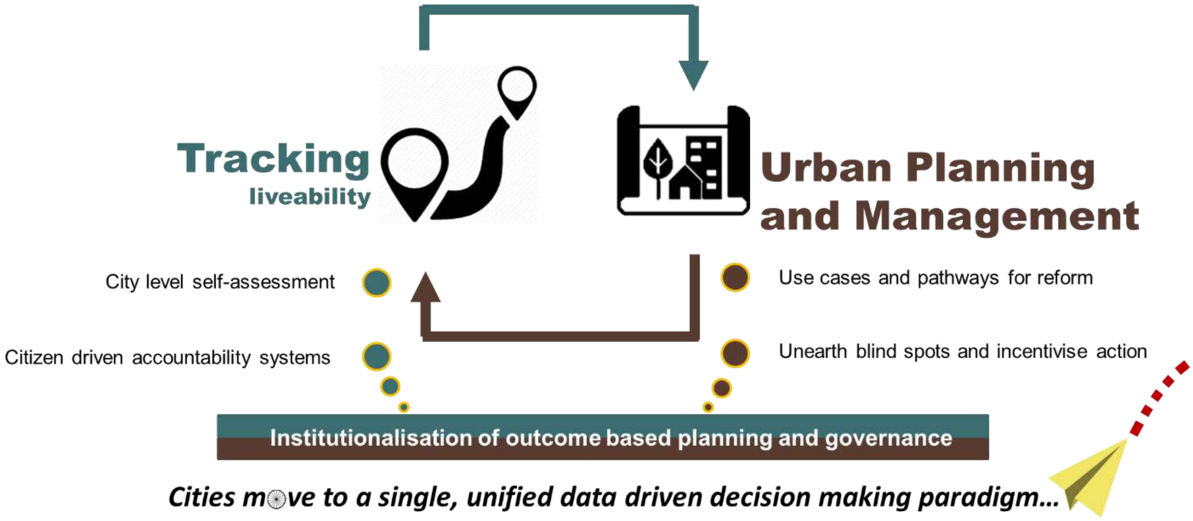
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

TIRUNELVELI

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km²)**	109	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	473637
Total Number of Households	152339

SOCIAL PROFILE

Education	**Total Number of Schools**	227
	Total Enrolment (Class 1 to 5)	36272
Health	**Total Number of In-patients Beds**	120
	Total Health Workforce	739
Safety and Security	**Total Strength of Police Force**	1206
	Total Number of CCTV Cameras	63
Heritage Sites	**Total Number of Heritage Sites**	4

ECONOMIC PROFILE

Total Population in Working Age Group	147153
Total Number of Industries	490
Total Number of Commercial Enterprises	11008
Total Number of Hotels	26
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	25420
Total VAT Collection in FY 2016-17 (INR Lakhs)	28157.9

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	48
		Total Number of Water Connections	70773
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	105478
		Total number of households in the city with access to community toilets in the city	213
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	150
		Total number of households covered through door-to-door collection of solid waste	159628
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	44.11
		Daily average quantum of waste water treated by STPs in the city (MLD)	8
	Electricity	**Total number of authorized electrical connections in the city**	225243
		Total electricity supplied to the city (kWh)	392910839
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	11850
	Roads and Transport	**Total Length of Road Network in the City (Km)**	128
		Total length of arterial and sub-arterial road network in the city (Km)	1136
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	20.8

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital

Pillars of Comprehensive Development	Category	Indicators
		education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

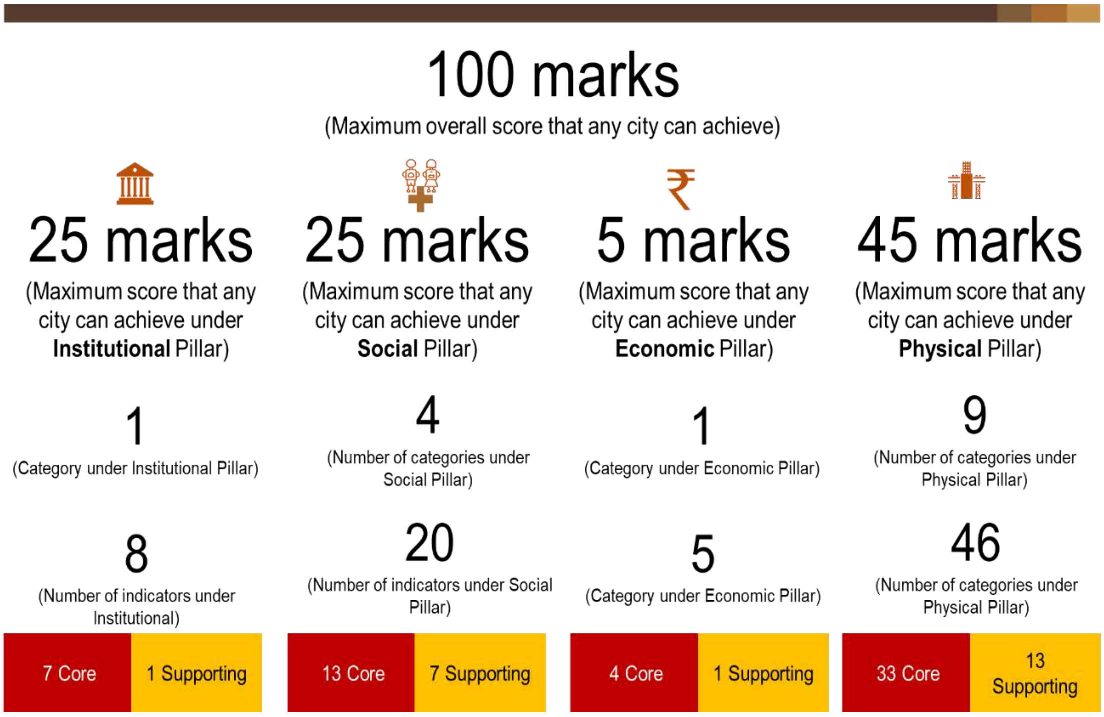
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB – Account section
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning Department
Urban Local Body	For Water Supply and Drainage related questions	ULB – Development Authority – Engineering
Urban Local Body	For Heritage sites related data	ULB – Development Authority - Engineering
Urban Local Body	For Ecological sites related data	ULB – Development Authority - Engineering
Urban Local Body	For Housing related data	Town and Country Planning Department
Urban Local Body	For Building plan related data	Town and Country Planning Department
Urban Local Body	For Roads related data	ULB – Development Authority Department
Urban Local Body	For Solid waste management related data	ULB – Health Department
Urban Local Body	For IT services related data	ULB – Information technical section
Urban Local Body	For Vendor committee related data	ULB – Health Department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism Department, revenue department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State pollution control Board – Tirunelveli District Sipco - pettai
Development Authority	Building Infrastructure	ULB – Development Authority - Engineering

Designated data owners	Subcategories	Data owners at city level
	Construction planning	Town and country planning Department
	Green Building	Town and country planning department
	Rain water harvesting	Town and country planning Department
	Universal Design Principle	Health Department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Central command control center – Disaster Management – Revenue department – Collector office
State Education Department		Chief Educational Officer - Tirunelveli
State Health Department	Health care professionals	ULB – Health Department
	Citizen Services	ULB – Health Department
	Disease Prevalence	Joint Director of Health Services through ULB Health Department
	Health Infrastructure	Joint Director of Health Services through ULB Health Department
State Renewable Energy Development Agency		Tamilnadu Electricity Board - Tirunelveli
State Sales / Commercial Taxes Department		District sales / commercial Tax office – deputy commissioner - Tirunelveli
Town and Country Planning Department	Land Use	Town and country Planning Department
Traffic and Police Department		City police commissioner office –Traffic and Crime – police Department
Transport Authorities	Buses	Tamilnadu state transport corporation
	Registered Vehicles	Regional Transporting Office - Tirunelveli
	Sub urban rail transport	Not applicable
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 73 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**2**
State Education Department	**1**
DISCOM/Electricity Department	**5**
Traffic and Police Department	**6**
Development Authority	**4**
Pollution Control Board	**4**
State Renewable Energy Department	**1**
Town and Country Planning	**2**
State Health Department	**7**
Transport Authority	**6**
Disaster Management	**1**
Urban Local Body	**34**
Total	**73***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

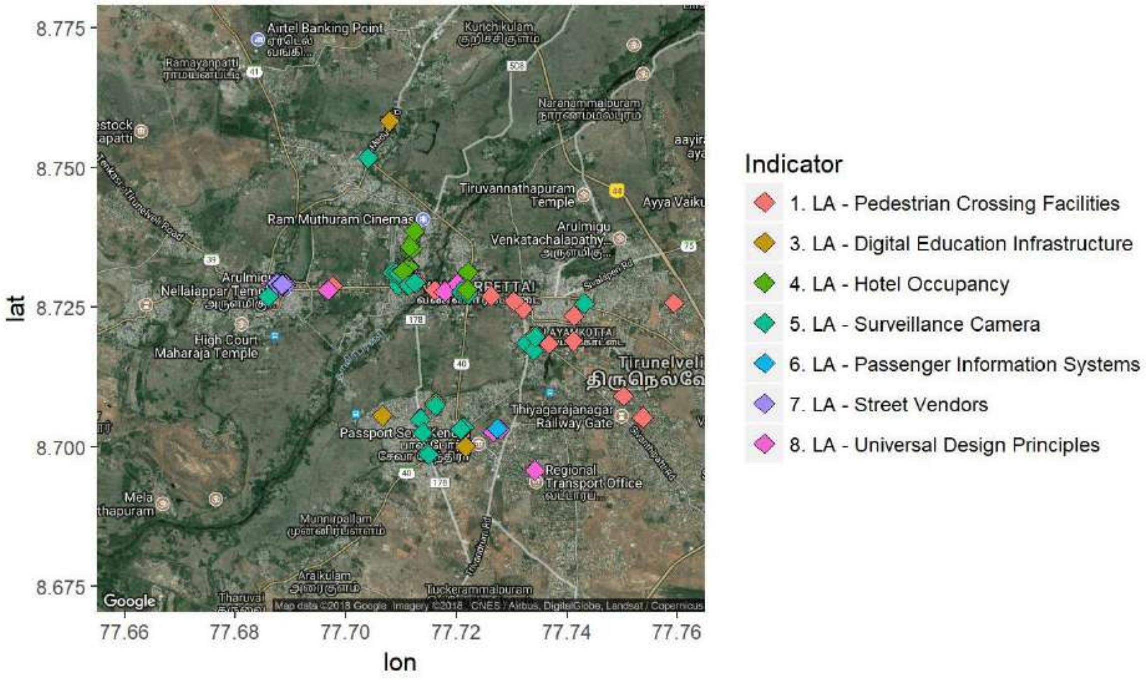
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.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Tiruvannathapuram Temple
Ayya Vaiku
Ram Muthuram Cinemas
Venkatachalapathy
Nellalappar Temple
High Court Maharaja Temple
PETTAI
PALAYAMKOTTAI
Tirunelveli
Thiyagarajanagar Railway Gate
Passport Seva Kendra
Regional Transport Office
Mela thapuram
Munnirpallam
Araikulam
Tharuvai
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Indicator
🔶 1. LA - Pedestrian Crossing Facilities
🔶 3. LA - Digital Education Infrastructure
🔶 4. LA - Hotel Occupancy
🔶 5. LA - Surveillance Camera
🔶 6. LA - Passenger Information Systems
🔶 7. LA - Street Vendors
🔶 8. LA - Universal Design Principles

5 City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	62.00%
Identity & Culture	71%
Education	81%
Health	72%
Safety & Security	70%
Economy & Employment	17%
Housing & Inclusiveness	37%
Public Open Spaces	0%
Mixed Land Use & Compactness	0%
Power Supply	62%
Transport & Mobility	33%
Assured Water Supply	75%
Waste Water Management	83%
Solid Waste Management	88%
Reduced Pollution	40%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

TIRUPATI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

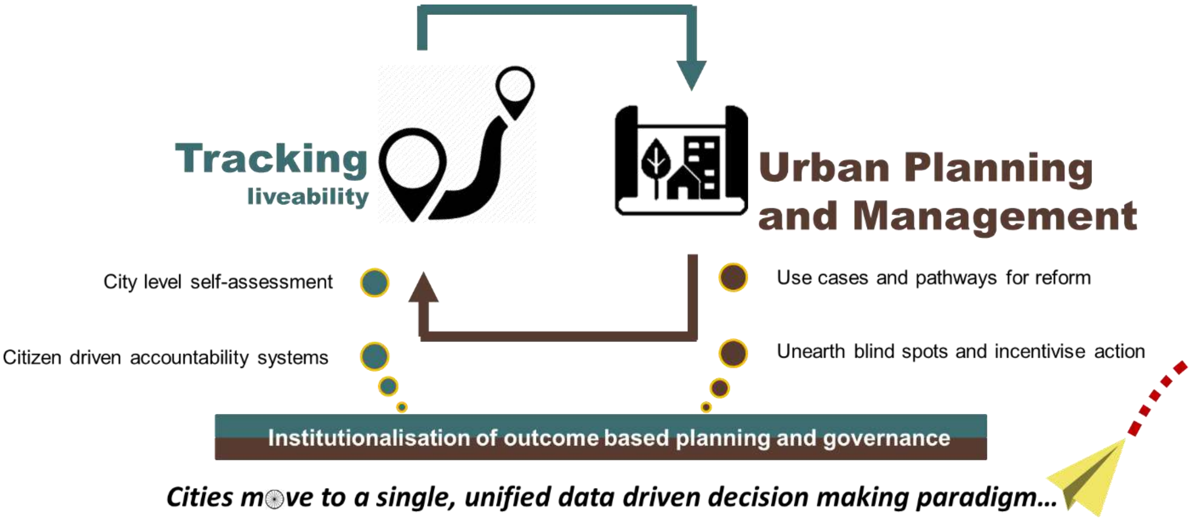
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

TIRUPATI

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	**Total Geographical Area (Km^2)**	27.44	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	295323
Total Number of Households	100992

SOCIAL PROFILE

Education	**Total Number of Schools**	335
	Total Enrolment (Class 1 to 5)	32827
Health	**Total Number of In-patients Beds**	5500
	Total Health Workforce	2028
Safety and Security	**Total Strength of Police Force**	1700
	Total Number of CCTV Cameras	256
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	151344
Total Number of Industries	...
Total Number of Commercial Enterprises	11972
Total Number of Hotels	174
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	15722.17
Total VAT Collection in FY 2016-17 (INR Lakhs)	17062.17

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	48
		Total Number of Water Connections	43422
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	62302
		Total number of households in the city with access to community toilets in the city	120
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	219
		Total number of households covered through door-to-door collection of solid waste	103288
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	40.69
		Daily average quantum of waste water treated by STPs in the city (MLD)	29.5
	Electricity	**Total number of authorized electrical connections in the city**	202718
		Total electricity supplied to the city (kWh)	531.89
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	2800000
	Roads and Transport	**Total Length of Road Network in the City (Km)**	490.44
		Total length of arterial and sub-arterial road network in the city (Km)	37.62
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	29.1

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population

Pillars of Comprehensive Development	Category	Indicators
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings

Pillars of Comprehensive Development	Category	Indicators
		following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through

Pillars of Comprehensive Development	Category	Indicators
		reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

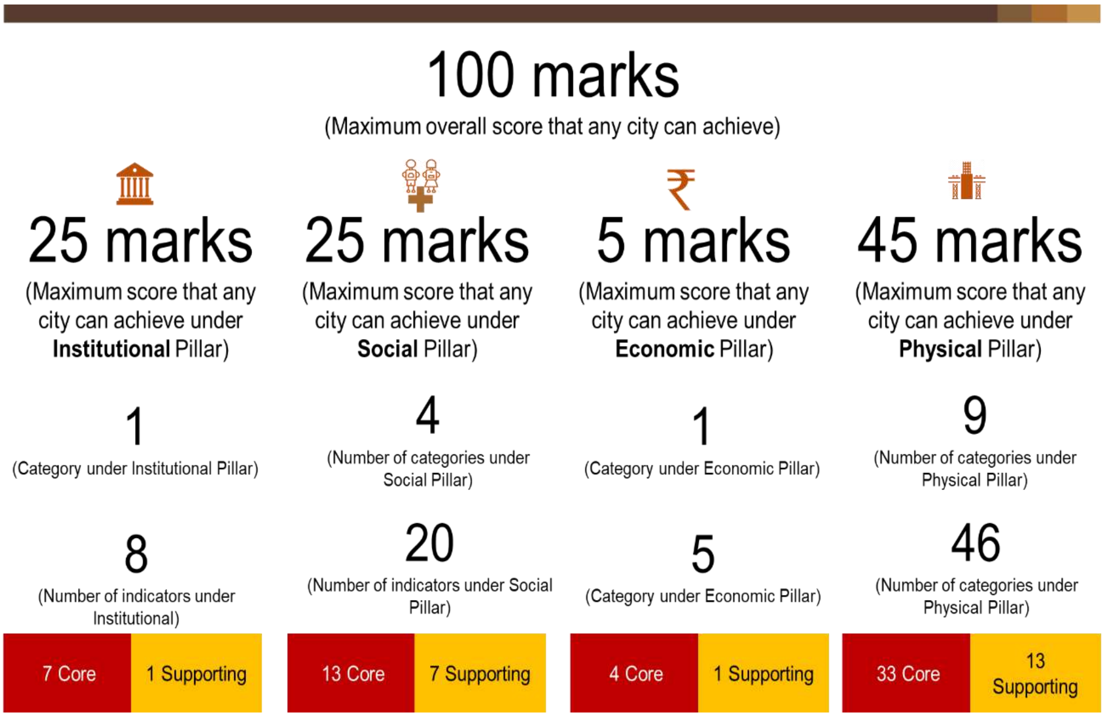
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different

categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Deputy Engineer zone 5 section
Urban Local Body	For Water Supply and Drainage related questions	Deputy Executive Engineer zone 4 section
Urban Local Body	For Heritage sites related data	Assistant City Planner -1
Urban Local Body	For Ecological sites related data	Municipal Engineer zone 4 section
Urban Local Body	For Housing related data	Housing Section
Urban Local Body	For Building plan related data	Town Planning section
Urban Local Body	For Roads related data	Asst Engineer section
Urban Local Body	For Solid waste management related data	Deputy Executive Engineer zone 4 section
Urban Local Body	For IT services related data	VOICE section
Urban Local Body	For Vendor committee related data	UCD Section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Heads of the Departments
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Tirupati Urban Development Authority Planning section
	Construction planning	Tirupati Urban Development Authority Planning section
	Green Building	Tirupati Urban Development Authority Planning section
	Rain water harvesting	Tirupati Urban Development Authority

Designated data owners	Subcategories	Data owners at city level
		Planning section
	Universal Design Principle	Tirupati Urban Development Authority Planning section
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Southern power/DISCOM, Tirupati
State Disaster management authority		District Disaster Management Authority
State Education Department		Mandal Education Officer (Urban)
State Health Department	Health care professionals	Medical Health Officer
	Citizen Services	Medical Health Officer
	Disease Prevalence	Medical Health Officer
	Health Infrastructure	Medical Health Officer
State Renewable Energy Development Agency	Renewable Energy	Non-Conventional Energy Development Corporation of Andhra Pradesh
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Deputy Superintendent of Police
Transport Authorities	Buses	District Transport Dept-APSRTC
	Registered Vehicles	District Transport
	Sub urban rail transport	No
	Mono Rail Authority	No
	Tramways	No
	Marine Transport Authority	No

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 92 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**5**
DISCOM/Electricity Department	**6**
Traffic and Police Department	**20**
Development Authority	**1**
Pollution Control Board	**7**
State Renewable Energy Department	**2**
Town and Country Planning	**1**
State Health Department	**2**
Transport Authority	**2**
Disaster Management	**0**
Urban Local Body	**45**
Total	**92***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

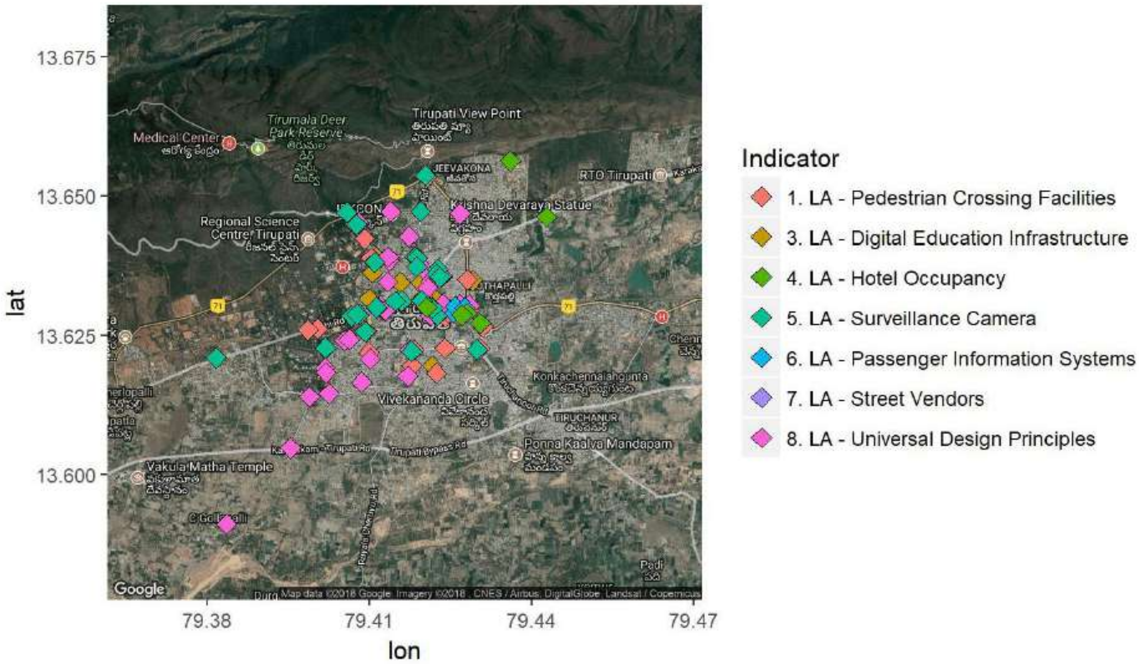
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.675
13.650
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lat
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lon
Tirumala Deer Park Reserve
Tirupati View Point
Medical Center
JEEVAKONA
RTO Tirupati
Krishna Devaraya Statue
Regional Science Centre Tirupati
THAPALLI
Konkachennaiagunta
Vivekananda Circle
TIRUCHANUR
Ponna Kaalva Mandapam
Vakula Matha Temple
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	58.53%
Identity & Culture	60%
Education	96%
Health	99%
Safety & Security	41%
Economy & Employment	42%
Housing & Inclusiveness	1%
Public Open Spaces	41%
Mixed Land Use & Compactness	0%
Power Supply	51%
Transport & Mobility	42%
Assured Water Supply	74%
Waste Water Management	72%
Solid Waste Management	100%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

TIRUPPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.

#	Challenges	Proposed Solutions
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.

#	Challenges	Proposed Solutions
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.

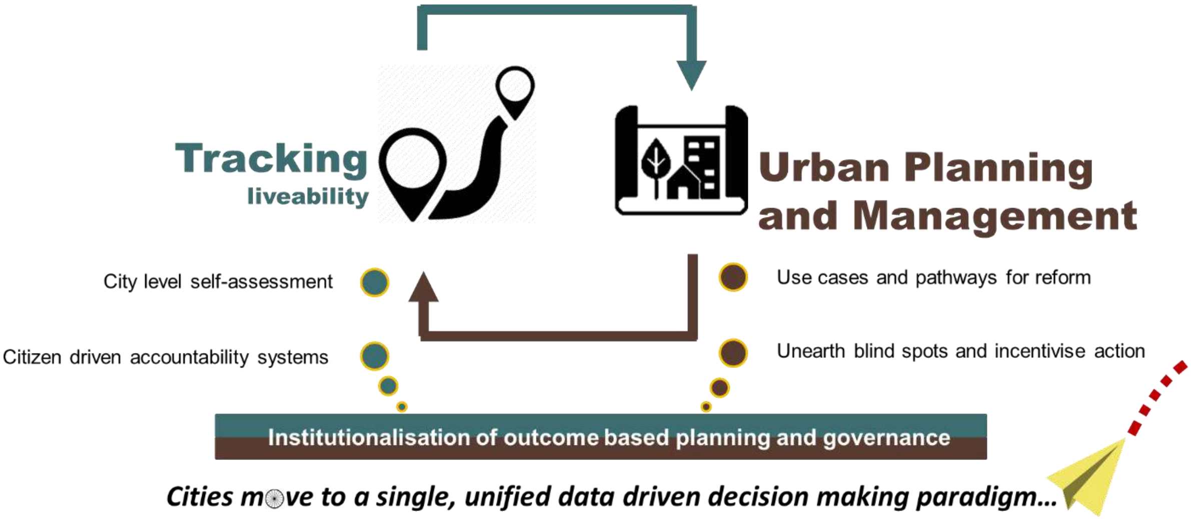
#	Challenges	Proposed Solutions
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

TIRUPPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	**Total Geographical Area (Km^2)**	159.35	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	444352
Total Number of Households	289235

SOCIAL PROFILE

Education	**Total Number of Schools**	258
	Total Enrolment (Class 1 to 5)	28104
Health	**Total Number of In-patients Beds**	1774
	Total Health Workforce	566
Safety and Security	**Total Strength of Police Force**	655
	Total Number of CCTV Cameras	36
Heritage Sites	**Total Number of Heritage Sites**	0

ECONOMIC PROFILE

Total Population in Working Age Group	865419
Total Number of Industries	12191
Total Number of Commercial Enterprises	8811
Total Number of Hotels	39
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	22977.52
Total VAT Collection in FY 2016-17 (INR Lakhs)	25913.96

PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	125
		Total Number of Water Connections	185349
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	280170
		Total number of households in the city with access to community toilets in the city	9065
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	520
		Total number of households covered through door-to-door collection of solid waste	289235
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	96.28
		Daily average quantum of waste water treated by STPs in the city (MLD)	7
	Electricity	**Total number of authorized electrical connections in the city**	351827
		Total electricity supplied to the city (kWh)	1356742711
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	96842.49
	Roads and Transport	**Total Length of Road Network in the City (Km)**	1332.84
		Total length of arterial and sub-arterial road network in the city (Km)	…
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	1.289

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.

100 marks

(Maximum overall score that any city can achieve)

25 marks

(Maximum score that any city can achieve under **Institutional** Pillar)

1

(Category under Institutional Pillar)

8

(Number of indicators under Institutional)

7 Core | 1 Supporting

25 marks

(Maximum score that any city can achieve under **Social** Pillar)

4

(Number of categories under Social Pillar)

20

(Number of indicators under Social Pillar)

13 Core | 7 Supporting

5 marks

(Maximum score that any city can achieve under **Economic** Pillar)

1

(Category under Economic Pillar)

5

(Category under Economic Pillar)

4 Core | 1 Supporting

45 marks

(Maximum score that any city can achieve under **Physical** Pillar)

9

(Number of categories under Physical Pillar)

46

(Number of categories under Physical Pillar)

33 Core | 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section, Tirupur Municipal Corporation
Urban Local Body	For Park and Recreation Related Questions	Town and country Planning Department Planning Department, Tirupur Municipal Corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Heritage sites related data	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Ecological sites related data	Engineering Department, Tirupur Municipal Corporation
Urban Local Body	For Housing related data	Town and Country Planning Department Planning Department, Tirupur Municipal Corporation
Urban Local Body	For Building plan related data	Town and Country Planning Department Planning Department, Tirupur Municipal Corporation
Urban Local Body	For Roads related data	Tirupur Municipal Corporation
Urban Local Body	For Solid waste management related data	Solid waste management Unit , Tirupur Municipal Corporation
Urban Local Body	For IT services related data	IT Department, Tirupur Municipal Corporation
Urban Local Body	For Vendor committee related data	Tirupur Municipal Corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Tamil Nadu State pollution control Board
Development Authority	Building Infrastructure	Town and country planning Department Tirupur Municipal Corporation
	Construction planning	Town and country planning Department Tirupur Municipal Corporation
	Green Building	Town and country planning department
	Rain water harvesting	Town and country planning department
	Universal Design Principle	Town and country planning Department

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		Disaster Management – Collector office
State Education Department		District Education Department
State Health Department	Health care professionals	City Health Officer- Tirupur Municipal Corporation
	Citizen Services	City Health Officer- Tirupur Municipal Corporation
	Disease Prevalence	City Health Officer- Tirupur Municipal Corporation
	Health Infrastructure	City Health Officer- Tirupur Municipal Corporation
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		District sales / commercial Tax office, Tirupur
Town and Country Planning Department	Land Use	Town and country Planning Department, Tirupur
Traffic and Police Department		City police commissioner office, Tirupur
Transport Authorities	Buses	Tamilnadu state transport corporation
	Registered Vehicles	Regional Transporting Office, Tirupur
	Sub urban rail transport	
	Mono Rail Authority	
	Tramways	
	Marine Transport Authority	

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 130 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**6**
DISCOM/Electricity Department	**10**
Traffic and Police Department	**4**
Development Authority	**6**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**2**
State Health Department	**20**
Transport Authority	**8**
Disaster Management	**1**
Urban Local Body	**69**
Total	**130***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

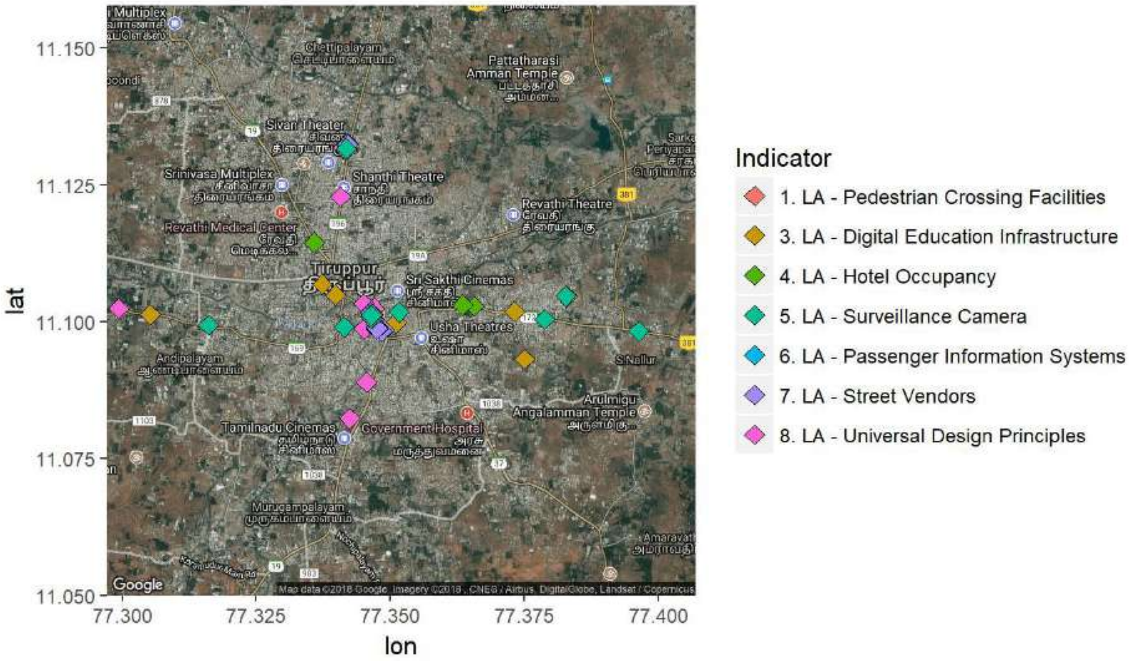
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
11.150
11.125
11.100
11.075
11.050
lon
77.300
77.325
77.350
77.375
77.400
Chettipalayam
Pattatharasi Amman Temple
Sivan Theater
Srinivasa Multiplex
Shanthi Theatre
Revathi Theatre
Revathi Medical Center
Tiruppur
Sri Sakthi Cinemas
Usha Theatres
Andipalayam
S.Nallur
Arulmigu Angalamman Temple
Tamilnadu Cinemas
Government Hospital
Murugampalayam
Google
Map data ©2018 Google, Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5 City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	46.49%
Identity & Culture	18%
Education	90%
Health	93%
Safety & Security	64%
Economy & Employment	32%
Housing & Inclusiveness	12%
Public Open Spaces	1%
Mixed Land Use & Compactness	8%
Power Supply	47%
Transport & Mobility	18%
Assured Water Supply	87%
Waste Water Management	61%
Solid Waste Management	67%
Reduced Pollution	75%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

THOOTHUKUDI

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level

environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.

#	Challenges	Proposed Solutions
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.

#	Challenges	Proposed Solutions
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.

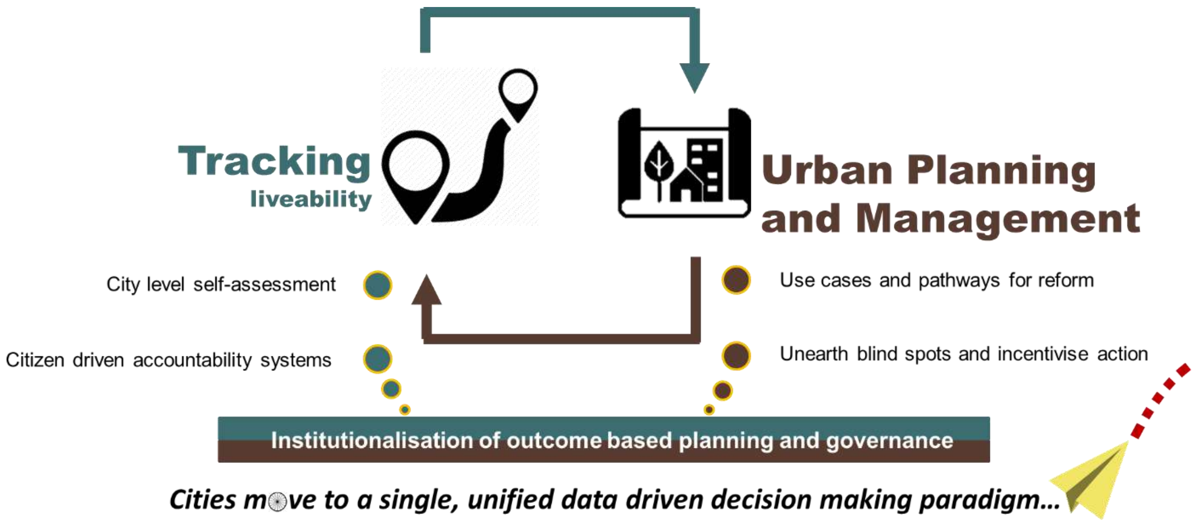
#	Challenges	Proposed Solutions
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

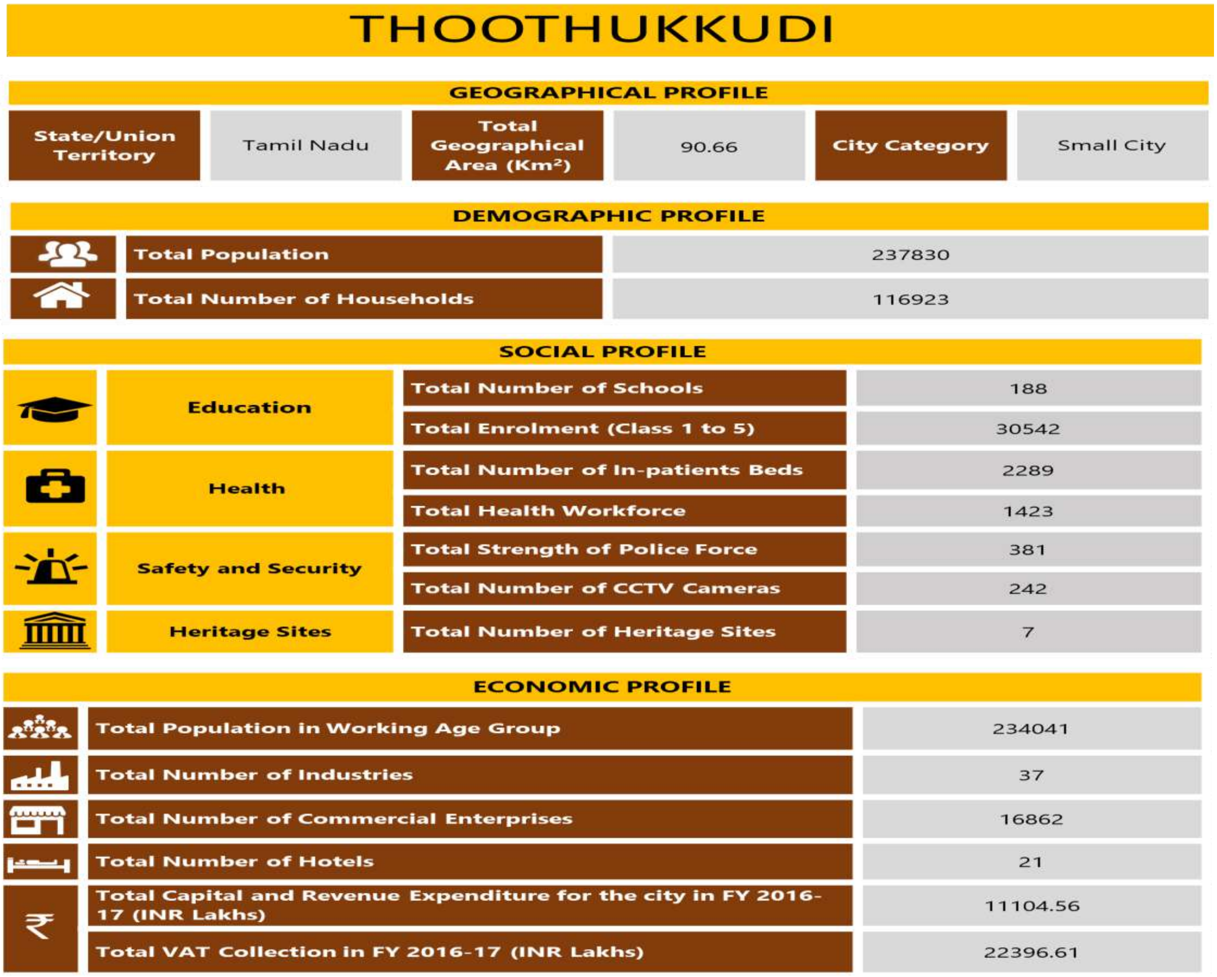

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm…

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km²)	90.66	City Category	Small City

DEMOGRAPHIC PROFILE

Total Population	237830
Total Number of Households	116923

SOCIAL PROFILE

Education	Total Number of Schools	188
	Total Enrolment (Class 1 to 5)	30542
Health	Total Number of In-patients Beds	2289
	Total Health Workforce	1423
Safety and Security	Total Strength of Police Force	381
	Total Number of CCTV Cameras	242
Heritage Sites	Total Number of Heritage Sites	7

ECONOMIC PROFILE

Total Population in Working Age Group	234041
Total Number of Industries	37
Total Number of Commercial Enterprises	16862
Total Number of Hotels	21
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	11104.56
Total VAT Collection in FY 2016-17 (INR Lakhs)	22396.61

PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	35
		Total Number of Water Connections	51180
	Sanitation Facilities	Total number of households with access to individual toilets in the city	80165
		Total number of households in the city with access to community toilets in the city	2479
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	155
		Total number of households covered through door-to-door collection of solid waste	104564
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	...
		Daily average quantum of waste water treated by STPs in the city (MLD)	...
	Electricity	Total number of authorized electrical connections in the city	164953
		Total electricity supplied to the city (kWh)	319.9044
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	58827
	Roads and Transport	Total Length of Road Network in the City (Km)	607.85
		Total length of arterial and sub-arterial road network in the city (Km)	...
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	4.5

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary

Pillars of Comprehensive Development	Category	Indicators
		education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational

Pillars of Comprehensive Development	Category	Indicators
		places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System

Pillars of Comprehensive Development	Category	Indicators
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse

Pillars of Comprehensive Development	Category	Indicators
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

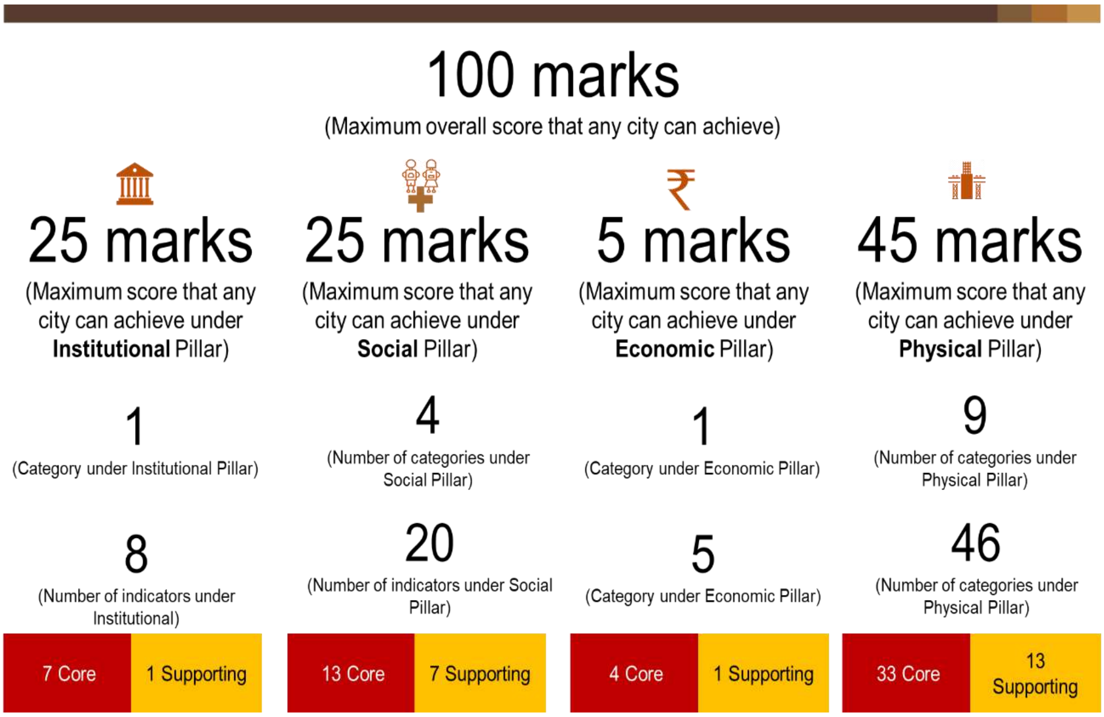
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\textit{indicator value for the city} - \textit{indicator value for the worst performing city}}{\textit{benchmark} - \textit{indicator value for the worst performing city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning

department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Section-Urban Local Body
Urban Local Body	For Park and Recreation Related Questions	Urban Local Body
Urban Local Body	For Water Supply and Drainage related questions	Water Supply section-Urban Local Body
Urban Local Body	For Heritage sites related data	Not Applicable
Urban Local Body	For Ecological sites related data	Urban Local Body
Urban Local Body	For Housing related data	Slum Clearence Board-Tirunelveli
Urban Local Body	For Building plan related data	Town Planning-Urban
Urban Local Body	For Roads related data	Urban Local Body
Urban Local Body	For Solid waste management related data	Urban Local Body
Urban Local Body	For IT services related data	Urban Local Body
Urban Local Body	For Vendor committee related data	Urban Local Body
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Urban Local Body
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Urban Local Body
	Construction planning	Urban Local Body

Designated data owners	Subcategories	Data owners at city level
	Green Building	Urban Local Body
	Rain water harvesting	Urban Local Body
	Universal Design Principle	Urban Local Body
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Tamilnadu Electricity Board
State Disaster management authority		State Disaster Management Authority
State Education Department		Education Department
State Health Department	Health care professionals	Urban Local Body
	Citizen Services	Urban Local Body
	Disease Prevalence	Urban Local Body
	Health Infrastructure	Urban Local Body
State Renewable Energy Development Agency		Tamilnadu Electricity Board
State Sales / Commercial Taxes Department		Tax Department
Town and Country Planning Department	Land Use	Local Planning Authority
Traffic and Police Department		Police Department
Transport Authorities	Buses	TamilNadu State Transport Corporation
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 170 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**8**
Traffic and Police Department	**8**
Development Authority	**2**
Pollution Control Board	**3**
State Renewable Energy Department	**3**
Town and Country Planning	**3**
State Health Department	**8**
Transport Authority	**7**
Disaster Management	**1**
Urban Local Body	**125**
Total	**170***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

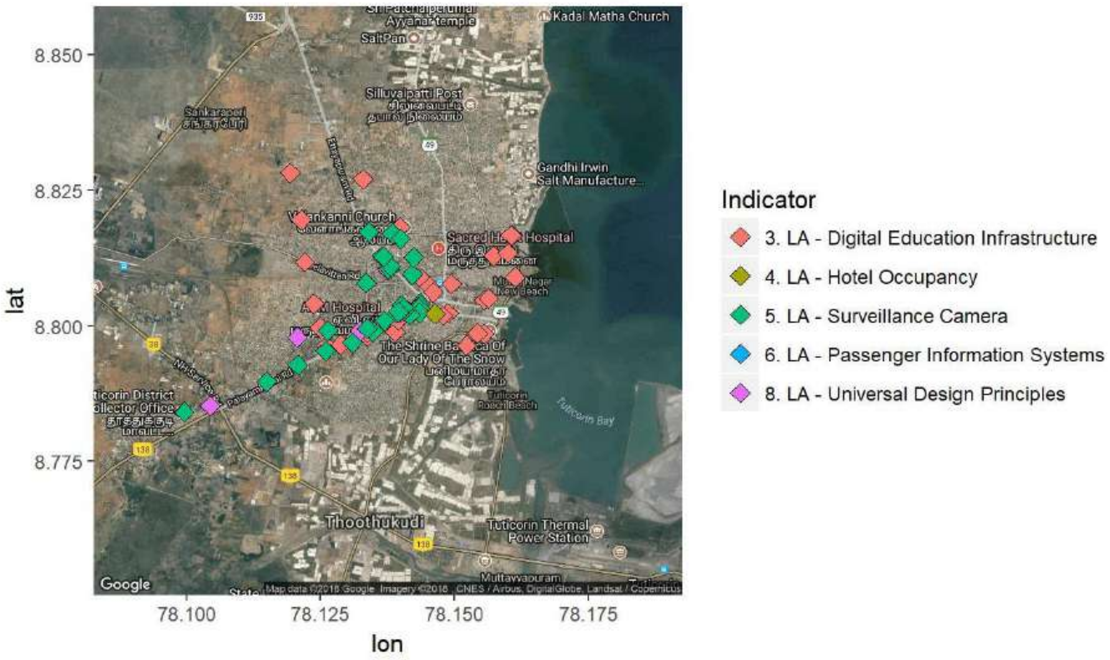
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


8.850
8.825
8.800
8.775
lat
78.100
78.125
78.150
78.175
lon
Indicator
◆ 3. LA - Digital Education Infrastructure
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 8. LA - Universal Design Principles
Kadal Matha Church
Ayyanar temple
SaltPan
Silluvaipatti Post
Sankarapeti
Gandhi Irwin Salt Manufacture
Sacred Heart Hospital
The Shrine Basilica Of Our Lady Of The Snow
Tuticorin District Collector Office
Tuticorin Bay
Thoothukudi
Tuticorin Thermal Power Station
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

2. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	50.47%
Identity & Culture	15%
Education	91%
Health	99%
Safety & Security	67%
Economy & Employment	25%
Housing & Inclusiveness	18%
Public Open Spaces	3%
Mixed Land Use & Compactness	0%
Power Supply	51%
Transport & Mobility	20%
Assured Water Supply	68%
Waste Water Management	31%
Solid Waste Management	66%
Reduced Pollution	81%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

TRIVANDRUM

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

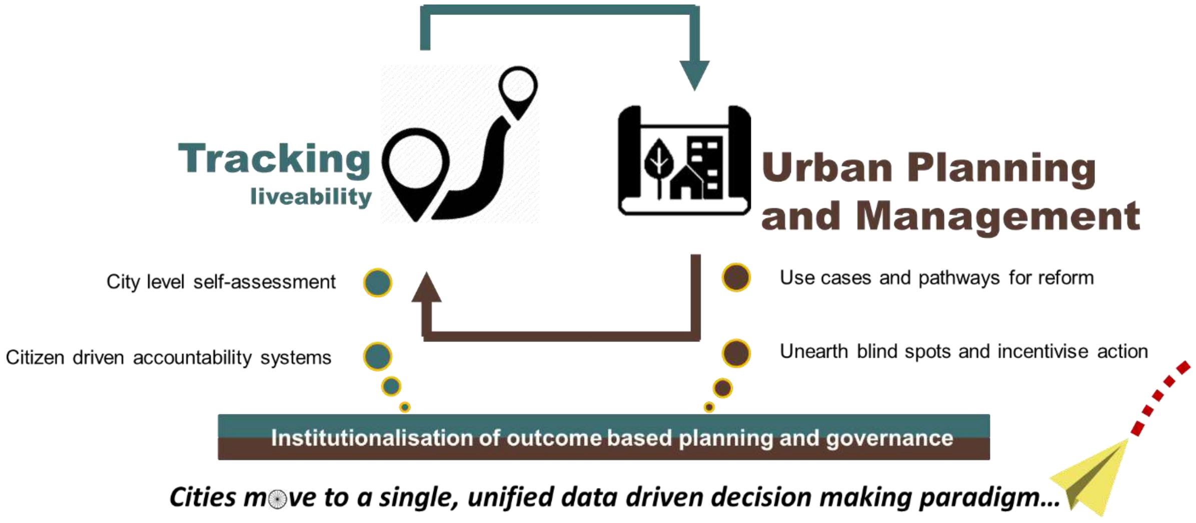
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

THIRUVANANTHAPURAM

GEOGRAPHICAL PROFILE

State/Union Territory	Kerala	**Total Geographical Area (Km^2)**	214.86	**City Category**	Large City

DEMOGRAPHIC PROFILE

Total Population	788271
Total Number of Households	251423

SOCIAL PROFILE

Education	**Total Number of Schools**	140
	Total Enrolment (Class 1 to 5)	49355
Health	**Total Number of In-patients Beds**	4110
	Total Health Workforce	9691
Safety and Security	**Total Strength of Police Force**	3954
	Total Number of CCTV Cameras	257
Heritage Sites	**Total Number of Heritage Sites**	...

ECONOMIC PROFILE

Total Population in Working Age Group	685935
Total Number of Industries	129
Total Number of Commercial Enterprises	26690
Total Number of Hotels	691
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	34427
Total VAT Collection in FY 2016-17 (INR Lakhs)	112008.5

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	268
	Total Number of Water Connections	272306
Sanitation Facilities	Total number of households with access to individual toilets in the city	247000
	Total number of households in the city with access to community toilets in the city	...
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	...
	Total number of households covered through door-to-door collection of solid waste	..
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	103
	Daily average quantum of waste water treated by STPs in the city (MLD)	44.5
Electricity	Total number of authorized electrical connections in the city	525368
	Total electricity supplied to the city (kWh)	2118778857
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	...
Roads and Transport	Total Length of Road Network in the City (Km)	534
	Total length of arterial and sub-arterial road network in the city (Km)	42.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	112

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

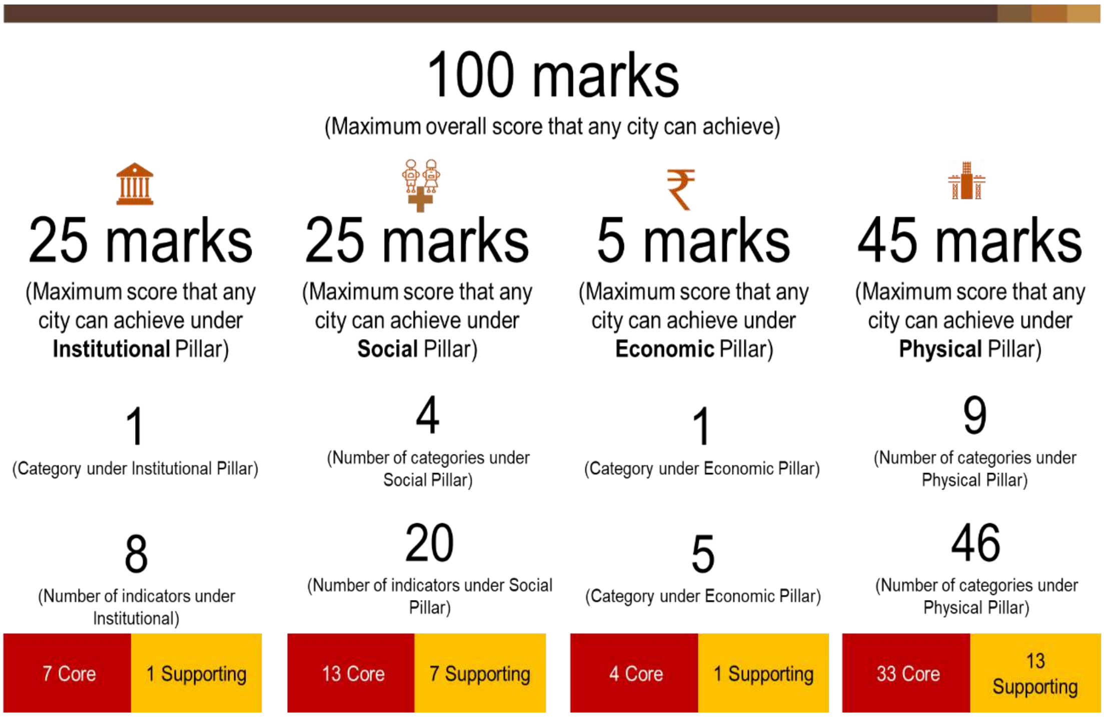
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	ULB accounts department
Urban Local Body	For Park and Recreation Related Questions	ULB Engineering department, health department and ULB secretary
Urban Local Body	For Water Supply and Drainage related questions	Kerala Water authority and Kerala water authority sewerage division
Urban Local Body	For Heritage sites related data	Archeological survey of India site
Urban Local Body	For Ecological sites related data	ULB master plan document provided by ULB secretary
Urban Local Body	For Housing related data	PMAY data provided by Rahul project officer PMAY
Urban Local Body	For Building plan related data	ULB Engineering department
Urban Local Body	For Roads related data	Kerala Road Fund Board and Public Works department
Urban Local Body	For Solid waste management related data	ULB Health department
Urban Local Body	For IT services related data	ULB Information technology department
Urban Local Body	For Vendor committee related data	NULM department of ULB
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution control board
Development Authority	Building Infrastructure	ULB Engineering department
	Construction planning	ULB Engineering department
	Green Building	ULB Engineering department
	Rain water harvesting	ULB Engineering department
	Universal Design Principle	ULB Engineering

Designated data owners	Subcategories	Data owners at city level
		department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Kerala State Electricity Board
State Disaster management authority		ULB disaster management cell
State Education Department		District education office
State Health Department	Health care professionals	Medical council, Dental council,
	Citizen Services	District medical office
	Disease Prevalence	District medical office
	Health Infrastructure	District medical office
State Renewable Energy Development Agency		Agency for Non-conventional Energy and Rural Technology (ANERT)
State Sales / Commercial Taxes Department		State commercial tax department
Town and Country Planning Department	Land Use	Town and country planning department
Traffic and Police Department		Kerala Police
Transport Authorities	Buses	Kerala state road transport corporation
	Registered Vehicles	Trivandrum Road transport office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 58 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments.

Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**2**
Traffic and Police Department	**2**
Development Authority	**0**
Pollution Control Board	**0**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**3**
Transport Authority	**3**
Disaster Management	**0**
Urban Local Body	**45**
Total	**58***

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

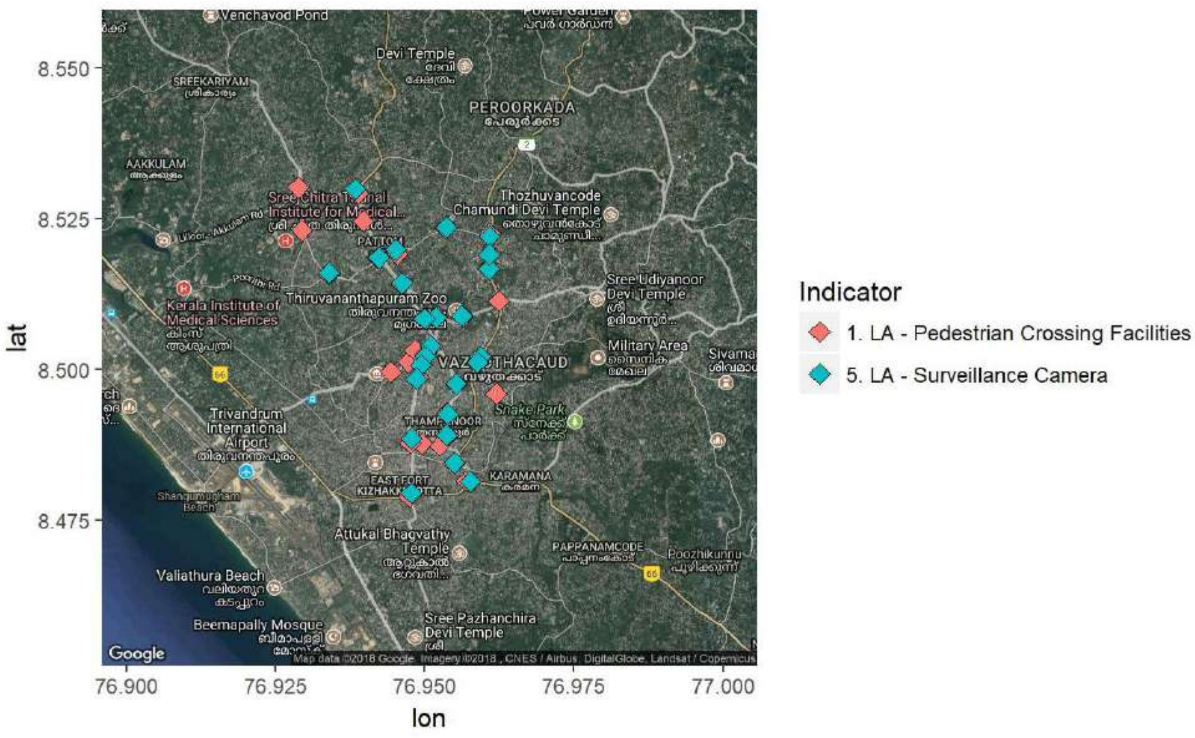
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


8.550
8.525
8.500
8.475
lat
76.900
76.925
76.950
76.975
77.000
lon
Indicator
1. LA - Pedestrian Crossing Facilities
5. LA - Surveillance Camera
Venchavod Pond
Devi Temple
SREEKARIYAM
PEROORKADA
AAKKULAM
Thozhuvancode Chamundi Devi Temple
Kerala Institute of Medical Sciences
Thiruvananthapuram Zoo
Sree Udiyanoor Devi Temple
Military Area
VAZHUTHACAUD
Snake Park
Trivandrum International Airport
THAMPANOOR
EAST FORT KIZHAKKEKOTTA
KARAMANA
Shanghumugham Beach
Attukal Bhagvathy Temple
PAPPANAMCODE
Poozhikunnu
Valiathura Beach
Beemapally Mosque
Sree Pazhanchira Devi Temple
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	67.83%
Identity & Culture	44%
Education	71%
Health	74%
Safety & Security	65%
Economy & Employment	39%
Housing & Inclusiveness	7%
Public Open Spaces	2%
Mixed Land Use & Compactness	8%
Power Supply	52%
Transport & Mobility	37%
Assured Water Supply	71%
Waste Water Management	44%
Solid Waste Management	0%
Reduced Pollution	68%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

TUMKUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt “outcome based” approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data

collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

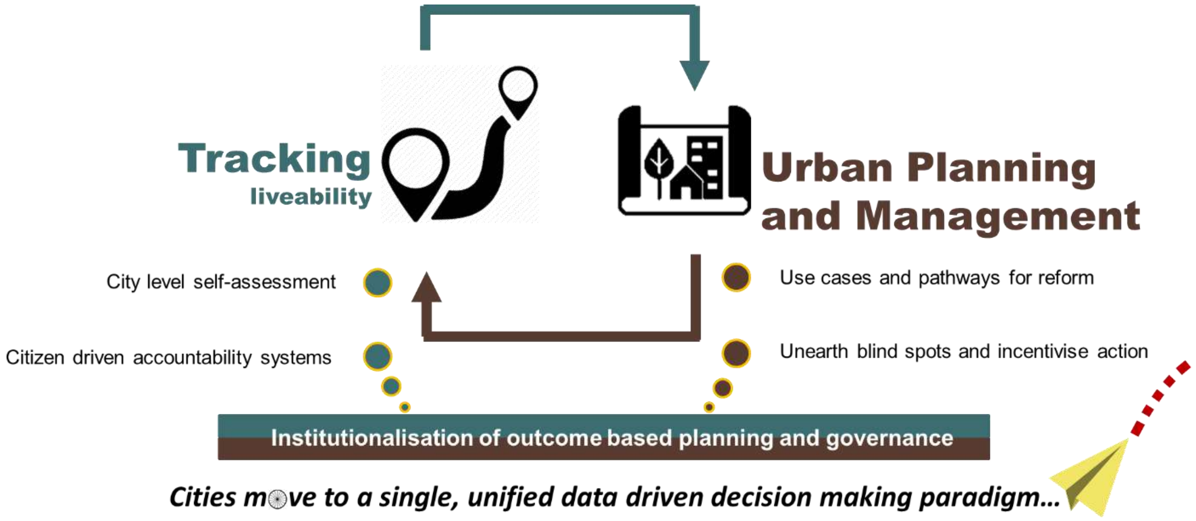
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including

smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

TUMAKURU

GEOGRAPHICAL PROFILE

State/Union Territory	Karnataka	**Total Geographical Area (Km^2)**	48.21	**City Category**	Small City

DEMOGRAPHIC PROFILE

Total Population	302143
Total Number of Households	88920

SOCIAL PROFILE

Education	**Total Number of Schools**	268
	Total Enrolment (Class 1 to 5)	24334
Health	**Total Number of In-patients Beds**	4035
	Total Health Workforce	1254
Safety and Security	**Total Strength of Police Force**	394
	Total Number of CCTV Cameras	0
Heritage Sites	**Total Number of Heritage Sites**	390

ECONOMIC PROFILE

Total Population in Working Age Group	219000
Total Number of Industries	321
Total Number of Commercial Enterprises	8196
Total Number of Hotels	28
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	11382.13
Total VAT Collection in FY 2016-17 (INR Lakhs)	18133.4

PHYSICAL PROFILE		
Water	**Average Quantity of Water Supplied (MLD)**	44
	Total Number of Water Connections	46997
Sanitation Facilities	**Total number of households with access to individual toilets in the city**	87519
	Total number of households in the city with access to community toilets in the city	1006
Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	120
	Total number of households covered through door-to-door collection of solid waste	88525
Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	35
	Daily average quantum of waste water treated by STPs in the city (MLD)	20
Electricity	**Total number of authorized electrical connections in the city**	209957
	Total electricity supplied to the city (kWh)	9199
Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	607145
Roads and Transport	**Total Length of Road Network in the City (Km)**	697.05
	Total length of arterial and sub-arterial road network in the city (Km)	16.4
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various ‘Category Sub-Indexes’ and a composite ‘City Liveability Index’ will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio

Pillars of Comprehensive Development	Category	Indicators
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services

Pillars of Comprehensive Development	Category	Indicators
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities

Pillars of Comprehensive Development	Category	Indicators
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection

Pillars of Comprehensive Development	Category	Indicators
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

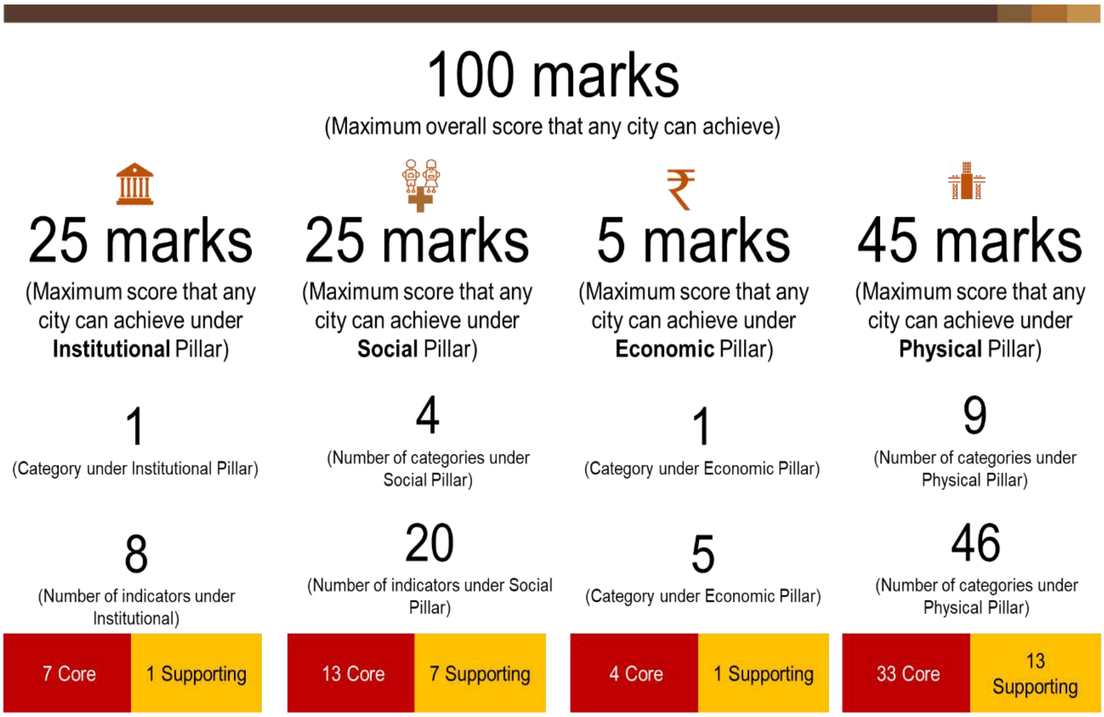
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)		25 marks (Maximum score that any city can achieve under **Social** Pillar)		5 marks (Maximum score that any city can achieve under **Economic** Pillar)		45 marks (Maximum score that any city can achieve under **Physical** Pillar)	
1 (Category under Institutional Pillar)		4 (Number of categories under Social Pillar)		1 (Category under Economic Pillar)		9 (Number of categories under Physical Pillar)	
8 (Number of indicators under Institutional)		20 (Number of indicators under Social Pillar)		5 (Category under Economic Pillar)		46 (Number of categories under Physical Pillar)	
7 Core	1 Supporting	13 Core	7 Supporting	4 Core	1 Supporting	33 Core	13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were

identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts Department
Urban Local Body	For Park and Recreation Related Questions	Engineering (civil) Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering (ele) Section
Urban Local Body	For Heritage sites related data	Engineering (Civil) Section
Urban Local Body	For Ecological sites related data	Engineering (Civil) Section
Urban Local Body	For Housing related data	National Urban Livelihoods Mission
Urban Local Body	For Building plan related data	Building license section
Urban Local Body	For Roads related data	Engineering (Civil) Section
Urban Local Body	For Solid waste management related data	Environment Section
Urban Local Body	For IT services related data	Income Tax Section
Urban Local Body	For Vendor committee related data	National Urban Livelihoods Mission
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Professional Tax, Department of Health & Family Welfare Services, Karnataka Slum Development Board, Under Ground Drainage section, Karnataka Industrial Area Development Board, Statistical Department, Tumkur Urban Development Authority, Karnataka State Road Transport Corporation, Employment Department.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Building license section, City Corporation Tumkur
	Construction planning	Building license section, City Corporation

Designated data owners	Subcategories	Data owners at city level
		Tumkur
	Green Building	Building license section, City Corporation Tumkur
	Rain water harvesting	Building license section, City Corporation Tumkur
	Universal Design Principle	Engineering (Civil) section, City Corporation Tumkur
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Accounts and Technical Section
State Disaster management authority		Not Applicable
State Education Department		Block Resource Center
State Health Department	Health care professionals	District Health Officer Section
	Citizen Services	District Health Officer Section
	Disease Prevalence	District Health Officer Section
	Health Infrastructure	District Health Officer Section
State Renewable Energy Development Agency	Renewable Energy	Accounts and Technical Section of Bangalore Electricity Supply Company Ltd., (BESCOM)
State Sales / Commercial Taxes Department		Commercial taxes Department(LGSTO 175 & 170)
Town and Country Planning Department	Land Use	Planning Section .
Traffic and Police Department		District Crime Record Bureau (DCRB Section)
Transport Authorities	Buses	Divisional Traffic Section & Depot computerization system
	Registered Vehicles	Road Transport Office
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 135 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**3**
State Education Department	**8**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**2**
Development Authority	**6**
Pollution Control Board	**2**
State Renewable Energy Department	**1**
Town and Country Planning	**14**
State Health Department	**4**
Transport Authority	**6**
Disaster Management	**1**
Urban Local Body	**87**
Total	**135***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

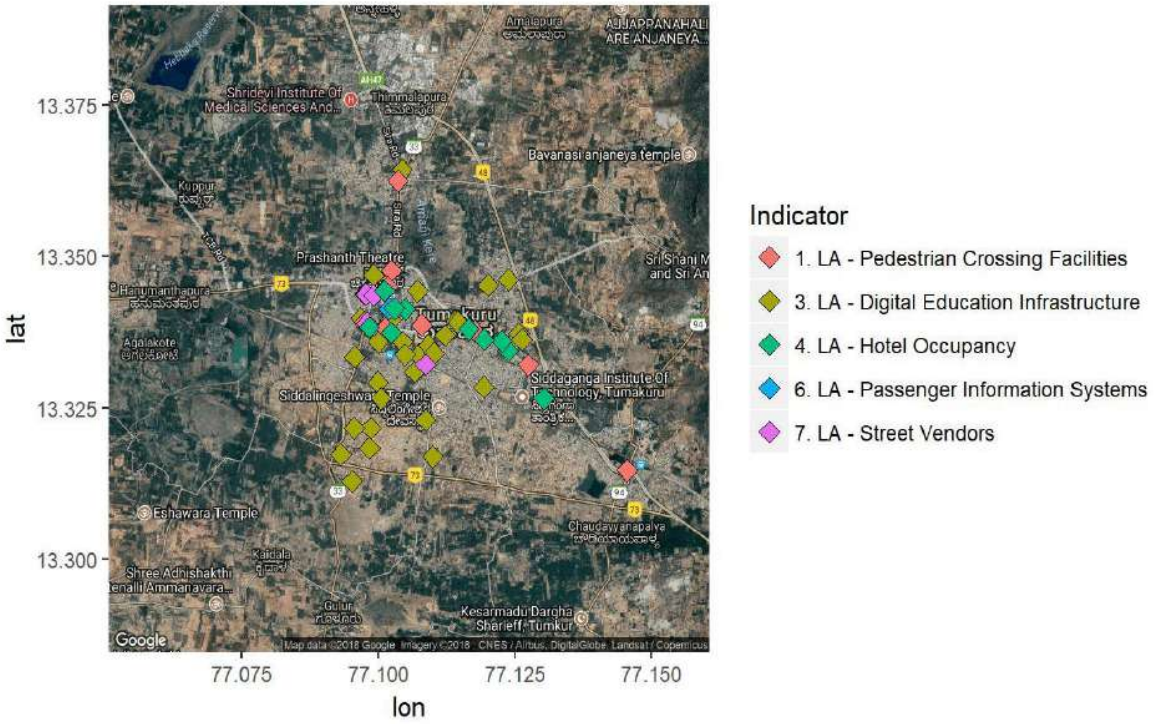
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


13.375
13.350
13.325
13.300
lat
77.075
77.100
77.125
77.150
lon
Tumakuru
Shridevi Institute Of Medical Sciences And...
Thimmalapura
Bavanasi anjaneya temple
Kuppur
Prashanth Theatre
Hanumanthapura
Agalakote
Siddalingeshwara Temple
Siddaganga Institute Of Technology, Tumakuru
Eshawara Temple
Chaudavyanapalya
Shree Adhishakthi
Kaidala
Gulur
Kesarmadu Dargha Shariff, Tumkur
Amalapura
AJJAPPANAHALLI ARE ANJANEYA
Google
Map data ©2018 Google Imagery ©2018 CNES / Airbus, DigitalGlobe, Landsat / Copernicus
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
6. LA - Passenger Information Systems
7. LA - Street Vendors

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	42.27%
Identity & Culture	5%
Education	87%
Health	99%
Safety & Security	64%
Economy & Employment	41%
Housing & Inclusiveness	9%
Public Open Spaces	11%
Mixed Land Use & Compactness	0%
Power Supply	58%
Transport & Mobility	32%
Assured Water Supply	74%
Waste Water Management	62%
Solid Waste Management	65%
Reduced Pollution	87%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

UDAIPUR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

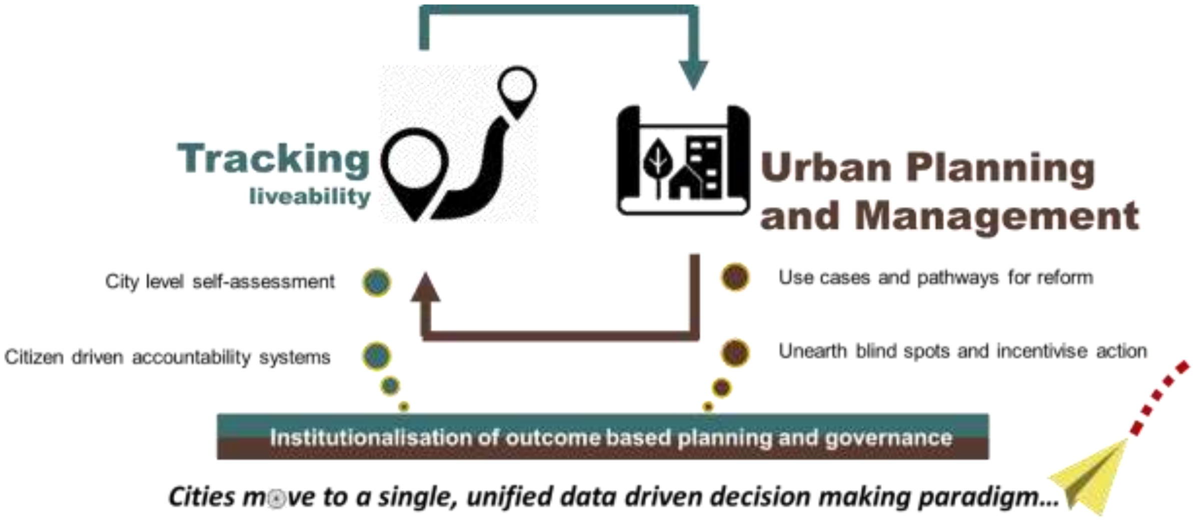
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

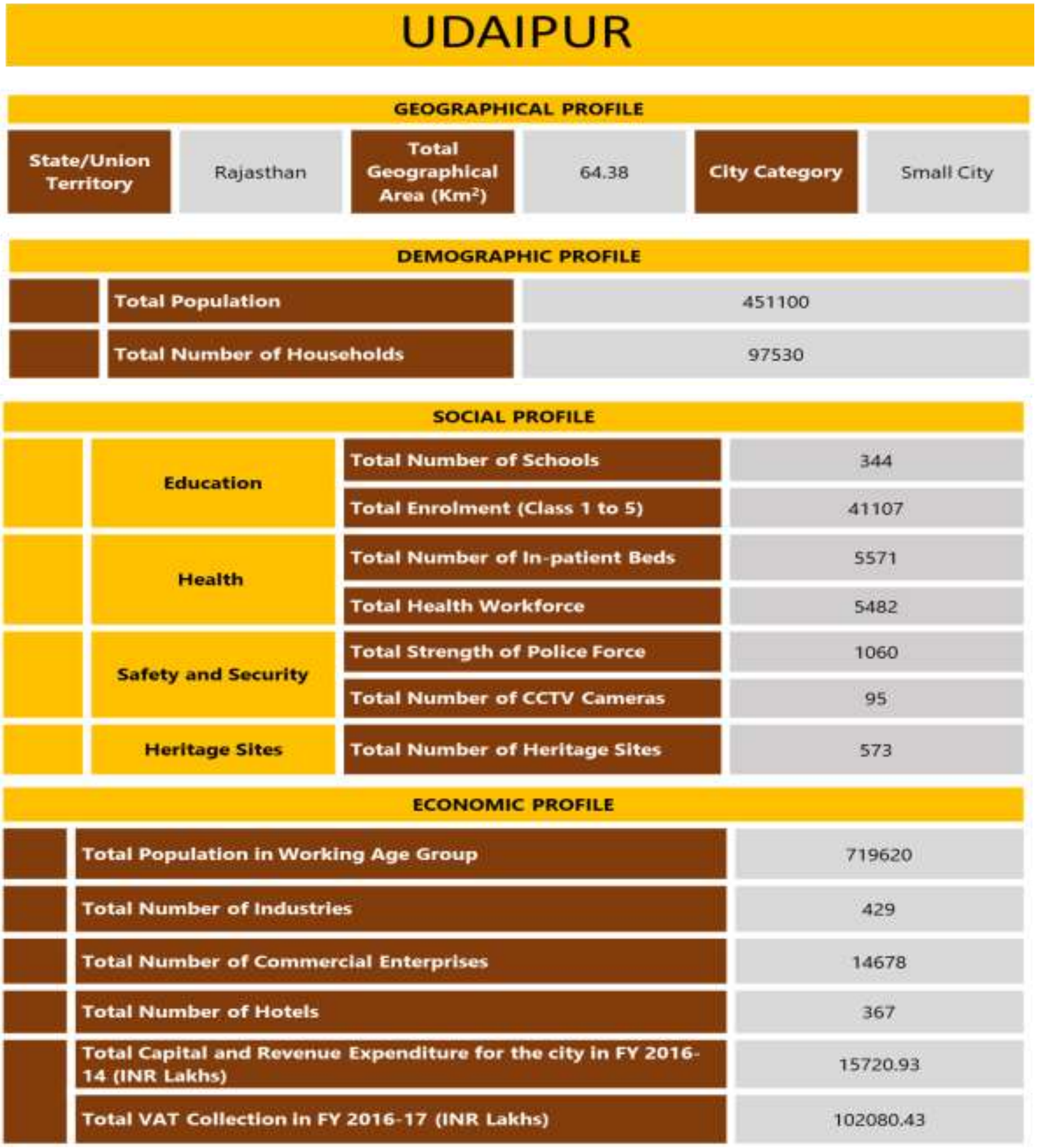
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



UDAIPUR

GEOGRAPHICAL PROFILE

State/Union Territory	Rajasthan	**Total Geographical Area (Km^2)**	64.38	**City Category**	Small City

DEMOGRAPHIC PROFILE

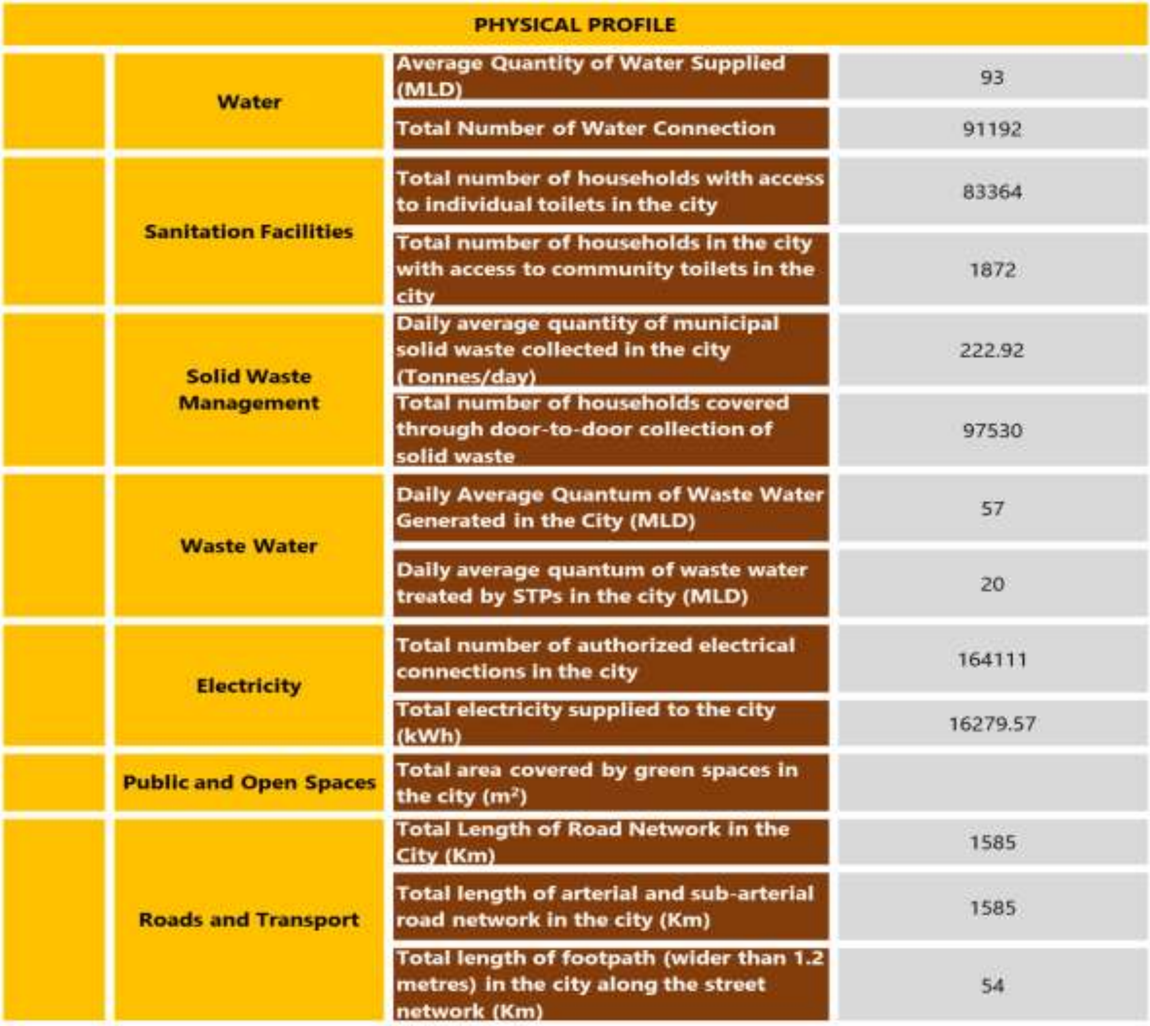
Total Population	451100
Total Number of Households	97530

SOCIAL PROFILE

Education	**Total Number of Schools**	344
	Total Enrolment (Class 1 to 5)	41107
Health	**Total Number of In-patient Beds**	5571
	Total Health Workforce	5482
Safety and Security	**Total Strength of Police Force**	1060
	Total Number of CCTV Cameras	95
Heritage Sites	**Total Number of Heritage Sites**	573

ECONOMIC PROFILE

Total Population in Working Age Group	719620
Total Number of Industries	429
Total Number of Commercial Enterprises	14678
Total Number of Hotels	367
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	15720.93
Total VAT Collection in FY 2016-17 (INR Lakhs)	102080.43



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	93
		Total Number of Water Connection	91192
	Sanitation Facilities	Total number of households with access to individual toilets in the city	83364
		Total number of households in the city with access to community toilets in the city	1872
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	222.92
		Total number of households covered through door-to-door collection of solid waste	97530
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	57
		Daily average quantum of waste water treated by STPs in the city (MLD)	20
	Electricity	Total number of authorized electrical connections in the city	164111
		Total electricity supplied to the city (kWh)	16279.57
	Public and Open Spaces	Total area covered by green spaces in the city (m²)	
	Roads and Transport	Total Length of Road Network in the City (Km)	1585
		Total length of arterial and sub-arterial road network in the city (Km)	1585
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	54

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

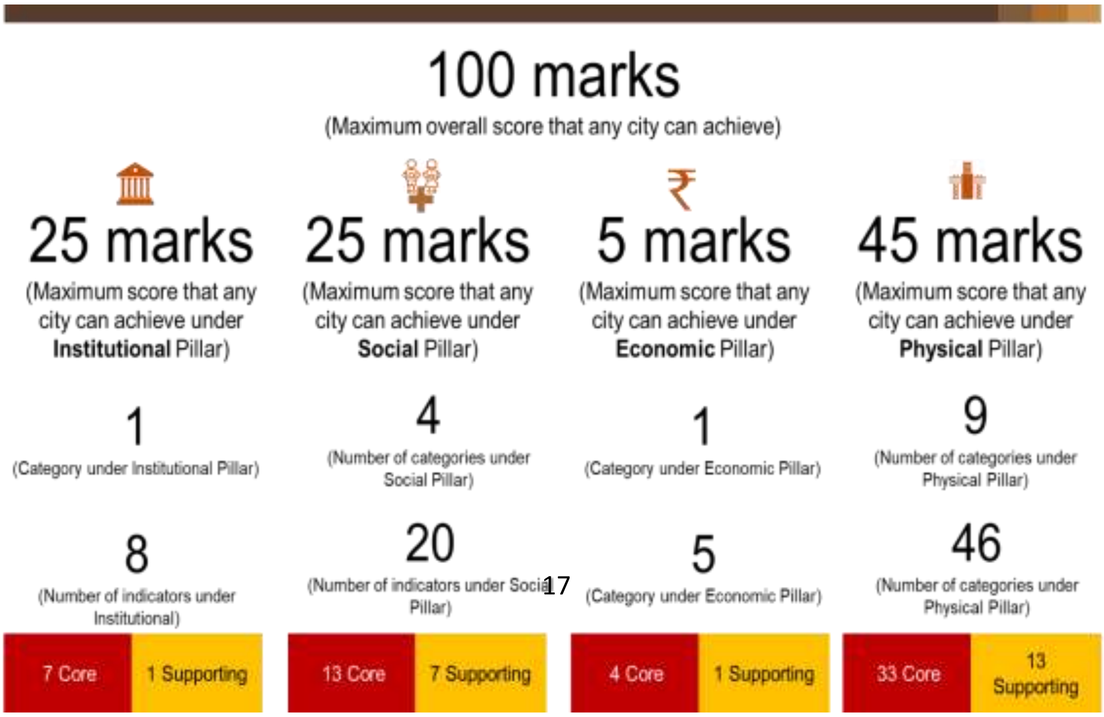
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{\mathit{indicator\ value\ for\ the\ city} - \mathit{indicator\ value\ for\ the\ worst\ performing\ city}}{\mathit{benchmark} - \mathit{indicator\ value\ for\ the\ worst\ performing\ city}}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Municipal corporation
Urban Local Body	For Park and Recreation Related Questions	Municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Municipal corporation
Urban Local Body	For Heritage sites related data	Municipal corporation
Urban Local Body	For Ecological sites related data	Municipal corporation
Urban Local Body	For Housing related data	Nagar vikas pranyas
Urban Local Body	For Building plan related data	Nagar vikas pranyas
Urban Local Body	For Roads related data	Municipal corporation
Urban Local Body	For Solid waste management related data	Municipal corporation
Urban Local Body	For IT services related data	Municipal corporation
Urban Local Body	For Vendor committee related data	Municipal corporation
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Public health engineering department
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	UIT{nagar vikas pranyas}
	Construction planning	UIT
	Green Building	UIT
	Rain water harvesting	Municipal corporation
	Universal Design Principle	Municipal corporation,UIT

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	AVVNL
State Disaster management authority		Disaster control office
State Education Department		
State Health Department	Health care professionals	Public health department
	Citizen Services	Municipal corporation
	Disease Prevalence	Public health department
	Health Infrastructure	Public health department
State Renewable Energy Development Agency		AVVNL
State Sales / Commercial Taxes Department		Revenue department
Town and Country Planning Department	Land Use	UIT
Traffic and Police Department		City police headquarters
Transport Authorities	Buses	MUNICIPAL CORPORATION
	Registered Vehicles	ROAD TRANSPORT OFFICE
	Sub urban rail transport	Not Applicable
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 50 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

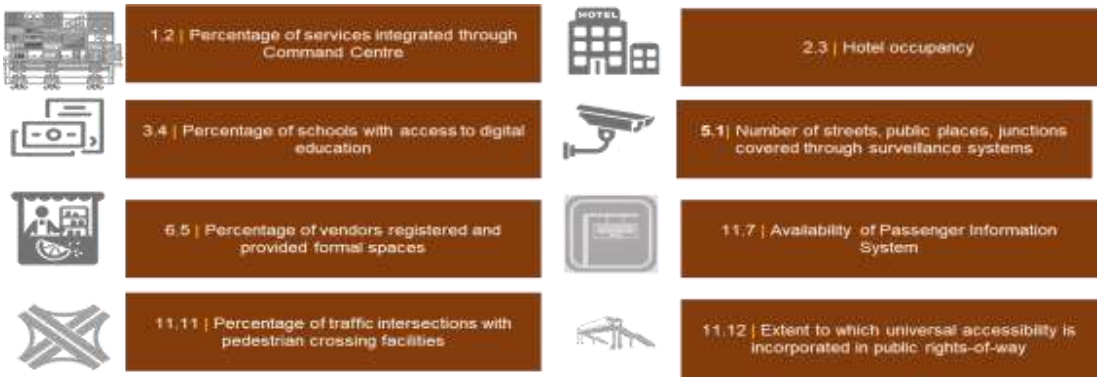
Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	2
DISCOM/Electricity Department	4
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	3
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	2
Transport Authority	2
Disaster Management	0
Urban Local Body	36
Total	50*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were

found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

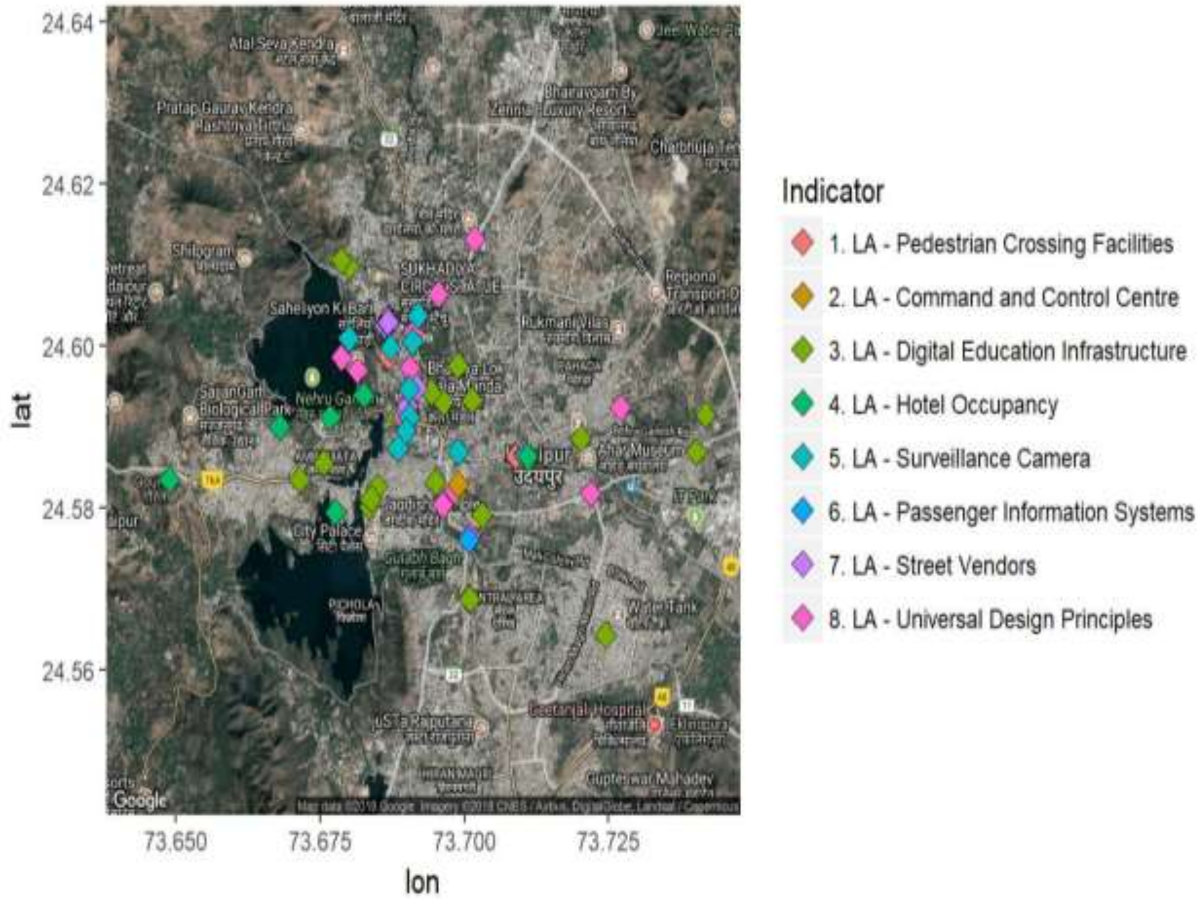
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


24.64
24.62
24.60
24.58
24.56
lat
73.650
73.675
73.700
73.725
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	43.38%
Identity & Culture	28%
Education	86%
Health	83%
Safety & Security	61%
Economy & Employment	37%
Housing & Inclusiveness	20%
Public Open Spaces	50%
Mixed Land Use & Compactness	0%
Power Supply	25%
Transport & Mobility	30%
Assured Water Supply	56%
Waste Water Management	62%
Solid Waste Management	72%
Reduced Pollution	83%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

UJJAIN

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully	The indicator on unemployment will be excluded from scores. For final ranking, the

#	Challenges	Proposed Solutions
	cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	cities will be scored on 78 indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.

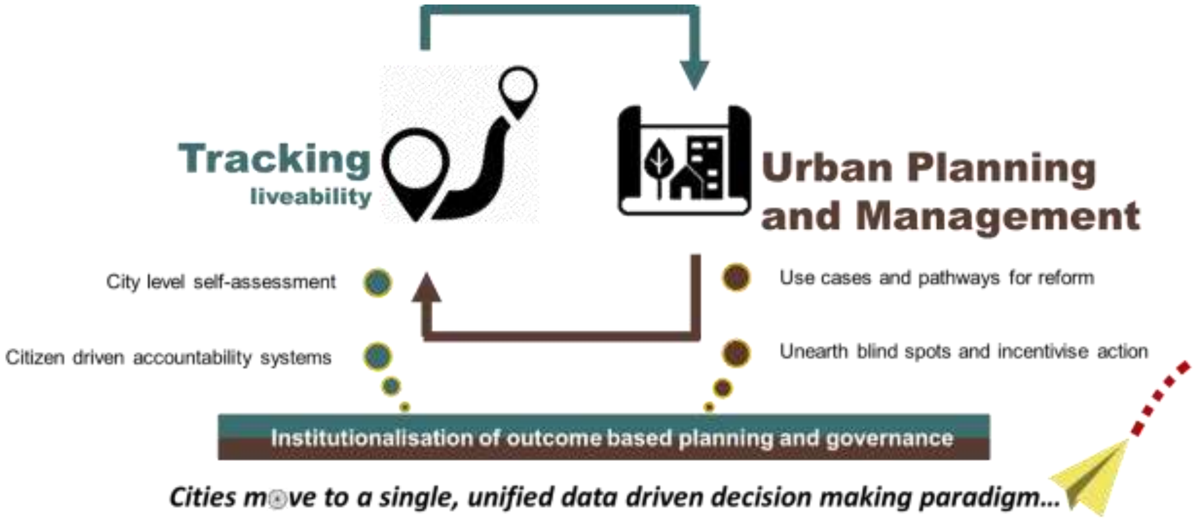
#	Challenges	Proposed Solutions
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

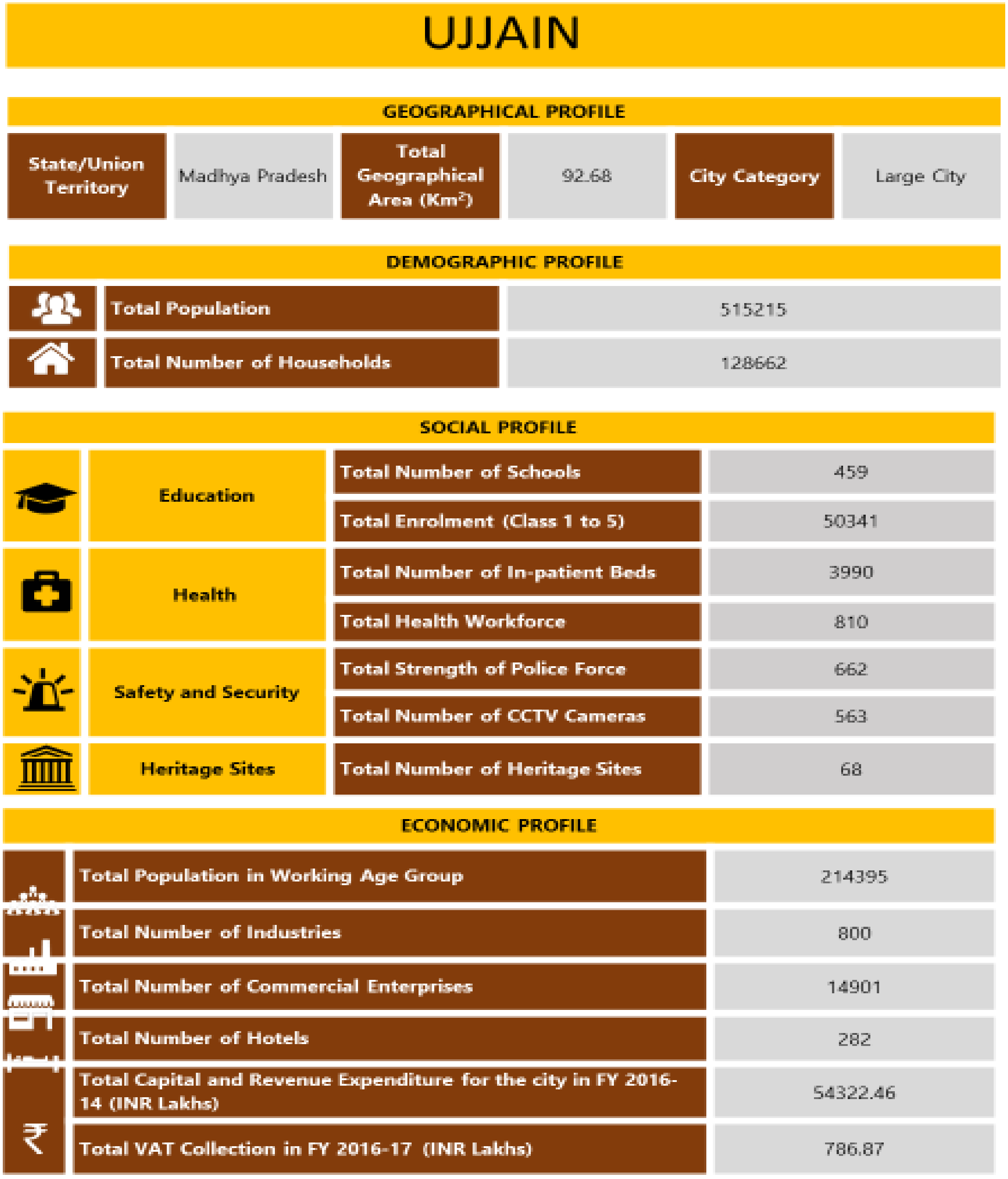
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



UJJAIN

GEOGRAPHICAL PROFILE

State/Union Territory	Madhya Pradesh	**Total Geographical Area (Km^2)**	92.68	**City Category**	Large City

DEMOGRAPHIC PROFILE

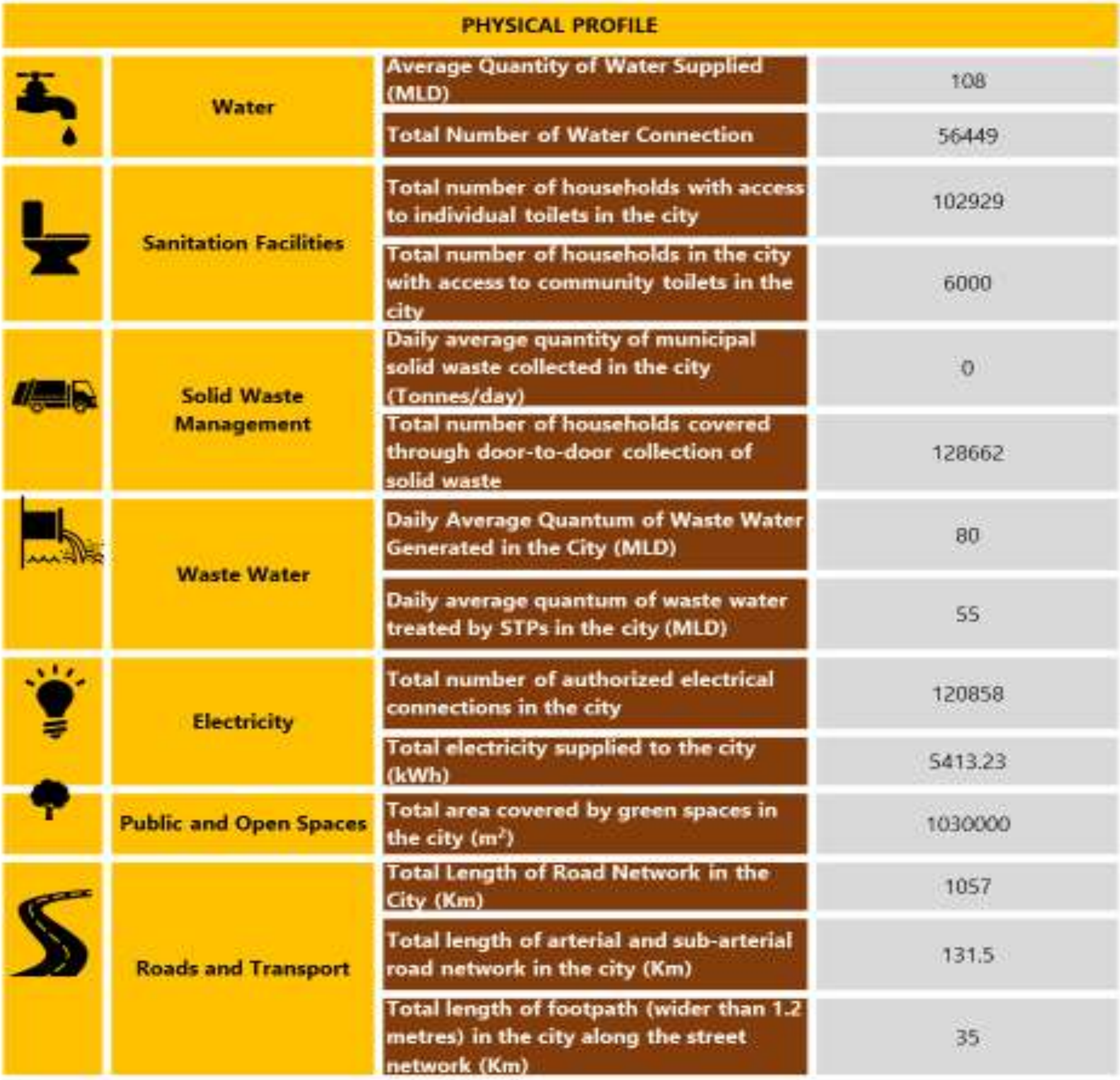
Total Population	515215
Total Number of Households	128662

SOCIAL PROFILE

Education	**Total Number of Schools**	459
	Total Enrolment (Class 1 to 5)	50341
Health	**Total Number of In-patient Beds**	3990
	Total Health Workforce	810
Safety and Security	**Total Strength of Police Force**	662
	Total Number of CCTV Cameras	563
Heritage Sites	**Total Number of Heritage Sites**	68

ECONOMIC PROFILE

Total Population in Working Age Group	214395
Total Number of Industries	800
Total Number of Commercial Enterprises	14901
Total Number of Hotels	282
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	54322.46
Total VAT Collection in FY 2016-17 (INR Lakhs)	786.87



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	108
	Total Number of Water Connection	56449
Sanitation Facilities	Total number of households with access to individual toilets in the city	102929
	Total number of households in the city with access to community toilets in the city	6000
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	0
	Total number of households covered through door-to-door collection of solid waste	128662
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	80
	Daily average quantum of waste water treated by STPs in the city (MLD)	55
Electricity	Total number of authorized electrical connections in the city	120858
	Total electricity supplied to the city (kWh)	5413.23
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	1030000
Roads and Transport	Total Length of Road Network in the City (Km)	1057
	Total length of arterial and sub-arterial road network in the city (Km)	131.5
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	35

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education

Pillars of Comprehensive Development	Category	Indicators
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places

Pillars of Comprehensive Development	Category	Indicators
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization

Pillars of Comprehensive Development	Category	Indicators
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution

Pillars of Comprehensive Development	Category	Indicators
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

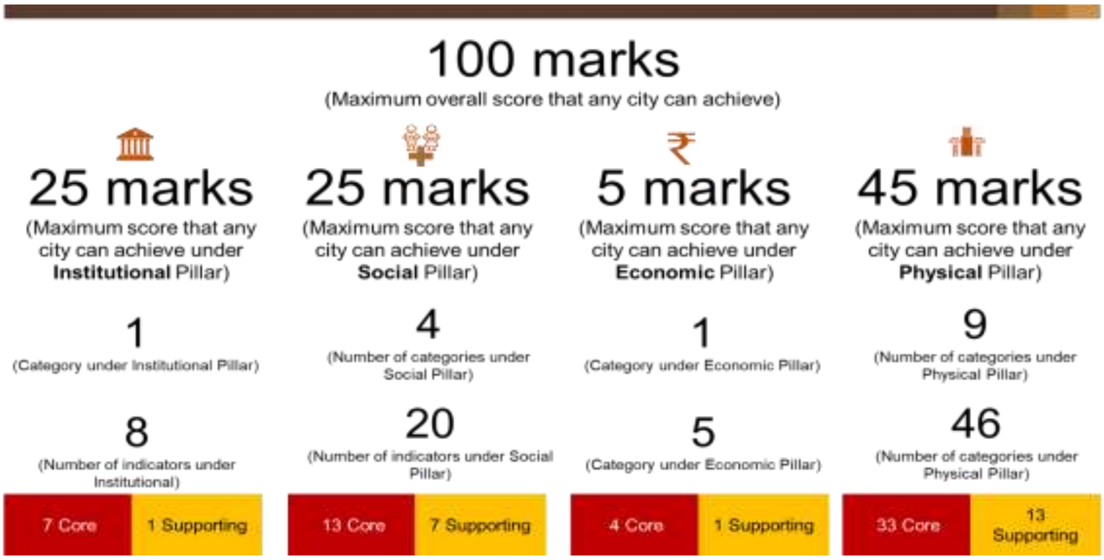
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks
(Maximum overall score that any city can achieve)

25 marks (Maximum score that any city can achieve under **Institutional** Pillar)	25 marks (Maximum score that any city can achieve under **Social** Pillar)	5 marks (Maximum score that any city can achieve under **Economic** Pillar)	45 marks (Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by

the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Sub categories	Data owners at city level
	Accounts	Accounts Department, Ujjain Municipal Corporation
	Park and Recreation	Ujjain Municipal Corporation
	Water Supply and Drainage	Water Supply department, Ujjain Municipal Corporation
	Heritage sites	Ujjain Municipal Corporation
	Ecological sites	Ujjain Municipal Corporation

Designated data owners	Sub categories	Data owners at city level
Urban Local Body	Housing	Housing section, Ujjain Municipal Corporation
	Building plan	Ujjain Municipal Corporation
	Roads	Ujjain Municipal Corporation
	Solid waste management	Solid waste management, Ujjain Municipal Corporation
	IT services	IT Section, Ujjain Municipal Corporation
	Vendor committee	Ujjain Municipal Corporation
	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Madhya Pradesh Pollution Control Board
Development Authority	Building Infrastructure	Ujjain Development Authority
	Construction planning	Ujjain Development Authority
	Green Building	Ujjain Development Authority
	Rain water harvesting	Ujjain Development Authority
	Universal Design Principle	Ujjain Development Authority
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company limited
State Disaster management authority		District Disaster management Office
State Education Department		District Education Department
State Health Department	Health care professionals	Health Department
	Citizen Services	Health Department
	Disease Prevalence	Health Department
	Health Infrastructure	Health Department
State Renewable Energy Development Agency		Madhya Pradesh New and Renewable Energy Department
State Sales / Commercial Taxes Department		Department of Commercial Taxes
Town and Country Planning Department	Land Use	Town and country planning
Traffic and Police		Traffic and Police Department,

Designated data owners	Sub categories	Data owners at city level
Department		Ujjain
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Madhya Pradesh Transport Department
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	NA
	Marine Transport Authority	NA

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 67 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	3
State Education Department	3
DISCOM/Electricity Department	6
Traffic and Police Department	5
Development Authority	7
Pollution Control Board	3
State Renewable Energy Department	5
Town and Country Planning	2
State Health Department	4
Transport Authority	9
Disaster Management	2
Urban Local Body	18
Total	67

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

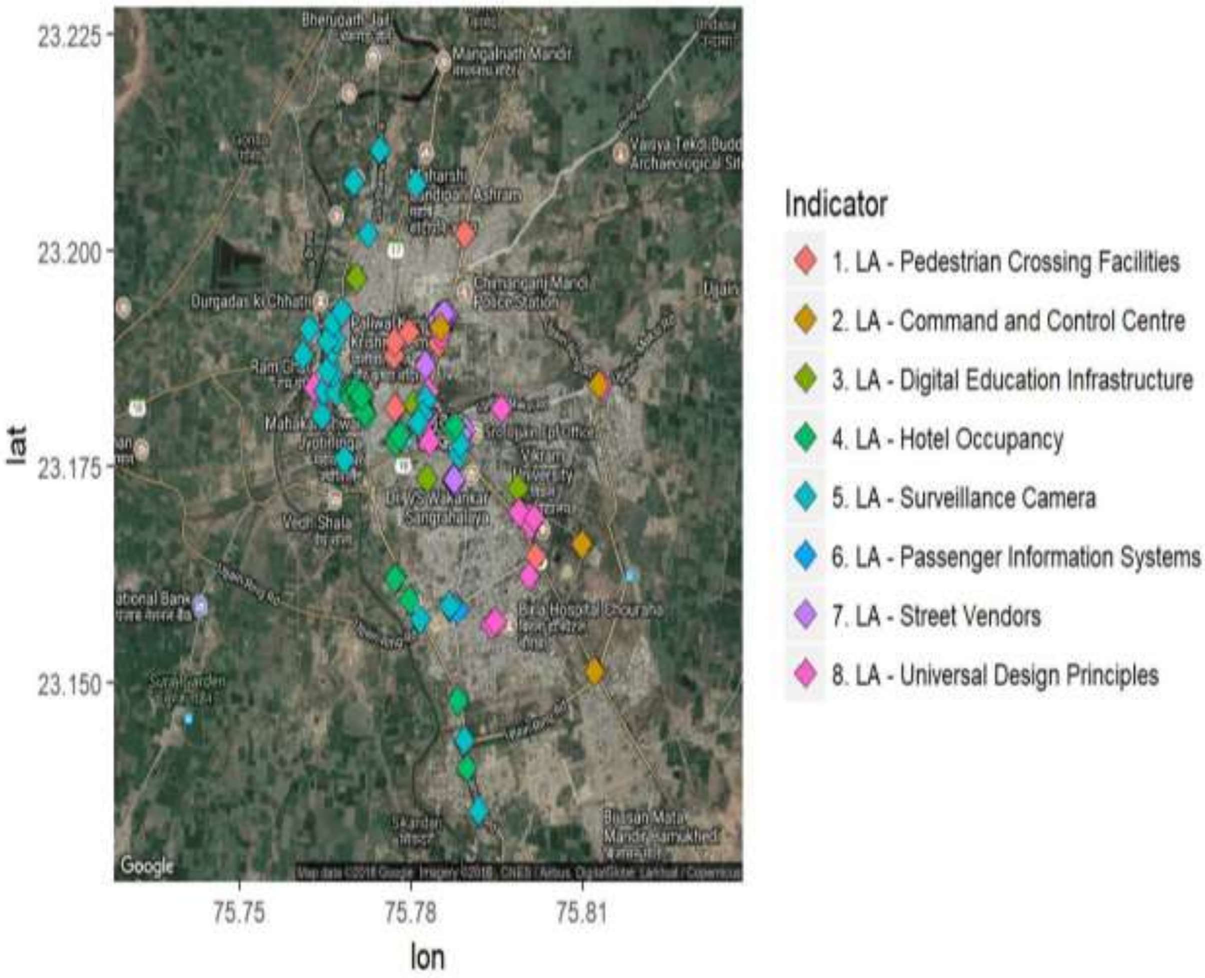
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1| Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


lat
23.225
23.200
23.175
23.150
lon
75.75
75.78
75.81
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Mangalnath Mandir
Vikram University
Google

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	65.50%
Identity & Culture	48%
Education	77%
Health	75%
Safety & Security	69%
Economy & Employment	22%
Housing & Inclusiveness	15%
Public Open Spaces	9%
Mixed Land Use & Compactness	0%
Power Supply	55%
Transport & Mobility	41%
Assured Water Supply	66%
Waste Water Management	46%
Solid Waste Management	99%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

VADODARA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

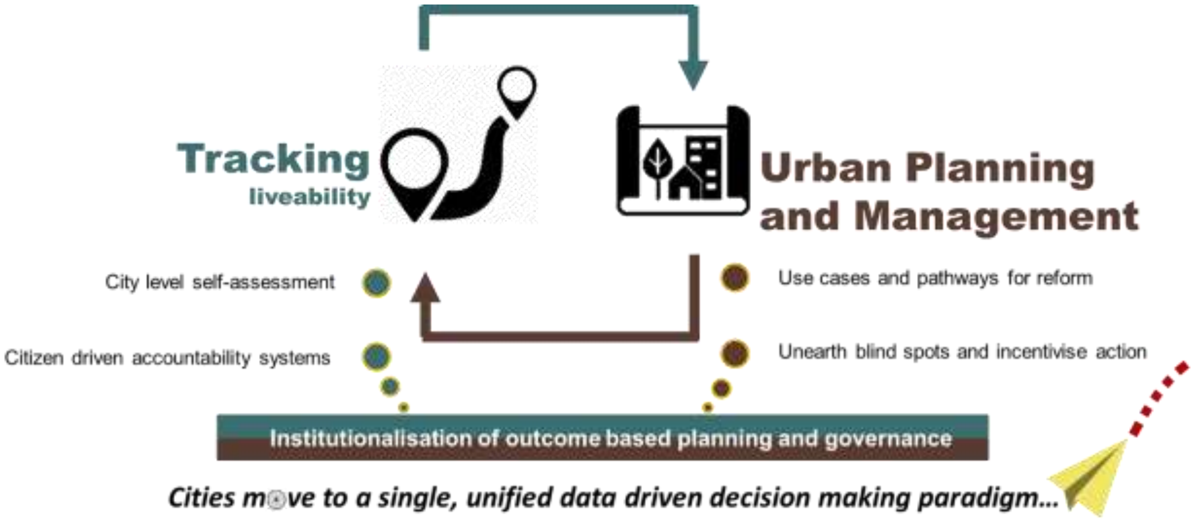
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).

VADODARA

GEOGRAPHICAL PROFILE

State/Union Territory	Gujarat	Total Geographical Area (Km²)	159.95	City Category	Metropolis

DEMOGRAPHIC PROFILE

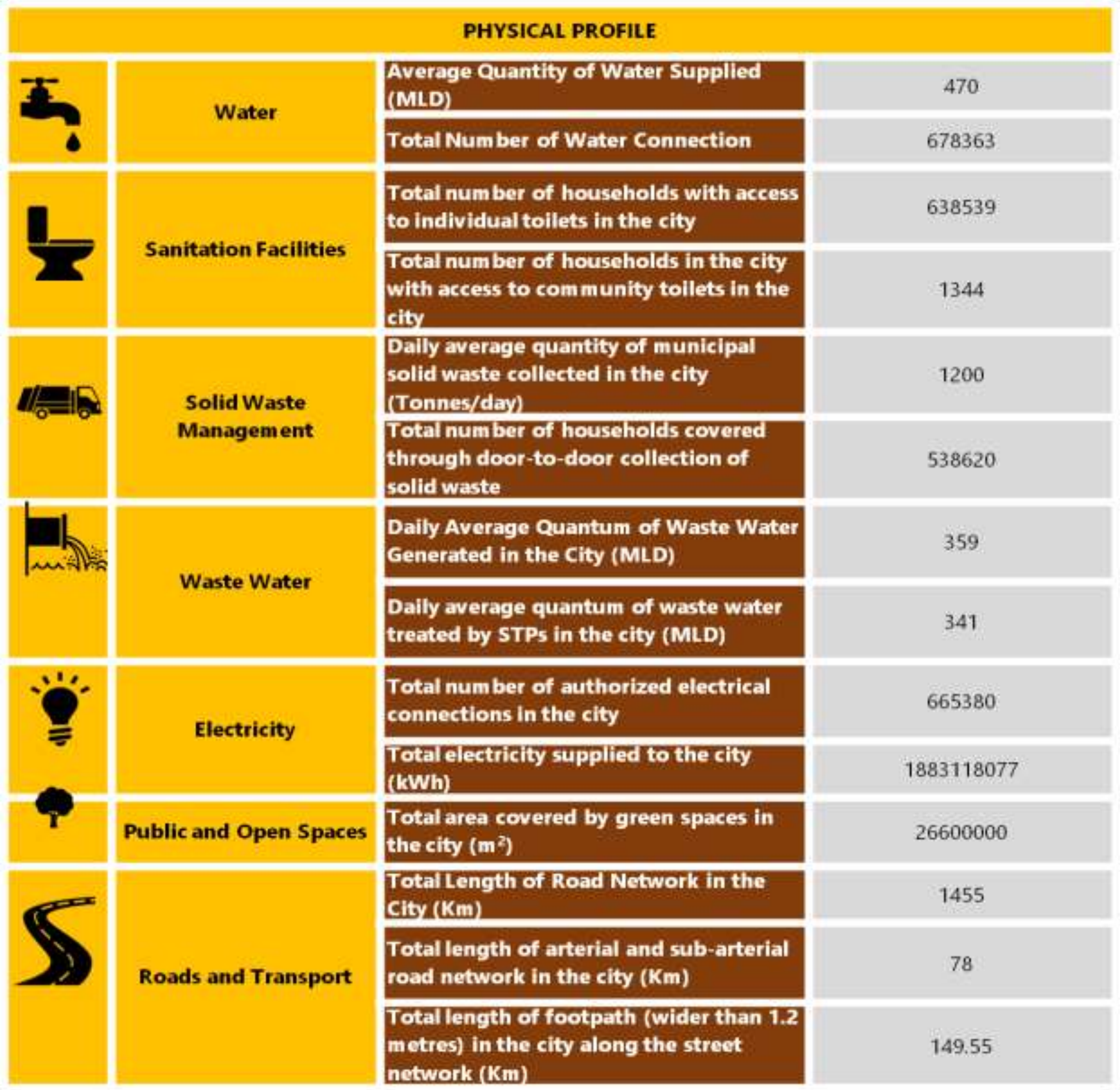
Total Population	1752371
Total Number of Households	538620

SOCIAL PROFILE

Education	Total Number of Schools	620
	Total Enrolment (Class 1 to 5)	134869
Health	Total Number of In-patient Beds	12717
	Total Health Workforce	8450
Safety and Security	Total Strength of Police Force	4327
	Total Number of CCTV Cameras	529
Heritage Sites	Total Number of Heritage Sites	81

ECONOMIC PROFILE

Total Population in Working Age Group	661219
Total Number of Industries	9444
Total Number of Commercial Enterprises	101263
Total Number of Hotels	58
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	160493.35
Total VAT Collection in FY 2016-17 (INR Lakhs)	259823.07



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	470
	Total Number of Water Connection	678363
Sanitation Facilities	Total number of households with access to individual toilets in the city	638539
	Total number of households in the city with access to community toilets in the city	1344
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	1200
	Total number of households covered through door-to-door collection of solid waste	538620
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	359
	Daily average quantum of waste water treated by STPs in the city (MLD)	341
Electricity	Total number of authorized electrical connections in the city	665380
	Total electricity supplied to the city (kWh)	1883118077
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	26600000
Roads and Transport	Total Length of Road Network in the City (Km)	1455
	Total length of arterial and sub-arterial road network in the city (Km)	78
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	149.55

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population

Pillars of Comprehensive Development	Category	Indicators
		enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services

Pillars of Comprehensive Development	Category	Indicators
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting

Pillars of Comprehensive Development	Category	Indicators
		facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

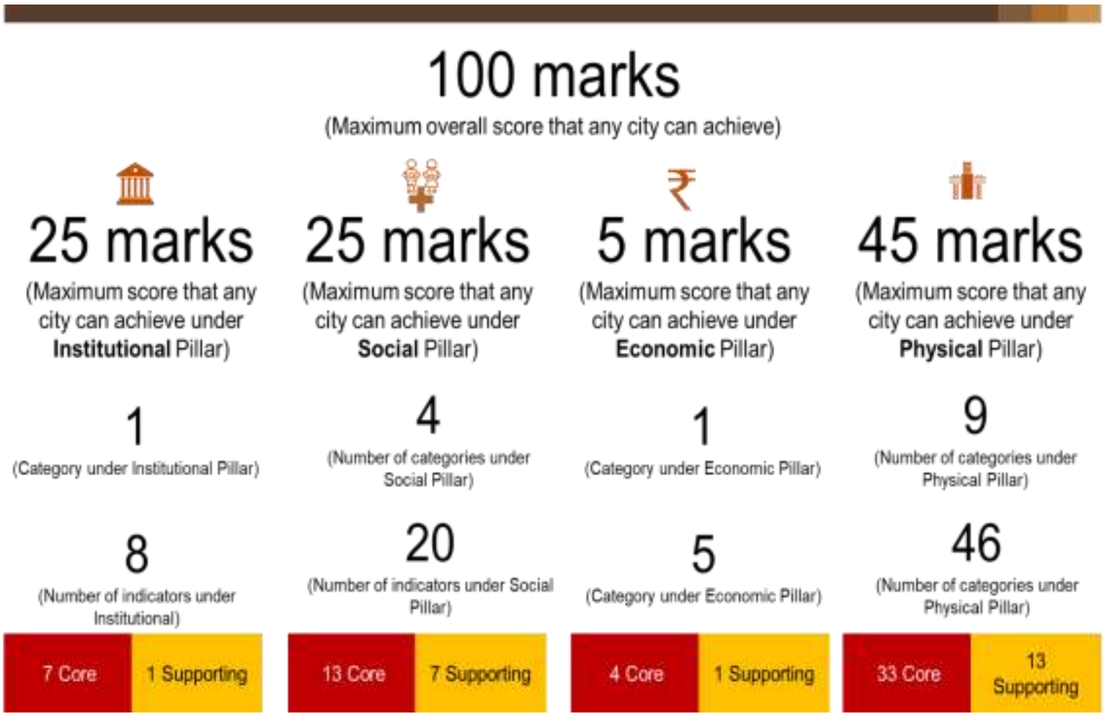
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1 (Category under Institutional Pillar)	4 (Number of categories under Social Pillar)	1 (Category under Economic Pillar)	9 (Number of categories under Physical Pillar)
8 (Number of indicators under Institutional)	20 (Number of indicators under Social Pillar)	5 (Category under Economic Pillar)	46 (Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts dep.
Urban Local Body	For Park and Recreation Related Questions	Parks and Garden
Urban Local Body	For Water Supply and Drainage related questions	Housing building and Drainage
Urban Local Body	For Heritage sites related data	Heritage dep.
Urban Local Body	For Ecological sites related data	Yet not charge taken by any department
Urban Local Body	For Housing related data	Housing building
Urban Local Body	For Building plan related data	Town planning
Urban Local Body	For Roads related data	Road dep.
Urban Local Body	For Solid waste management related data	Solid waste management
Urban Local Body	For IT services related data	IT dep.
Urban Local Body	For Vendor committee related data	Estate dep.
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Affordable housing
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Town planning
	Construction planning	Housing building, town

Designated data owners	Subcategories	Data owners at city level
		planning
	Green Building	Town planing
	Rain water harvesting	Town planing
	Universal Design Principle	Solid west management
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	MGVCL/ Madhya Gujarat
State Disaster management authority		Fire and Emergency services
State Education Department		Education dep. (SSA)
State Health Department	Health care professionals	Health dep.
	Citizen Services	Health dep.
	Disease Prevalence	Health dep.
	Health Infrastructure	Health dep.
State Renewable Energy Development Agency		Gujarat Energy Development Agency (GEDA)
State Sales / Commercial Taxes Department		state tax Joint commissioner office
Town and Country Planning Department	Land Use	Development authority, town planning department
Traffic and Police Department		Traffic and Police Department
Transport Authorities	Buses	Vechiclepool department
	Registered Vehicles	RTO Regional transport office
	Sub urban rail transport	N.A.
	Mono Rail Authority	N.A.
	Tramways	N.A.
	Marine Transport Authority	N.A.

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 71 number of documents.

Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	6
DISCOM/Electricity Department	4
Traffic and Police Department	3
Development Authority	5
Pollution Control Board	0
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	2
Transport Authority	3
Disaster Management	0
Urban Local Body	47
Total	71*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

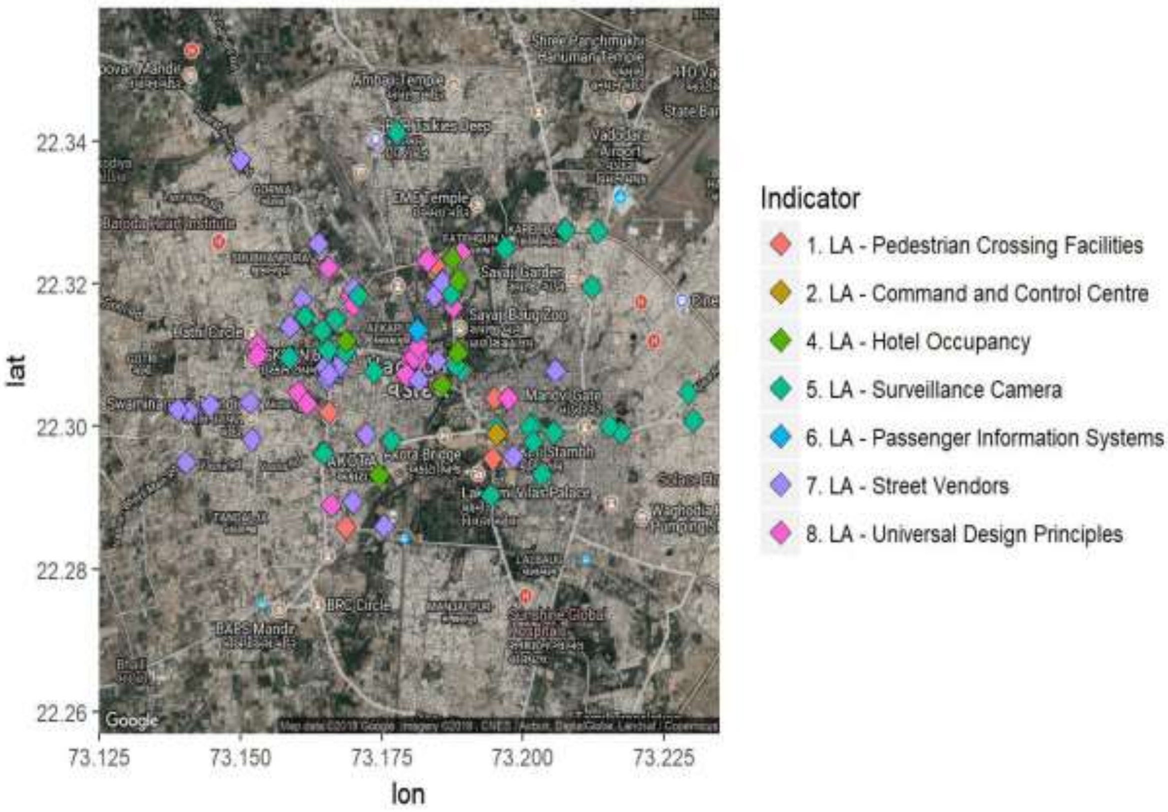
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


22.34
22.32
22.30
22.28
22.26
lat
73.125
73.150
73.175
73.200
73.225
lon
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 2. LA - Command and Control Centre
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles
Sayaji Garden
Sayaji Baug Zoo
Vadodara Airport
EME Temple
Kala Ghoda
Mandvi Gate
Laxmi Vilas Palace
BRC Circle
BAPS Mandir
Kirti Stambh
Akota Bridge

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	54.82%
Identity & Culture	8%
Education	87%
Health	89%
Safety & Security	50%
Economy & Employment	10%
Housing & Inclusiveness	31%
Public Open Spaces	54%
Mixed Land Use & Compactness	75%
Power Supply	55%
Transport & Mobility	22%
Assured Water Supply	52%
Waste Water Management	44%
Solid Waste Management	70%
Reduced Pollution	65%

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

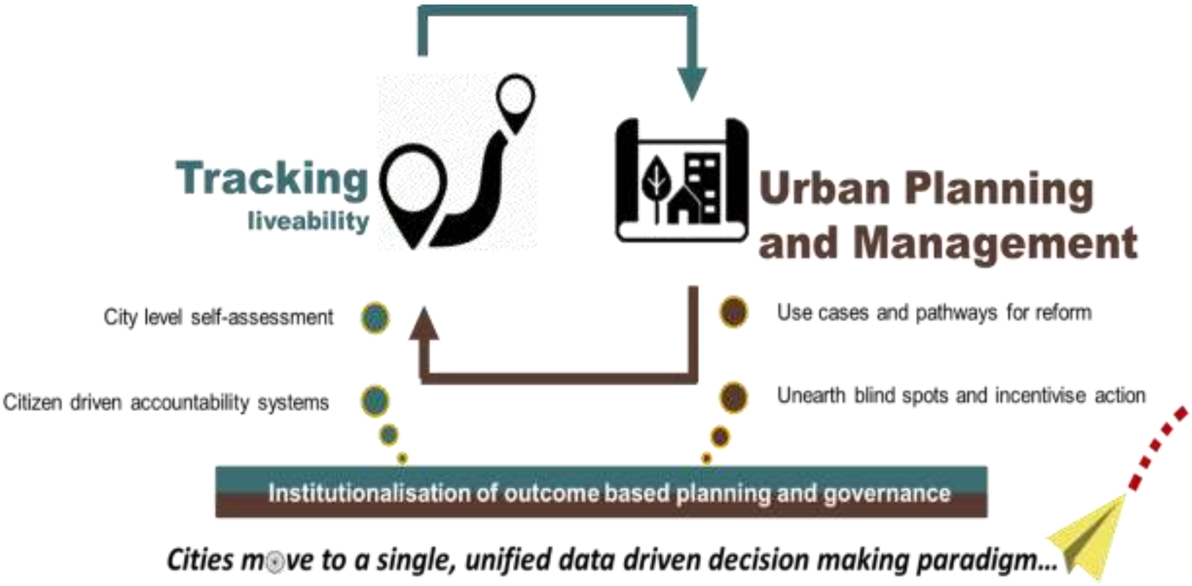
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

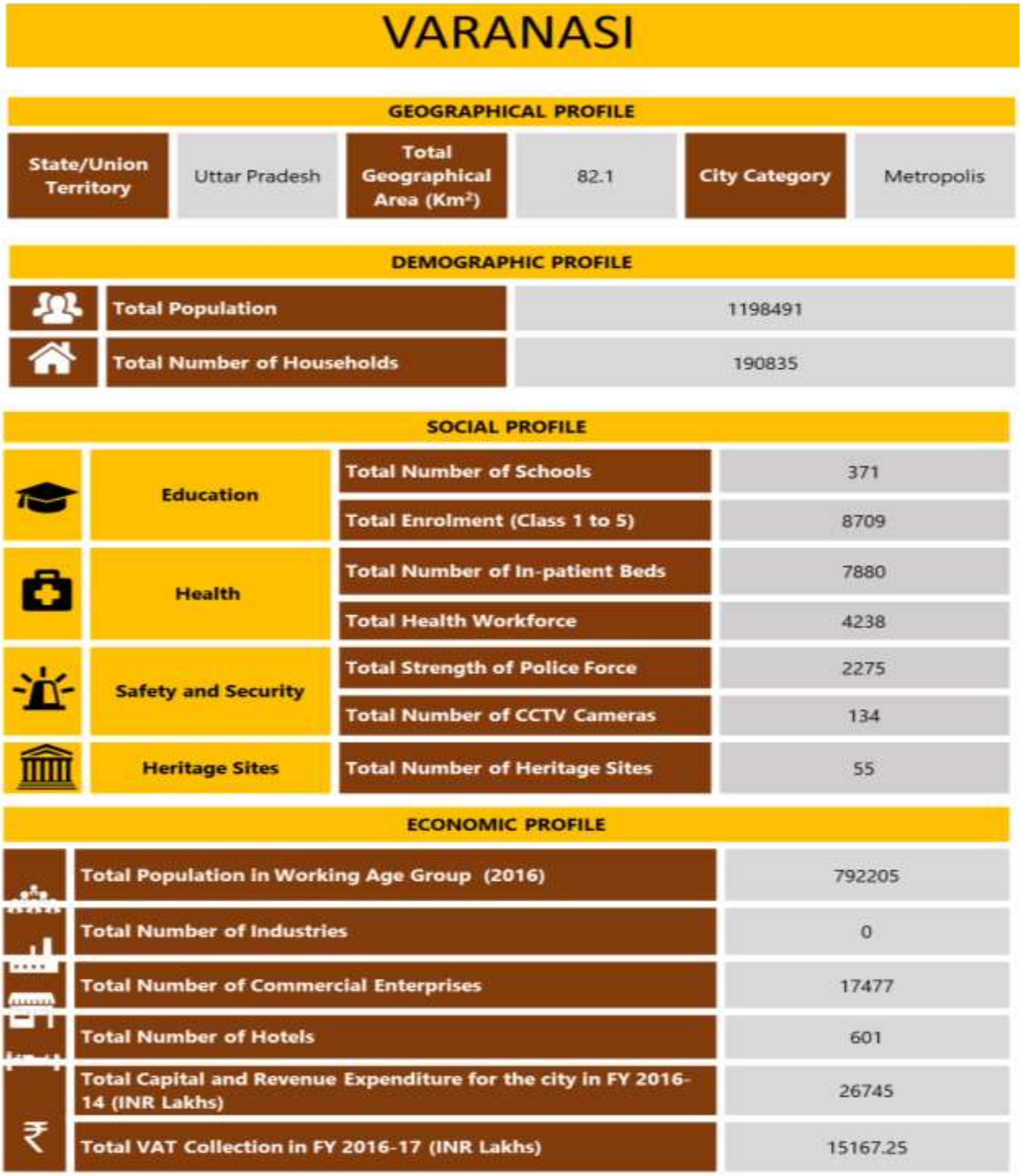
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



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GEOGRAPHICAL PROFILE

State/Union Territory	Uttar Pradesh	**Total Geographical Area (Km^2)**	82.1	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

Total Population	1198491
Total Number of Households	190835

SOCIAL PROFILE

Education	**Total Number of Schools**	371
	Total Enrolment (Class 1 to 5)	8709
Health	**Total Number of In-patient Beds**	7880
	Total Health Workforce	4238
Safety and Security	**Total Strength of Police Force**	2275
	Total Number of CCTV Cameras	134
Heritage Sites	**Total Number of Heritage Sites**	55

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	792205
Total Number of Industries	0
Total Number of Commercial Enterprises	17477
Total Number of Hotels	601
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	26745
Total VAT Collection in FY 2016-17 (INR Lakhs)	15167.25

PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	311
	Total Number of Water Connection	106230
Sanitation Facilities	Total number of households with access to individual toilets in the city	179847
	Total number of households in the city with access to community toilets in the city	55
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	550
	Total number of households covered through door-to-door collection of solid waste	180805
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	280
	Daily average quantum of waste water treated by STPs in the city (MLD)	83
Electricity	Total number of authorized electrical connections in the city	360000
	Total electricity supplied to the city (kWh)	1821000000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	35275400
Roads and Transport	Total Length of Road Network in the City (Km)	1180
	Total length of arterial and sub-arterial road network in the city (Km)	1069
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	3

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators,

various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000

Pillars of Comprehensive Development	Category	Indicators
		population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting

Pillars of Comprehensive Development	Category	Indicators
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

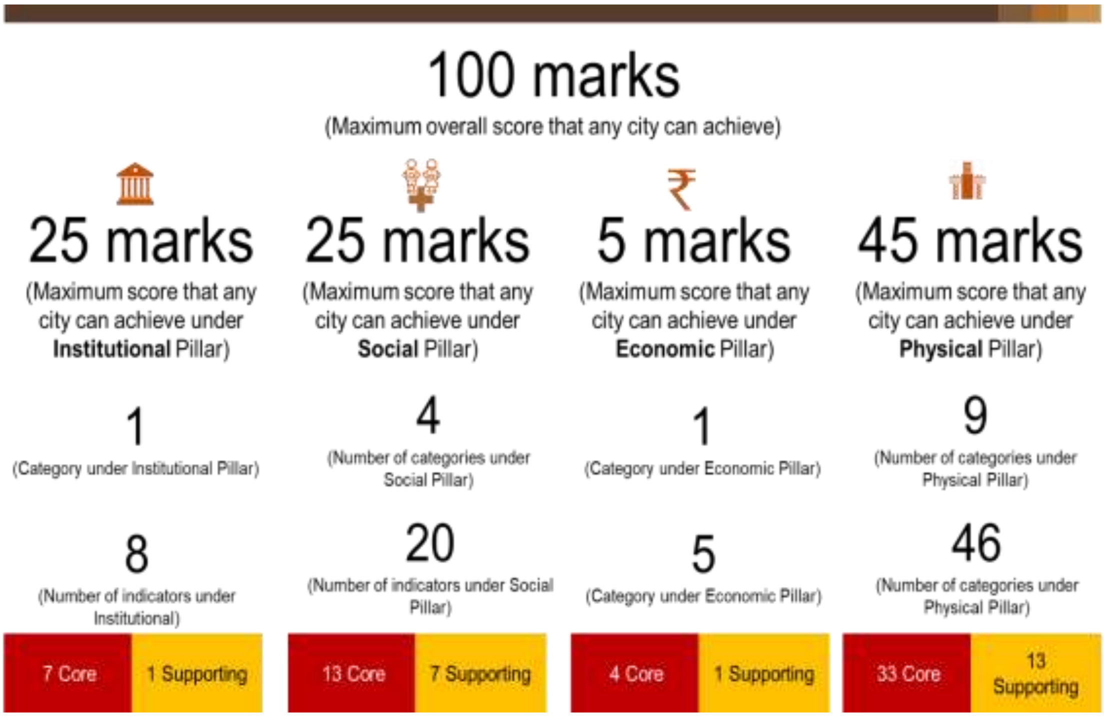
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark -\ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and

development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Acount department Nagar Nigam
Urban Local Body	For Park and Recreation Related Questions	Udyan adhikshak Nagar nigam, AMRUT yojna
Urban Local Body	For Water Supply and Drainage related questions	Jalkal
Urban Local Body	For Heritage sites related data	Hriday yojna office Nagar nigam
Urban Local Body	For Ecological sites related data	NA
Urban Local Body	For Housing related data	DUDA/NRLM Nagar nigam
Urban Local Body	For Building plan related data	Computer cell Nagar nigam
Urban Local Body	For Roads related data	Chief engineer office Nagar nigam
Urban Local Body	For Solid waste management related data	Swaksha Bharat Mission office Nagar nigam
Urban Local Body	For IT services related data	Coordinator Computer cell
Urban Local Body	For Vendor committee related data	DUDA/NRLM office Nagar nigam
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Tourism, Employment exchange, Town and country planning, Ward parishad.
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution control board
Development Authority	Building Infrastructure	Varanasi development authority
	Construction planning	Varanasi development authority
	Green Building	Varanasi development authority
	Rain water harvesting	Varanasi development authority
	Universal Design Principle	Varanasi development authority

Designated data owners	Subcategories	Data owners at city level
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Urban electricity distribution circle Bhelupur
State Disaster management authority		District disaster management authority
State Education Department		Basic Shiksha Adhikari office
State Health Department	Health care professionals	Chief Medical Officer office
	Citizen Services	Chief Medical Officer office
	Disease Prevalence	Chief Medical Officer office
	Health Infrastructure	Chief Medical Officer office
State Renewable Energy Development Agency	Renewable Energy	Project Officer NEDA
State Sales / Commercial Taxes Department		Commercial Tax Department
Town and Country Planning Department	Land Use	Town and Country planning Department Varanasi
Traffic and Police Department		Varishth Police adhikshak office
Transport Authorities	Buses	ARM city bus office
	Registered Vehicles	Sambhagiya parivahan adhikari office
	Sub urban rail transport	NA
	Mono Rail Authority	NA
	Tramways	N A
	Marine Transport Authority	N A

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 35 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	**1**
State Education Department	**1**
DISCOM/Electricity Department	**1**
Traffic and Police Department	**0**
Development Authority	**2**
Pollution Control Board	**3**
State Renewable Energy Department	**0**
Town and Country Planning	**1**
State Health Department	**0**
Transport Authority	**1**
Disaster Management	**0**
Urban Local Body	**25**
Total	**35***

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

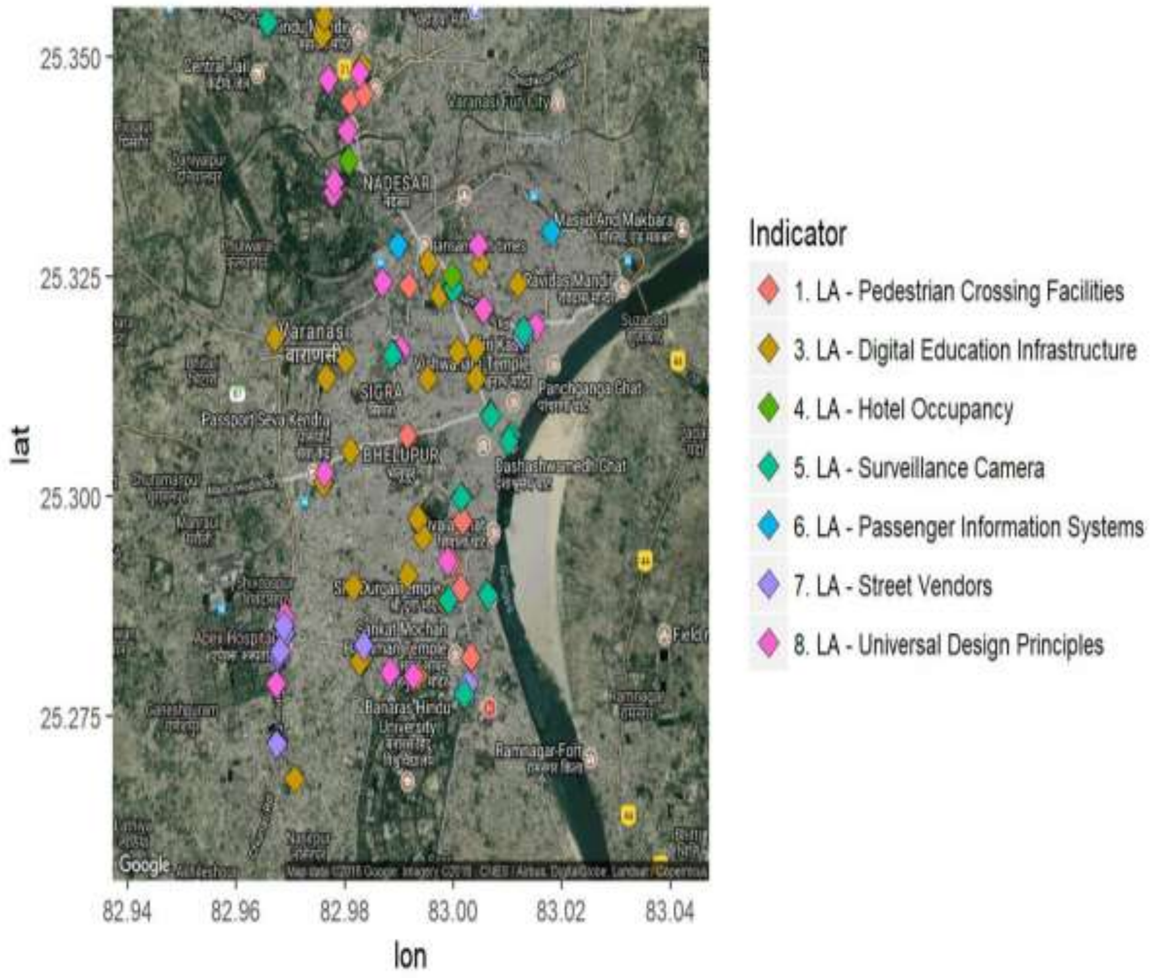
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


25.350
25.325
25.300
25.275
lat
82.94
82.96
82.98
83.00
83.02
83.04
lon
NADESAR
Varanasi
SIGRA
BHELUPUR
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	43.18%
Identity & Culture	42%
Education	45%
Health	94%
Safety & Security	63%
Economy & Employment	16%
Housing & Inclusiveness	7%
Public Open Spaces	52%
Mixed Land Use & Compactness	9%
Power Supply	57%
Transport & Mobility	41%
Assured Water Supply	49%
Waste Water Management	29%
Solid Waste Management	96%
Reduced Pollution	58%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

VASAI VIRAR

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

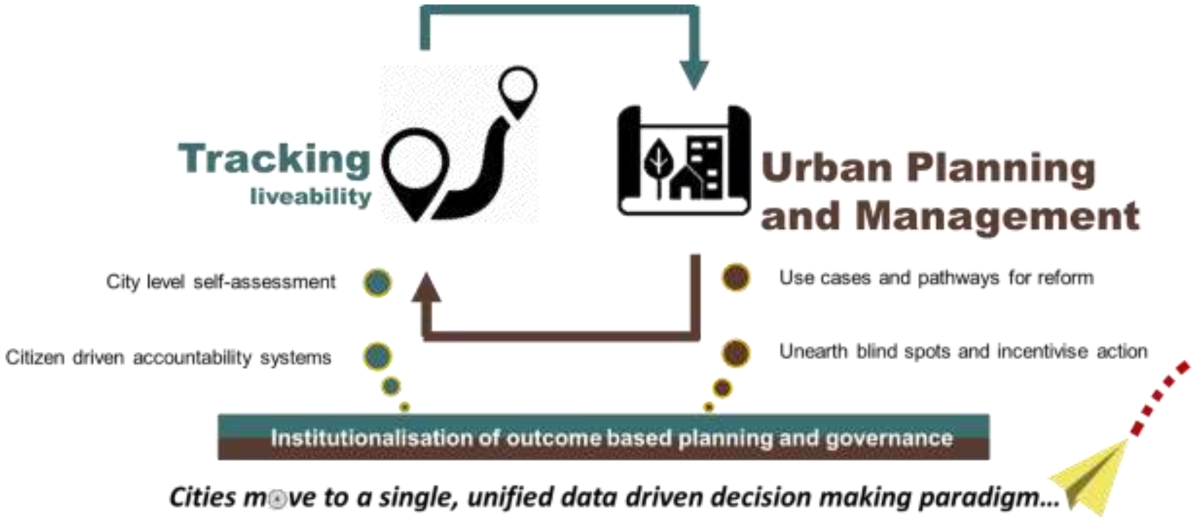
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

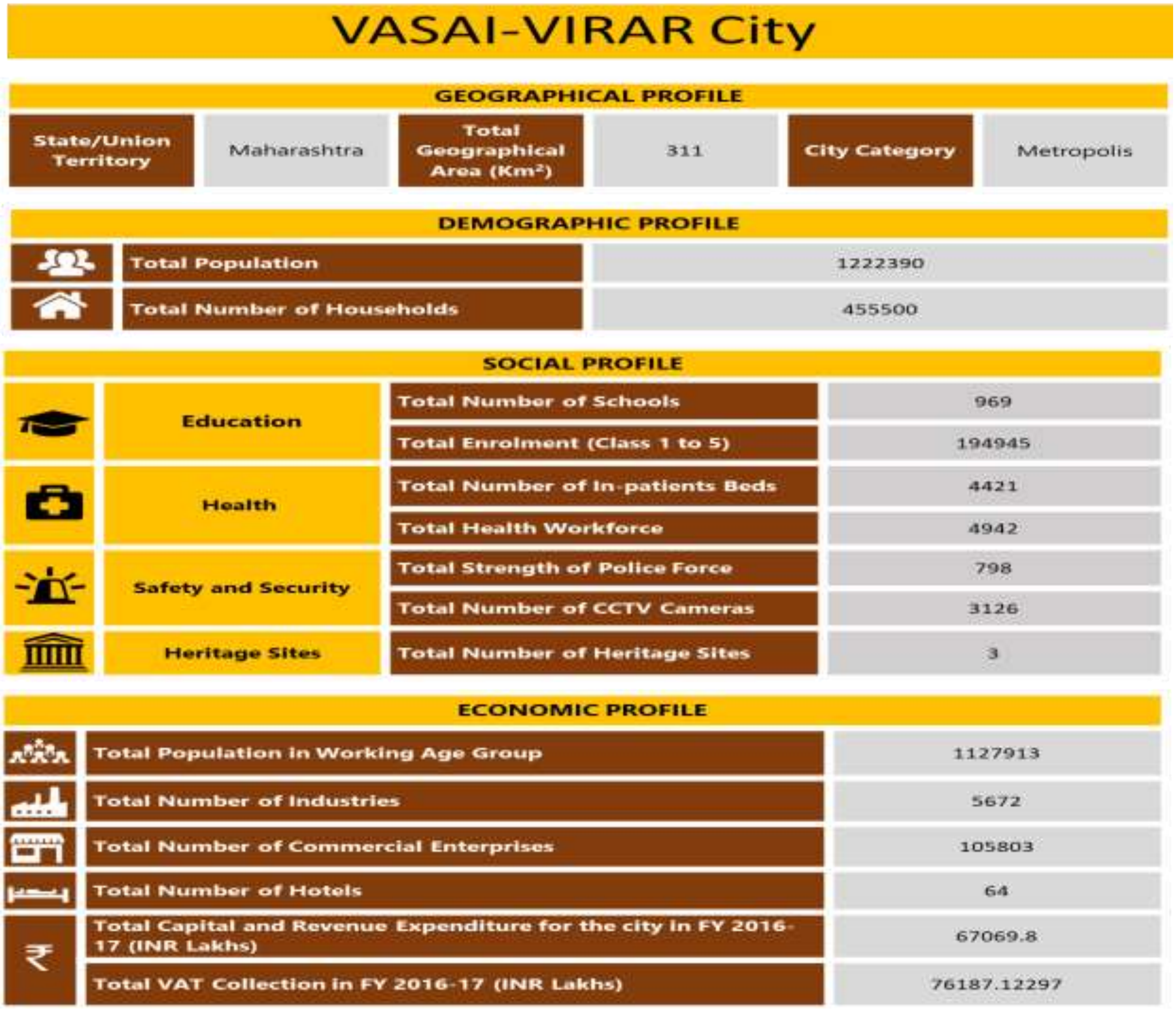

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VASAI-VIRAR City

GEOGRAPHICAL PROFILE

State/Union Territory	Maharashtra	Total Geographical Area (Km²)	311	City Category	Metropolis

DEMOGRAPHIC PROFILE

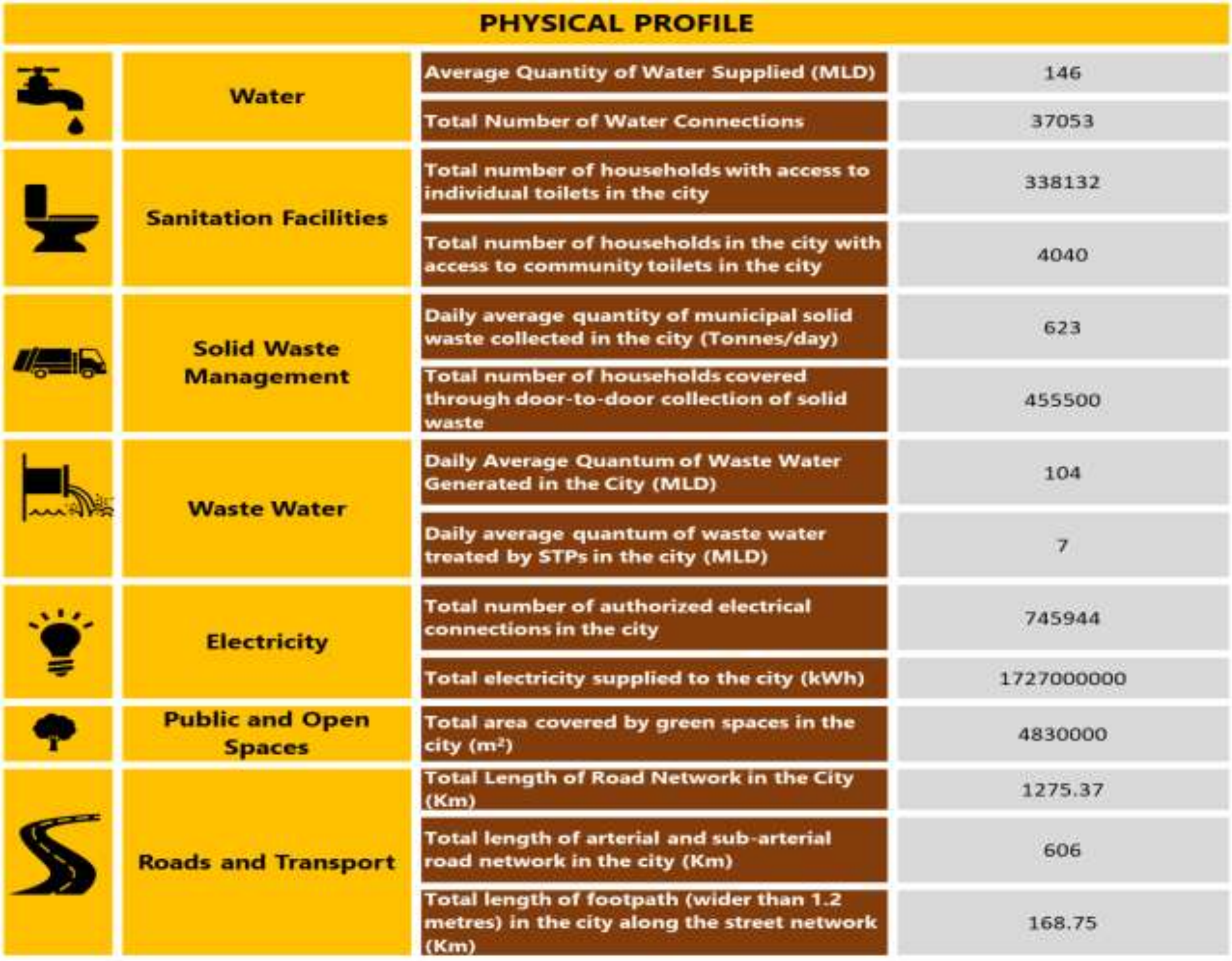
Total Population	1222390
Total Number of Households	455500

SOCIAL PROFILE

Education	Total Number of Schools	969
	Total Enrolment (Class 1 to 5)	194945
Health	Total Number of In-patients Beds	4421
	Total Health Workforce	4942
Safety and Security	Total Strength of Police Force	798
	Total Number of CCTV Cameras	3126
Heritage Sites	Total Number of Heritage Sites	3

ECONOMIC PROFILE

Total Population in Working Age Group	1127913
Total Number of Industries	5672
Total Number of Commercial Enterprises	105803
Total Number of Hotels	64
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	67069.8
Total VAT Collection in FY 2016-17 (INR Lakhs)	76187.12297



PHYSICAL PROFILE

Water	Average Quantity of Water Supplied (MLD)	146
	Total Number of Water Connections	37053
Sanitation Facilities	Total number of households with access to individual toilets in the city	338132
	Total number of households in the city with access to community toilets in the city	4040
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	623
	Total number of households covered through door-to-door collection of solid waste	455500
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	104
	Daily average quantum of waste water treated by STPs in the city (MLD)	7
Electricity	Total number of authorized electrical connections in the city	745944
	Total electricity supplied to the city (kWh)	1727000000
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	4830000
Roads and Transport	Total Length of Road Network in the City (Km)	1275.37
	Total length of arterial and sub-arterial road network in the city (Km)	606
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	168.75

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary

Pillars of Comprehensive Development	Category	Indicators
		education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density

Pillars of Comprehensive Development	Category	Indicators
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian

Pillars of Comprehensive Development	Category	Indicators
		crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

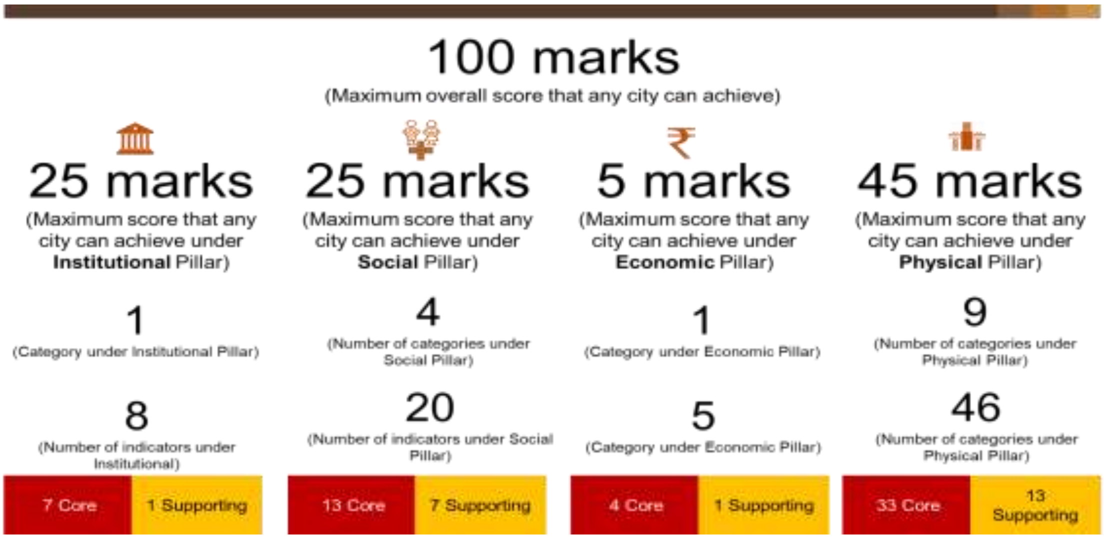
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under **Institutional** Pillar)
1
(Category under Institutional Pillar)
8
(Number of indicators under Institutional)
7 Core
1 Supporting
25 marks
(Maximum score that any city can achieve under **Social** Pillar)
4
(Number of categories under Social Pillar)
20
(Number of indicators under Social Pillar)
13 Core
7 Supporting
5 marks
(Maximum score that any city can achieve under **Economic** Pillar)
1
(Category under Economic Pillar)
5
(Category under Economic Pillar)
4 Core
1 Supporting
45 marks
(Maximum score that any city can achieve under **Physical** Pillar)
9
(Number of categories under Physical Pillar)
46
(Number of categories under Physical Pillar)
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry.

The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts department
Urban Local Body	For Park and Recreation Related Questions	Pwd department
Urban Local Body	For Water Supply and Drainage related questions	Water department
Urban Local Body	For Heritage sites related data	Town planning department
Urban Local Body	For Ecological sites related data	Forest department
Urban Local Body	For Housing related data	Housing department
Urban Local Body	For Building plan related data	City engineer and town planning department
Urban Local Body	For Roads related data	City engineer department/ pwd dept
Urban Local Body	For Solid waste management related data	Solid waste management department
Urban Local Body	For IT services related data	It department
Urban Local Body	For Vendor committee related data	Social welfare department
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Employment exchange department

Designated data owners	Subcategories	Data owners at city level
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Water department and environment department, mpcb
Development Authority	Building Infrastructure	City engineer and town planning department
	Construction planning	Pwd department
	Green Building	Town planning department
	Rain water harvesting	Town planning department
	Universal Design Principle	City engineering department
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Electricity department
State Disaster management authority		Disaster management department
State Education Department		Education department
State Health Department	Health care professionals	Health department
	Citizen Services	Health department
	Disease Prevalence	Health department
	Health Infrastructure	Health department
State Renewable Energy Development Agency		Electricity department
State Sales / Commercial Taxes Department		Sales tax department
Town and Country Planning Department	Land Use	Town planning department
Traffic and Police Department		Disaster management department
Transport Authorities	Buses	Transport department
	Registered Vehicles	Transport department (rto)
	Sub urban rail transport	Transport department
	Mono Rail Authority	Transport department
	Tramways	Transport department
	Marine Transport Authority	Transport department

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 143 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	1
DISCOM/Electricity Department	11
Traffic and Police Department	7
Development Authority	3
Pollution Control Board	3
State Renewable Energy Department	8
Town and Country Planning	1
State Health Department	8
Transport Authority	9
Disaster Management	3
Urban Local Body	89
Total	143*

.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

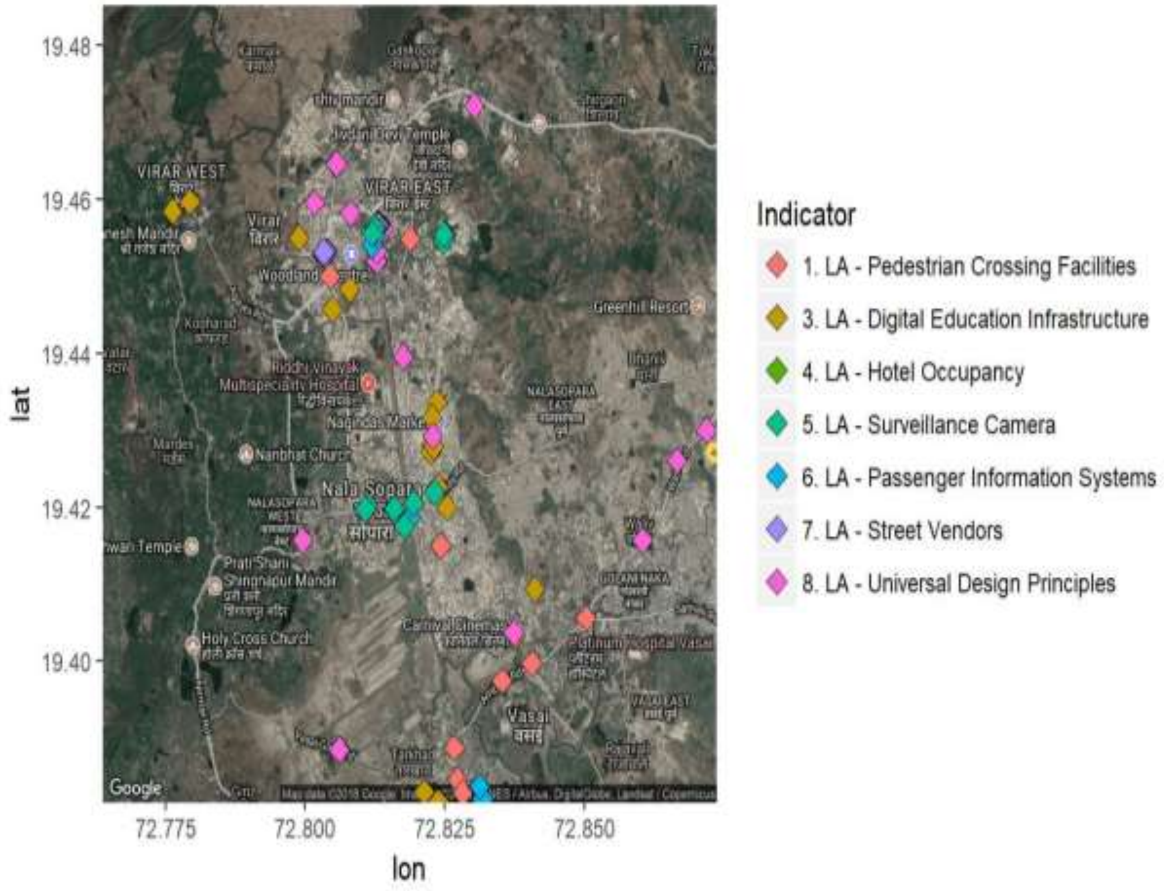
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


19.48
19.46
19.44
19.42
19.40
lat
72.775
72.800
72.825
72.850
lon
VIRAR WEST
VIRAR EAST
Virar
Jivdani Devi Temple
Woodland
Greenhill Resort
Riddhi Vinayak Multispeciality Hospital
Nagindas Market
Nanbhat Church
Nala Sopara
NALASOPARA EAST
NALASOPARA WEST
Pratt Shani Shingnapur Mandir
Holy Cross Church
Carnival Cinemas
Platinum Hospital Vasai
Vasai
VASAI EAST
Google
Indicator
1. LA - Pedestrian Crossing Facilities
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	54.69%
Identity & Culture	68%
Education	95%
Health	98%
Safety & Security	52%
Economy & Employment	22%
Housing & Inclusiveness	9%
Public Open Spaces	23%
Mixed Land Use & Compactness	0%
Power Supply	57%
Transport & Mobility	68%
Assured Water Supply	88%
Waste Water Management	80%
Solid Waste Management	82%
Reduced Pollution	85%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

VELLORE

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	**Challenges**	**Proposed Solutions**
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don’t have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.

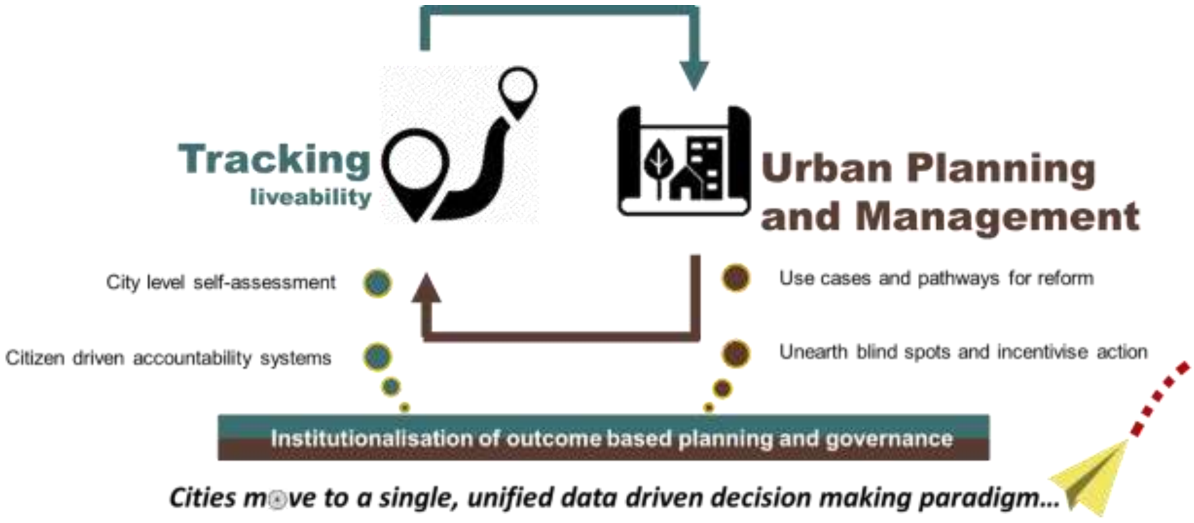
#	Challenges	Proposed Solutions
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

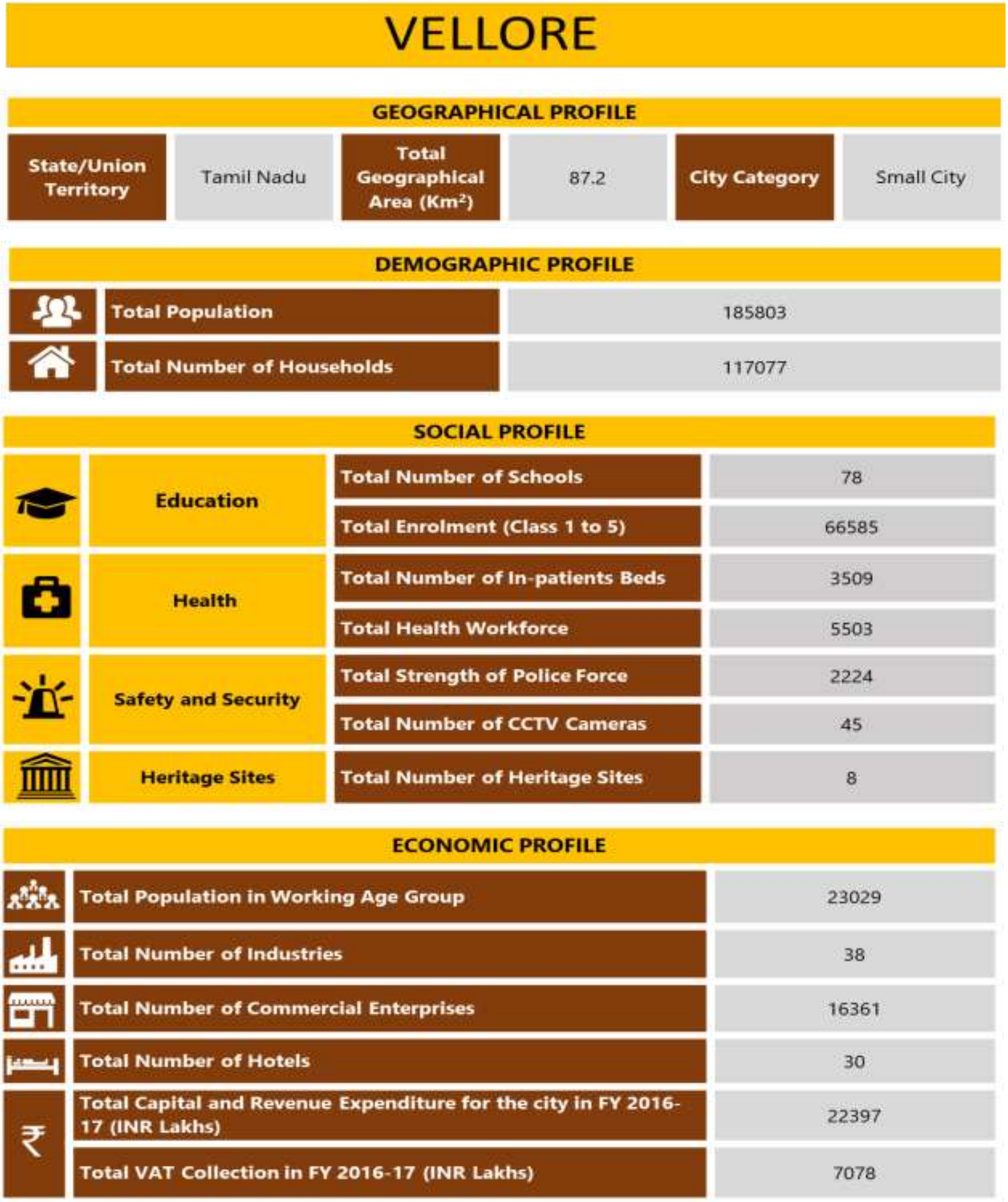
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VELLORE

GEOGRAPHICAL PROFILE

State/Union Territory	Tamil Nadu	Total Geographical Area (Km²)	87.2	City Category	Small City

DEMOGRAPHIC PROFILE

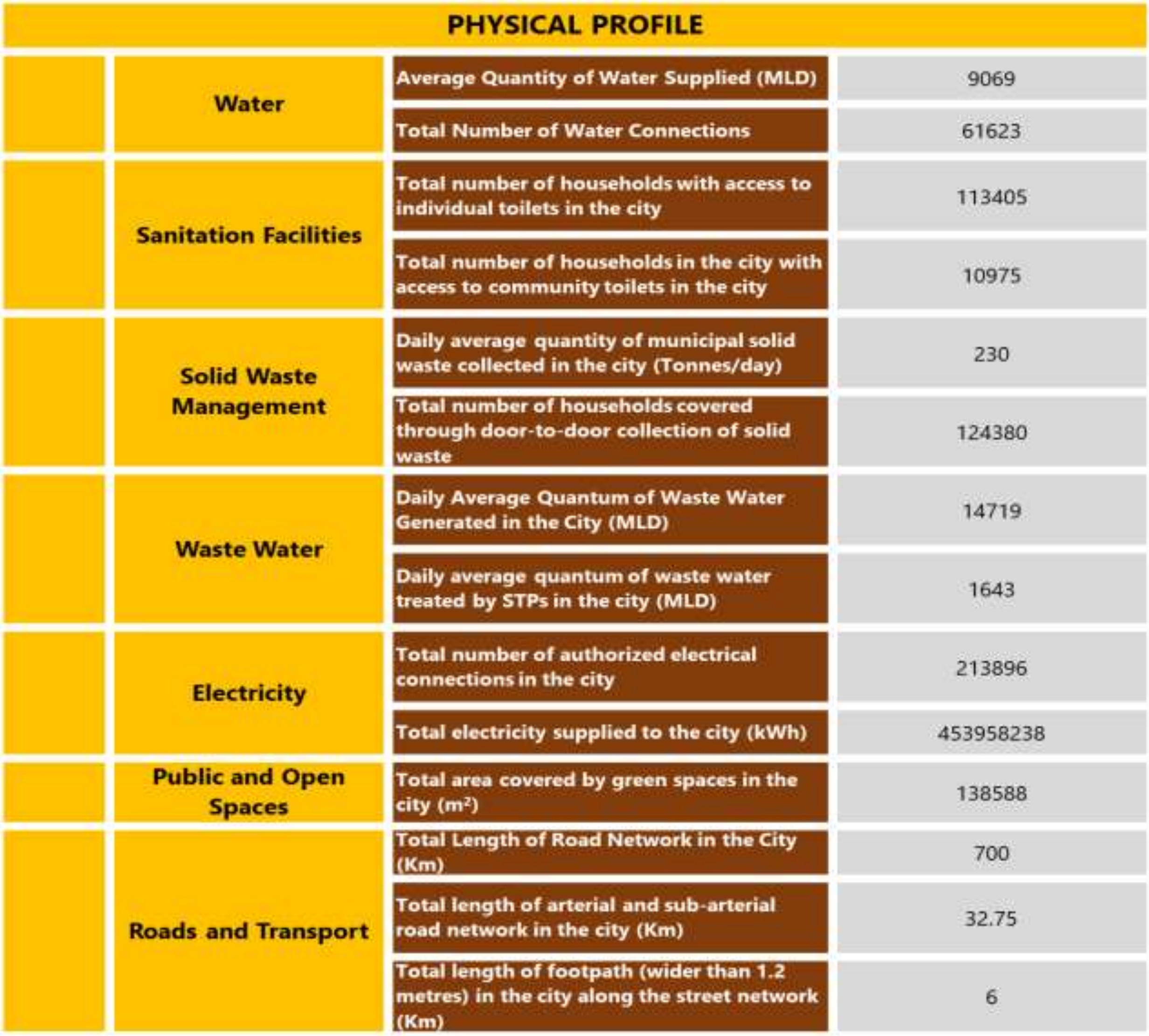
Total Population	185803
Total Number of Households	117077

SOCIAL PROFILE

Education	Total Number of Schools	78
	Total Enrolment (Class 1 to 5)	66585
Health	Total Number of In-patients Beds	3509
	Total Health Workforce	5503
Safety and Security	Total Strength of Police Force	2224
	Total Number of CCTV Cameras	45
Heritage Sites	Total Number of Heritage Sites	8

ECONOMIC PROFILE

Total Population in Working Age Group	23029
Total Number of Industries	38
Total Number of Commercial Enterprises	16361
Total Number of Hotels	30
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	22397
Total VAT Collection in FY 2016-17 (INR Lakhs)	7078



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	9069
		Total Number of Water Connections	61623
	Sanitation Facilities	Total number of households with access to individual toilets in the city	113405
		Total number of households in the city with access to community toilets in the city	10975
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	230
		Total number of households covered through door-to-door collection of solid waste	124380
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	14719
		Daily average quantum of waste water treated by STPs in the city (MLD)	1643
	Electricity	Total number of authorized electrical connections in the city	213896
		Total electricity supplied to the city (kWh)	453958238
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	138588
	Roads and Transport	Total Length of Road Network in the City (Km)	700
		Total length of arterial and sub-arterial road network in the city (Km)	32.75
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	6

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000

Pillars of Comprehensive Development	Category	Indicators
		population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply

Pillars of Comprehensive Development	Category	Indicators
		and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains

Pillars of Comprehensive Development	Category	Indicators
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

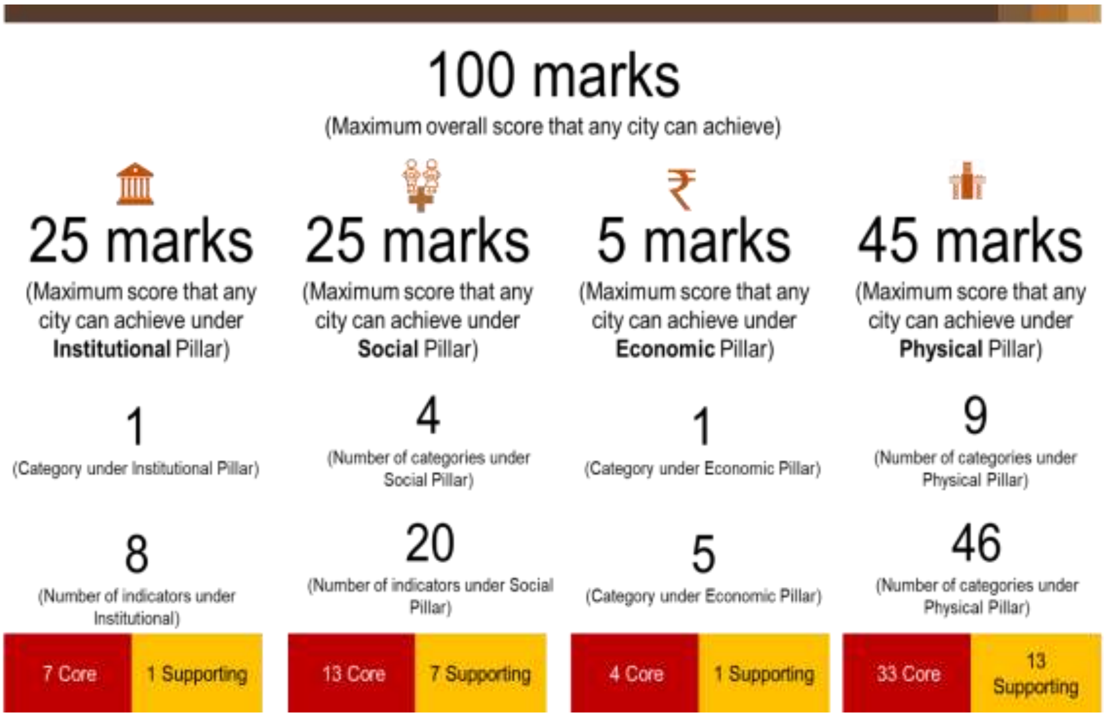
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts
Urban Local Body	For Park and Recreation Related Questions	Engineering
Urban Local Body	For Water Supply and Drainage related questions	Engineering
Urban Local Body	For Heritage sites related data	Town Planning
Urban Local Body	For Ecological sites related data	Town Planning
Urban Local Body	For Housing related data	Town Planning
Urban Local Body	For Building plan related data	Town Planning
Urban Local Body	For Roads related data	Engineering

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Solid waste management related data	Health Dept. ULB
Urban Local Body	For IT services related data	IT Dept
Urban Local Body	For Vendor committee related data	Town Planning
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	Revenue
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	State Pollution Control Board
Development Authority	Building Infrastructure	Town Planning
	Construction planning	Town Planning
	Green Building	Town Planning
	Rain water harvesting	Town Planning
	Universal Design Principle	Town Planning
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	TamilNadu Generation and Distribution Corporation Limited
State Disaster management authority		District Disaster Management Unit
State Education Department		District Chief Educational Officer
State Health Department	Health care professionals	Deputy Director Health Services
	Citizen Services	Deputy Director Health Services
	Disease Prevalence	Deputy Director Health Services
	Health Infrastructure	Deputy Director Health Services
State Renewable Energy Development Agency		Tamil Nadu Energy Development Agency
State Sales / Commercial Taxes Department		Deputy Commissioner, Commercial Taxes
Town and Country Planning Department	Land Use	Town Planning
Traffic and Police Department		District Superintendent of Police
Transport Authorities	Buses	Regional Transport Office
	Registered Vehicles	Regional Transport Office
	Sub urban rail transport	Not Applicable

Designated data owners	Subcategories	Data owners at city level
	Mono Rail Authority	Not Applicable
	Tramways	Not Applicable
	Marine Transport Authority	Not Applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 94 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	10
Traffic and Police Department	2
Development Authority	1
Pollution Control Board	1
State Renewable Energy Department	2
Town and Country Planning	3
State Health Department	1
Transport Authority	3
Disaster Management	1
Urban Local Body	67
Total	94*

Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

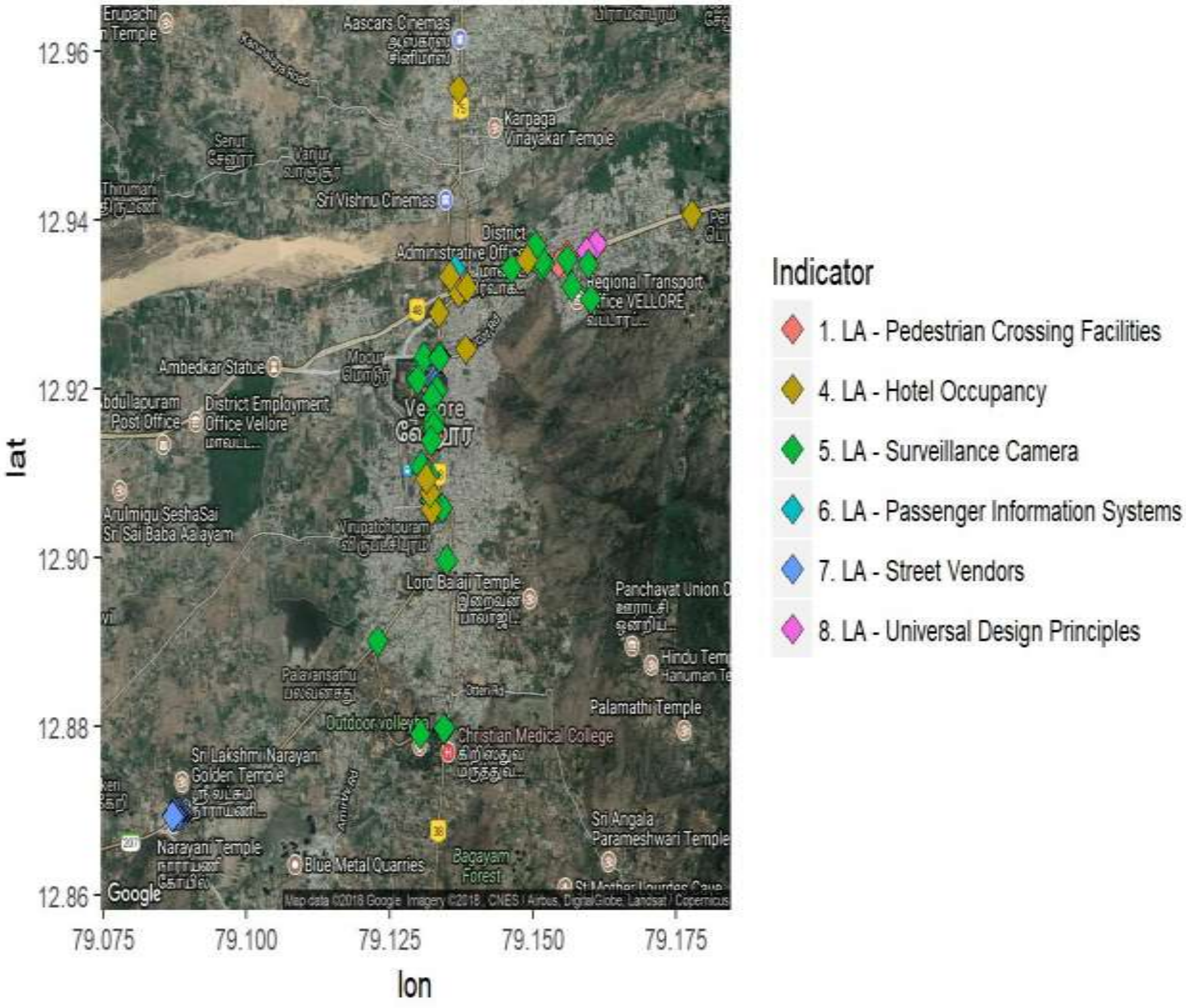
- 1.2 | Percentage of services integrated through Command Centre
- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 11.7 | Availability of Passenger Information System
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

- 6.4 | Unemployment Rate
- 11.3 | Mode share of public transport
- 11.5 | Mode share of Non Motorized Transport
- 12.3 | Quality of Water Supplied
- 15.4 | Level of Noise Pollution

4.4 Physical Audit

The following map presents the indicators audited at city level.


12.96
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Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 6. LA - Passenger Information Systems
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	49.49%
Identity & Culture	40%
Education	59%
Health	100%
Safety & Security	59%
Economy & Employment	36%
Housing & Inclusiveness	50%
Public Open Spaces	3%
Mixed Land Use & Compactness	50%
Power Supply	57%
Transport & Mobility	40%
Assured Water Supply	73%
Waste Water Management	63%
Solid Waste Management	67%
Reduced Pollution	64%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

VIJAYAWADA

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

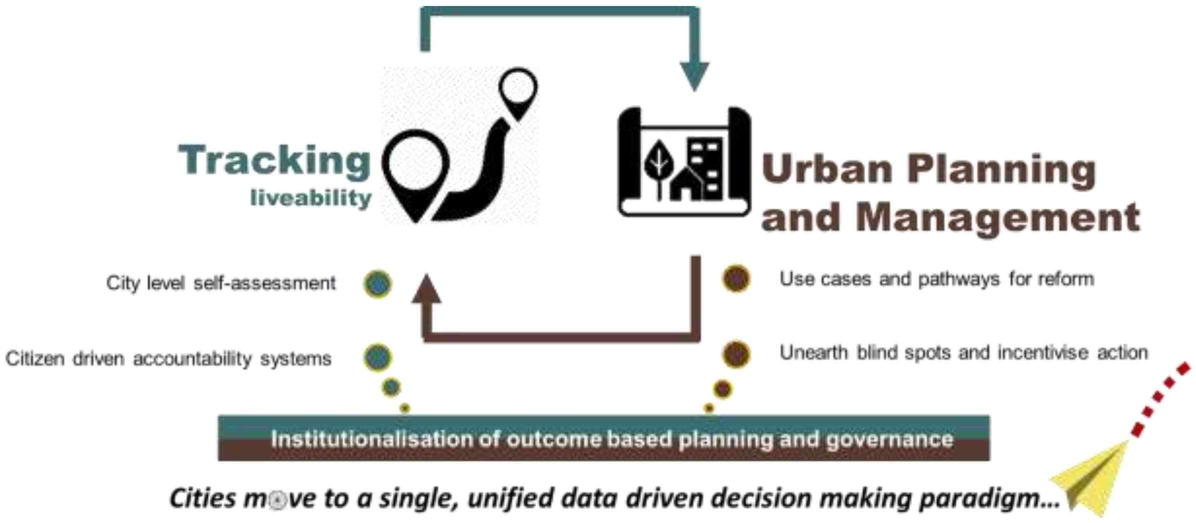
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities

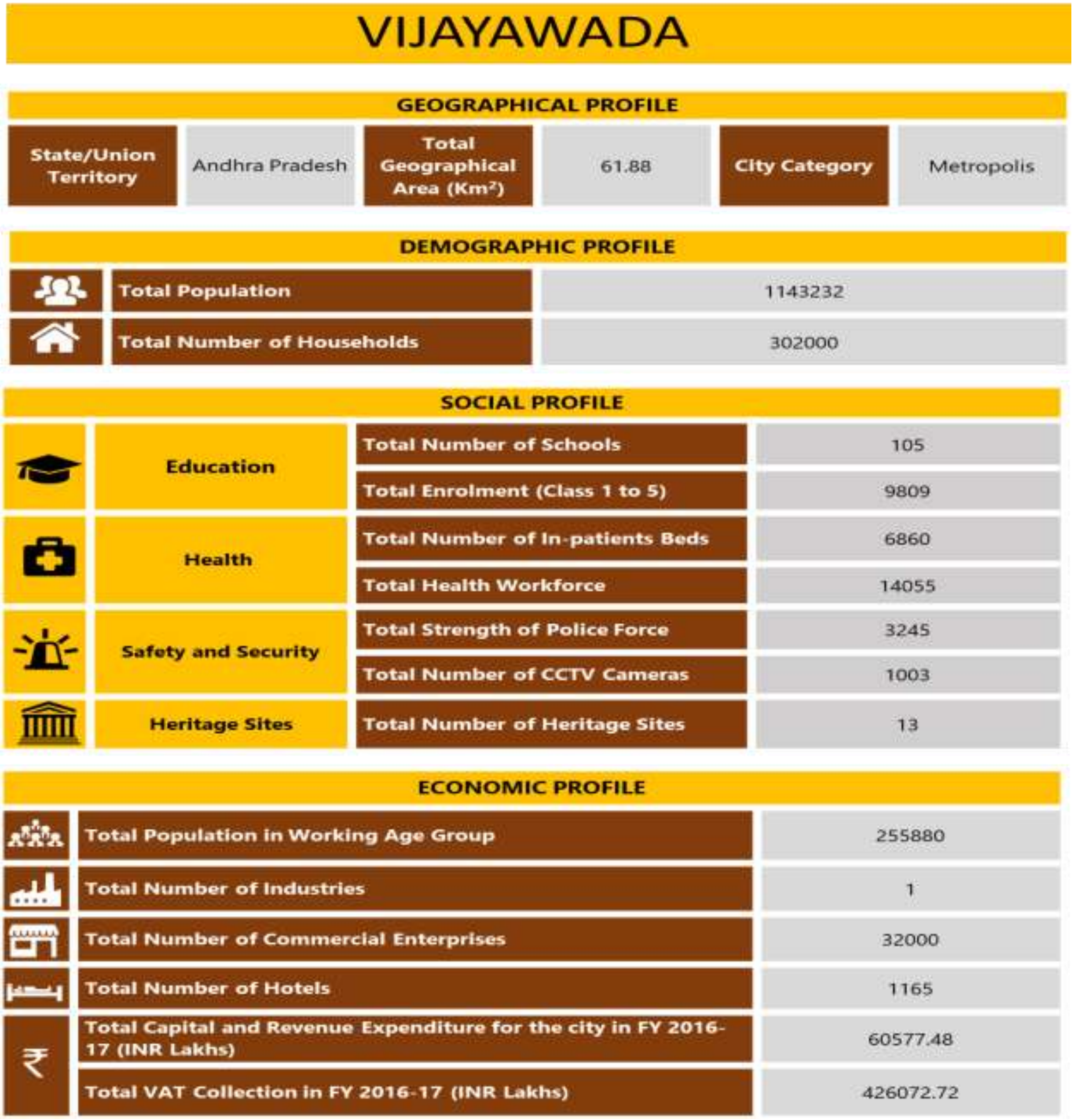

Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance

Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VIJAYAWADA

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	**Total Geographical Area (Km²)**	61.88	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

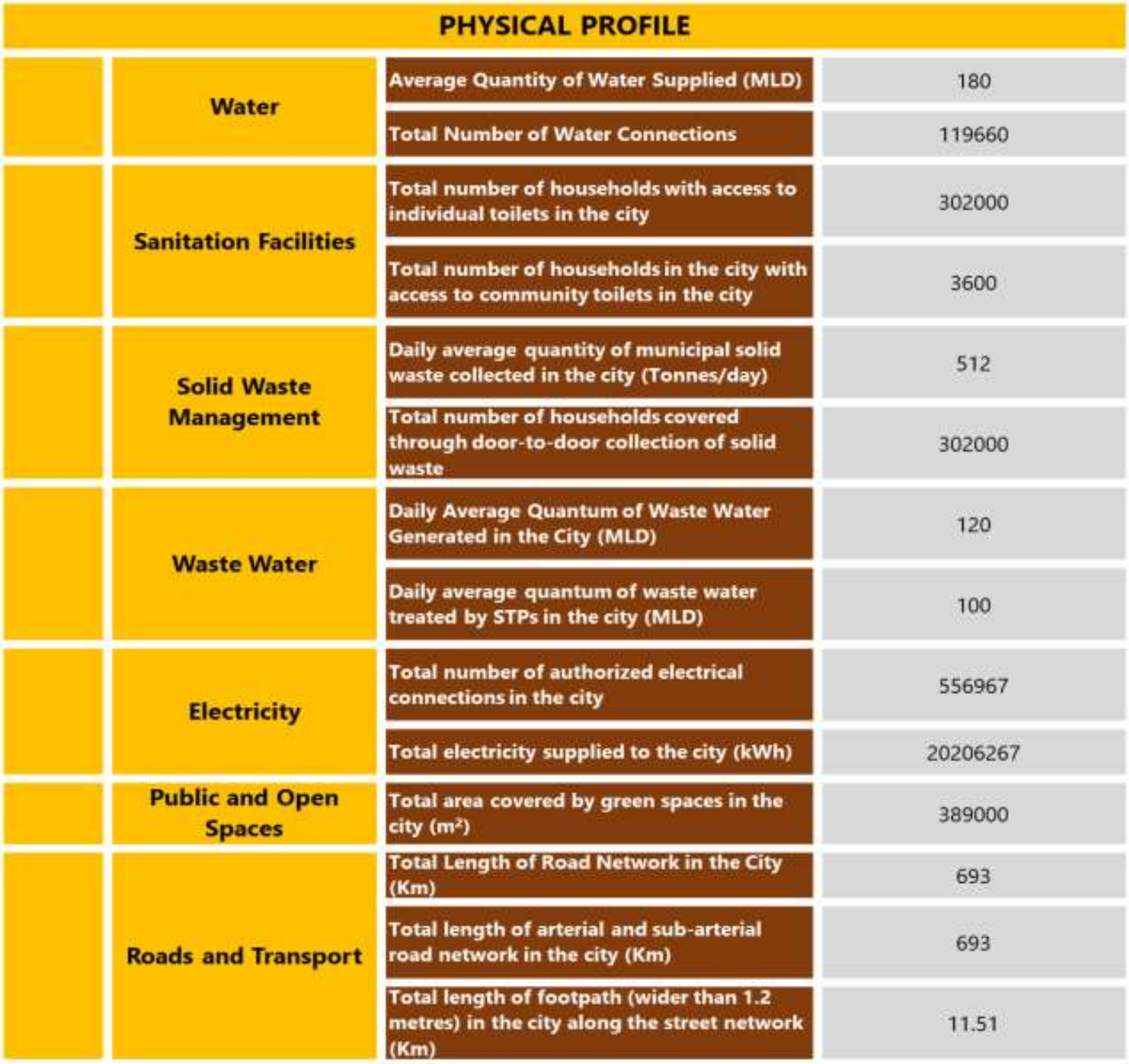
Total Population	1143232
Total Number of Households	302000

SOCIAL PROFILE

Education	**Total Number of Schools**	105
	Total Enrolment (Class 1 to 5)	9809
Health	**Total Number of In-patients Beds**	6860
	Total Health Workforce	14055
Safety and Security	**Total Strength of Police Force**	3245
	Total Number of CCTV Cameras	1003
Heritage Sites	**Total Number of Heritage Sites**	13

ECONOMIC PROFILE

Total Population in Working Age Group	255880
Total Number of Industries	1
Total Number of Commercial Enterprises	32000
Total Number of Hotels	1165
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	60577.48
Total VAT Collection in FY 2016-17 (INR Lakhs)	426072.72



PHYSICAL PROFILE			
	Water	Average Quantity of Water Supplied (MLD)	180
		Total Number of Water Connections	119660
	Sanitation Facilities	Total number of households with access to individual toilets in the city	302000
		Total number of households in the city with access to community toilets in the city	3600
	Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	512
		Total number of households covered through door-to-door collection of solid waste	302000
	Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	120
		Daily average quantum of waste water treated by STPs in the city (MLD)	100
	Electricity	Total number of authorized electrical connections in the city	556967
		Total electricity supplied to the city (kWh)	20206267
	Public and Open Spaces	Total area covered by green spaces in the city (m^2)	389000
	Roads and Transport	Total Length of Road Network in the City (Km)	693
		Total length of arterial and sub-arterial road network in the city (Km)	693
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	11.51

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education

Pillars of Comprehensive Development	Category	Indicators
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical

Pillars of Comprehensive Development	Category	Indicators
		services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water	12.1 Household level coverage of direct water supply

Pillars of Comprehensive Development	Category	Indicators
	Supply	connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

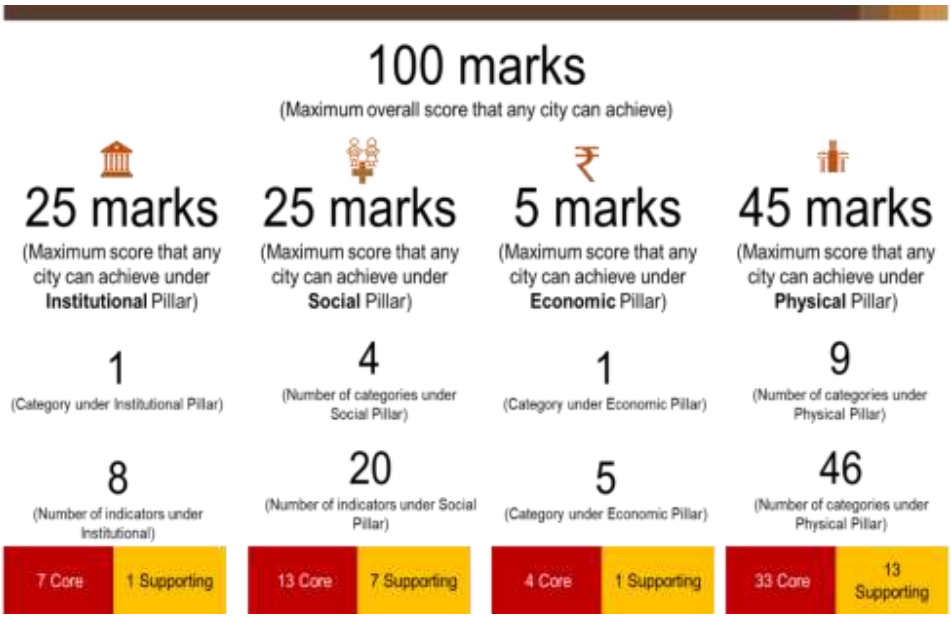
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Account Section
Urban Local Body	For Park and Recreation Related Questions	Horticulture Section
Urban Local Body	For Water Supply and Drainage related questions	Engineering section
Urban Local Body	For Heritage sites related data	Estate Section
Urban Local Body	For Ecological sites related data	Horticulture section
Urban Local Body	For Housing related data	Housing Section
Urban Local Body	For Building plan related data	Planning section
Urban Local Body	For Roads related data	Engineering section
Urban Local Body	For Solid waste management related data	Engineering section
Urban Local Body	For IT services related data	VOICE section
Urban Local Body	For Vendor committee related data	UCD Section
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Planning section
	Construction planning	Planning section
	Green Building	Planning section

Designated data owners	Subcategories	Data owners at city level
	Rain water harvesting	Planning section
	Universal Design Principle	Planning section
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Southern power/DISCOM, Vijayawada
State Disaster management authority		District Disaster Management Authority AC[P]
State Education Department		Deputy Education Officer
State Health Department	Health care professionals	District Medical and Health Officer
	Citizen Services	Do
	Disease Prevalence	Do
	Health Infrastructure	Do
State Renewable Energy Development Agency	Renewable Energy	NEDCAP
State Sales / Commercial Taxes Department		Commercial Tax
Town and Country Planning Department	Land Use	Planning section
Traffic and Police Department		Commissioner of Police
Transport Authorities	Buses	District Transport Dept
	Registered Vehicles	Do
	Sub urban rail transport	Do
	Mono Rail Authority	Do
	Tramways	Do
	Marine Transport Authority	Do

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 25 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

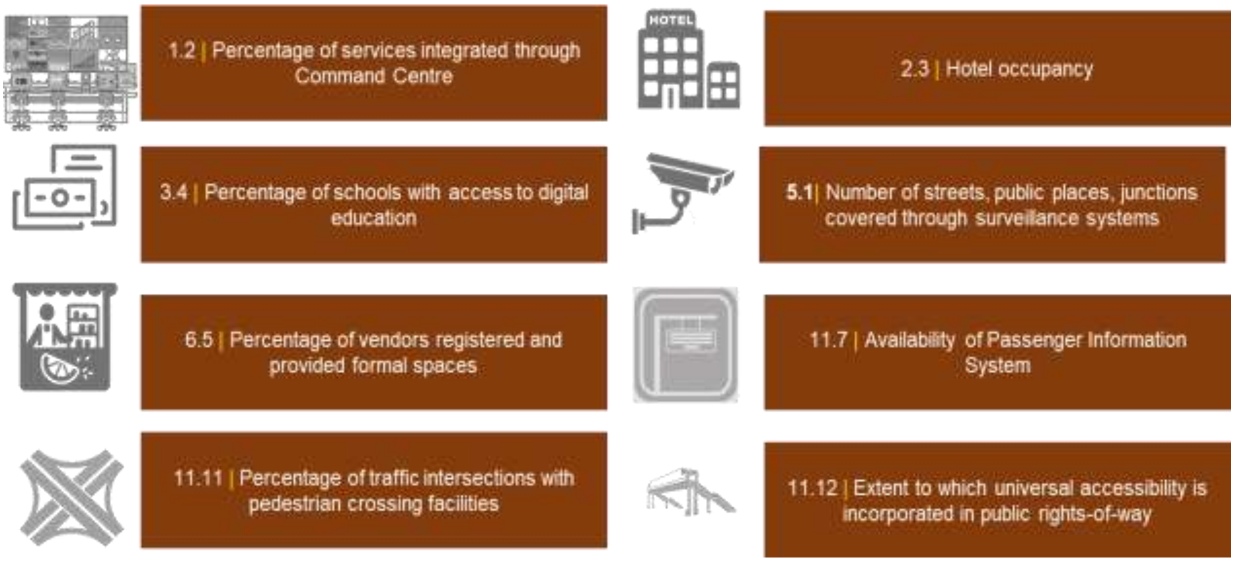
Data Owners	Number of Documents
Sales and Commercial Taxes	5
State Education Department	4
DISCOM/Electricity Department	1
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	1
State Renewable Energy Department	1
Town and Country Planning	0
State Health Department	0
Transport Authority	6
Disaster Management	0
Urban Local Body	7
Total	25*

* The count of documents is based on first round of submission.

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:



1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1 | Number of streets, public places, junctions covered through surveillance systems

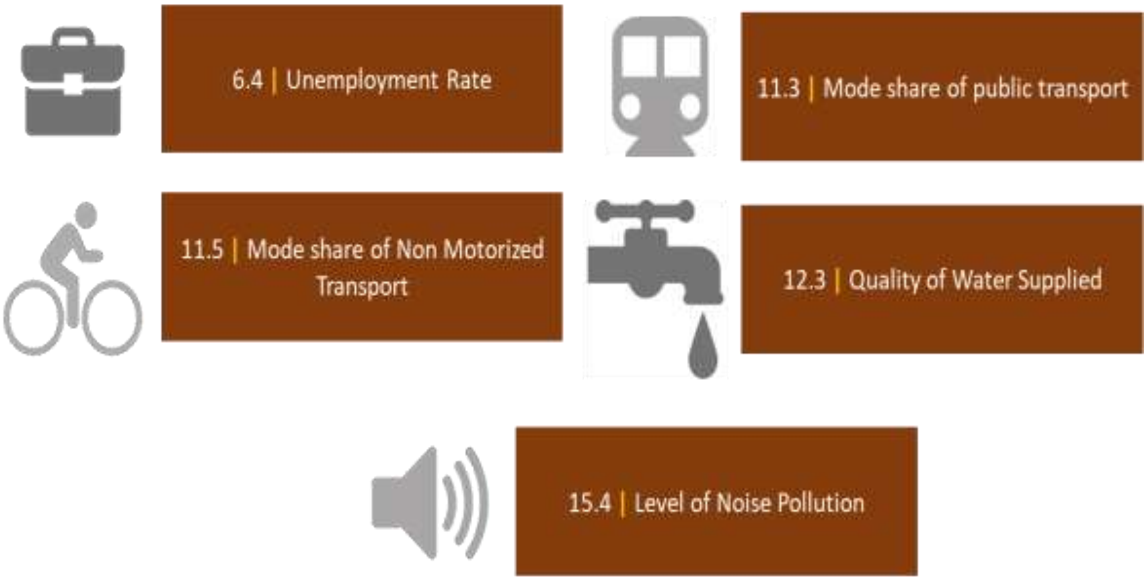
6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.



6.4 | Unemployment Rate

11.3 | Mode share of public transport

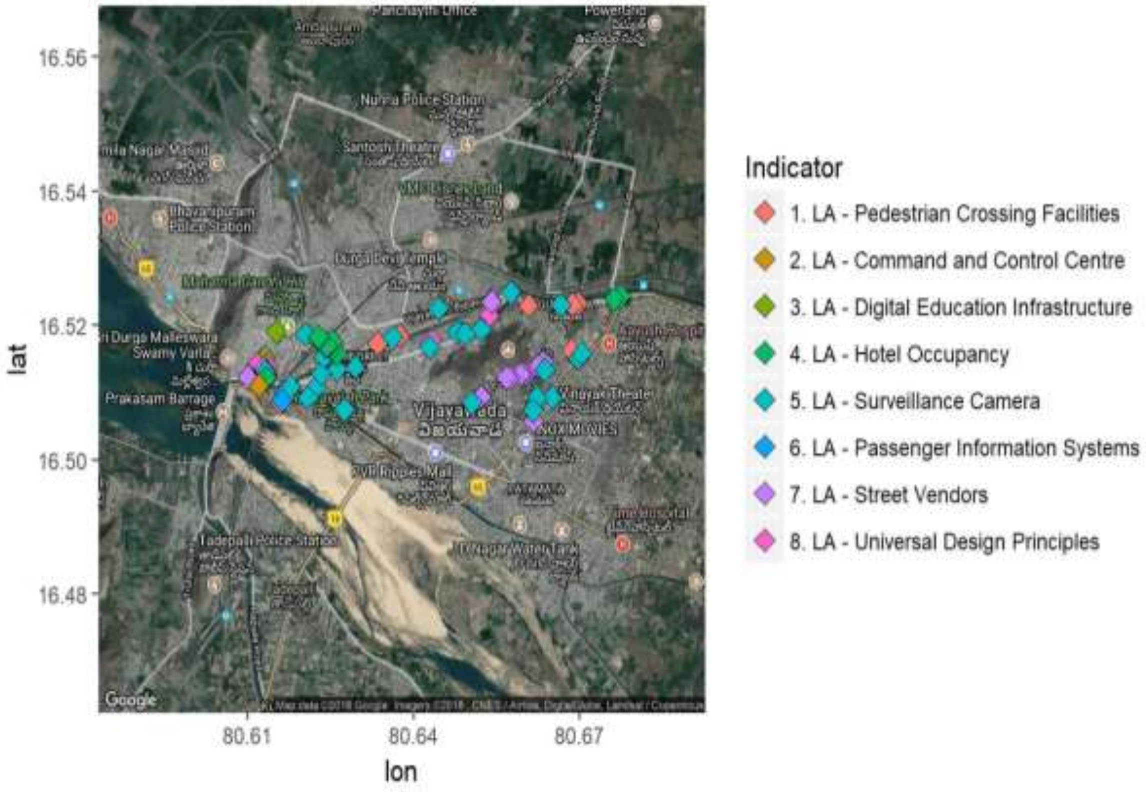
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


16.56
16.54
16.52
16.50
16.48
lat
80.61
80.64
80.67
lon
Nunna Police Station
Santosh Theatre
Bhavanipuram Police Station
Durga Devi Temple
Prakasam Barrage
Vijayawada
PVP Ripples Mall
Tadepalli Police Station
Vinayak Theatre
Google
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles

5. Category wise scores

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	65.17%
Identity & Culture	59%
Education	78%
Health	97%
Safety & Security	42%
Economy & Employment	5%
Housing & Inclusiveness	11%
Public Open Spaces	3%
Mixed Land Use & Compactness	6%
Power Supply	67%
Transport & Mobility	30%
Assured Water Supply	79%
Waste Water Management	87%
Solid Waste Management	87%
Reduced Pollution	79%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT FINAL REPORT

Ministry of Housing and Urban Affairs
Government of India

VISAKHAPATNAM

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection,

timelines, expectations of support and support extended by MoHUA. The state level workshops brought various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78

#	Challenges	Proposed Solutions
	collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be possible in the short window.	indicators.
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

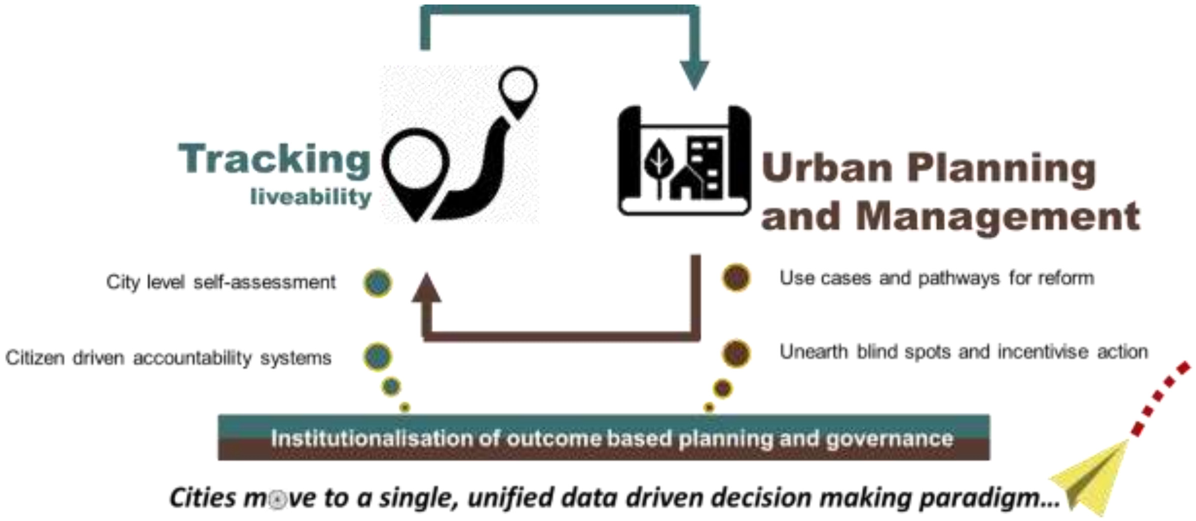
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

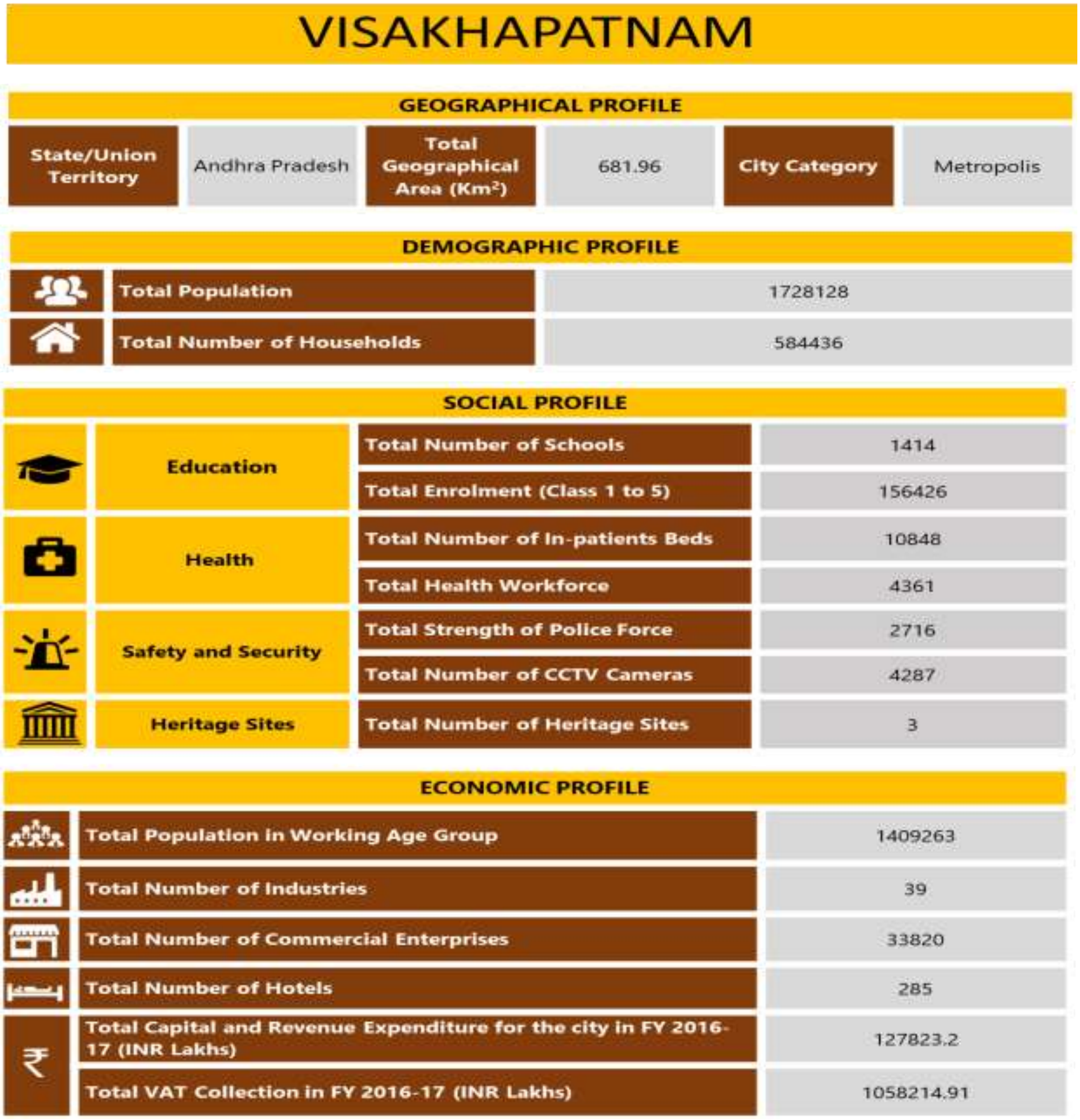
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



VISAKHAPATNAM

GEOGRAPHICAL PROFILE

State/Union Territory	Andhra Pradesh	**Total Geographical Area (Km²)**	681.96	**City Category**	Metropolis

DEMOGRAPHIC PROFILE

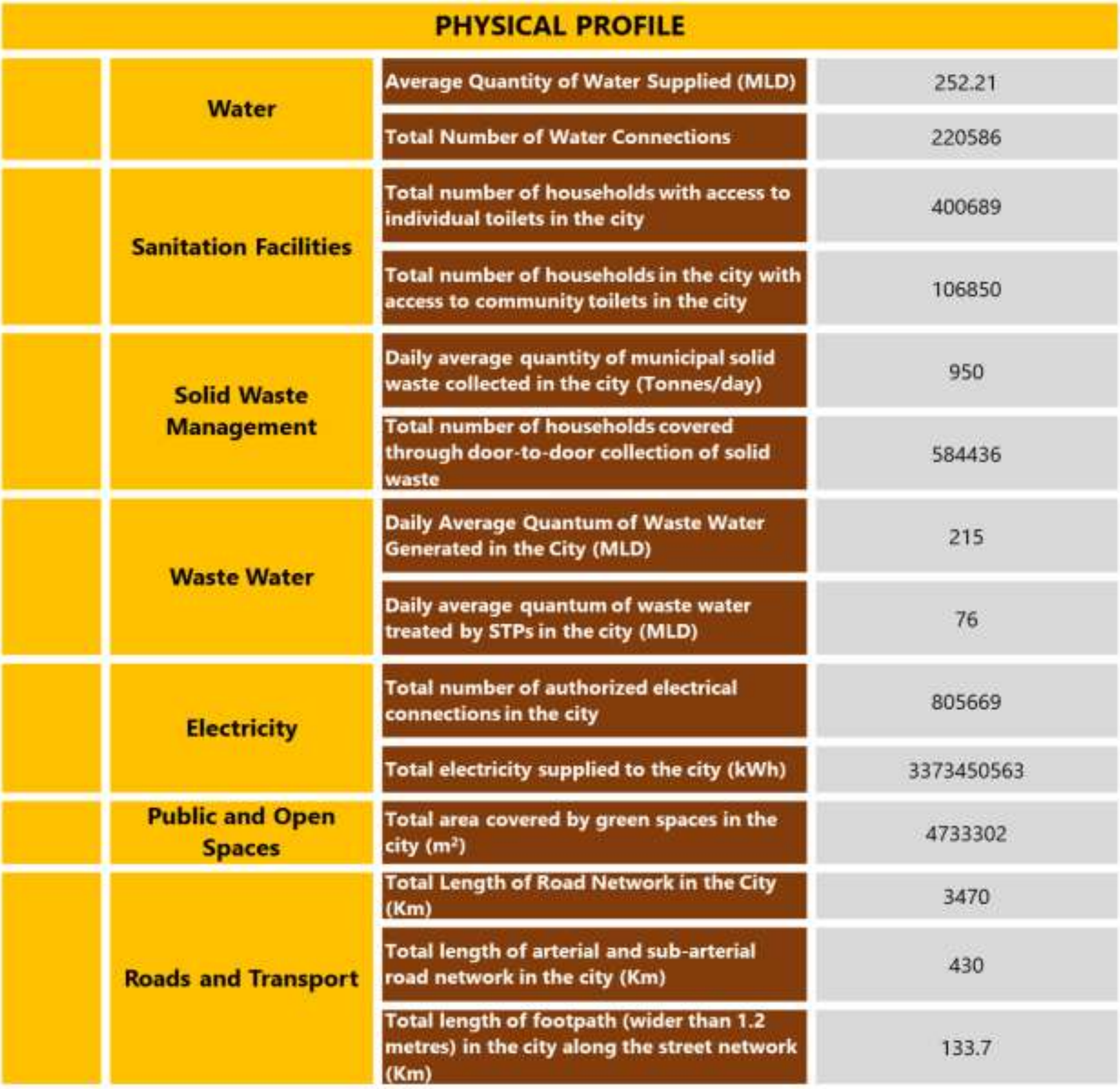
Total Population	1728128
Total Number of Households	584436

SOCIAL PROFILE

Education	**Total Number of Schools**	1414
	Total Enrolment (Class 1 to 5)	156426
Health	**Total Number of In-patients Beds**	10848
	Total Health Workforce	4361
Safety and Security	**Total Strength of Police Force**	2716
	Total Number of CCTV Cameras	4287
Heritage Sites	**Total Number of Heritage Sites**	3

ECONOMIC PROFILE

Total Population in Working Age Group	1409263
Total Number of Industries	39
Total Number of Commercial Enterprises	33820
Total Number of Hotels	285
Total Capital and Revenue Expenditure for the city in FY 2016-17 (INR Lakhs)	127823.2
Total VAT Collection in FY 2016-17 (INR Lakhs)	1058214.91



PHYSICAL PROFILE			
	Water	**Average Quantity of Water Supplied (MLD)**	252.21
		Total Number of Water Connections	220586
	Sanitation Facilities	**Total number of households with access to individual toilets in the city**	400689
		Total number of households in the city with access to community toilets in the city	106850
	Solid Waste Management	**Daily average quantity of municipal solid waste collected in the city (Tonnes/day)**	950
		Total number of households covered through door-to-door collection of solid waste	584436
	Waste Water	**Daily Average Quantum of Waste Water Generated in the City (MLD)**	215
		Daily average quantum of waste water treated by STPs in the city (MLD)	76
	Electricity	**Total number of authorized electrical connections in the city**	805669
		Total electricity supplied to the city (kWh)	3373450563
	Public and Open Spaces	**Total area covered by green spaces in the city (m^2)**	4733302
	Roads and Transport	**Total Length of Road Network in the City (Km)**	3470
		Total length of arterial and sub-arterial road network in the city (Km)	430
		Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	133.7

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	2. Identity and Culture	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases

Pillars of Comprehensive Development	Category	Indicators
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	6. Economy and Employment	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	7. Housing and Inclusiveness	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport

Pillars of Comprehensive Development	Category	Indicators
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste Management	14.1 Household level coverage of municipal solid waste collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

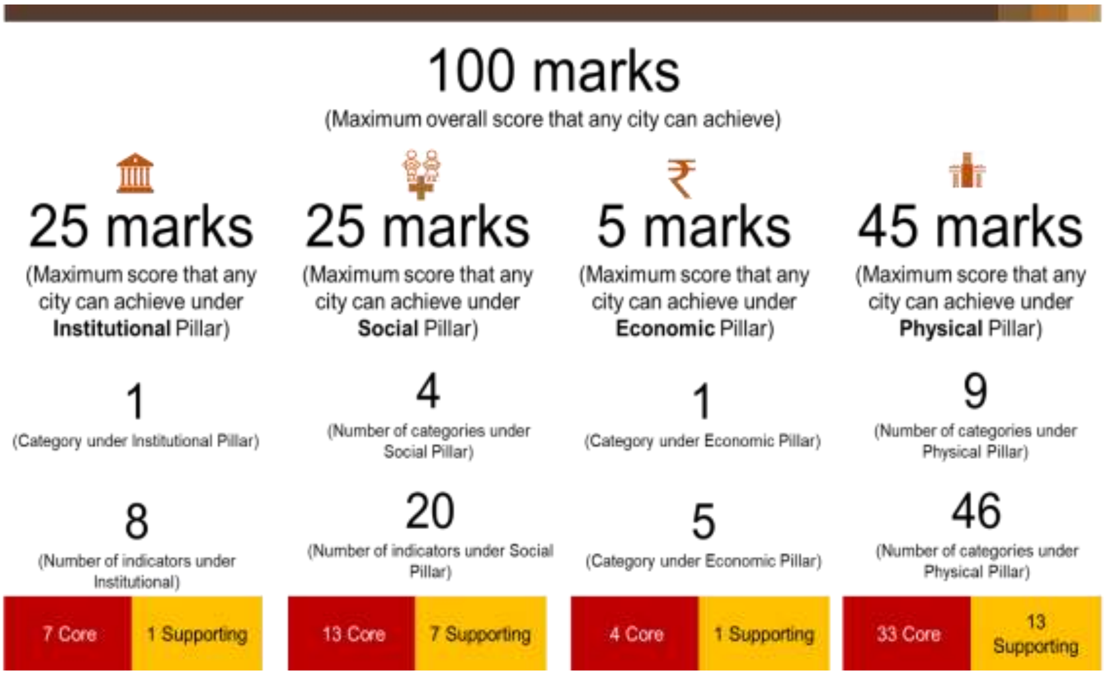
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.



100 marks

(Maximum overall score that any city can achieve)

25 marks	25 marks	5 marks	45 marks
(Maximum score that any city can achieve under **Institutional** Pillar)	(Maximum score that any city can achieve under **Social** Pillar)	(Maximum score that any city can achieve under **Economic** Pillar)	(Maximum score that any city can achieve under **Physical** Pillar)
1	4	1	9
(Category under Institutional Pillar)	(Number of categories under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
8	20	5	46
(Number of indicators under Institutional)	(Number of indicators under Social Pillar)	(Category under Economic Pillar)	(Number of categories under Physical Pillar)
7 Core 1 Supporting	13 Core 7 Supporting	4 Core 1 Supporting	33 Core 13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to "maximum within the comparison group" or "absolute benchmarks". For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring. The list of benchmarks is presented in Annexure 1.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled

in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Accounts , Revenue and Audit departments
Urban Local Body	For Park and Recreation Related Questions	Assistant Director, Horticulture, Director of Sports& Town Planning
Urban Local Body	For Water Supply and Drainage related questions	Engineering Department(Water supply & projects)
Urban Local Body	For Heritage sites related data	Archaeological Department, Town Planning & Visakhapatnam Urban Development Authority.
Urban Local Body	For Ecological sites related data	Archaeological Department, Town Planning & Visakhapatnam Urban Development Authority.
Urban Local Body	For Housing related data	Urban Community Development, Town Planning
Urban Local Body	For Building plan related data	Town Planning Department & Visakhapatnam urban Development Authority
Urban Local Body	For Roads related data	Engineering-Public Works, Andhra University GIS team & Low carbon Mobility Plan report.
Urban Local Body	For Solid waste management related data	Public Health Department
Urban Local Body	For IT services related data	Information Technology Department
Urban Local Body	For Vendor committee related data	Urban Community Development
Urban Local Body	Any other departments	IT Department and Administration

Designated data owners	Subcategories	Data owners at city level
	involved in providing data for questions mentioned under Urban Local Body	
Central / state Pollution control Board	Water Quality, Air Quality, Noise Quality	Pollution Control Board
Development Authority	Building Infrastructure	Town planning Department & Visakhapatnam Urban Development Authority (VUDA)
	Construction planning	Town planning Department & VUDA
	Green Building	Town planning Department & VUDA
	Rain water harvesting	Town planning Department & VUDA
	Universal Design Principle	Town planning Department & VUDA
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL)
State Disaster management authority		Addition Commissioner (Projects) District DM Authority,
State Education Department		District Educational Officer
State Health Department	Health care professionals	District Medical & Health Department
	Citizen Services	District Medical & Health Department
	Disease Prevalence	District Medical & Health Department
	Health Infrastructure	District Medical & Health Department
State Renewable Energy Development Agency	Renewable Energy	National Renewable Energy Corporation Limited
State Sales / Commercial Taxes Department		Deputy Commercial tax Department
Town and Country Planning Department	Land Use	Town Planning Department.
Traffic and Police Department		Office of Commissioner of Police.
Transport Authorities	Buses	Road Transport Authority
	Registered Vehicles	Road Transport Authority
	Sub urban rail transport	-
	Mono Rail Authority	-
	Tramways	-
	Marine Transport Authority	-

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 77 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	1
State Education Department	2
DISCOM/Electricity Department	1
Traffic and Police Department	3
Development Authority	0
Pollution Control Board	6
State Renewable Energy Department	0
Town and Country Planning	0
State Health Department	1
Transport Authority	10
Disaster Management	0
Urban Local Body	53
Total	77*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team

to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

1.2 | Percentage of services integrated through Command Centre

2.3 | Hotel occupancy

3.4 | Percentage of schools with access to digital education

5.1| Number of streets, public places, junctions covered through surveillance systems

6.5 | Percentage of vendors registered and provided formal spaces

11.7 | Availability of Passenger Information System

11.11 | Percentage of traffic intersections with pedestrian crossing facilities

11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate

11.3 | Mode share of public transport

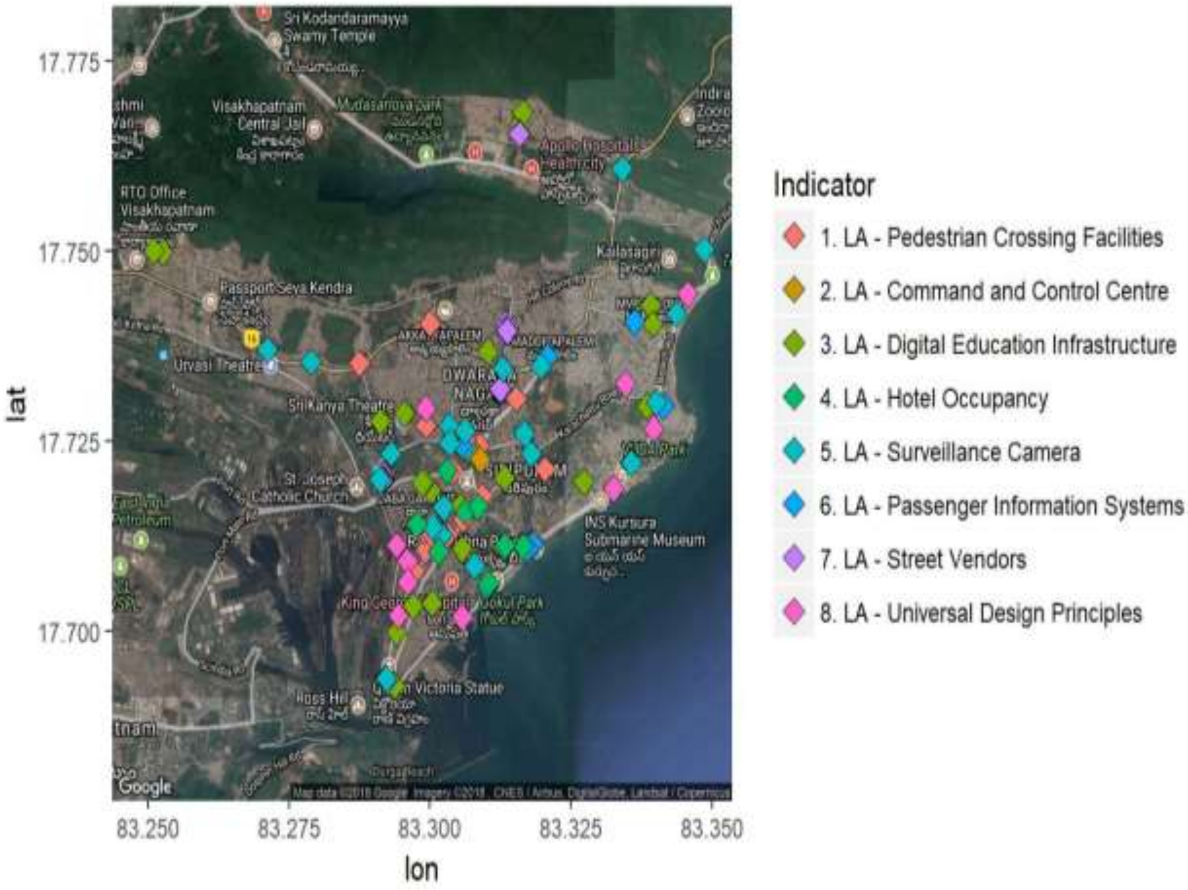
11.5 | Mode share of Non Motorized Transport

12.3 | Quality of Water Supplied

15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


17.775
17.750
17.725
17.700
lat
83.250
83.275
83.300
83.325
83.350
lon
Indicator
1. LA - Pedestrian Crossing Facilities
2. LA - Command and Control Centre
3. LA - Digital Education Infrastructure
4. LA - Hotel Occupancy
5. LA - Surveillance Camera
6. LA - Passenger Information Systems
7. LA - Street Vendors
8. LA - Universal Design Principles
Sri Kodandaramayya Swamy Temple
Visakhapatnam Central Jail
Mudasarlova park
Apollo Hospitals Healthcity
RTO Office Visakhapatnam
Passport Seva Kendra
Kailasagiri
Urvasi Theatre
AKKAYYAPALEM
DWARAKA NAGAR
Sri Kanya Theatre
St. Joseph Catholic Church
INS Kursura Submarine Museum
Gokul Park
King George
Ross Hill
Victoria Statue
Google
Map data ©2018 Google Imagery ©2018 , CNES / Airbus, DigitalGlobe, Landsat / Copernicus

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	**Scores in Percentage**
Governance	59.52%
Identity & Culture	22%
Education	82%
Health	90%
Safety & Security	65%
Economy & Employment	11%
Housing & Inclusiveness	1%
Public Open Spaces	36%
Mixed Land Use & Compactness	0%
Power Supply	48%
Transport & Mobility	34%
Assured Water Supply	79%
Waste Water Management	74%
Solid Waste Management	67%
Reduced Pollution	60%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

LIVEABILITY ASSESSMENT
FINAL REPORT

Ministry of Housing
and Urban Affairs
Government of India

WARANGAL

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Executive Summary

Assessment of liveability indices is an initiative by the Ministry of Housing and Urban Affairs to improve quality of life of citizens and achieve sustainable development goals by encouraging cities to adopt "outcome based" approach for urban planning. Assessment process aimed to provide opportunity to cities to review the development components holistically by involving 79 measurable indicators categorized under governance, health, education, safety, economy, power supply, transportation and mobility, identity, culture, housing, waste management and pollution.

This report highlights the assessment process, key milestones, and the final outcome of the data submitted. Implementation of liveability assessment commenced formally on 19th January 2018. A national level workshop was organized on 13th February 2018 to explain the importance and process of liveability assessment and get feedback on methodology from the city authorities.

This was followed by the next stage of Questionnaire development. The questionnaire was arranged under 12 categories representing 12 data owners namely urban local body, Central and state pollution control board, development authority, DISCOM/Electricity board, State disaster management authority, state education department, state health department, state renewable energy development agency, state sales and commercial taxes department, town and country planning department, traffic and police department and transport authorities.

An online data entry portal was developed to facilitate data submission by the cities. Each city had a unique log in to access the portal and submit the data. Both online and off-line options (download the questionnaire in an excel) to submit the data were available for cities. An email help desk was set up for the cities to raise any queries and seek clarification when responding to the questions.

A team for each state comprising of State Coordinator and City Coordinator (one per city) was deployed that facilitated the process and supported the cities. A total of 6 regional coordinators/ consultants, 29 State Coordinators, and 99 city coordinators were deployed across 116 cities. Training for state coordinators was held from 26th to 28th February 2018 at Chennai to make coordinators understand overall liveability assessment, indicators, data sources, protocols and roles and responsibilities.

City Reconnaissance Meetings were initiated by the state and city coordinators. The discussion began with discussions to finalize the state workshop schedule, mapping of data owners, and assist cities in data collection. The City Coordinators were based in the cities for over 6 weeks and during this time, they liase with ULB and other data owners to explain the liveability framework, online portal, and facilitate the online submission.

A total of 33 state workshops were conducted at the state level. The objective of the workshop was to orient the city stakeholders on liveability assessment, indicators, components of data collection, timelines, expectations of support and support extended by MoHUA. The state level workshops brought

various city level departments on a single platform to understand and discuss the methodology and components of city liveability assessment.

Nodal agency at state level supported by the City and State Coordinator and city level (Municipality corporation/smart city limited) coordinated with city specific data owners/departments for data gathering, collation, and submission. Nodal persons in each department were appointed for timely data collection and submission. Of 116, 112 cities submitted data as per the timeline on 16th April 2018.

Post submission, the city and state coordinators supported by the central team followed up extensively with the cities to support secondary documents as evidence to substantiate their submissions. Secondary documents such as reports, official orders, copy of office register, signed copy of liveability assessment questionnaire furnished by cities against the submitted data. Documents are verified to map the documents for the reponses provided by city and to check the type data provided by city. The document check outcomes were shared with the cities as a part of data quality check.

For checking consistency of data, logical check of data, verifying data from other public sources were undertaken. Quality check was done to ensure data validity and provide opportunity to cities to review the data provided by them and correct in case of wrong data entry.

For 8 selected indicators namely, percentage of services integrated through command and control center, hotel occupancy rate, percentage of schools with access to digital education, number of CCTV cameras per unit road length, percentage of vendors registered and provided formal spaces, availability of passenger information system, percentage of traffic intersection with pedestrian crossing facility, and extent to which universal accessibility is incorporated in public rights of way. Physical audit was conducted in 110 cities by physical auditors appointed and trained by the consortium. In consultation with ULB nodal person, locations and indicators for physical audit was selected in each city. A mobile based application was developed to capture the physical audit related data.

Primary data collection was done for five indicators such as unemployment rates, mode share of public transport, mode share of non-motorized transport, quality of water supplied, and level of noise pollution. Protocols for water and noise test were prepared in consultation with experts. Water quality test involved physical, chemical and bacteriological test of water as per the CPCB norms. For testing quality of water at consumer end, the auditors worked closely with the ULB and Water department. Samples were collected from consumer end and submitted to the lab suggested by city. For noise pollution, in about 20 cities the state pollution board or city level environment department took the responsibility for providing noise pollution data as per the protocols. In rest of the cities, mobile based application was used to measure noise pollution.

During implementation, MoHUA facilitated the process by conducting video conferences with cities to address any queries, reiterate the importance, and ensure that cities adequately engages in the process and submit their responses in time and respond to requests for clarifications.

In addition to secondary data collection, physical audit and primary data collection, citizen survey was conducted to understand their perception and level of satisfaction on various services such as health, education, water supply, electricity, waste management etc. provided by urban local bodies. Over 60000 citizens participated in the survey across India.

The final scores and ranks have been generated based on the scoring methodology that has been discussed extensively and minor modifications made that are summarized as below:

#	Challenges	Proposed Solutions
1	Only 23 cities of 111 cities have City Mobility Plan (CMP) or any and hence able to provide data for Mode Share of Public Transport and Non-Motorised Transport. To address the data gap, as advised by the MoHUA, the consortia undertook a sample dipstick across all cities covering a sample of 150 Households. Understandably, the dipstick findings will not match the rigor of a CMP.	We recommend the following: 1) Cities which have provided CMP Data will be evaluated on 100% of the maximum score 2) For the cities where the dipstick data is used, the city receives a 50% discount on the overall score Alternatively, another approach is to assign 0 score to all 88 cities that don't have a CMP
2	Variance was observed on data reported by cities on road network and data presented in the smart city proposals during the verifications.	We recommend taking the data reported by the cities in the Smart City Proposals.
3	There is no secondary source/ organization that provides unemployment data at city level. As a result, most cities do not have the data. Fully cognizance of the challenges of generating this data in a short span of time, it was agreed to collect this data through a dipstick survey on lines of NSSO questions. The data generated needs further scrutiny and triangulation with some inputs from experts. This may not be	The indicator on unemployment will be excluded from scores. For final ranking, the cities will be scored on 78 indicators.

#	Challenges	Proposed Solutions
	possible in the short window.	
4	Many cities did not have data on noise pollution and it was decided that data will be collected using a mobile app for all the 111 cities. However, many cities have expressed reservations with the approach especially with respect to the reliability of using this data. Further, some cities have relied on the SPCB to collect the data as per the approach proposed by the consortia. Thus, noise pollution data is currently from two sources: 1. SPCB- 20 cities 2. Noise-based app- 91 cities	The data collected through the primary survey will be used for scoring the cities. Currently, there is no differential scoring for the data from the SPCB and the data collected through the mobile app. However, a certain higher weightage can be provided to those cities which used the state apparatus to collect noise pollution data.
5	For the indicator on quality of water supplied, the methodology document states that samples should be drawn both at the treatment plant outlet as well as the consumer end. However, the data provided by the cities were predominantly from the distribution point. Hence for consumer end results with MoHUA intervention, consortia coordinated with cities to collect the data at the consumer end. The cities facilitated the testing. The outcome of the process is as below: 1. Sample given- 102 cities 2. Report received- 86 cities 3. Report awaited- 16 cities 4. Tests not completed due to lack of cooperation and other reasons – 9	The maximum score for this indicator will be distributed equally (50%) for results based on samples from the treatment plant and consumer end. Cities that did not complete tests or provide the results will be given a score 0 for against consumer end tests.
6	City level population is not projected annually by most of the cities. So, estimates for 2017 population are not available with the cities.	As recommended by MoHUA, 2011 census population is being used for the ranking purpose.

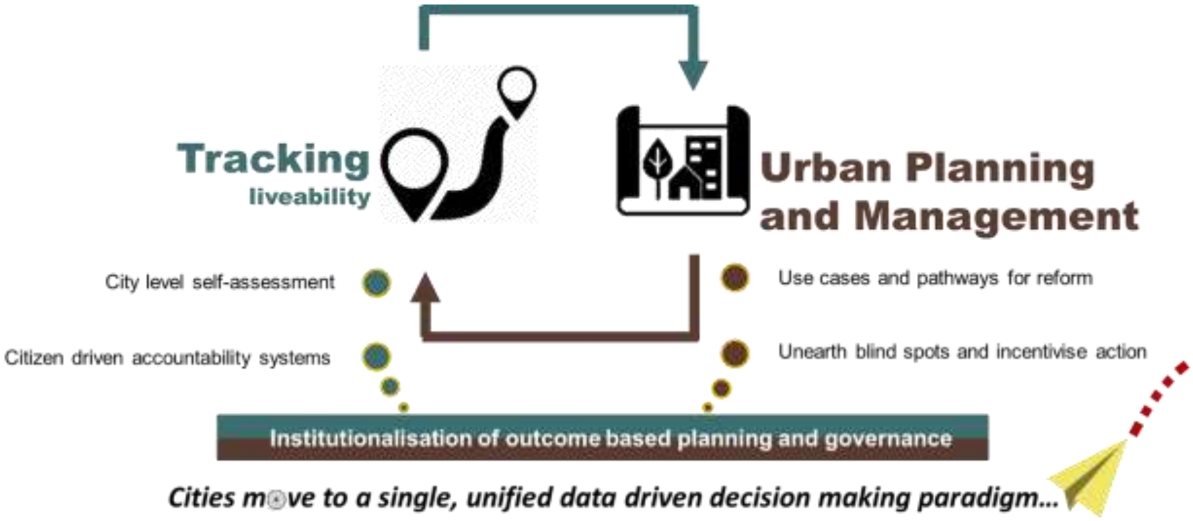
#	Challenges	Proposed Solutions
7	The age category specific data for 9 cities is not available at a city level	The age category specific population data has been taken at a district level for these cities.
8	Indicators on non-motorised transports like- Dedicated bicycle tracks, bicycle parking facilities and mode share of non-motorised transport are not relevant for hilly terrains.	As discussed during the PMC meeting, these indicators have been treated as non-applicable for the hilly cities and the weights have been redistributed among other indicators within the same category.
9	The indicator on increase in professional tax is not relevant to cities which do not levy the professional tax.	As discussed during the PMC meeting, this indicator has been non-applicable to the cities belonging to states where professional tax is not levied, and the weights have been redistributed among other indicators within the same category.
10	The indicator on increase in VAT collection is not applicable to Port Blair and Kavaratti, as there was no provision of VAT collection in these cities.	As discussed during the PMC meeting, these indicatosr has been treated as non-applicable for these two cities and the weights have been redistributed among other indicators within the same category.
11	Indicator on coverage of basic services to slum households does not concern cities with no slums (notified/ non-notified.	As discussed during the PMC meeting, this indicators has been treated as non-applicable for these cities and the weights have been redistributed among other indicators within the same category.

1. Introduction

The Ministry of Housing and Urban Affairs (MoHUA) is implementing several flagship urban missions such as the Smart Cities Mission (SCM), Atal Mission for Urban Rejuvenation and Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Housing for All (HFA). Theses mission along with other transformative initiatives of the Government including National Water Mission, Power for All, National Health Mission are aimed at making Indian cities more 'liveable.' The overarching goal of these initiatives is to move from an input-based approach to a 'citizen centric-outcome based' assessment of urban liveability.

To develop a common minimum framework for cities to assess their existing status and chart their pathway towards providing a better quality of life to their citizens, the MoHUA developed a set of 'Liveability Standards' relevant to cities to generate a Liveability Index and ranking of cities. These standards were launched in June, 2017. The MoHUA has planned to conduct an 'Annual Assessment of Liveability Standards in Cities – an ambitious national project that will involve yearly submission of data by cities across the various indicators, compilation and analysis, development of indices and ranking of cities. The Liveability Index is envisioned as a 360° tool for tracking, planning and transforming Indian cities. The Liveability Index is aimed at the following objectives:

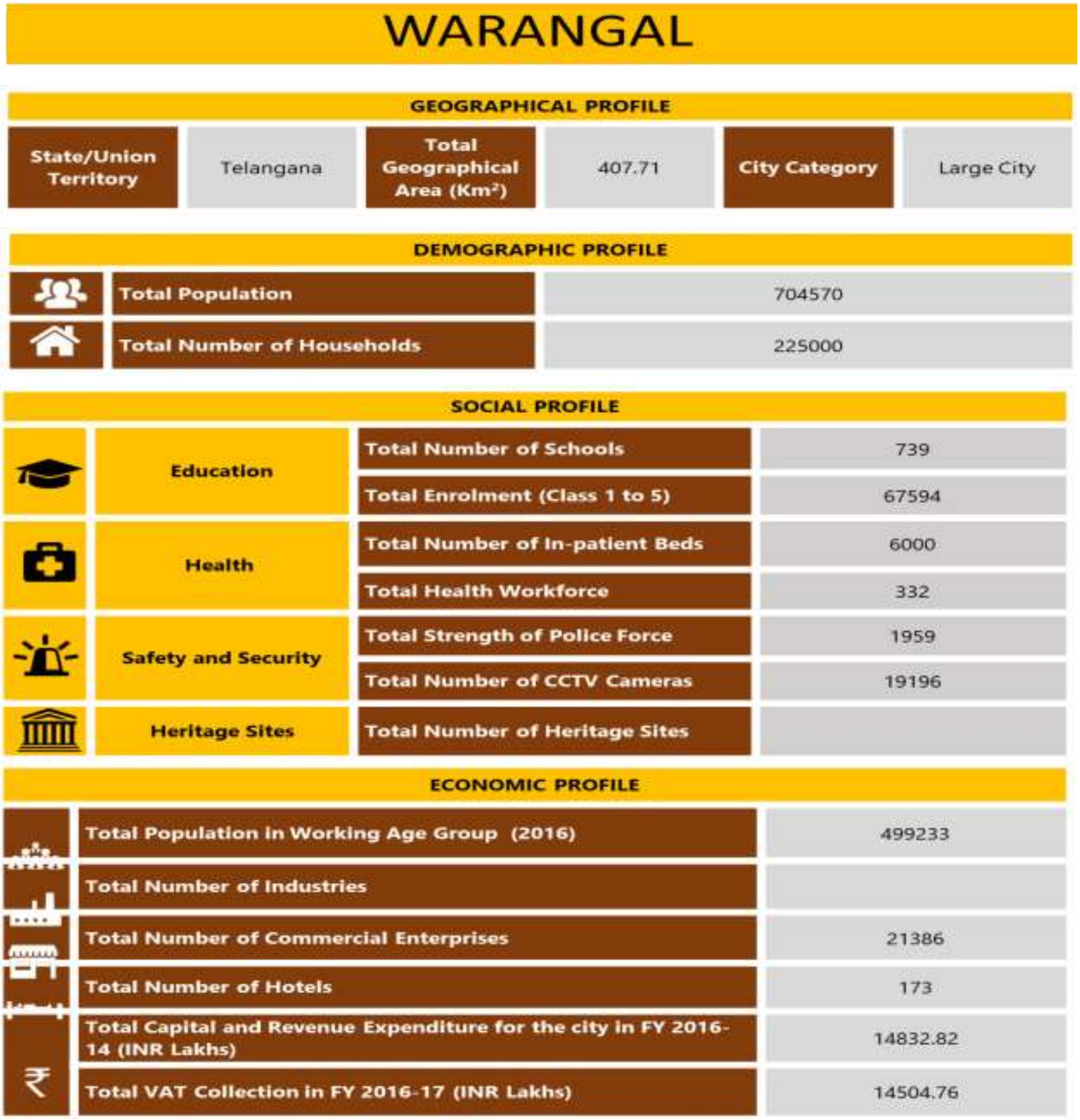
- Providing strong evidence-based approach for future interventions and investments to deliver liveability outcomes
- Catalysing actions to improve the overall quality of the city's liveability and achieve broader development outcomes including the Sustainable Development Goals
- Assessing the implementation of government policies and schemes governing characteristics of cities that can contribute to creating liveable communities


Tracking
liveability
Urban Planning
and Management
City level self-assessment
Citizen driven accountability systems
Use cases and pathways for reform
Unearth blind spots and incentivise action
Institutionalisation of outcome based planning and governance
Cities move to a single, unified data driven decision making paradigm...

The first round of the assessment commenced in January 2018 covering 116 major cities including smart cities, capital cities and cities with population of above one million each. Implementation of the liveability assessment commenced in January 2018 with a national level orientation workshop for the urban local bodies. The workshop aimed at orienting the states and urban local bodies on the overall framework, indicators, data sources, methodology and key milestones and timelines involved in the liveability assessment. Subsequently, a series of State/ Union Territory level orientation workshops were carried out in 33 states/UTs for a detailed discussion on the framework. Online data collection commenced from 9th March through an online data collection platform that supported both online and offline data submission modes. On the date of closure of the online data entry portal i.e., 16th April, 2018 112 cities submitted their data. Subsequently, comprehensive checks on the submitted data was undertaken that involved checking for outliers, logical inconsistencies etc. post which round-1 of data reconciliation was conducted. This draft report is based on round-1 of reconciled data as on 28th April, 2018.

2. City Profile

This chapter presents the city profile -Geographic and Demographic, Social (Education Health, Safety and Security, Heritage), Economic profile, and Physical (Water, sanitation and Waste Management, Electricity, Open space and roads).



WARANGAL

GEOGRAPHICAL PROFILE

State/Union Territory	Telangana	Total Geographical Area (Km²)	407.71	City Category	Large City

DEMOGRAPHIC PROFILE

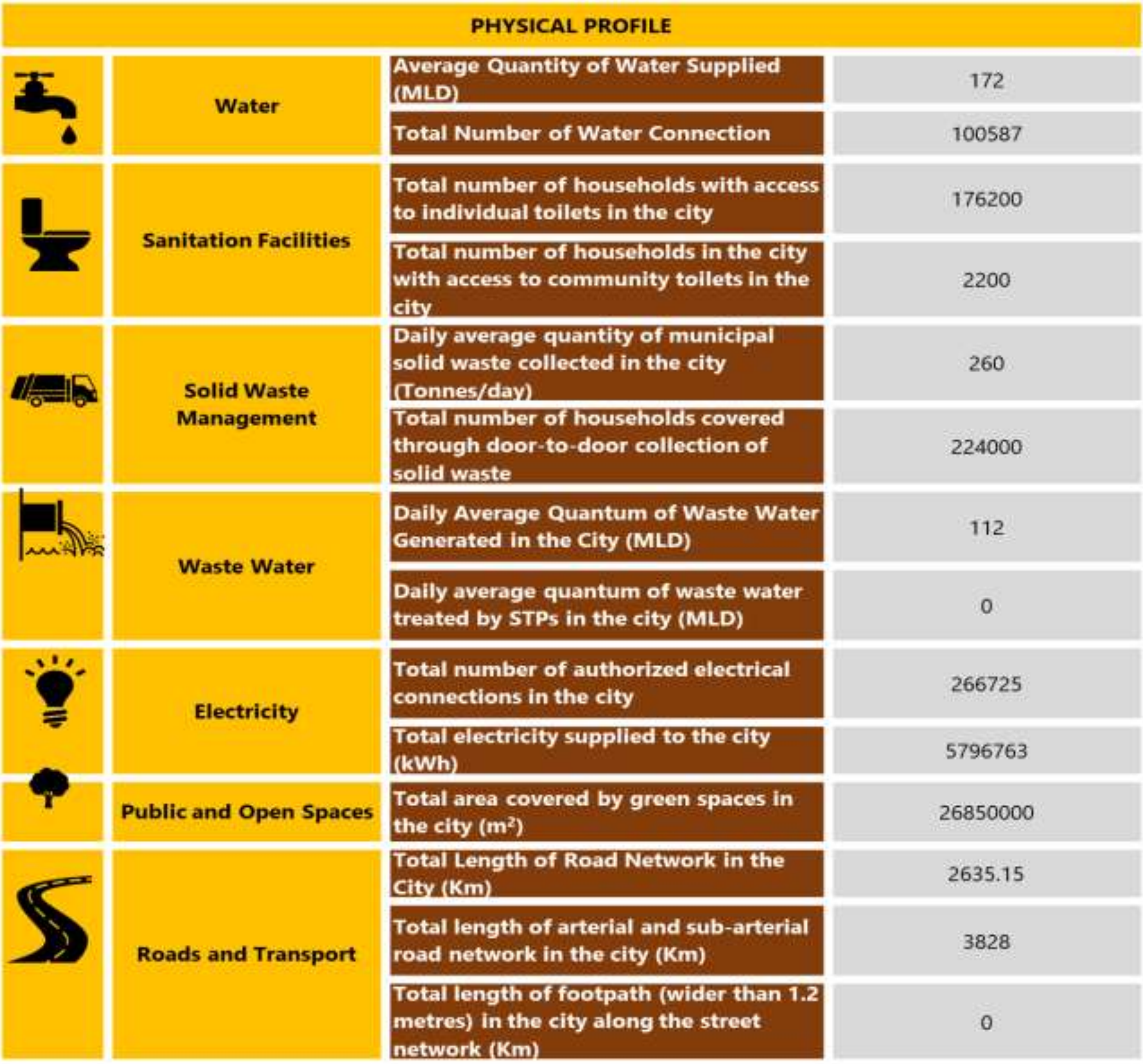
Total Population	704570
Total Number of Households	225000

SOCIAL PROFILE

Education	Total Number of Schools	739
	Total Enrolment (Class 1 to 5)	67594
Health	Total Number of In-patient Beds	6000
	Total Health Workforce	332
Safety and Security	Total Strength of Police Force	1959
	Total Number of CCTV Cameras	19196
Heritage Sites	Total Number of Heritage Sites	

ECONOMIC PROFILE

Total Population in Working Age Group (2016)	499233
Total Number of Industries	
Total Number of Commercial Enterprises	21386
Total Number of Hotels	173
Total Capital and Revenue Expenditure for the city in FY 2016-14 (INR Lakhs)	14832.82
Total VAT Collection in FY 2016-17 (INR Lakhs)	14504.76



PHYSICAL PROFILE		
Water	Average Quantity of Water Supplied (MLD)	172
	Total Number of Water Connection	100587
Sanitation Facilities	Total number of households with access to individual toilets in the city	176200
	Total number of households in the city with access to community toilets in the city	2200
Solid Waste Management	Daily average quantity of municipal solid waste collected in the city (Tonnes/day)	260
	Total number of households covered through door-to-door collection of solid waste	224000
Waste Water	Daily Average Quantum of Waste Water Generated in the City (MLD)	112
	Daily average quantum of waste water treated by STPs in the city (MLD)	0
Electricity	Total number of authorized electrical connections in the city	266725
	Total electricity supplied to the city (kWh)	5796763
Public and Open Spaces	Total area covered by green spaces in the city (m^2)	26850000
Roads and Transport	Total Length of Road Network in the City (Km)	2635.15
	Total length of arterial and sub-arterial road network in the city (Km)	3828
	Total length of footpath (wider than 1.2 metres) in the city along the street network (Km)	0

3. Liveability Framework and Indicators

The Liveability Framework comprises a total of 79 indicators (57 Core Indicators and 22 Supporting Indicators). A core indicator carries 70% weightage and a supporting indicator carries 30% weightage. These indicators are grouped under 15 thematic categories which in turn are part of four pillars of comprehensive development of cities i.e., institutional, social, economic and physical. Based on the performance of cities against the various core and supporting indicators, various 'Category Sub-Indexes' and a composite 'City Liveability Index' will be developed for each city.

3.1 Scoring and Computing Category Indices of Liveability

The set of 79 indicators, associated categories and pillars are presented in the table below:

Table 1 List of Pillars, Categories and Indicators

Pillars of Comprehensive Development	Category	Indicators
Institutional	1. Governance	1.1 Percentage of citizen services available online
		1.2 Percentage of services integrated through Command Centre
		1.3 Percentage of citizens using online services
		1.4 Average delay in grievance redressal
		1.5 Tax collected as percentage of tax billed
		1.6 Extent of cost recovery (O&M) in water supply services
		1.7 Capital spending as percentage of total expenditure
		1.8 Percentage of population covered under Ward Committees/Area *Sabhas*
Social	**2. Identity and Culture**	2.1 Restoration and reuse of historic buildings
		2.2 Percentage of ecologically important areas covered through projects for restoration
		2.3 Hotel occupancy
		2.4 Percentage of budget allocated towards cultural/sports activities
		2.5 Number of cultural/sports events hosted by city
	3. Education	3.1 Percentage of school-aged population enrolled in schools
		3.2 Percentage of female school-aged population enrolled in schools

Pillars of Comprehensive Development	Category	Indicators
		3.3 Primary education student-teacher ratio
		3.4 Percentage of schools with access to digital education
		3.5 Percentage of students completing primary education
		3.6 Percentage of students completing secondary education
	4. Health	4.1 Number of in-patient hospital beds per 10,000 population
		4.2 Healthcare professionals per 10,000 population
		4.3 Average response time in case of health emergencies
		4.4 Period prevalence of water borne diseases
		4.5 Period prevalence of vector borne diseases
	5. Safety and Security	5.1 Number of CCTV Cameras
		5.2 Number of recorded crimes per lakh population
		5.3 Extent of crimes recorded against women, children and elderly per year
		5.4 Transport-related fatality per lakh population
Economic	**6. Economy and Employment**	6.1 Increase in VAT/GST collection
		6.2 Increase in collection of Professional Tax
		6.3 Increase in issuance of Construction permits
		6.4 Unemployment rate
		6.5 Percentage of vendors registered and provided formal spaces
Physical	**7. Housing and Inclusiveness**	7.1 Percentage of Slum/EWS households covered through formal/affordable housing
		7.2 Percentage of slum areas covered through basic

Pillars of Comprehensive Development	Category	Indicators
		services
	8. Public Open Spaces	8.1 Per capita availability of green spaces
		8.2 Per capita availability of public and recreational places
	9. Mixed Land Use and Compactness	9.1 Share of mixed land use area in overall city land use
		9.2 Net Density
	10. Power Supply	10.1 Percentage of city population with authorized electrical services
		10.2 Percentage of electrical connections covered through smart meters
		10.3 Average number of electrical interruptions per year
		10.4 Average length of electrical interruptions per year
		10.5 Percentage of total energy derived from renewable sources
		10.6 Energy consumption per unit - water supply and sewerage
		10.7 Energy consumption per unit - street lighting
		10.8 Percentage of new and redeveloped buildings following green building norms
		10.9 Total energy consumption per capita
	11. Transportation and Mobility	11.1 Geographical coverage of public transport
		11.2 Availability of public transport
		11.3 Mode share of public transport
		11.4 Percentage of road network with dedicated bicycle tracks
		11.5 Percentage of interchanges with bicycle parking

Pillars of Comprehensive Development	Category	Indicators
		facilities
		11.6 Mode share of non-motorized transport
		11.7 Availability of Passenger Information System
		11.8 Extent of signal synchronization
		11.9 Availability of paid parking spaces
		11.10 Percentage coverage of footpaths – wider than 1.2 m
		11.11 Percentage of traffic intersections with pedestrian crossing facilities
		11.12 Extent to which universal accessibility is incorporated in public rights-of-way
	12. Assured Water Supply	12.1 Household level coverage of direct water supply connections
		12.2 Per capita supply of water
		12.3 Quality of water supplied
		12.4 Level of non-revenue water – NRW
		12.5 Percentage of water connections covered through meters
		12.6 Percentage of plots with rainwater harvesting facility
	13. Waste Water Management	13.1 Coverage of toilets
		13.2 Coverage of sewerage network and/or septage
		13.3 Collection efficiency of sewerage network
		13.4 Extent of reuse and recycling of waste water
		13.5 Coverage of storm water drains
	14. Solid Waste	14.1 Household level coverage of municipal solid waste

Pillars of Comprehensive Development	Category	Indicators
	Management	collection
		14.2 Efficiency of collection of municipal solid waste
		14.3 Extent of municipal solid waste recovered through reuse
	15. Reduced Pollution	15.1 Concentration of SO2- air pollution
		15.2 Concentration of NO2- air pollution
		15.3 Concentration of PM10 - air pollution
		15.4 Level of noise pollution
		15.5 Quality of water in public surface water bodies

3.2 Scoring and Computing Category Indices of Liveability

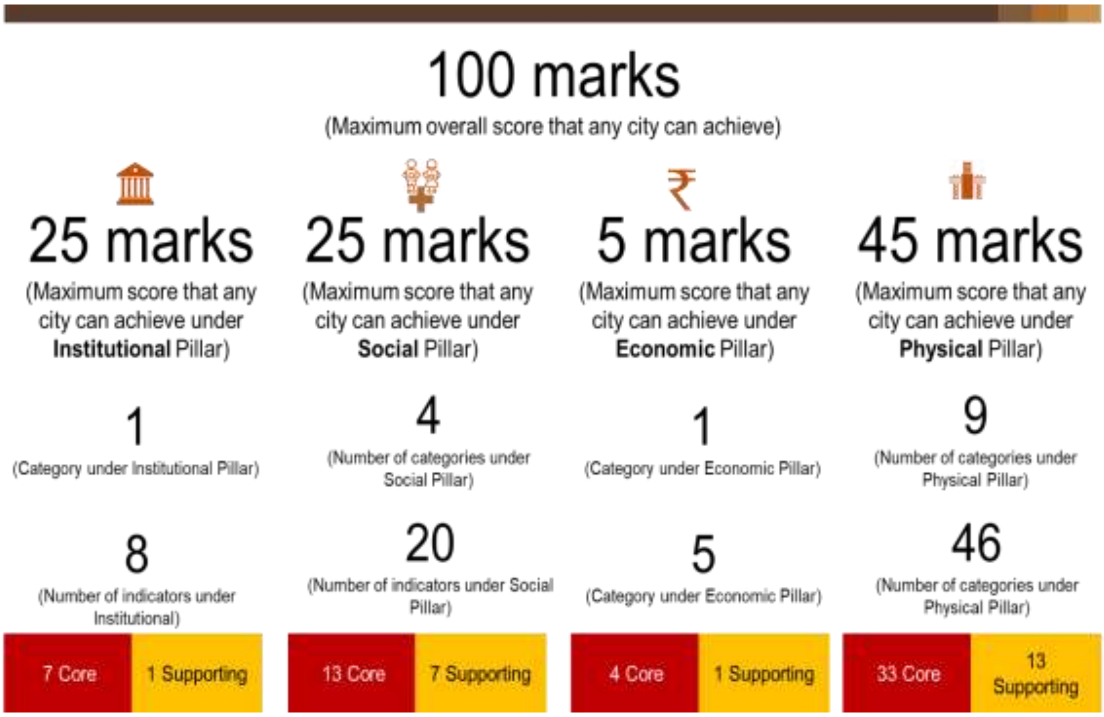
The performance achieved by cities against 79 indicators, will be assessed against given benchmarks. Where no international/national norms are available, city with the best performance in its group (population range) will be treated as a benchmark. The groups are given in the table below.

Table 2 Details on Population Range

Category	Population range
Category 1	Population ≥ 4 million
Category 2	1 million ≤ Population < 4 million
Category 3	0.5 million ≤ Population < 1 million
Category 4	Population < 0.5 million

3.3 Scoring Approach and Methodology

A city can earn a maximum score of 100 points for 79 indicators across four pillars. The pillar weights are as follows: Institutional (25 points), Social (25 points), Economy and Employment (5 points) and Physical (45 points). Based on the number and nature of indicators i.e., core vs. secondary, indicator wise maximum marks were computed.


100 marks
(Maximum overall score that any city can achieve)
25 marks
(Maximum score that any city can achieve under Institutional Pillar)
25 marks
(Maximum score that any city can achieve under Social Pillar)
5 marks
(Maximum score that any city can achieve under Economic Pillar)
45 marks
(Maximum score that any city can achieve under Physical Pillar)
1
(Category under Institutional Pillar)
4
(Number of categories under Social Pillar)
1
(Category under Economic Pillar)
9
(Number of categories under Physical Pillar)
8
(Number of indicators under Institutional)
20
(Number of indicators under Social Pillar)
5
(Category under Economic Pillar)
46
(Number of categories under Physical Pillar)
7 Core
1 Supporting
13 Core
7 Supporting
4 Core
1 Supporting
33 Core
13 Supporting

Dimensional Index Methodology (DIM) has been used to compute scores for each indicator with reference to “maximum within the comparison group” or “absolute benchmarks”. For indicators where benchmarks are available, cities getting the benchmark score (or above) are given the maximum mark, and the marks awarded to other cities are calculated proportionately. For indicators where benchmarks are not available, the best performing cities in each population group are given the maximum mark, and the marks awarded to other cities (within the population group) are calculated proportionately. For indicators where benchmarks do not exist, the city data has been tested for outliers before scoring.

3.4 Scoring Normalisation:

To construct aggregate scores across cities as well as to make the scores across indicators comparable, indicator values were normalised using a min-max approach. The following formula was used to normalise the indicator values-

$$\frac{indicator\ value\ for\ the\ city - indicator\ value\ for\ the\ worst\ performing\ city}{benchmark - \ indicator\ value\ for\ the\ worst\ performing\ city}$$

This approach would restrict the normalised indicator value between 0 and 1. Cities that met or exceeded the benchmark received a normalised indicator value of 1. Worst performing cities are given a normalised indicator value of 0. After normalisation, the normalised value is weighted according to the category and the indicator being core or supporting.

To illustrate, consider the indicator 12.3 Quality of Water Supplied in the Category 12 for Assured Water Supply. If in City A 50% of the water samples collected qualify the potable water standards specified by the CPHEEO, and only 10% of the samples from worst performing city qualify the standards. Then, the normalised value for the indicator for city A would be 0.44 [(0.5-0.1)/(1-0.1)].

The weight for indicator 12.3 is 1.03, so the final weighted score for City A would come out to 0.45 [1.03*0.44].

4. Data Collection and Verification

4.1 Submission of Data by the cities

The Liveability Assessment is based on secondary data submitted by the urban local bodies and other concerned government agencies (collectively called as data owners). The 79 indicators were broken down into a set of easy to understand and relatable 553 questions mapped to data owners. Submission of the data was enabled through an online data entry portal on the smartnet platform of the Ministry. The portal also allowed the ULBs to download the liveability assessment questionnaire and upload filled in questionnaire. To familiarise and assist cities in identifying, mapping and collation of data points, a city level nodal person was available during the entire period of data submission process.

4.2 Mapping of Data Owners for the City

For the assessment of liveability indices broadly 12 data owners such as Central/state Pollution control board, Development authority, DISCOM/Electricity Board, State Disaster Management Authority, State Education Department, State Health department, State Renewable energy and development agency, State sales and commercial taxes department, town and country planning department, Traffic and police department, Transport authority, and Urban local body were identified to respond to the questions on the portal. However, during state workshop and subsequent city level discussions, more data owners were mapped to respond to different categories and sub categories. The following table provides the details of city level data owners mapped under the 12 data owner.

Table 3:Details of Data Owners

Designated data owners	Subcategories	Data owners at city level
Urban Local Body	For Accounts Related Questions	Administration wing c1 Greater Warangal municipal corporation
Urban Local Body	For Park and Recreation Related Questions	Town planning wing Greater Warangal municipal corporation
Urban Local Body	For Water Supply and Drainage related questions	Engineering section Greater Warangal municipal corporation
Urban Local Body	For Heritage sites related data	ENGINEERING
Urban Local Body	For Ecological sites related data	ENGINEERING
Urban Local Body	For Housing related data	
Urban Local Body	For Building plan related data	City planner
Urban Local Body	For Roads related data	engineering
Urban Local Body	For Solid waste management related data	Public health
Urban Local Body	For IT services related data	IT WING
Urban Local Body	For Vendor committee related data	MEPMA
Urban Local Body	Any other departments involved in providing data for questions mentioned under Urban Local Body	ADMINISTRATION
Central / state Pollution control	Water Quality, Air Quality, Noise Quality	ENGINEERING AND

Designated data owners	Subcategories	Data owners at city level
Board		
Development Authority	Building Infrastructure	TOWN PLANNING
	Construction planning	TOWN PLANNING
	Green Building	ENGINEERING
	Rain water harvesting	TOWN PLANNING
	Universal Design Principle	TOWN PLANNING
DISCOM/Electricity Board	Electrical Connection/ Grievance Redressal/ Power supply	ELECTRICAL SUPERENTANDANT
State Disaster management authority		
State Education Department		
State Health Department	Health care professionals	DMHO
	Citizen Services	DMHO
	Disease Prevalence	DMHO
	Health Infrastructure	DMHO
State Renewable Energy Development Agency	Renewable Energy	
State Sales / Commercial Taxes Department		
Town and Country Planning Department	Land Use	TOWN PLANNING
Traffic and Police Department		
Transport Authorities	Buses	
	Registered Vehicles	Road transport authority
	Sub urban rail transport	Not applicable
	Mono Rail Authority	Not applicable
	Tramways	Not applicable
	Marine Transport Authority	Not applicable

4.3 List of secondary documents available as supportive

City has provided supporting documents/evidences against the responses given by city on the online portal. In support of their responses on the portal, city submitted 27 number of documents. Documents submitted includes reports, official orders, copy of data maintained in official register, signed copy of questionnaire, and signed letters/submissions from concern departments. Verification includes mapping of documents against responses given by city, checking the type/category of documents, and validation of data provided.

The following table presents the data owner wise number of documents:

Table 4: Data owner wise number of secondary documents submitted by city

Data Owners	Number of Documents
Sales and Commercial Taxes	0
State Education Department	0
DISCOM/Electricity Department	0
Traffic and Police Department	0
Development Authority	0
Pollution Control Board	4
State Renewable Energy Department	4
Town and Country Planning	0
State Health Department	0
Transport Authority	0
Disaster Management	0
Urban Local Body	19
Total	27*

4.4 Data Verification

A three-stage data quality check comprising verification of data against secondary documents furnished by data owners, logical inconsistency checks including outliers, and physical audit for select indicators (Refer the exhibit below) is being undertaken. The objective of the data quality check is to ensure that data from the source documents are accurate and verifiable. Sources of data included reports, administrative data, survey results and other statistical records, log books among other.

Physical audit of eight indicators – one indicator from the Institutional pillar, one from the Social pillar, one from the Economy pillar and five from the Physical pillar is also being carried out by the field team to ascertain the degree of reliability of data reported by the cities. The list of these eight indicators is presented below:

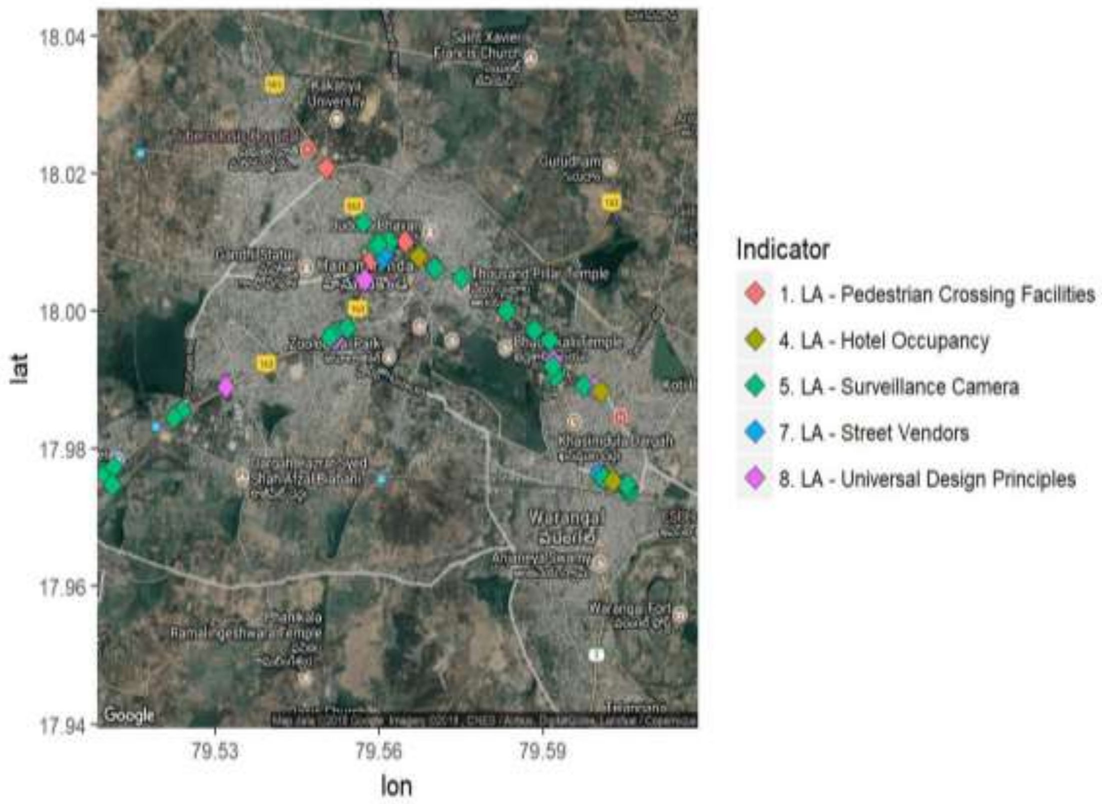
1.2 | Percentage of services integrated through Command Centre
2.3 | Hotel occupancy
3.4 | Percentage of schools with access to digital education
5.1| Number of streets, public places, junctions covered through surveillance systems
6.5 | Percentage of vendors registered and provided formal spaces
11.7 | Availability of Passenger Information System
11.11 | Percentage of traffic intersections with pedestrian crossing facilities
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

For a set of five indicators namely, unemployment rate, mode share of public transport, mode share of non-motorised transport, quality of water supplied and level of noise pollution, existing datasets were found to be not available consistently across all cities and/or were inadequate. To help cities that do not have data on these five indicators, dipstick assessments are being carried to fill data gaps.

6.4 | Unemployment Rate
11.3 | Mode share of public transport
11.5 | Mode share of Non Motorized Transport
12.3 | Quality of Water Supplied
15.4 | Level of Noise Pollution

4.5 Physical Audit

The following map presents the indicators audited at city level.


18.04
18.02
18.00
17.98
17.96
17.94
lat
79.53
79.56
79.59
lon
Saint Xavier Francis Church
Kakatiya University
Gurudham
Thousand Pillar Temple
Warangal
Warangal Fort
Ramalingeshwara Temple
Google
Indicator
◆ 1. LA - Pedestrian Crossing Facilities
◆ 4. LA - Hotel Occupancy
◆ 5. LA - Surveillance Camera
◆ 7. LA - Street Vendors
◆ 8. LA - Universal Design Principles

5. City Score on 15 categories of Assessment

Liveability Assessment covered 15 categories and 78 indicators. The below table presents the scores for all 15 indicators namely governance, identity & culture, education, health, safety and security, economy & employment, housing & inclusiveness, public open spaces, mixed land use & compactness, power supply, transport & mobility, assured water supply, waste water management, solid waste management and reduced pollution.

Table 5: Category wise scores

Categories	Scores in Percentage
Governance	54.85%
Identity & Culture	42%
Education	87%
Health	89%
Safety & Security	58%
Economy & Employment	37%
Housing & Inclusiveness	0%
Public Open Spaces	55%
Mixed Land Use & Compactness	0%
Power Supply	61%
Transport & Mobility	6%
Assured Water Supply	71%
Waste Water Management	29%
Solid Waste Management	65%
Reduced Pollution	75%

The rank of the city is based on the performance and scores in each of the category. The final city rank is submitted separately.

Copies of the Final City Assessment report has been received. The reports have been approved by AS&MD (AMRUT). The final consolidated report of Ease of Living, 2018 has been released by Hon'ble Minister (I/C) of Housing & Urban Affairs on 10.08.2018.

Reema Jain

US (CBUD)

12/10/2018

CBUD

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.

Re: **Contract Reference No: 1554254 –'Assessment of Liveability Indices for 116 cities'- Submission of Final City Assessment Report**

Dear Sir,

We, hereby submit the Final City Assessment Reports for 'Assessment of Liveability Indices for 116 cities' (Contract reference number 1554254). The reports are in line with the report structure approved by the Chairman of the Project Implementation Committee. Each city report contains the following:

1. Executive Summary
2. Introduction, City Profile, Liveability Framework and Indicators
3. City Reconnaissance Meeting: Data Collection and Verification
4. Final Scores

Thank you.

We remain,

Yours sincerely,

29/6/2018

The Reports have to be apprd by JS (AMRUT)

29/6/2018

Name and Title: Parijat Chakraborty, Executive Director-Ipsos Public Affairs
Name of Consultant: Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist Intelligence Unit

pl. put up after the apprd from AMRUT, Divn

CBUD

Ipsos Research Pvt. Ltd.
Registered Office :
Lotus Corporate Park
1701, 17th Floor, F Wing
Off Western Express Highway
Goregaon East, Mumbai - 400063, India
Tel. : +91 22 6620 8000

Branch Office :
301, 3rd floor, Vipul Square
B-Block, Sushant Lok, Part - 1
Gurugram - 122 003, Haryana, India
Tel. : +91 0124 4692400
Fax : +91 0124 4692401

CIN : U74130MH2004PTC146904 I Email : ipsos.india@ipsos.com I Website: www.ipsos.com

Ipsos Research Private Limited

I N V O I C E NO - 18271859

Payment Terms :	60 days
Due Date :	30/09/2018
Invoice Date :	**31/07/2018**
	(1/1)

MINISTRY OF HOUSING AND URBAN AFFAIRS,
GOVERNMENT OF INDIA
202-C, NIRMAN BHAWAN, MAULANA AZAD ROAD,
New Delhi
India
07 Delhi

Company	: Ipsos Research Pvt.Ltd [32002]
Income Tax PAN No.	: AABCI3609K
End Client	: 13920206
Sales Order	: 18000499 S2
Accounting Contact	: IpsosIndiaInvoice@ipsos.com

Purchase Order Number	: NA
Client Contact	: G. Vijay Kumar
Client Tel	: 011 23063217
Client Email	: g.vijaykumar@nic.in

JOB NUMBER	IPSOS SALES REF.	DESCRIPTION	TOTAL	
1709582501 32205	Sharma, Tripti Tel +44 (0) 20 7347 3813 Tripti.Sharma@ipsos.com	HSN code 9983 AssessmentofLiveabilityindices	32,828,460.00	INR

Final 30% invoice on Assessment of Liveability Indices for 116 cities in India

Total Budget Research	109,428,200.00
Already Billed	76,599,740.00
Percentage Billed on this Invoice	30.00%

Invoice Subtotal	32,828,460.00	**INR**
IGST 18.000 %	5,909,122.80	**INR**
Total Amount Due	38,737,582.80	**INR**

Rupees THREE CRORE EIGHTY SEVEN LAC THIRTY SEVEN THOUSAND FIVE HUNDRED EIGHTY TWO AND PAISE EIGHTY ONLY

Ipsos Billing Address:
1701, 17th Floor, F wing Lotus Corporate Park,
off western express highway,
Goregaon east Mumbai - 400 063
27 Maharashtra
India
GSTIN: 27AABCI3609K1ZJ

Remit Payment to

Ipsos Research Pvt.Ltd
Lotus Corporate Park,
1701, 17th Floor, F Wing,
Off Western Express Highway,
Goregoan East,
Mumbai 400 063
India

Payment Details

IFSC Code	: HSBC0400002
Swift Code	: HSBCINBBXXX
Account Number	: 030-777080-001
Bank Name	: HSBC Bank, Mumbai
Bank Address	: Banking Corporation Ltd. Mumbai/ Fort Branch 52/60, M G Road, Mumbai 400001 India

- Please draw cheque in favour of **"Ipsos Research Pvt. Ltd."**
- Payment of this invoice, or correspondence regarding the same may please be forwarded to our **Mumbai Office.**
- Invoices not paid on or before due date will carry interest @ 3% per month.

Registered Office Address :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
CIN: U74130MH2004PTC14694
Phone: +91 22 66208000
Fax: +91 22 66208200
E-Mail: IpsosIndiaInvoice@ipsos.com
Website: www.ipsos.com

This file is signed using Digital Signature.

For Ipsos Research Pvt. Ltd.

Signed by : ANKIT AJMERA
(Personal , CID - 6446641)
Date : 31/Jul/2018 10:35:06
Location :
Reason :

Ankit Ajmera
Sr. Manager - Finance

DESAI SAKSENA & ASSOCIATES
Chartered Accountants

Laxmi Building
1st Floor
Sir P.M. Road, Fort
Mumbai- 400001

Tel : 66 26 16 00
Fax : 66 26 16 17
Email : contact@dsaca.co.in

Website : www.dsaca.co.in

TO WHOMSOEVER IT MAY CONCERN

As per the information, explanation given to us and as shown by the records produced before us, we hereby certify that M/s. Ipsos Research Private Limited, having registered office at Lotus Corporate Park, 1701, 17th Floor, F wing, Off Western Express Highway, Goregaon East, Mumbai – 400 063, the payment of IGST (18%) amounting Rs. 59,09,123/- pertaining to Ministry of Housing and Urban Affairs vide invoice ref no. 18271859 dated 31.07.2018 has been made to the Government on **17th August, 2018**.

Thanking You,
Yours Faithfully,

For DESAI SAKSENA & ASSOCIATES
Chartered Accountants

CA Varsha Nanwani
Taxation Manager
Membership No. 174729

Place: Mumbai
Date: 20th August, 2018

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)

****

Nirman Bhawan, New Delhi
Dated: 30th October, 2018

To

The Pay and Accounts Officer (Secretariat)
Ministry of Housing and Urban Affairs,
Nirman Bhawan, New Delhi.

Subject:- Payment of **Rs.3,28,28,460/-(Excl GST) (Rs. Three crore Twenty Eight Lakh Twenty Eight Thousand Four Hundred Sixty Only)** to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities under CBUD project.

Sir / Madam,

I am directed to convey the sanction of the Competent Authority Payment of **Rs.3,28,28,460/-(Excl GST) (Rs. Three crore Twenty Eight Lakh Twenty Eight Thousand Four Hundred Sixty Only)** to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities under CBUD project. The details of the payment are as under:-

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (excl GST)**
			Fee	GST@18%	
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	**Rs.3,28,28,460/-** **(Excl GST)**

2. Administration Section is requested to deduct TDS as per provision on Rs.3,28,28,460/-(excl. GST).

3. The e-payment may be drawn in favour of M/s. IPSOS Research Private Limited (India) with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Mumbai/ Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	M/s. IPSOS Research Private Limited (India)
Account no.	030777080001
IFS Code	HSBC Bank, Mumbai.

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.56 for the year 2018-19.

5. This issues with the approval of Integrated Finance Division and concurrence of JS & FA vide e-office No.3136811 (Note #208 dated 29-10-2018 at 4:05 PM).

Yours faithfully

30/10/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Copy to:-

6. Admn.-II Section with original copy for forwarding to PAO.
7. IPSOS Research Pvt Ltd. Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai-400063.
8. PPS to JS (DAY & NULM) and Project Director, CBUD, M/o Housing & Urban Affairs, Nirman Bhawan, New Delhi.
9. Integrated Finance Division, Ministry of Housing & Urban Affairs, Nirman Bhawan.
10. Sanction Folder.

30/10/2018

(G.Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)

****

Nirman Bhawan, New Delhi
Dated: 30th October, 2018

To

The Pay and Accounts Officer (Secretariat)
Ministry of Housing and Urban Affairs,
Nirman Bhawan, New Delhi.

Subject:- Payment of **Rs.59,09,122/-against GST (Rs. Fifty Nine Lakh Nine Thousand One Hundred Twenty Two Only)** to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities under CBUD project.

Sir / Madam,

I am directed to convey the sanction of the Competent Authority Payment of **Rs.59,09,122/-against GST (Rs. Fifty Nine Lakh Nine Thousand One Hundred Twenty Two Only)** to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities under CBUD project. The details of the payment are as under:-

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released against GST only**
			Fee	GST@18%	
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	**Rs.59,09,122/- against GST**

2. Since this is GST payment, so, administration Section is requested not to deduct TDS as per provision.

3. The e-payment may be drawn in favour of M/s. IPSOS Research Private Limited (India) with Bank details as under:-

Name of the Bank & Branch	HSBC Bank, Mumbai/ Fort Branch, 52/60, M G Road, Mumbai-400001
Name of Account Holder	M/s. IPSOS Research Private Limited (India)
Account no.	030777080001
IFS Code	HSBC Bank, Mumbai.

जी. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

4. The expenditure involved will be debited to the Major Head 2217-Urban Development-Other U.D. Scheme-05- General – Minor Head 191-Assistance to Local Bodies, Corporation, Urban Development Authorities, Town Improvement Board-Sub Head 15-Mission for 100 Smart Cities-02-World Bank-Capacity Building for Strengthened Urban Development and Implementation Support-PMU-28-Professional Services under Demand No.56 for the year 2018-19.

5. This issues with the approval of Integrated Finance Division and concurrence of JS & FA vide e-office No.3136811 (Note #208 dated 29-10-2018 at 4:05 PM).

Yours faithfully

30/10/2018

(G. Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

Y KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Copy to:-

1. Admn.-II Section with original copy for forwarding to PAO.
2. IPSOS Research Pvt Ltd. Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai-400063.
3. PPS to JS (DAY & NULM) and Project Director, CBUD, M/o Housing & Urban Affairs, Nirman Bhawan, New Delhi.
4. Integrated Finance Division, Ministry of Housing & Urban Affairs, Nirman Bhawan.
5. Sanction Folder.

30/10/2018

(G.Vijay Kumar)
Under Secretary to the Government of India
Ph: 011-23063217

Y KUMAR
retary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Reema Jain, IES
Deputy Director (AMRUT)
Government of India
Ministry of Housing and Urban Affairs

D.O.No. K.14012/101(11)/2017-SCM.III(V)-Part(2)
Dated: 02 January, 2019

Completion Certificate

This is to certify that Ipsos Research Private Limited (Lead member) in consortium with M/s Athena Infonomics India Private Limited and The Economist Group was awarded the contract for **'Assessment of Liveability Indices for 116 cities in India'** on 21.02.2018 and the effective date of commencement of services was 08.02.2018. The contract was awarded for a total amount of Rs. 10,94,28,200/- plus taxes. The time period of the contract was 20 weeks (from 8th February 2018 to 28th June 2018).

It is certified that the services as envisaged in the scope of the contract has been completed in accordance with the scope and terms of reference of the contract.

Reema Jain

(Reema Jain)
Deputy Director, AMRUT
Ministry of Housing & Urban Affairs
Tel: 011-23062273

Note No. #1

SMART CITIES-III DIVISION

******

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the **Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites"** (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017 in the chamber of Economic Advisor-II (Room No.665-A) Nirman Bhawan, New Delhi.

2. The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Mr. Sajessh Kumar N., Director (Smart Cities)-Member
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Mr. Raja Dawn, PMU (CBUD), Member
- Mr Nilesh Rajayadhaksha, PMU (CBUD), Member

(Sh. Shiv Pal Singh, Director (AMRUT) was on leave)

3. The Request for Expression of Interest (EOI "Assessment of Liveability in Selected Cites" was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017. The list of EOIs received is **PUC1.**

4. After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

5. As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No Lead Firm Consortium Partner Primary Eligibility Technical Score (max. 100)
1 M/s CRISIL Risk and Infrastructure Solutions Limited Hansa Research Group Lead partner registered as Company, hence eligible and got 100 marks.
2 Deloitte Touche Tohmatsu India LLP Lead partner registered as LLP, hence eligible and got 100 marks
3 Infrastructure Development Corporation (Karnataka) Limited (iDecK) Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd. Lead partner registered as Company, hence eligible 90 and got marks

6. The abstract sheet of marks obtained by each firm is as per and evaluation sheets are at PUC3.

As mentioned in para above and since the cost of project is estimated more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank.

7. The Minutes of the Meeting may be seen at **PUC2.**

8. The recommendations of procurement committee may be forwarded to the World Bank for prior review as per World Bank procurement guidelines.

9. Submitted for consideration, please

MoM EOI Liveability.pdf

02/06/2017 6:48 PM

G Vijay Kumar
(US SC-III)

Note No. #2

File put up for the approval of recommendation by the procurement committee.

02/06/2017 6:50 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #3

Approved.

SS

02/06/2017 7:42 PM

SAMEER SHARMA
(AS (SC))

Note No. #4

07/06/2017 12:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #5

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. on 9th May, 2017 publishing in leading newspapers and uploading the same on e-procurement website with the last date of receipt of EOI as 30th May 2017. EOIs were opened on 31st May, 2017 and 17 bids were received.

2. The procurement committee meeting was held on 2nd June, 2017 for shortlisting of the firms. The EOIs were evaluated by the PMU of CBUD Team and reviewed by the procurement committee. it has been found that only 3 firms could only qualify as per evaluation criteria. As per World Bank procurement norms at least six firms need to be shortlisted. Besides as per procurement norms of World Bank any procurement above US$ one million needs prior review of the World Bank. The same was recommended by the Procurement Committee. After getting the approval form the competent authority, the matter was referred to the World Bank for their consideration on 2nd June 2017.

3. The World Bank vide email dated 7th June, 2016 (PUC3)has observed that

"only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms"

4. **The matter was placed before the procurement committee in its 2nd meeting held on 7th June, 2017. The procurement committee has recommended that the bids may be re invited and programme division may also consider revising the eligibility criteria to have better competition as advised by the World Bank.(PUC1)**

5. In view of the advice of the World Bank, and recommendations of the Procurement Committee, eligibility criteria has been revised. The earlier eligibility criteria and revised criteria is given below:

Existing Eligibility Criteria

S.No.	**Parameter**	**Maximum Marks**
	General Experience of the Firm	**5**
1. 2.	Financial Strength of the Firm	**15**
1. 3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
5	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**

S.No.	Parameter	Maximum Marks
6	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

Revised Eligibility Criteria

S.No.	Parameter	Maximum Marks
	General Experience of the Firm	**10**
1. 5.	Financial Strength of the Firm	**15**
1. 6.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12	**20**
	Total	**100**

6. The eligibility criteria 4 and 5 have been revised to make the bidding wider and more competitive. However, the eligibility marks have been kept in the same ratio as advised by the IFD i.e. 15% for financial strength, Key personnel 25% and experience of the firm 60%. The revised REOI may be uploaded for inviting bids giving 14 day's time.

7. The file is submitted for consideration/approval of

(1) Approval of recommendations/minutes of the Procurement Committee held on 7th June 2017 and thereby Cancellation of the existing REOI.

(2) Approval of the revised REOI (PUC2) prepared on the basis of certain recommendations of Procurement Committee and if, approved the file may be sent to IFD for their concurrence.

MOM_07062017.pdf

Revised REOI Liveability Index.pdf

08/06/2017 10:49 AM

G Vijay Kumar
(US SC-III)

Note No. #6

File put up for the approval of para 7 above as recommended by the procurement committee.

08/06/2017 10:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #7

Approved, as proposed in para. 7

SS

08/06/2017 1:23 PM

SAMEER SHARMA
(AS (SC))

Note No. #8

File put up to IFD for concurrence in regard to revised RfP.

08/06/2017 1:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #9

The difference between sl. no.5&6 of revised EoI is not clear. Any agency that undertakes"Survey and field research" for an assignment will also do "Analysis and assessment of data" for the same assignment. Since the two activities are very similar and interlinked, this will create difficulty at the time of selection of firms.

08/06/2017 3:40 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #10

08/06/2017 5:13 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #11

Reference observations of DS(F):

As advised by DS(F), the criteria have been modified and made mutually exclusive.

Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.----Criteria no. 4

Specific experience of the Firm in implementing assignments related to market research and field surveys **in the urban areas detailed in Annexure 1** to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. - Criteria no. 5

Experience of Applicant in implementing assignments **related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1** to this section.--- Criteria no. 6

The following additional point has also been added to the RfP on page 15:
"Note: The projects mentioned in evaluation criteria 4,5 & 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation"

Accordingly, the REOI has been modified and if considered, the file may be sent to IFD for their concurrence.

Revised_REOI 08062017_Liveability .pdf

08/06/2017 6:12 PM

G Vijay Kumar
(US SC-III)

Note No. #12

May kindly see the remarks of DS/F above. As discussed with DS/F modification has been made in the REOI . We amy send the revised REOI for concurrence of IFD pl.

08/06/2017 6:41 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #13

As proposed.

SS

08/06/2017 6:44 PM

SAMEER SHARMA
(AS (SC))

Note No. #14

08/06/2017 6:46 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #15

Notes on pre pages may kindly be seen. the Smart city Division is preparing a Liveability Index of cities based on 79 parameters.

For carrying out the assessment of cities, an EoI was floated and three Consultants were shortlisted. Since as per World bank criteria, the minimum no. of shortlisted firms is 6, the selection criteria was modified and the revised EoI has been submitted for approval of IFD. This appears to be in order and may be concurred.

09/06/2017 11:13 AM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #16

What is NIUA's role in this? Why are we vetting/concurring their tender where they will be selecting the contractor?

10/06/2017 1:33 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

Note No. #17

12/06/2017 2:24 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #18

Reference observations of JS&FA:

The matter has been re-examined and it has been decided that the role of NIUA will be restricted for help in rolling out of the assignment and co-ordination with the selected agency in assessment of the liveability index of cities.

The REOI will be issued by the Smart Cities-III Division, MoUD through CBUD Project funded by the World Bank. The shortlisting/ evaluation of applications for REOI will be done by the Procurement Committee constituted for the CBUD Project with the approval of the Project Director,CBUD/ Mission Director for Smart Cities as is being done in other assignments. After this, the RFP will be issued to the shortlisted Agencies. The Payment will also be made directly to the selected agency by the MoUD under CBUD project for which provisions have already made in the Procurement Plan. **Accordingly**, **REOI has been amended** (**PUC1**)

If considered, **the file may be sent to IFD for their concurrence**, please.

13/06/2017 3:36 PM

G Vijay Kumar
(US SC-III)

Note No. #19

REOI will be issued by programme division, and the role of NIUA will be limited to rolling out the assaignment and co-ordinating with the selected agency in assessment of the liveability index of cities.

We may send the revised REOI for the concurrence of IFD pl.

13/06/2017 5:03 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #20

Yes, please.

SS

13/06/2017 5:16 PM

SAMEER SHARMA
(AS (SC))

Note No. #21

13/06/2017 5:22 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #22

13/06/2017 5:35 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #23

Integrated Finance Division

This is a proposal for concurrence of revised EoI for shortlisting the consultants for "“Assessment of Liveability in Selected Cites”. This is to be funded under CBUD scheme. Initially, it was decided that the work including payment for the consultancy will be made through NIUA.

Now, the Programme Div. has decided that the procurement will be done by the Ministry itself in consultation with the World Bank and the Payment will also be made directly to the selected agency by the MoUD itself. The role of NIUA will be limited to rolling out the assignment and co-ordinating with the selected agency in assessment of the liveability index of cities.

Accordingly, they have amended the REoI. The draft REoI had already been examined and the present one is only amended version which occurred due to change from NIUA to MoUD only.

We may, therefore, concur to the revised REoI please.

14/06/2017 4:33 PM

Pankaj Kumar
(US(IFD-II))

Note No. #24

IFD may concur.

14/06/2017 5:13 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #25

14/06/2017 5:48 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

Note No. #26

15/06/2017 9:29 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #27

Pl issue the REOI today itself.

15/06/2017 11:42 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #28

Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) **(PUC1)** of Assessment of Liveability in selected Indian Cities was published on 15th June 2017 on www. eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017. As per the World Bank guidelines, the RFP has to be issued 6 highest scoring/shortlisted firms.

2. In this regard, a meeting of the procurement committee was held on 05th July 2017 to discuss these proposals. Based on the criteria given in REOI, the evaluation of 21 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project on the above mentioned date. The detailed Evaluation Sheet is attached as Annexure **(PUC2)**.

3. The Procurement Committee has recommended the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP). It has also been recommended that the list of shortlisted firms along with their applications, and the evaluation sheet for all 21 participating firms may be sent to World Bank for their concurrence/review.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Public Affairs**	Athena Infonomics	The Economics Intelligence Unit			**100**
2	**Delloite Touche Tohmatsu India LLP**	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		**100**
3	**Hindusthan**					**88**

	Thompson Associates Pvt. Ltd. (Division IMRB International)					
4	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	**84**
5	**PricewaterhouseCoopers**					**81**
6	**Jones Lang LaSalle**					**80**

4. Submitted for consideration/approval of Project Director (CBUD) for

(i) Accepting the recommendations/minutes **(PUC3)** of the Procurement Committee and

(ii) Sending the list of 6 shortlisted consulting firms along with the detailed evaluation sheet of 21 applications to the World Bank for their concurrence/review.

Minutes of the Procurement Committee on Liveability REOI.pdf

07/07/2017 4:00 PM

G Vijay Kumar
(US SC-III)

Note No. #29

07/07/2017 4:46 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #30

Approved, as proposed.

SS

07/07/2017 4:51 PM

SAMEER SHARMA
(AS (SC))

Note No. #31

Pl send to World Bank as approved.

10/07/2017 10:28 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #32

The REOI for 'Selection of Consultant for Assessment of Liveability in 116 cities" was re-issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan.

2. A total of 21 EOIs were received in response. These were evaluated by the Procurement Committee of CBUD and 6 firms were shortlisted as per the prescribed eligibility criteria. Since the present case falls under prior review category, the list of shortlisted firms along with relevant documents was forwarded to the World Bank for their approval.**(PUC1)**

3. In response, the World Bank has noted that the REOI was not uploaded on the "STEP" platform of the Bank and that the same is a mandatory requirement. It is clarified that though REOI was uploaded on the STEP and it was included in the procurement plan but due to certain technical issues it could not be uploaded on the UNDP procurement portal. Every effort had been made to ensure wide circulation and international participation (the e-procurement website is itself a global website). However, given the mandatory nature of the procedure, the World Bank has advised that the REOI be issued afresh (**PUC2**) , so that compliance with all procedural modalities required at the Bank's end may be met.

4. Keeping in view of above, the Procurement Committee of CBUD has

recommended that the REOI may be considered for fresh issuance on the same terms and conditions as before, giving the minimum period of 14 days as required under the World Bank guidelines. Minutes may be seen at **PUC3.**

5. Submitted for accepting the recommendation of the Procurement Committee, please

Minutes of the Procurement Committee.pdf

10/08/2017 5:35 PM

G Vijay Kumar
(US SC-III)

Note No. #33

10/08/2017 6:37 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #34

Approved.

SS

11/08/2017 11:28 AM

SAMEER SHARMA
(AS (SC))

Note No. #35

11/08/2017 11:45 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #36

28/08/2017 10:11 AM

G Vijay Kumar
(US SC-III)

Note No. #37

May like to see the preceding note. It was approved to reissue the EOI by the competent authority based on the recommendation of the procurement committee. IFD has also given their concurrence to the RfP for the Liveability index which have to be issued to the shortlisted firms based on the EOI.

As per the work reallocation , CBUD is dealt by the JS/ NULM and the Liveability Index is dealt by JS/ AMRUT. As the Index is to be prepared by April 2018, there is a need to expedite the procurement of agency based on the EOI and RfP lready approved by the IFD.

For direction pl.

28/08/2017 10:23 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #38

Liveability is looked after by JS (AMRUT); however, the funding for the first year is from CBUD. Importantly, this is a time bound activity. I suggest that Sajeesh may continue to assist you upto the completion of all tender activities as he has been doing this for two years in CBUD and particularly for the Liveability Index file. Please get the EOI issued today.

SS

28/08/2017 11:10 AM

SAMEER SHARMA
(AS (SC))

Note No. #39

May like to see before further action is taken.

29/08/2017 5:47 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #40

01/09/2017 10:17 AM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #41

Put up for further action.

01/09/2017 11:06 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #42

May like to see the note of AS(SC) and JS(AMRUT) please

01/09/2017 12:45 PM

Parmod Kumar
(Dir(UD))

Note No. #43

Next step is to issue the REOI. This has to be done by the Mission Deirectorate, CBUD as it is funded under CBUD. I can only assist the CBUD division regarding the process and being part of Procurement Committee if the division desires to do so. As the next step CBUD division may issue the REOI.

04/09/2017 10:17 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #44

04/09/2017 11:36 AM

Parmod Kumar
(Dir(UD))

Note No. #45

04/09/2017 5:34 PM

G Vijay Kumar
(US SC-III)

Note No. #46

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:41 PM

Parmod Kumar
(Dir(UD))

Note No. #47

06/09/2017 11:08 AM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #48

Discussed with JS(AMRUT).

This is a procurement under the World Bank funded CBUD project and the procurement has to be done by the CBUD division.

In the past also in case of capacity building and reforms under the AMRUT, when they were being funded by the CBUD project, the procurement was done by the CBUD division.

Therefore the procurement of agency may kindly be done by the CBUD division.

It is proposed that the file alongwith RfP file may be returned to CBUD division.

For approval please

06/09/2017 5:44 PM

Shiv Pal Singh
(DIR (AMRUT))

Note No. #49

06/09/2017 6:56 PM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #50

REOI may be issued. Put up for reconstitution of Procurement Committee in view of the change/ absence of some members.

07/09/2017 5:47 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #51

08/09/2017 9:09 AM

Parmod Kumar
(Dir(UD))

Note No. #52

REOI was issued on 8th September 2017 and the same was uploaded on the website of the Ministry www. moud.gov.in, procurement portal www.eprocurement.gov.in and the World Bank's STEP and UNDB site (kindly see the attachment).

2. The advertisement was also sent on 8th Septemebr 2017 to DAVP for the publication in two national dailies (Hindi and English) for wide publicity.

3. But, after lapse of one week, no response was given by the DAVP even after repetitive attempts. So, the official from CBUD Division) visited the O/o DAVP on 15thSeptember 2017 and met to the concerned person Mr. Nitesh Jha, Deputy Director. He informed that for placing of advertisement 100% amount of estimate is required as specified in the Ministry of I & B's order dated 15th February 2017 (copy enclosed) . He also suggested that the release order of the advertisement shall be issued only upon receipt of letter of acceptance / sanction letter from the Ministry.

4. In view of the above, the O/o DAVP has sent an email on 15th September 2017 for the **estimation (Copy attached)** in r/o the publication and requested to send the sanction letter for publication the same. The total cost for the publication is **Rs.2,06,870/-.**

5. In this connection, it is also mentioned here that estimation incurred against advertisement done in the last financial year (FY 2016-17) has not been sent to the Ministry by the O/o DAVP after asking for sending the same at several times through telephonic conversation and visting the DAVP office. So, if the outstanding estimate cost received, the same may also be reimbursed.

6. In this context, it may be informed that there is no fund is available under the advertising head of CBUD. Since this is the proposal related to Smart City, so, if agreed, we may use the fund from the advertising head of Smart Cities Mission where sufficient fund is available.

7. File is submitted for approval of Project Director CBUD/ Mission Director (Smart Cities) and concurrence of JS&FA, please.

Procurement Notice for Liveability Project_ P099979 - Capacity Building for Urban Development Project - WB5294-09_17.pdf

Request to DAVP for the publication of advertisemnt.pdf

OM of DAVP.pdf

Estimation from DAVPpdf.pdf

18/09/2017 5:47 PM

G Vijay Kumar
(US (CBUD))

Note No. #53

submitted pl for approval

19/09/2017 12:07 PM

Parmod Kumar
(Dir(UD))

Note No. #54

We may agree to use the Smart City fund as proposed

19/09/2017 12:16 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #55

Approved. Let us also consult IFD.

SS

19/09/2017 12:18 PM

SAMEER SHARMA
(AS (SC))

Note No. #56

19/09/2017 12:23 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Note No. #57

19/09/2017 12:33 PM

Parmod Kumar
(Dir(UD))

Note No. #58

Expenditure sanction of **Rs.2,06,870** to DAVP for publication as proposed

19/09/2017 2:25 PM

Parmod Kumar
(Dir(UD))

Note No. #59

19/09/2017 2:26 PM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #60

Finance Division

Ref. proposal at p. 20-21/N.

CBUD Division has forwarded a proposal for the payment of Rs. 2,06,870/- to DAVP for publishing of Request for Expression of Interest (REoI) for shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities in two National Dailies (Hindi and English) for wide publicity.

2. It is mentioned that a request was made to DAVP for publishing a above REoI for the above mentioned procurement to be published in National Dailies. In this regard, DAVP has furnished an estimation of Rs. 2,06,870/- for this purpose (copy attached) and informed that release order of the advertisement shall be issued only upon receipt of letter of acceptance / sanction letter from the Ministry. it is also mentioned that REoI has been already issued on 8th September 2017 and the same has been uploaded on the website of the Ministry www. moud.gov.in, procurement portal www.eprocurement.gov.in and the World Bank's STEP and UNDB site.

3. Further, it is mentioned that there is no fund is available under the advertising head of CBUD. Since this procurement is related with Smart City Mission, expenditure of Rs. 2,06,870/- will be incurred from the advertising head of Smart Cities Mission where sufficient fund is available.

4. Project Director CBUD/Mission Director (Smart Cities) has approved the proposal vide p-22/N.

5. In view of above, Finance Division may have No Objection for payment of Rs. 2,06,870/- to DAVP for publishing the REOI mentioned at para 1 above subject to approval of Competent Authority and compliance of Mission Guidelines in this regard.

Submitted please.

19/09/2017 5:31 PM

RAJEEV KUMAR
(US(IFD-I))

Note No. #61

Expenditure of Rs. 206,870/- for publication of EoI may be incurred from advertising budget of SCM where funds are available as informed by the Division.

20/09/2017 10:33 AM

Yashodhara Vijayan
(DS(FINANCE))

Note No. #62

21/09/2017 2:27 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

Note No. #63

21/09/2017 2:38 PM

Yashodhara Vijayan

(DS(FINANCE))

Note No. #64

21/09/2017 4:15 PM

RAJEEV KUMAR
(US(IFD-I))

Note No. #65

22/09/2017 3:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #66

A sanction letter (pg-753-758) dated 21st September 2017 for release of Rs.2,06,8701- to DAVP, Ministry of Information and Broadcasting for the Publication of Request for Expression Interest (REOI) has been issued to O/o PAO, MoHUA to issue the letter of Authority (LOA) in favour of Pr. Accounts Officer, M/o I&B, DAVP.

2. The publication in r/o advertisement of above REOI in the leading English national newspaper namely Hindustan Times dated 23rd December 2017 may be seen at page 759. Advertisement in Hindi newspaper namely Amar Ujala (pg-760) dated 22nd September 2017 & Punjab Kesari (pg-761) dated 22nd September 2017 has also been published.

Submitted for information please.

25/09/2017 1:11 PM

Pankaj Sinha
(ASO)

Note No. #67

This is regarding selection of consulting firm for the assignment of Assessment of Liveability in selected Indian Cities. In this regard, applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) **(PUC1)** published on 08th September 2017 on e-procurement portal (www. eprocure.gov.in) with the last date of 3rd October 2017.

2. As per the World Bank's requirements, the REOI was also published in STEP, World Bank and subsequently published on UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS. Besides, The REOI was published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only.

3. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017

4. In this regard, a meeting of the procurement committee was held on 24-25 October 2017 to discuss these proposals. Based on the criteria given in REOI, the evaluation of 28 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project. The detailed Evaluation Sheet is attached as Annexed to the minutes of the meeting (PUC2).

5. On the basis of evaluation, the Procurement Committee has recommended the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP), as per procedure.

Sl.No	**Name of Lead Partner**	**Consortium Member 1**	**Consortium Member 2**	**Consortium Member 3**	**Consortium Member 4**	**Total Marks Obtained (Max.100)**
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle**	-	-	-	-	**80**

	Property Consultants India Private Limited					
4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

6. Submitted for consideration/approval of Project Director (CBUD) for

(i) Accepting the recommendations/minutes **(PUC2)** of the Procurement Committee

and

(ii) Sending the list of 6 shortlisted consulting firms along with the detailed evaluation sheet of 21 applications to the World Bank for their concurrence/review.

Minutes of the meeting held on 24-25 October 2017.pdf

The deatailed Evaluation Sheet.pdf

27/10/2017 2:43 PM

G Vijay Kumar
(US (CBUD))

Note No. #68

27/10/2017 5:51 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #69

Sir, may like to see and advise.

27/10/2017 6:37 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #70

I would suggest that we seek the consent of World Bank and then PD can take a decision to issue RfPs to the shortlisted vendors.

SS

30/10/2017 10:27 AM

SAMEER SHARMA
(AS (SC))

Note No. #71

30/10/2017 10:29 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #72

Action accordingly pl.

30/10/2017 10:44 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #73

An e-mail was sent to the World Bank for their concurrence/comments.

Liveability_ REOI_Minutes to the World Bnak for Concurrence Clearance.pdf

30/10/2017 12:18 PM

G Vijay Kumar
(US (CBUD))

Note No. #74

30/10/2017 1:01 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #75

Reference notes above:

An email was sent to the World Bank for their concurrence/comments and thereafter the RFP and the Standard form of Contract concurred by IFD, MoHUA was also provided through STEP of the World Bank.

The World Bank have informed that they have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the qualified consultants being included in the shortlist. However, they have observed that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement". In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.

To this effect, we have written to the World Bank that MoHUA have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.

No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.

Since only 6 firms have qualified, we may issue RFP only to the qualified firms only.

File of Liveability Index (Noting portion)-Concurrence of IFD for RFP.pdf

File of Liveability Index (Correspondence portion)-Concurrence of IFD for RFP.pdf

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons.pdf

14/11/2017 11:31 AM

G Vijay Kumar
(US (CBUD))

Note No. #76

As per the directions of JS(NULM-CBUD), an-email was sent to the World Bank on 15th November 2017 stating that the REOI was issued with approval of the World Bank and minimum of 75 marks were fixed for qualification of firm as per the criteria for evaluation of applications. Based on the Evaluation Criteria, only six firms have been qualified, all of which are registered/incorporated in India. Further, out of 28 responses, only one firm i.e. Ecorys Netherlands BV is registered out of India and could obtain only 65 marks and could not qualify as per evaluation criteria.

In view of the above, we have requested an urgent response from the World Bank through STEP on issuing RFP to the six shortlisted firms.

In response to this, the World Bank vide their e-mail dated 21st November 2017 have stated that based on MoHUA's recommendation that the foreign firm from the Netherlands is not qualified for the assignment, they are fine with the Shortlist.

The World Bank have also requested to incorporate some comments (detailed below with the remarks) and resend the RFP for Bank's review and no objection as MOUD like to follow e-procurement and the RFP will need to be modified to suit the same.

Comments from the World Bank on the RFP for Liveability Index

Comments by the World Bank	**Remark**
The contact details of the firms to whom the RFP is issued may be deleted.	Deleted

Data Sheet : Please delete the Notes to Client at the beginning of the Data Sheet	Deleted
Data Sheet 1 (c) : Shall be "Law of Republic of India"	Done
Data Sheet 12.1 : Please enter the date at the time of issuing the RFP	Dates entered
Data Sheet 13.1 : Please change the date according to the date of issue of RFP. It should be mid way between date of issue of RFP and last date of proposal submission	Dates entered
Data Sheet 16.1 : Please include the list of reimbursable expenses as per standard RFP	Included
Data Sheet 16.3: Please replace service tax with GST and any other applicable tax	Done
Data Sheet 17.1 : e-procurement clauses are not incorporated in ITC whereas in the Datasheet it is indicated that proposals shall be submitted on e-procurement portal. Further, in Data Sheet Clause 17.4 it is indicated that hard copy of original proposal shall be submitted which is not allowed in e-procurement. Please modify e-procurement provisions in line with Bank's modified RFP for e-procurement, in case e-procurement is envisaged	Corrections made.
Data Sheet 17.7 and 17.9 : Please change the date as per RFP issuance date. Proposals to be submitted manually or else the RFP needs to be substantially modified to incorporate all e-procurement provisions.	Dates changed
Data Sheet 19.1 Same as above	Dates changed
Data Sheet 21.1 : Criteria no. (ii) Adequacy of the proposal, methodology and work plan, the total marks may be reduced to 30 and for criteria no.(ii) the total marks may be increased to 60. Marks for individual key experts may be accordingly adjusted	Discussed with the World Bank. They are fine with criteria providing that a Note will be submitted through STEP saying that in view of complex nature of the Work.
Data Sheet 23.1 : Please incorporate all e-procurement provisions	Needful done
Data Sheet 30.2 please insert approximate date, say 15 days from contract signing	Done.
ToR para 7.8 : For Bank funded CBUD project the IA is MoUD. Therefore, the contract shall be signed by MoUD	Yes.
SCC Clause 45.1 5 (a) Please replace with the following : "The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	replaced.

As per the comments of the World Bank, the RFP to be issued is modified to the effect of e-procurement format. Regarding Evaluation Criteria, as advised by the World Bank, we may submit the Modified RFP of electronic format through STEP saying that the present assignment is of complex nature; a new one and within the limits set out in the World Bank procurement guidelines. **As comments/modifications are purely technical in nature the approval of Project**

Director, CBUD is sought.

The Important dates for the RFP on liveability are:
i. Date of issuance: 22nd November 2017
ii. last date for Clarifications to be sough thorough e-mail: 1st December 2017
iii. Pre-Application Conference: 4th December 2017 at 3.00 pm.
iv. last date for submission of Applications: 14th December 2017 by 3.00 pm
v. Expected date of commencement of services: 1st January 2018

If approved, the modified RFP along with above mentioned Note will be submitted to STEP, please.

Letter to the World Bank for urgent reponse through STEP.pdf

Interim reposne from the STEP, World Bank.pdf

Comments of the World Bank on the RFP for liveability index.pdf

SRFP Liveability-e-procurement.pdf

22/11/2017 12:56 PM

G Vijay Kumar
(US (CBUD))

Note No. #77

22/11/2017 2:18 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #78

May like to see before its uploaded

22/11/2017 2:44 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #79

Seen, thanks. As PD you may decide at your end please.

SS

22/11/2017 4:56 PM

SAMEER SHARMA
(AS (SC))

Note No. #80

22/11/2017 5:40 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #81

22/11/2017 5:43 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #82

Reference Notes above:

The Ministry has submitted the modified RFP in STEP on 22nd November 2017 and confirmed the World Bank that the package of Liveability is a lump sum contract. The World Bank have reviewed the draft Request for Proposals (including the shortlist) for the above-mentioned consulting services, submitted to the Bank on 2017/11/22 and based on the information provided the Bank has no objection to the Request for Proposals and to the qualified consultants being included in the shortlist.The World Bank have requested for incorporation of the comments given below.

Incorporation of the following Bank comments :	Remarks.
(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.	Done
(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.	Done accordingly
(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or	Inserted

reference to any procedure available on the portal may be indicated.	
(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.	Done
(5) Delete “Foreword” from Section-8 “Conditions of Contract and Contract Forms”.	Deleted
(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.	Deleted Time based
(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.	Inserted
(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.	Inserted
(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.	Done
(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.	Done
(11) SCC 23.1 : Please insert relevant option	Done
(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.	Indicated
(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions	Done
(14) SCC 27.2 : Insert relevant option	Done
(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.	Done
(16) SCC 39.1 & 39.2 : insert relevant option.	Done
(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.	Done
(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).	Done
For payments in foreign currency, it should be LIBOR + 2%.	Done
(19) SCC 45.1 Delete the instructions in brackets.	Done
(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.	Done

(21) SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	Done

Further, discussed with DS (CBUD) and incorporated all the above comments.

The Important dates for the RFP on liveability are:
i. Date of issuance: 27th November 2017
ii. last date for Clarifications to be sough thorough e-mail: 8th December 2017
iii. Pre-Application Conference: 12th December 2017 at 3.00 pm.
iv. last date for submission of Applications: 27th December 2017 by 3.00 pm

The RFP document was uploaded on www.eprocurment.gov.in and the system has already sent the e-mails to the shortlisted consultants.

Submitted for kind perusal, please.

No object from World Bank for issuance of RFP on Liveability.pdf

Government electronic Procurement notification for the tender to the shortlisted firms.pdf

RFP Liveability Final _27th November 2017_3PM.pdf

27/11/2017 4:16 PM

G Vijay Kumar
(US (CBUD))

Note No. #83

27/11/2017 5:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #84

28/11/2017 11:33 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #85

28/11/2017 12:36 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #86

28/11/2017 1:10 PM

G Vijay Kumar
(US (CBUD))

Note No. #87

13/12/2017 10:07 AM

Pankaj Sinha
(ASO)

Note No. #88

The Pre-Application Conference for the RFP on Livaeability was held on 12th December 2017. All the six consulting firms, who have been issued the RFP, attended the Conference. The attendance sheet has also been attached.

The queries raised by the consulting firms and the clarifications are listed out and attached below.

If considered, the same may be up-loaded on the e procurement portal, please.

attendance sheet on 12th December 2017.pdf

Pre Bid_Clarifications_12Dec17.pdf

13/12/2017 2:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #89

May kindly see, before it is uploaded on e-proc portal.

13/12/2017 5:35 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #90

Pl incorporate the corrections as discussed and issue.

13/12/2017 7:23 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #91

13/12/2017 7:30 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #92

As discussed, the corrections have been in incorporated and the revised document (attached below) has been uploaded on e procurement portal.

Reply_Pre Bid_Clarification_12Dec17.pdf

14/12/2017 11:00 AM

G Vijay Kumar
(US (CBUD))

Note No. #93

08/01/2018 5:58 PM

Pankaj Sinha
(ASO)

Note No. #94

The meetings of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for evaluation of technical proposals of firms for **Assessment of Liveability Indices for 116 cities in India** was held on 3rd January and 5th January, 2018 in the chamber of Economic Advisor, (room No.

232-C), Nirman Bhawan, New Delhi for the evaluation of the technical proposals.

The following were present:

- Mr. Sudhir Kumar Tiwari, Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD
- Mr. Sajeesh Kumar N., Director (SC)
- Mr Shiv Pal Singh, Director (AMRUT) only on 3rd January, 2018.
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM)
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Mr Amit Gupta, PMU, CBUD

The Final RFP with shortlist was forwarded to World Bank on 30th October, 2017 whose 'No Objection' was received on 24th November, 2017. The RFP was issued to shortlisted consultants on 27th November, 2017. A pre proposal meeting was held on 12th December, 2017 and minutes were issued on 14th December, 2018. No addendum was issued. The last date and time of submission of the proposal was 15.00 hours on 27th December, 2017. Till last date and time, following proposals were received from following shortlisted consultants:

1	Ipsos Public Affairs	● Athena Infonomics India Pvt Ltd. ● The Economic Group Limited
2	PricewaterhouseCoopers	
3	Jones Lang LaSalle	
4	Delloite Touche Tohmatsu India LLP	● Insight Development Group Pvt Ltd ● Stesalit Systems Limited ● Kadence International Pvt Ltd ● Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	● Institute for Social and Economic Change (ISEC) ● Public Affairs Centre (PAC) ● Sigma Research & Consulting Pvt. Ltd ● Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	

The technical proposals received till deadline were opened by the Procurement Committee on 28th December, 2017. The Financial Proposals were securely stored. It was noted that as per clause 5.2 of RFP, "*The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet*". The evaluation criteria indicated at Data sheet of RFP is as follows:

	Description	Points
(	**Specific experience of the Consultant (as a**	**10**

i)	**firm) relevant to the Assignment:**	
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The Committee evaluated the Technical Proposals on the basis of firm's responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and rating system as specified in the RFP.

As per RFP, minimum technical score required to qualify and eligible for opening of financial proposals is 75 out of maximum of 100 points. As such financial proposal of following firms are recommended to be opened by the Procurement Committee:

1. M/s IPSOS Public Affairs in consortia with Athena Infonomics India Pvt Ltd. and The Economic Group Limited
2. Delloite Touche Tohmatsu India LLP in consortia with Insight Development Group,Pvt Ltd, Stesalit Systems Limited, Kadence International Pvt Ltd, Operations Research Guild (ORG) India Private Limited

The minutes of the meeting are placed at p. 1024-1026/c and the evaluation of bidders by the Committee members may be seen at p. 1017-1023/c.

Submitted for the approval of Project Director, CBUD for accepting the recommendations/minutes of the Procurement Committee and thereafter sending the same to the World Bank (through STEP) for their review/comments.

Minutes of the Meeting of Liveability.pdf

Evaluation sheet of Bidders for Liveability.pdf

08/01/2018 6:33 PM

G Vijay Kumar
(US (CBUD))

Note No. #95

08/01/2018 7:09 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #96

09/01/2018 3:00 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #97

10/01/2018 10:22 AM

YOGENDRA SINGH AWANA

(DEPUTY SECRETARY)

Note No. #98

This is regarding selection of the consulting firm for the assignment of **Assessment of Liveability Indices for 116 cities in India.** With the approval of the Project Director, CBUD, the Technical Evaluation of the RFP was submitted to the World Bank through STEP. The World bank have given their No-objection for the Technical Proposal of RFP and they have conveyed for receiving of the Combined Technical and Financial Evaluation and a draft initialled negotiated contract for their review. (p.1027-1028/c)

In this regard, a meeting of the Procurement Committee of CBUD Project for opening of financial proposals and final combined technical and financial evaluation was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi (p.1029/c).

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD
- The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	**Country**	**Points**
IPSOS RESEARCH PRIVATE LIMITED	India	
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	**93.70**
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	**77.60**
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. (p. 1030-1033) Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

The Financial proposals of the shortlisted consulting firms are annexed.

Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes) (attached p. 1034-1053/c)

Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)

(attached p. 1054-1061/c)

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS								
The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-								
T=0.80, and P=0.20								
Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ´ P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score.							
	Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)							
S(t) = Technical Scores of the bidder								
S(f) = Financial Score of the bidder								

Keeping in view of above, the Procurement Committee of CBUD recommended (the minutes attached p. 1062-1063/c) the the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

Submitted for the approval of Secretary (MoHUA) for accepting the recommendations of the Procurement Committee, please.

No Objection from the World bank for Evaluation of Technical Proposals of RFP on Liveability - Shortlisting of Cons.pdf

Deloitte.pdf

Ipsos.pdf

Minutes of the Procurement Committee Meeting held on 15th January 2018.pdf

16/01/2018 4:21 PM

G Vijay Kumar
(US (CBUD))

Note No. #99

The minutes have been shown to EA. His signatures on the same would be obtained once he is in office. Due to paucity of time, the proposal is submitted for approval before approaching WB for their confirmation on selection of M/s IPSOS and consortium.

16/01/2018 4:26 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #100

16/01/2018 4:29 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #101

16/01/2018 4:31 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #102

Reference Notes on pre-pages:

With the approval of the Project Director, CBUD, the Combined Evaluation consisting of Technical Evaluation and Financial Evaluation of the **RFP on Liveability** was submitted to the World Bank through STEP.

The World Bank have given their No-objection for the Combined Technical and Financial Evaluation and requested the Ministry to proceed with the negotiations with the selected consulting firms with draft negotiated contract (DNC) for their review. *(p.1066-1067/c)*

Keeping in view of the recommendations of the Procurement Committee of CBUD {the minutes attached *(p. 1064-1065/c)}* and subsequent no objection from the World bank, the the highest ranked consulting firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India) and The Economic Group Ltd (United Kingdom)** may be issued a **letter of Intent** for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA). **DFA**, please.

No Objection from the World bank for combined technical and financial evaluation of RFP on Liveability.pdf

Minutes of the meeting of Procurement Committe for opening of Financial Bids and final evaulation of Liveability.pdf

17/01/2018 6:06 PM

G Vijay Kumar
(US (CBUD))

Note No. #103

After issue of LoI to M/s IPSOS as proposed above, the draft Contract to be signed between M/o HUA and M/s IPSOS would be forwarded to JS (AMRUT) for finalizing the same in consultation with the IFD and signing it for execution thereof.

17/01/2018 6:21 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #104

Submitted for approval **to issue LOI** to highest ranked consulting firm of M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India) and The Economic Group Ltd (United Kingdom) for assessment of Livability Indices of 116 cities.

After issue of LoI, the draft Contract to be signed between MoHUA and M/s IPSOS would be forwarded to JS (AMRUT) for finalizing the same in consultation with the IFD and signing it for execution thereof.

18/01/2018 11:09 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #105

19/01/2018 11:11 AM

DURGA SHANKER MISHRA
(SECRETARY)

Note No. #106

19/01/2018 11:13 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #107

19/01/2018 11:20 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #108

Reference notes above:

The Procurement Committee of CBUD {the minutes attached*(p. 1064-1065/c)}* had recommended the the highest ranked consulting firm M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) for the selection as a Consultant for the assignment of **Assessment of Liveability Indices for 116 cities in India** on the basis of REOI and RFP issued for the purpose; and to be invited for the contract negotiations. The World Bank has also given their no objection.

Before inviting the consulting for the contract negotiations, we may get the vetting of the draft contract by IFD, MoHUA.

In this regard, the initial estimation for the project is Rs. 16.41 Crores *(p. 1070-1071/c). The proposal was concurred by the IFD at REOI and RFP stage (file attached) and also by the World Bank*

The total cost of the Financial Proposal of M/s IPSOS consortium is Rs. 10,94,28,200/- (excluding taxes) (p. 1034-1053/c) which means Rs. 12,91,25,276/- (including GST of 18%).

The Cost of the Financial Proposal is within the limits of the estimated cost. As such, the file alonwith the draft contract (attached p. 1072-1120/c)) may be sent to IFD, for their vetting please.

Liveability REOI and RFP file -Concurrence of IFD (Noting Protion).pdf

Liveability REOI and RFP file -Concurrence of IFD (Correspondence Protion).pdf

Draft_Contract_Liviability .pdf

22/01/2018 12:37 PM

G Vijay Kumar
(US (CBUD))

Note No. #109

Please bring out the changes in the final draft of contract from the one approved by IFD with the RfP.

22/01/2018 2:45 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #110

Please refer to my notes dated 22nd and 27th November 2017:

As per the request made by the World Bank, the following minor changes have been carried out in the RFP and the Standard Form of Contract. This was necessitated as the Ministry followed e-procurement and the RFP was modified to suit the same.

Incorporation of the following Bank comments :	Remarks.
(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.	Done
(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.	Done accordingly
(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or reference to any procedure available on the portal may be indicated.	Inserted
(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.	Done
(5) Delete “Foreword” from Section-8 “Conditions of Contract and Contract Forms”.	Deleted
(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.	Deleted Time based
(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.	Inserted
(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.	Inserted
(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.	Done
(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.	Done
(11) SCC 23.1 : Please insert relevant option	Done
(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.	Indicated
(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions	Done
(14) SCC 27.2 : Insert relevant option	Done

(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.	Done
(16) SCC 39.1 & 39.2 : insert relevant option.	Done
(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.	Done
(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).	Done
For payments in foreign currency, it should be LIBOR + 2%.	Done
(19) SCC 45.1 Delete the instructions in brackets.	Done
(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.	Done
(21) SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	Done

There is no major change in the RFP and the Standard Form of Contract due to the fact that the Ministry did not agree for the change in the Evaluation Criteria, which was concurred by the IFD, MoHUA.

We may send the file to IFD, for vetting of the Draft Contract, please.

22/01/2018 3:26 PM

G Vijay Kumar
(US (CBUD))

Note No. #111

We may refer the draft contract to be signed between MoHUA and M/s IPSOS Research Pvt Ltd, to IFD for their vetting.

22/01/2018 5:14 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #112

29/01/2018 10:06 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #113

Please complete the the tender process first.

29/01/2018 12:58 PM

Jhanja Tripathy
(JS &FA)

Note No. #114

30/01/2018 2:46 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #115

Ref. query of JS & FA.

2. It is mentioned that tendering process has already been completed as a result of which M/s IPSOS Research Pvt Ltd has been finally selected. It is proposed to sign proposed contract with it. We may accordingly refer the file back for vetting of draft contract by IFD.

30/01/2018 4:39 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #116

30/01/2018 4:51 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #117

30/01/2018 6:01 PM

Jhanja Tripathy
(JS &FA)

Note No. #118

30/01/2018 6:15 PM

RAMESH CHAND
(DIRECTOR)

Note No. #119

Integrated Finance Division

This is regarding vetting of the draft contract to be signed between MoHUA and selected consultant for "Assessment of Liveablity Indices for 116 cities in India".

2. M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) has been selected a total cost of **Rs. 10,94,28,2009/- plus taxes** after following the due process of procurement prescribed by MoF/ World Bank. The draft contract has been shown to the World Bank and they have no objection. The draft contract seems to be in order subject to following minor corrections:

(i) in 4th line of Part I, word 'with' may be added after 'consortium'.
(ii) in the 1st line of Part I (c), word 'or ' has to be deleted.
(iii) Para 41.2.4 continued in 41.2.3. This may be segregated.
(iv) in the last line of Para 44.2, it should be GCC 45.1 in place of GCC 49.1.
(v) 11.1 may be added in Part III: Special Conditions of Contract.
(vi) Appendix B on Key Experts as per the WB guidelines may be attached.

31/01/2018 3:38 PM

Pankaj Kumar
(US(IFD-II))

Note No. #120

31/01/2018 3:57 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #121

31/01/2018 5:55 PM

Jhanja Tripathy
(JS &FA)

Note No. #122

01/02/2018 10:24 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #123

01/02/2018 11:37 AM

Pankaj Kumar
(US(IFD-II))

Note No. #124

02/02/2018 2:28 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #125

Reference Notes on pre-pages:

With the approval of the Project Director, CBUD, the draft contract of **Liveability** was submitted to the World Bank through STEP.

The World Bank have given their No-objection for the the combined technical and financial evaluation report and the draft negotiated contract subject to the clearance on The Economist Group (The World Bank's database research on debarred firms has shown that "The Economic Consulting Group, UK" has been permanently debarred. In this regard, the Ministry and the World Bank would like a confirmation from the M/S IPSOS Research Private Limited and the consortium partners that "The Economist Group Limited, UK" is a separate entity/firm from "The Economic Consulting Group, UK") **and they have also requested to send the signed contract to the Bank prior to requesting or making any payments under this contract.**

It may be submitted that M/s IPSOS Research India Private Limited has clarified that The Economist Intelligence Unit (EIU) is a business within The Economist Group. It is a highly reputed organization and working with many esteemed organizations in the world. More information about the organization can be accessed at www.eiu.com. The attached affidavit also confirms that they are not blacklisted anywhere. They also informed that they re not aware of organizations named Economic Consulting Group, UK or Economic Consultancy Associates, UK. These appear to be different organizations and not connected to EIU.(copy attached)

Meanwhile, the IFD, MoHUA has concurred the draft contract (refer p. 42-46/N) subject to following minor corrections:
(i) in 4th line of Part I, word 'with' may be added after 'consortium'.
(ii) in the 1st line of Part I (c), word 'or ' has to be deleted.
(iii) Para 41.2.4 continued in 41.2.3. This may be segregated.
(iv) in the last line of Para 44.2, it should be GCC 45.1 in place of GCC 49.1.
(v) 11.1 may be added in Part III: Special Conditions of Contract.
(vi) Appendix B on Key Experts as per the WB guidelines may be attached.

Keeping in view of above, the contract was modified accordingly and attached below. If approved, the contract may be signed, please.

Submitted for kind approval, please.

Contract_Liviability Index_Final.pdf

No Objection from the World Bank for signing of the Liveability Contract.pdf

Clarifications from IPSOS Reaserach india private Limited on EIU.pdf

15/02/2018 6:22 PM

G Vijay Kumar
(US (CBUD))

Note No. #126

Discussed with DS (CBUD).

The Appendix B and C as per advice of IFD, the relevant portions (particulars of Key Experts) of Technical Proposal and breakdown of Contract price from the Financial Proposal will be taken while signing the contract.

As the IFD, MoHUA and the World Bank have given their no objection for signing the contract, if approved the contract may be signed, please.

Technical Proposal of IPSOS.pdf

Finacial Proposal of IPSOS.pdf

Contract_Liviability Index_Final.pdf

15/02/2018 7:00 PM

G Vijay Kumar
(US (CBUD))

Note No. #127

15/02/2018 7:07 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #128

Draft agreement with IPSOS consortium for assessment and ranking of cities for livability indices is put up for approval.

IFD and World Bank have already agreed to it.

16/02/2018 1:07 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #129

20/02/2018 8:29 PM

DURGA SHANKER MISHRA
(SECRETARY)

Note No. #130

21/02/2018 11:25 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #131

21/02/2018 3:21 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #132

The contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

20/03/2018 4:45 PM

G Vijay Kumar
(US (CBUD))

Note No. #133

K.14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

Ministry of Housing and Urban Affairs has prepared Liveability Standards for Indian Cities and the same were launched by the Hon'ble Minister, Ministry of Housing and Urban Affairs in the National workshop held on 23rd June 2017 at Vigyan Bhawan, New Delhi. Through an international bidding process under World Bank funded CBUD programme, the Ministry has selected M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities at a total cost of Rs.10,94,28,200/- plus taxes after following the due process of procurement prescribed by MoF/ World Bank and the same to be completed by June, 2018. After that, the Ministry will be able to issue liveability indexes of the 116 selected Cities.

2. In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract) is as under:

% of Payment	Deliverables
Twenty percent (20%) of the contract price	Acceptance / approval of Inception Report
Fifty percent (50%) of the contract price	Acceptance / approval of Draft Final Report
Thirty percent (30%) of the contract price	Acceptance / approval of Final Report

4. The Consultant has raised the invoices for Rs.2,58,25,055/- (incl GST) for the submission of inception report (pg-1369-1833) against which Rs.2,18,85,640/- (excl Taxes) has been recommended / verified by CBUD team (vide PUC--pg-1837-1842). The consultant has not submitted a CA certificate confirming the payment of GST. The project implementation committee has recommended the approval of the report and same has been confirmed by JS (AMRUT), Minutes of the same has been attached at page 1834-1836. The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.

Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released**
			Fee	GST@18%	**Fee**
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640	39,39,415/-	2,18,85,640/- (excl GST) only
	Grand total to be released				**2,18,85,640/-(excl GST)**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

22/03/2018 5:01 PM

Pankaj Sinha
(ASO)

Note No. #134

22/03/2018 5:15 PM

G Vijay Kumar
(US (CBUD))

Note No. #135

22/03/2018 5:41 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #136

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 2,18,85,640/- (excluding GST @18%)** in respect of 20% value of **Inception Report** *(p. 1369-1833/c)* submitted by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Liveability Indices for 116 Cities in India.

In this regard, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected by the Ministry of Housing and Urban Affairs after following the due process of procurement prescribed by MoF/the World Bank. With due concurrence of IFD, MoHUA (p. 46/N) and approval of Secretary (MoHUA) (p. 49-50/N), a contract ***(p.1121-1368/c)*** was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium, at a total cost of Rs. 10,94,28,200/- plus applicable taxes..

*In the instant case, the consulting firm has submitted the Inception Report, one of the deliverables according to the contract. T**he Inception Report submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA (p.1839/c)** on the basis of recommendations of the Project Implementation Committee on City Liveability Index (p.1834-1836/c).*

The Inception Report has been **recommended by PMU, CBUD team** *(p. 1837/c)* and the **Sector Expert has examined the Inception Report and conveyed that report confirms to the deliverables as per ToR. The Accounts Division has also verified** the claim.

The fund of Rs. 30.25 cr. was allocated for the year 2017-18. An amount of Rs. 24,34,96,909/- was already sanctioned and the fund of Rs. 5,90,03,091/- is available. The sanctioning orders are being issued for the proposals concurred by the IFD.

In the instant proposal, **Rs. 2, 18,85,640/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

23/03/2018 11:52 AM

G Vijay Kumar
(US (CBUD))

Note No. #137

23/03/2018 7:02 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #138

26/03/2018 2:57 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #139

26/03/2018 3:35 PM

Jhanja Tripathy
(JS &FA)

Note No. #140

Integrated Finance Division

Ref. Program Div's notes on pg 51-54/N.:

This is regarding payment of Rs.2,18,85,640/-(excl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable i.e. inception report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes.

2. The Inception Report submitted by the consultant, has been recommended by the Project Implementation Committee and approved by the Mission Director. As per the contract agreement, the consultant is eligible for payment of 20% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment excluding GST since the consulting firm has not submitted the proof of depositing the same.

3. On going through the contract document, in accordance with Para 7.5 (p.35 of the contract document), the consultant had to submit separate inception reports for each city. This has not been confirmed by the Programme Div. in their notes.

4. In view of above, we may concur to release Rs.2,18,85,640/-(excl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

26/03/2018 5:02 PM

Pankaj Kumar
(US(IFD-II))

Note No. #141

26/03/2018 6:32 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #142

26/03/2018 7:47 PM

Jhanja Tripathy
(JS &FA)

Note No. #143

27/03/2018 10:11 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #144

27/03/2018 1:26 PM

Pankaj Kumar
(US(IFD-II))

Note No. #145

27/03/2018 1:57 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #146

27/03/2018 2:13 PM

G Vijay Kumar
(US (CBUD))

Note No. #147

Ref above:

Observation of US (IFD) in r/o the payment to be released to M/s IPSOS Research Pvt Ltd for submission of first deliverable against liveability index in 116 Cities, may be perused. IFD suggested that the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

2. In this regard, it may be stated that the separate report for each city has been submitted by the consultant which may be seen at page 1843-2202. So, if approved, a sanction letter may be prepared. Submitted for perusal and approval please.

28/03/2018 6:20 PM

Pankaj Sinha
(ASO)

Note No. #148

Reference note above and observations of IFD at p. 54/ N.

A separate Inception Report for each city ***(P. 1843-2202/c)*** was already prepared by the Consultant. On the basis of this an Inception Report ***(p. 1369-1833/c)*** was submitted by the Consultant to the Ministry.

The Inception Report submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA *(p.1839/c)* on the basis of recommendations of the Project Implementation Committee on City Liveability Index (p.1834-1836/c).

We may issue the sanction orders, if considered, please.

28/03/2018 6:39 PM

G Vijay Kumar
(US (CBUD))

Note No. #149

The advice of IFD has been complied with the submission of city-wise inception reports by IPSOS. We may release the amount concurred by IFD. However, after release of amount, we may forward the individual city wise reports to JS (AMRUT) for their necessary action.

28/03/2018 6:49 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #150

28/03/2018 7:14 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #151

28/03/2018 7:15 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #152

28/03/2018 7:17 PM

G Vijay Kumar
(US (CBUD))

Note No. #153

Ref above:

The amount of Rs.2,18,85,640/- (excl Taxes) against the submission of Inception Report for assessment of liveability indices in 116 cities under CBUD Project has been released vide sanction letter dated 28-03-2018 (pg-2203-2205) as concurred by IFD. Individual City-wise reports have been attached from pg 1843-2202. Now, we may forward the individual city wise reports to JS (AMRUT) for their consideration please.

04/04/2018 1:02 PM

Pankaj Sinha
(ASO)

Note No. #154

04/04/2018 4:12 PM

G Vijay Kumar
(US (CBUD))

Note No. #155

05/04/2018 3:40 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #156

06/04/2018 10:47 AM

G Vijay Kumar
(US (CBUD))

Note No. #157

Please examine and discuss.

09/04/2018 1:18 PM

SHIV DAS MEENA
(JS (AMRUT))

Note No. #158

24/04/2018 4:12 PM

VINAY PRATAP SINGH
(DIR (AMRUT-II))

Note No. #159

Discussed

26/04/2018 7:39 PM

GURJEET SINGH DHILLON
(DIR (AMRUT))

Note No. #160

09/05/2018 2:31 PM

REEMA JAIN
(DEPUTY DIRECTOR)

Note No. #161

10/05/2018 4:07 PM

G Vijay Kumar
(US (CBUD))

Note No. #162

10/05/2018 4:35 PM

Pankaj Sinha
(ASO)

Note No. #163

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the release of **Rs.39,39,415/- in r/o claim of GST payment paid against Inception Report** to M/s IPSOS Research Private Limited (India) in consortium with M/s ATHENA INFONOMICS India Private Limited (India) and Economist Group Limited (United Kingdom) for assessment of liveability indices in 116 cities **(**vide PUC--pg--2206-2208). An amount of Rs.2,18,85,640/- (Excl GST) was already paid vide sanction letter dated 28-03-2018 (pg-2203-2205).

2. In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018 at a total cost of Rs.10,94,28,200/- plus taxes. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract) is as under:

% of Payment	Deliverables
Twenty percent (20%) of the contract price	Acceptance / approval of Inception Report
Fifty percent (50%) of the contract price	Acceptance / approval of Draft Final Report
Thirty percent (30%) of the contract price	Acceptance / approval of Final Report

4. The Consultant earlier raised the invoices for Rs.2,58,25,055/- (incl GST) for the submission of inception report (pg-1369-1833) against which Rs.2,18,85,640/- (excl Taxes) was reimbursed to the Consultant vide sanction letter dated 28-03-2018.

Now, the Consultant has submitted the proof of GST payment which has been recommended / verified by the CBUD team (PUC-2206-2208). The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl No.	Invoice No. & Date	Deliverables	Fee	GST@18%	Amount to be released
1.	18270619 dated 19-03-2018	Inception report (20%)	2,18,85,640-paid vide letter dated 28-3-2018.	39,39,415/-	Rs.39,39,415/- against GST
	Grand total to be released :				**Rs.39,39,415/- against GST**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

28/05/2018 4:29 PM

Pankaj Sinha
(ASO)

Note No. #164

28/05/2018 4:50 PM

G Vijay Kumar
(US (CBUD))

Note No. #165

29/05/2018 4:33 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #166

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 39,39,415/- as GST** to the consulting firm M/s IPSOS Research Private Limited in consortium with Athena Infonomics India Private Limited and The Economist Group Limited on the submission of proof. In this regard, the payment for the Inception Report (Rs. 2,18,85,640/-) was already made with the approval of Joint Secretary (AMRUT) and Project Director, CBUD with the concurrence of IFD in connection with CBUD assignment for the Assessment of Liveability Indices for 116 Cities in India.

The CBUD Team (p. 2206-2208/c) as well as the Accounts Division has also verified the claim.

The fund of Rs. 166.6 Cr. was allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date, in this Financial Year, 35 sanction orders have been issued for Rs. 3,48,52,772/- and Rs. 163.12 Cr is available.

In the instant proposal, **Rs. 39,39,415/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

29/05/2018 4:48 PM

G Vijay Kumar
(US (CBUD))

Note No. #167

29/05/2018 5:40 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #168

01/06/2018 11:41 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #169

01/06/2018 12:20 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #170

01/06/2018 12:35 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #171

Integrated Finance Division

Due to non submission of the proof of depositing the GST, proposal for payment against 1st deliverable to M/s. IPSOS Research Private Limited (India) w.r.t. consultancy work for providing assessment of liveability indices in 116 cities, was concurred to excluding GST - refer p.49/N.

Now, the consultant has submitted the proof of depositing the GST amounting to Rs.39,39,415/- (18% of the payment of Rs. 2,18,85,640/- for 1st deliverable). We may, therefore, concur to the proposal for reimbursement of Rs.39,39,415/- to the consultant.

04/06/2018 10:13 AM

Pankaj Kumar
(US(IFD-II))

Note No. #172

05/06/2018 1:41 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #173

Ref. IFD's notes above:

We may forward the file to JS&FA for her approval please.

06/06/2018 4:55 PM

Pankaj Kumar
(US(IFD-II))

Note No. #174

06/06/2018 5:21 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #175

08/06/2018 4:45 PM

Jhanja Tripathy
(JS &FA)

Note No. #176

08/06/2018 4:47 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #177

08/06/2018 5:29 PM

Pankaj Kumar
(US(IFD-II))

Note No. #178

11/06/2018 10:09 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #179

11/06/2018 12:28 PM

G Vijay Kumar
(US (CBUD))

Note No. #180

23/08/2018 12:29 PM

NEERAJ
(ASO)

Note No. #181

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.6,45,62,638/-(incl. GST) [Rs.5,47,14,100/- Fee + Rs.98,48,538/- GST @18%] (vide PUC—pg-6579-6584) to M/s. IPSOS Research Private Limited (India) for submission of 2nd deliverable i.e. Draft City Assessment Report i.e. Draft Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-2215-6578). The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes. Payment of Rs.2,58,25,055/- (incl GST) against the 1st deliverable i.e. inception report has already been made vide sanction letter dated 31/03/2018 & dated 12/06/2018 (pg-2203-2205 & pg-2209-2214)

2. The Draft City Assessment Report submitted by the consultant, has been approved by the Project Monitoring Committee chaired by Secretary (HUA) held on 17.07.2018. As per the contract agreement, the consultant is eligible for payment of 50% of the total contract amount against submission of 2nd deliverable.

In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c). Copies of the aforesaid reports have been submitted on 29/ 06/2018.

3. The payment schedule (as per clause 41.2 –Special Condition of Contract-pg-1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.6,45,62,638/-(incl. GST) [Rs.5,47,14,100/- Fee + Rs.98,48,538/- GST @18%] for the submission of 2nd deliverable i.e. Draft Final / Draft City Assessment Report of 116 Cities (pg-2215-6578) against which raised the invoice may be processed as approved by the Project Monitoring Committee chaired by Secretary (HUA). Minutes of the same has been attached with PUC (pg-6579-6584). The details of the payment are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.				
Sl.	Invoice No. &	Details of the	Amount claimed	**Amount to be**

No.	Date	Deliverable			**released (incl GST)**
			Fee	GST@18 %	Rs.6,45,62,638/-
1.	18271257 dated 29-05-2018	Draft City Assessment Report (50%)	5,47,14,100/-	98,48,538/-	
	Grand total to be released				**6,45,62,638/-(incl GST)**

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment

Submitted pl.

27/08/2018 12:21 PM

Pankaj Sinha
(ASO)

Note No. #182

27/08/2018 12:38 PM

G Vijay Kumar
(US (CBUD))

Note No. #183

Calculation has been checked however as per 7.5-Timelines and Deliverables for year 1 of Appendix A(pg-1173), Draft assessment Report should be submitted on 12 weeks from start date as per contract whereas same has been submitted on29/6/18 i.e after 20 weeks.

29/08/2018 3:31 PM

Kavita Kalra
(ACCOUNTS OFFICER)

Note No. #184

Reference Notes above:

The file is submitted for **approval of Project Director (CBUD)** for the payment of **Rs. 6,45,62,638/- (including GST @18%)** in respect of 50% value of **Draft Final Report/ Draft City Assessment Report** *(p. 2215-6578/c)* submitted by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Liveability Indices for 116 Cities in India.

In this regard, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected and a contract ***(p.1121-1368/ c)*** was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium, at a total cost of Rs. 10,94,28,200/- plus applicable taxes..

*In the instant case, the consulting firm has submitted the Draft Final Report/Draft City Assessment Reports for 116 Cities, one of the deliverables according to the contract. T**he Draft City Assessment Reports submitted by M/s IPSOS Research Private Limited(India) consortium was accepted/approved by the Joint Secretary (AMRUT), MoHUA** on the basis of basis of the minutes of the Project Monitoring Committee on "Ease of Living Index" which was held under Chairmanship of Secretary (HUA) on 17th July 2018.* (p. 6579-6584).

The Accounts Division has also verified the claim.

In this regard, it is also submitted that the payment for Inception Report (including GST@18%) was already paid to the consulting firm with the approval of Project Director (CBUD) and with the concurrence of JS&FA (please see Note# 133-175/N) and the status of deliverables is detailed below:

Contractual Amount: - Rs. 10,94,28,200/- exclusive of GST		
Details of deliverable	Amount paid to the consultant	Amount recommend for payment at this stage
Inception Report (20%)	Rs. 2,58,25,055/- (with GST)	
Draft Final Report/ Draft Cit Assessment Report (50%)		**Rs. 6,45,62,638/-**

		(including GST)
Final Report (30%)		**yet to to be approved**
Total	Rs.2,58,25,055/--	**Rs. 6,45,62,638/-** (including GST)

The fund of Rs. 166.6 Cr. was allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date, in this Financial Year, 125 sanction orders have been issued for Rs. 20,99,71,601/- and Rs. 145,60,28,399/- is available.

In the instant proposal, **Rs. 6,45,62,638/-** is required and the sufficient funds will be available for sanctioning.

If approved by the Projected Director (CBUD), the file may be sent to IFD for their concurrence, please.

29/08/2018 5:33 PM

G Vijay Kumar
(US (CBUD))

Note No. #185

30/08/2018 10:28 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #186

31/08/2018 11:00 AM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #187

31/08/2018 11:09 AM

Jhanja Tripathy
(JS &FA)

Note No. #188

31/08/2018 3:22 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #189

Integrated Finance Division

Reference Notes above:

The proposal is for release of the payment of Rs. 6,45,62,638/- (including GST @18%) on submission of Draft Final Report/ Draft City Assessment Report by the consultant in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Livability Indices for 116 Cities in India. For preparation of the said Reports, M/s IPSOS Research Private Limited(India) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd (United Kingdom) was selected and a contract was executed between the Ministry of Housing and urban Affairs and M/s IPSOS Research Private Limited(India) consortium at a total cost of Rs.10,94,28,200/- plus applicable taxes (pp.1121-1368/c).

2. Now, the consulting firm has submitted the Draft Final Report/Draft City Assessment Reports for 116 Cities, one of the deliverables according to the contract and these Reports has been accepted/approved by the Joint Secretary (AMRUT), MoHUA on the basis of the minutes of the Project Monitoring Committee on "Ease of Living Index" which was held under Chairmanship of Secretary (HUA) on 17th July 2018. (pp. 6579-6584/c) and the Accounts Division has also verified the claim. Now the Programme Division has proposd to release Rs. 6,45,62,638/- (including GST) to the consultant.

3. The fund of Rs. 166.6 Cr. Have been allocated for the year 2018-19 under sub-head of Professional Services of CBUD Project and as on date Rs. 20,99,71,601/- has been utilized leaving a balance amount Rs. 145,60,28,399/-.

4. In view of the above, IFD may concur the proposal to release Rs. 6,45,62,638/- to the consultant as sufficient funds are available and the reports have been accepted by the Project Director of CBUD.

Submitted please.

06/09/2018 5:38 PM

SHESH KUMAR
(US (D-V))

Note No. #190

07/09/2018 3:33 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #191

Discussed with Director(F).

The proposal relates to release Rs. 6,45,62,638/-(including IGST 18% amounting Rs.98,48,538/-) to M/s IPSOS Research Private Limited(India), a consortium, for submission of Draft Final Report in respect of Capacity Building for Urban Development (CBUD) Project for the Assessment of Livability Indices for 116 Cities in India.

2. M/o HUA has signed a contract vide pp. 1121-1368/c with the firm at a contract price of Rs.10,94,28,200/- exclusive of indirect taxes for the above said project with the payment schedule as under:

- 20% of contact price on acceptance/approval of the inception report
- 50% of contact price on acceptance/approval of the draft final report
- 30% of contact price on acceptance/approval of the final report

3. 20% of the contract price (Rs. 2,58,25,055/- including IGST 18%) has already been paid on submission of Inception Report vide letters dated 31.03.2018 & 12.06.2018 (pp.2203-2205/c & pp. 2209-2214/c) to the firm.

4. Now, the firm has submitted Draft Final Report alongwith the invoice No. 18271257 dated 29.05.2018 vide pp. 6583/c for their claims of Rs. 6,45,62,638/- alongwith a Certificate confirming that IGST 18% amounting Rs. 98,48,538/- has been made to the Govt. account on 19.06.2018 vide pp.6584/c.

5. As the draft final report has been approved /accepted in the meeting of Monitoring Committee held on 17.07.2018 under the Chairmanship of Secretary (HUA) (minutes are at pp.6581-6582/c), therefore, Programme Division has recommended for release of Rs.6,45,62,638/-(including IGST 18%).

6. In view of the above and funds availability, IFD may concur the proposal for release of Rs. 6,45,62,638/- (including Rs. 98,48,538/- as IGST 18%) for payment to the firm.

Submitted please.

- 20% of contract price will be paid on acceptance/approval of the inception report

10/09/2018 5:39 PM

SHESH KUMAR
(US (D-V))

Note No. #192

11/09/2018 11:23 AM

Yashodhara Vijayan
(CONSULTANT)

Note No. #193

11/09/2018 5:50 PM

Jhanja Tripathy
(JS &FA)

Note No. #194

12/09/2018 9:44 AM

Yashodhara Vijayan
(CONSULTANT)

Note No. #195

12/09/2018 12:19 PM

SHESH KUMAR
(US (D-V))

Note No. #196

12/09/2018 1:03 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #197

12/09/2018 1:16 PM

G Vijay Kumar
(US (CBUD))

Note No. #198

14/09/2018 11:00 AM

NEERAJ
(ASO)

Note No. #199

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.3,87,37,583 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,123/-GST] (vide -PUC—pg-9520-9522) to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-6589-9519). The work has been awarded to M/s IPSOS Research Private Limited (India) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes.

2. Ms Reema Jain, Deputy Director (AMRUT) has informed [vide PUC (pg-9520)] that ''Copies of the Final City Assessment Report submitted by the Consultant have been approved by AS & PD (AMRUT). The final consolidated report of ease of living, 2018 ha been released by Hon'ble Minister (I/C) of Housing & Urban Affairs on 10.08.2018."

In this context, it may be submitted that the contract was signed on 21st February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract- pg-1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.3,87,37,582.80/-(incl. GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST] for the submission of 3rd & final deliverable i.e. Final City Assessment Report of 116 Cities (pg-6589-9519) against which the invoice may be processed, the same has been approved by AS & PD (AMRUT). The payment for the previous 2 deliverables has already been made (pg-2203-2205 , pg-2209-2214 , pg-6585-6588). The details of the payment to be made are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (incl GST)**
			Fee	GST@18%	Rs.3,87,37,582.80/-
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment. Since Sr Accounts Officer and Under Secretary (CBUD) are on leave. So, as discussed, the file may be directly submitted to DS (CBUD).

Submitted pl.

18/10/2018 1:01 PM

Pankaj Sinha
(ASO)

Note No. #200

Ref. Note above.

2. The Accounts Office is unwell and not attending the office. US (CBUD) is out. In view of the time constraints for processing of bills, the file is being processed accordingly.

3. The final deliverable against preparation of liveability index has been achieved with the approval of final report by the Ministry. With this the final payment to M/s IPSOS has become due and is recommended for release. May kindly approve sanction of Rs. 3,87,37,582.80/- (including GST), to M/s IPSOS and refer the file to IFD for their concurrence.

18/10/2018 2:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #201

18/10/2018 3:12 PM

Sanjay Kumar
(JOINT SECRETARY)

Note No. #202

18/10/2018 4:24 PM

Jhanja Tripathy
(JS &FA)

Note No. #203

22/10/2018 12:16 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #204

24/10/2018 12:37 PM

SHESH KUMAR
(US (D-V))

Note No. #205

24/10/2018 1:52 PM

S K SARKAR
(CONSULTANT)

Note No. #206

Integrated Finance Division

Ref. Program Div's notes on pg 80-82/N.:

This is regarding payment of 3rd & final installment amounting to Rs.3,87,37,582.80/-(incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of last deliverable i.e. Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes. An amount of Rs.9,03,87,693/- (including GST) has been released to the consultant for 1st two deliverables - concurrence of IFD may be seen at pp.58-59/N, p.68/N & pp 78-79/N.

2. The last deliverables i.e. Final Report submitted by the consultant, has been approved by the Mission Director (AMRUT) and the final consolidated report has been released by the Hon'ble Minister (I/C). As per the contract agreement, the consultant is now eligible for payment of 30% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment including GST.

3. In view of above, we may concur to release Rs.3,87,37,582.80/-(incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

25/10/2018 12:19 PM

Pankaj Kumar
(US (IFD-III))

Note No. #207

26/10/2018 5:08 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #208

29/10/2018 4:05 PM

Jhanja Tripathy
(JS &FA)

Note No. #209

29/10/2018 4:47 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note No. #210

29/10/2018 5:20 PM

Pankaj Kumar
(US (IFD-III))

Note No. #211

30/10/2018 10:57 AM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note No. #212

30/10/2018 11:00 AM

G Vijay Kumar
(US (CBUD))

Note No. #213

Ref above:

A separate report for each city has been submitted by the consultant and enclosed from page 6589-9519. Now, as concurred by IFD, an amount of Rs.3,87,37,582.80 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST @18%] may be sanctioned.

2. For rounding figure & if approved, the sanction letter for Rs.3,87,37,582/- (incl GST) may be prepared.

Submitted please.

Note # 199

K-14012/101(11)/2017-SCM.III(V)-Part(2)
Government of India
Ministry of Housing & Urban Affairs
(CBUD Divisions)
****

This is regarding the payment of Rs.3,87,37,583 (incl GST) [Rs.3,28,28,460/- FEE & Rs.59,09,123/-GST] (vide -PUC—pg-9520-9522) to M/s. IPSOS Research Private Limited (India) for submission of 3rd & final deliverable i.e. Final City Assessment Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities (All Reports have been attached from pg-6589-9519) . The work has been awarded to M/s IPSOS Research Private Limited (India) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for contractual prices of Rs.10,94,28,200/- plus taxes.

2. Ms Reema Jain, Deputy Director (AMRUT) has informed [vide PUC (pg-9520)] that ''Copies of the Final City Assessment Report submitted by the Consultant have been approved by AS & PD (AMRUT). The final consolidated report of ease of living, 2018 ha been released by Hon'ble Minister (I/C) of Housing & Urban Affairs on 10.08.2018."

In this context, it may be submitted that the contract was signed on 21st

February 2018 and the effective date of commencement of Services is 8th February 2018. The time period of the contract shall be 20 weeks (from 8th February 2018 to 28th June 2018) (p. 1121-1368/c).

3. The payment schedule (as per clause 41.2 –Special Condition of Contract- pg- 1121-1368) is as under:

% of Payment of the contract price	Deliverables
Twenty percent (20%)	Acceptance / approval of Inception Report
Fifty percent (50%)	Acceptance / approval of Draft Final Report
Thirty percent (30%)	Acceptance / approval of Final Report

4. The Consultant has raised the invoices of Rs.3,87,37,582.80/-(incl. GST) [Rs.3,28,28,460/- FEE & Rs.59,09,122.80/-GST] for the submission of 3rd & final deliverable i.e. Final City Assessment Report of 116 Cities (pg-6589-9519) against which the invoice may be processed, the same has been approved by AS & PD (AMRUT). The payment for the previous 2 deliverables has already been made (pg-2203-2205 , pg-2209-2214 , pg-6585-6588). The details of the payment to be made are as under:

Contractual Amount: Rs.10,94,28,200/- exclusive of taxes.					
Sl. No.	Invoice No. & Date	Details of the Deliverable	Amount claimed		**Amount to be released (incl GST)**
			Fee	GST@18%	Rs.3,87,37,582.80/-
1.	18271859 dated 31-07-2018	Final City Assessment Report (30%)	3,28,28,460/-	59,09,122.80/-	

5. In view of the above, in the first instance, we may refer the file to Accounts Division for their verification. Thereafter, the file may be forwarded to IFD for concurrence of release of the above mentioned payment. Since Sr Accounts Officer and Under Secretary (CBUD) are on leave. So, as discussed, the file may be directly submitted to DS (CBUD).

Submitted pl.

18/10/2018 1:01 PM

Pankaj Sinha
(ASO)

Note # 200

Ref. Note above.

2. The Accounts Office is unwell and not attending the office. US (CBUD) is out. In view of the time constraints for processing of bills, the file is being processed accordingly.

3. The final deliverable against preparation of liveability index has been achieved with the approval of final report by the Ministry. With this the final payment to M/s IPSOS has become due and is recommended for release. May kindly approve sanction of Rs. 3,87,37,582.80/- (including GST), to M/s IPSOS and refer the file to IFD for their concurrence.

18/10/2018 2:37 PM

YOGENDRA SINGH AWANA
(DEPUTY SECRETARY)

Note # 201

18/10/2018 3:12 PM

Sanjay Kumar
(JOINT SECRETARY)

Note # 202

18/10/2018 4:24 PM

Jhanja Tripathy
(JS &FA)

Note # 203

22/10/2018 12:16 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Note # 204

24/10/2018 12:37 PM

SHESH KUMAR
(US (D-V))

Note # 205

24/10/2018 1:52 PM

S K SARKAR
(CONSULTANT)

Note # 206

Integrated Finance Division

Page: 83

Ref. Program Div's notes on pg 80-82/N.:

This is regarding payment of 3rd & final installment amounting to Rs.3,87,37,582.80/- (incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of last deliverable i.e. Final Report w.r.t. consultancy work for providing assessment of liveability indices in 116 cities. The work has been awarded to M/s. IPSOS Research Private Limited (india) in consortium with M/s Athena Infonomics India Pvt. Ltd and Economist Group Ltd (UK) for Rs.10,94,28,200/- plus taxes. An amount of Rs.9,03,87,693/- (including GST) has been released to the consultant for 1st two deliverables - concurrence of IFD may be seen at pp.58-59/N, p.68/N & pp 78-79/N.

2. The last deliverables i.e. Final Report submitted by the consultant, has been approved by the Mission Director (AMRUT) and the final consolidated report has been released by the Hon'ble Minister (I/C). As per the contract agreement, the consultant is now eligible for payment of 30% of the total contract amount. The bill has been verified by the Programme Division and AO and recommended for payment including GST.

3. In view of above, we may concur to release Rs. 3,87,37,582.80/- (incl. GST) to M/s. IPSOS Research Private Limited (India) for submission of first deliverable with the condition that before releasing the payment to the consultant the Program Div. may confirm themselves that a separate report for each city has been submitted by the consultant.

30/10/2018 11:31 AM

Pankaj Sinha
(ASO)

Note No. #214

30/10/2018 11:34 AM

G Vijay Kumar
(US (CBUD))

Note No. #215

18/12/2018 4:44 PM

G Vijay Kumar
(US (CBUD))

Note No. #216

Subject: Issuance of Completion Certificate - reg.

Ref: Note#199 to Note#213 above.

Ministry signed the contract for "Assessment of Liveability Indices in 116 cities in India" with M/s IPSOS Research Private Limited(Lead) in consortium with M/s ATHENA Infonomics India Pvt Ltd (India) and M/s The Economic Group Ltd on 21.02.2018 and the effective date of commencement of services was 08.02.2018. The time period of the contract was 20 weeks (from 8th February 2018 to 28th June 2018).

2) As per the terms of the contract, the last deliverable was submission of 116 Final City Reports. The consortium has submitted Final City Reports which have been duly approved by AS&MD (AMRUT), accordingly,the third and final installment has been released to the consortium. Hence, there is no unconcluded/outstanding deliverable left.

3) In view of the above, it is proposed that 'Completion Certificate' may be issued to the consortium. The draft completion certificate is attached for approval at DFA/9051757.

File is submitted for kind approval with respect to para 3 above.

19/12/2018 2:26 PM

REEMA JAIN
(DEPUTY DIRECTOR)

Note No. #217

As per the terms of contract, the work as been completed by the agency. there is no maintenance period in the contract. Further, no earnest money/security deposit was given by the agency against this contract. We may therefore approve the issuance of Completion Certificate as per DFA.

21/12/2018 5:29 PM

Rahul Kapoor
(DIR (SC-III))

Note No. #218

24/12/2018 9:50 AM

Kunal Kumar
(JS(SC))

Note No. #219

24/12/2018 1:52 PM

Rahul Kapoor
(DIR (SC-III))

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for

Assessment of Liveability in Selected Cities held on

2nd June, 2017

A meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for above mentioned assignment for "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 2nd June, 2017 in the chamber of Economic Advisor-II (Room No.665-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Mr. Sajessh Kumar N., Director (Smart Cities)-Member
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Mr. Raja Dawn, PMU (CBUD), Member
- Mr Nilesh Rajayadhaksha, PMU (CBUD), Member

(Sh. Shiv Pal Singh, Director (AMRUT) was on leave)

The Request for Expression of Interest (EOI **"Assessment of Liveability in Selected Cites"** was invited from eligible consultants. The EOI was uploaded on e-procurement website of the Ministry on 9th May, 2017 and was also published in the Newspapers. The last date of receipt of EOI was 30th May. EOIs were opened on 31st May, 2017.. **The list of EOIs received is at Annexure 1.**

After detailed discussion, the committee derived the detailed evaluation criteria. The EOIs were evaluated based on this detailed criteria and as per Procurement Guidelines of CBUD and in accordance with the Quality Cost Based Selection method set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers (May 2011).

As per World Bank procurement guidelines a panel of 6 firms needs to be shortlisted, but in this case after evaluation the following 3 firms were found to be qualified. Hence the committee recommends that the minutes of the meeting, shortlisting 3 firms, may be forwarded to the World Bank for their consideration.

Sl. No	Lead Firm	Consortium Partner	Primary Eligibility	Technical Score (max. 100)
1	M/s CRISIL Risk and Infrastructure Solutions Limited	Hansa Research Group	Lead partner registered as Company, hence eligible	100

2	Deloitte Touche Tohmatsu India LLP		Lead partner registered as LLP, hence eligible	100
3	Infrastructure Development Corporation (Karnataka) Limited (iDecK)	Institute for Social and Economic Change (ISEC), Public Affairs Center (PAC) and SIGMA Research and Consulting Pvt. Ltd.	Lead partner registered as Company, hence eligible	90

The abstract sheet of marks obtained by each firm is as per Annexure 2 and evaluation sheets are at Annexure 3.

As mentioned in para above and since the cost of project is estimated more than 1 million US$, the procurement requires prior-review by the World Bank as per procurement guidelines of the World Bank. The recommendations of procurement committee may be forwarded to the World Bank for prior review as per World Bank procurement guidelines.

Utpal Deka

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

Minutes of the Meeting of Procurement Committee for shortlisting the EOIs for

Assessment of Liveability in Selected Cities held on

7th June, 2017

2nd meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for shortlisting the Expression of Interest (EOIs) for assignment of "Assessment of Liveability in Selected Cites" (STEP reference number IN-MoUD-14653-CS-QCBS) was held on 7th June, 2017 in the chamber of Economic Advisor-II (Room No.655-A) Nirman Bhawan, New Delhi.

The following were present:

- Sh. Anupam Mishra, Economic Adviosr-Chairman
- Sh. Sajeesh Kumar N., Director (Smart Cities)-Member
- Sh. Shiv Pal Singh, Director (AMRUT)
- Ms. Yashodhara Vijayan, Dy. Secy (IFD)-Member
- Sh. Uptal Deka, Team Leader, CBUD- Member
- Sh. Raja Dawn, PMU (CBUD), Member
- Sh. Nilesh Rajayadhaksha, PMU (CBUD), Member

The minutes of the procurement committee meeting held on 2nd June, 2017 have been shared with the World Bank on 2nd June 2017 itself. Only three firms could qualify as against six required under the procurement guidelines of World Bank. The procurement also needed prior review by the World Bank being above US$ One million.

The World Bank vide email dated 7th June, 2017 has observed as under:

"We observe that only 3 firms have been shortlisted for the Liveability Index assessment although a lot many had submitted EOI. You may revisit the eligibility criteria and re-issue the EOI after formal/informal market assessment. Kindly give at least 14 days time for submission of EOI. The process must be done through STEP so that REOI is published on UNDB. You may also make efforts for increasing competition and to get a shortlist of 6 qualified firms."

In view of observations of the World Bank, the procurement committee recommends to re-invite the bids by giving due publicity. Programme division may also consider revising the eligibility criteria to have better competition as advised by the World Bank.

(Raja Dawn)
Member PMU

(Nilesh Rajadhyaksha)
Member, PMU

(Utpal Deka)
Team Leader, PMU

(Yashodhara Vijayan)
DS(Fin), MOUD

(Sh. Shiv Pal Singh)
Director(AMRUT)

(Sajeesh Kumar. N)
Director, (SC)III

(Anupam Mishra)
Economic Advisor-II(MOUD)

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.
e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA’s response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

- a. Category 1: Single Business Entity
- b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

- a. The number of members in the Consortium would be limited to Five(5) including the lead member;
- b. The Application should contain the information required from each member;
- c. The Application should include a description of the roles and responsibilities of all the members;
- d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
- e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
- f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

  i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
  ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:

  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**
3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**

5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all

those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:

a. is not received online as indicated at 2.11;
b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a

position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**

f. Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**

S.No.	Parameter	Maximum Marks
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12	**20**
Total		**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for “**Assessment of Liveability in Selected Cities”**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____________________

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies..

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12.**. (Substantially Completed only) (Consortium partner 3)………..**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197

32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803

69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348

106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

8th June, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 119 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.
e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website https://eprocure.gov.in/cppp, http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called “**Application Validity Period**”. NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure “A”.**

d) **The ‘Liveability Standards for Cities’ and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	8-May-2017
2.	Pre Application Conference	NA
3.	Last Date for receiving queries	NA
4.	NIUA's response to queries latest by	NA
5.	**Last Date of Submission of EOI**	**By 3:00 p.m on 22-May-2017**

1.7 Pre-Application Conference

Not Applicable

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;
   d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);
   e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;
   f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank (“Bank”) in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified

forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:

   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website: http://moud.gov.in/cms/tendersandcorrigendum.php and http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at **Email:niua@niua.org** Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and field-surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to this section for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to this section.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

Annexure 1

CATEGORY	
1. Governance	**9. Mixed Land Use and Compactness**
2. Identity and Culture	**10. Power Supply**

3. Education	**11. Transportation and Mobility**
4. Health	**12. Assured Water Supply**
5. Safety and Security	**13. Waste Water Management**
6. Economy and Employment	**14. Solid Waste Management**
7. Housing and Inclusiveness	**15. Reduced Pollution**
8. Public Open Spaces	

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.: **Number of assignments**
f. Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Shortlisting Process;

d. “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. “**Restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For ____________________________
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies. **(Substantially Completed only) (Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix6 .

Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.**.**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12

Category No.	Criteria[1]	Number and Name of Cities
1	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only[2])(Lead firm)**	
2	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**.. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12**. (Substantially Completed only) (Consortium partner 2)**	
4	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.**. (Substantially Completed only) (Consortium partner 3)………..**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 7.

Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in Annexure 1 to section 2.12.. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part

and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643

108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Minutes of the Meeting of Procurement Committee for shortlisting of applications in response to REOI for **"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"**

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of "**Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**" was held under the chairmanship of Dr. Kumar V. Pratap, Economic Advisor-I, MoUD on 05th July 2017 in the Room No. 232C, Nirman Bhawan, New Delhi.

The following were present in the meeting:

1. Dr. Kumar V. Pratap, Economic Advisor, MoUD
2. Shri Shiv Pal Singh, Director(AMRUT), MoUD.
3. Shri Sajeesh Kumar N, Director (SC-III), MoUD
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoUD.
5. Shri G. Vijay Kumar, Under Secretary (SC-III), MoUD
6. Shri Utpal Deka, Team Leader, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, CBUD
8. Shri Raja Dawn, Procurement Specialist, CBUD

2. As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under:

[illegible]	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. Applications were invited from the eligible consulting firms through the Request for Expression of Interest (REOI) published on 15th June 2017 on www.eprocure.gov.in with the last date of 29th June 2017. The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. Hindustan Times, Hindu and Hindustan. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, a total of 21 applications were received by the last date of submission of applications viz. 29th June 2017, and the bids were opened at 15.00 hrs on 30th June 2017. As per the World Bank guidelines, the RFP has to be issued 6 highest scoring/shortlisted firms.

4. In this regard, a meeting of the procurement committee was held on 05th July 2017 to discuss these proposals. Based on the criteria given in REOI and introduced in para 2 above, the evaluation of 21 Applications was done by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project on the above mentioned date. The detailed Evaluation Sheet is attached as **Annexure.**

5. The Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP). The list of shortlisted firms along with their applications, and the evaluation sheet for all 21 participating firms may be sent to World Bank for their concurrence/review.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	Ipsos Public Affairs	Athena Infonomics	The Economics Intelligence Unit			**100**
2	Delloite Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		**100**
3	Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					**88**
4	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	**84**
5	PricewaterhouseCoopers					**81**
6	Jones Lang LaSalle					**80**

Nilesh Rajadhyaksha
Capacity Building Expert, CBUD

Raja Dawn
Procurement Specialist
CBUD

Utpal Deka
Team Leader
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

Evaluation of Bidders for Assessment of Liveability Index of 116 cities of India

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	Ipsos Public Affairs	Athena Infonomics	The Economics Intelligence Unit			100
2	Delloite Touche Tohmatsu India LLP	Insight Development Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd		100
3	Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					88
4	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen	84
5	PricewaterhouseCoopers					81
6	Jones Lang LaSalle					80
7	KITCO Ltd.					70
8	Mott MacDonald					69
9	Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			67
10	Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		66
11	Sutra Consultants	Hijli INSPIRATION				64
12	Chrome Data Analytics & Media Pvt Ltd					62
13	Frost & Sullivan					60
14	Larsen & Toubro					55
15	Voyants Solution Pvt. Ltd.					46
16	Caritas Ecosystem					42
17	Quality Council of India					0
18	C-Voter					0
19	ICLEI South Asia					0
20	Institute for Financial Management and Research	Core CarbonX Sols Pvt. Ltd	Administrative Staff College of India	Nathan Economic Consulting India Pvt. Ltd		0
21	MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

Shortlisting of applications in response to REOI for

"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"

The REOI for 'Selection of Consultant for Assessment of Liveability in 116 cities" was re-issued on 15th June, 2017 on the Ministry's e-procurement website and was given wide publicity by additionally uploading it on website of MoUD and Smart Cities. It was also published in leading National daily newspapers i.e. Hindustan Times, Hindu and Hindustan.

A total of 21 EOIs were received in response. These were evaluated by the Procurement Committee of CBUD and 6 firms were shortlisted as per the prescribed eligibility criteria. Since the present case falls under prior review category, the list of shortlisted firms along with relevant documents was forwarded to the World Bank for their approval.

In response, the World Bank has noted that the REOI was not uploaded on the "STEP" platform of the Bank and that the same is a mandatory requirement. It is clarified that though REOI was uploaded on the STEP and it was included in the procurement plan but due to certain technical issues it could not be uploaded on the UNDP procurement portal. Every effort had been made to ensure wide circulation and international participation (the e-procurement website is itself a global website). However, given the mandatory nature of the procedure, the World Bank has advised that the REOI be issued afresh, so that compliance with all procedural modalities required at the Bank's end may be met.

It is therefore, recommended that the REOI may be considered for fresh issuance on the same terms and conditions as before, giving the minimum period of 14 days as required under the World Bank guidelines.

Nilesh Rajadhyaksha
Capacity Building
Expert, CBUD

Rakesh Gujral
Finance Management Specialist
CBUD

G. Vijay Kumar
Under Secretary
SC-III, MoUD

Sajeesh Kumar N.
Director
SC-III, MoUD

Ms.Yashodhara Vijayan
Deputy Secretary
IFD, MoUD

Shiv Pal Singh
Director (AMRUT),
MoUD

Dr. Kumar V. Pratap
Economic Adviser
MoUD

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RE: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project - WB5294-09/17

UN Development Business <undb@worldbank.org> Mon, Sep 11, 2017 at 11:11 PM
To: "noreply@worldbankgroup.org" <noreply@worldbankgroup.org>, Vasudha Thawakar <vsarda@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Radha Narayan <rnarayan@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, UN Development Business <undb@worldbank.org>, "G. Vijay Kumar" <g.vijaykumar.moud@gmail.com>

This is to confirm that the following is published in *UN Development Business (UNDB) online.*

Attached is a copy of the notice.

Best regards,

Dorothée Collard

UN Development Business

Development Business
Connecting you to a world of opportunities

From: STEP Admin [mailto:noreply@worldbankgroup.org]
Sent: Monday, September 11, 2017 7:35 AM

To: Vasudha Thawakar <vsarda@worldbank.org>; Swayamsiddha Mohanty <smohanty1@worldbank.org>; Radha Narayan <rnarayan@worldbank.org>; Payal Malik Madan <pmmadan@worldbank.org>; UN Development Business <undb@worldbank.org>; info@dgmarket.com; G. Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Procurement Systems Service Account <procservices@worldbank.org>
Subject: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project

Borrower G. Vijay Kumar (g.vijaykumar.moud@gmail.com)

has published a Procurement Notice for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS

Country: India

Project Id: P099979

Project Name: Capacity Building for Urban Development Project

Loan/Credit/TF Info.: IDA-49970

Notice Version No.: 1

General Information

Notice Type	Request for Expression of Interest
Borrower Bid Reference	IN-MOUD-27866-CS-QCBS
Bid Description	Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities
Language of Notice	English
Deadline for Application Submission Date	2017/10/03
Local Time	15:00
Selected category codes for product to be procured	86132101 - Training facilitation service

Contact Information on Advertisement

Organization/Department	CBUD, Ministry of Housing and Urban Affairs, Government of India
Name	G. Vijay Kumar

Title	Under Secretary to the Government of India
Address	Ministry of Housing and Urban Affairs, Government of India Maulana Azad Road, New Delhi 110001.
City	
Province/State	
Postal Code	
Country	India
Phone	011-23063217
Fax	
Email	g.vijaykumar.moud@gmail.com
Website	

Detailed Information for Advertisement

REQUEST FOR EXPRESSIONS OF INTEREST

(CONSULTING SERVICES – FIRMS SELECTION)

[INDIA]

[CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT]

Loan No./Credit No./Grant No: 4997-IN

Assignment Title: Short listing of Consulting Firms for Assessment of Liveability in Selected Cities

Reference No. (as per Procurement Plan): IN-MoUD-27866-CS-QCBS

The *Ministry of Housing and Urban Affairs , Government of India* has received financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services (“the Services”) include Assessment of Liveability in 116 cities. The ‘Liveability Standards for Cities’ and methodology for assessment is available at linkhttp://smartcities.gov.in/content/innerpage/others.php

The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites www.moud.gov.in and www.eprocure.gov.in. The application shall be uploaded/submitted on the web portal www.eprocure.gov.in duly digitally signed.

The *Ministry of Housing and Urban Affairs , Government of India* now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
	General Experience of the Firm	**10**
1.	Financial Strength of the Firm	**15**
1.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers*, January 2011, updated July 2014 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a joint venture or a sub-consultancy to enhance their qualifications. In case the Consultants associate with other firms, the nature of association whether Joint Venture or Sub-consultancy has to be indicated in the EOI.

A Consulting firm will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [**15:00 hrs of 03rd October, 2017 IST**].

Ministry of Housing and Urban Affairs, Government of India

Mr. G Vijay Kumar, Under Secretary (CBUD), O/o Project Director (CBUD)

Government of India, Room No 202-C, Nirman Bhawan

Maulana Azad Road, New Delhi 110001.

Tel: 011-23063217

E mail: g.vijaykumar@nic.in **and** g.vijaykumar.moud@gmail.com

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Notice-WB5294-09-17.pdf
598K

सत्यमेव जयते

K-14012/101(11)/2017-SCM-III(V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
Capacity Building for Urban Development CBUD Division

Room No. 202 C Wing,
Nirman Bhavan, New Delhi.
Dated 08th September, 2017

To

Shri Dhiraj Kakaria,
Director,
Directorate of Advertising and Visual Publicity (DAVP),
9th Floor, Soochna Bhawan, Phase-IV,
CGO Complex, Lodhi Road, New Delhi-110003.
(e-mail: davpco111@gmail.com)

Subject: Publication of Request for Expression Interest (REOI) for " Selection of Consulting Firms for providing consulting services for the Assessment of Liveability in 116 cities".

Sir,

I am directed to enclose a copy of Request for Expression of Interest (REOI) for " **Selection of Consulting Firms for providing consulting services for the Assessment of Liveability in 116 cities**" and to request you to publish the same in the leading national dailies (in Hindi and English) urgently.

2. You are requested to send the invoices to the undersigned after publishing the advertisement for releasing of the payment.

Yours faithfully,

8/9/2017

(G.Vijay Kumar)
Under Secretary to Government of India
Tel. 22063217

Encl: As above

जि. विजय कुमार/G. VIJAY KUMAR
अवर सचिव/Under Secretary
आवासन और शहरी कार्य मंत्रालय
Ministry of Housing and Urban Affairs
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

GOVERNEMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
REQUEST FOR EXPRESSION OF INTEREST (REOI)
CAPACITY BUILDING FOR URBAN DEVELOPMENT (CBUD) PROJECT

The Government of India has received financing from the International Development Association (IDA) (Credit No. 4997-IN) toward the cost of the Capacity Building for Urban Development Project (CBUD), and intends to apply part of the proceeds for consulting services.

Ministry of Urban Development now invites eligible consultancy firms to apply for the **Request for Expression of Interest (REOI) for "Selection of Consulting Firm for Providing consulting services of Assessment of Liveability in 116 cities".** The REOI dated 9th May 2017 invited by NIUA and the REOI dated 15th June 2017 issued by MoUD on the same subject stand cancelled.

The document can be downloaded from the websites www.moud.gov.in and www.eprocure.gov.in. The application shall be uploaded/submitted on the web portal www.eprocure.gov.in duly digitally signed.

Interested firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

No	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
	Total	**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

Consulting firm may associate with other firm(s) in the form of a consortium and joint venture to enhance their qualifications. A Consulting firm will be selected on QCBS method set out in the Consultant Guidelines.

An applicant requiring any clarification on the REOI Document may request MoHUA through Email: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com. **Expression of Interest must be submitted on line by 15:00 hrs of 03rd October, 2017.** No physical submission of applications shall be accepted.

Mr. G Vijay Kumar
Under Secretary (CBUD), O/o Project Director (CBUD),
Ministry of Housing and Urban Affairs,
Government of India, Room No 202-C, Nirman Bhawan,
Maulana Azad Road, New Delhi 110001.
Tel: 011-23063217

No. M-24013/108/2016-MUC
GOVERNMENT OF INDIA
MINISTRY OF INFORMATION AND BROADCASTING

Shastri Bhawan, New Delhi, dated .15.February, 2017

OFFICE MEMORANDUM

Subject: Clearing of Outstanding dues of DAVP – reg.

The undersigned is directed to say that the matter regarding the outstanding payments in DAVP from the client Ministries/Departments has been under consideration in this Ministry. This issue was also raised in the meeting of Committee of Secretaries (CoS) held on 17.7.2014 and it was inter-alia decided that DAVP should be provided 85% advance payments by client Ministries/Departments.

2. In this regard, it has been noted that the bills pending with DAVP for 2014-15, 2015-16 and 2016-17 comes upto Rs. 26.72 Crore, Rs. 100.12 Crore, Rs. 577.06 Crore. The total effective pendency after discounting the funds made available to DAVP amounts to Rs. 589.39 Crores. It is further noticed that the situation of release of outstanding payments is not improving and the LoAs are not being received in times and client Ministries/Departments have failed to release their payments in time.

3. Therefore, it has been decided that DAVP henceforth shall follow the following instructions in letter and spirit:

(i) In cases where Ministries/departments have already placed 85% of advertisement budget through LOA, DAVP will honour their bills till exhaustion of LOAs. DAVP will request the Ministries for committing 100% of their budget through LoA, as soon as the expenditure reaches 75%.

Contd......./-

(ii) In all other cases, it will be mandatory for Ministries/Departments to make 100% advance payment through LoAs of the estimated expenditure of campaign/advertisements to DAVP.

(iii) In all cases where there is a pendency of payment for more than one year, DAVP shall send a consolidated statement to Secretaries of concerned Ministries/Departments with a copy endorsed to CCA of the respective Ministries/Departments for immediate release of payments. If the payments are not received within a month, DAVP shall not entertain any further new request for campaign/ advertisements in respect of such Ministries/Departments.

(iv) In cases of urgency where a campaign/advertisement has to be released without accompanying funds, DAVP shall ask the concerned Department/Ministry to send a request from their Secretary to Secretary(I&B). Only on the instruction of Ministry of I&B, DAVP shall consider release of advertisements and the funds should be recouped immediately thereafter from the concerned Ministries. DAVP shall also send a monthly statement of all those Ministries to Ministry of I&B which have failed to honor in the commitment of release of funds, with a copy to the respective Secretaries of the Ministries.

4. This has approval of the Competent Authority.

Vijay Kaushik
(Vijay Kaushik)
Under Secretary to the Government of India
TELE: 2338 5795

To,

Directorate of Advertising and Visual Publicity (DAVP)
(Kind Attention to: Shri K. Ganesan, Pr. Director General)
Soochna Bhawan, Lodhi Road, New Delhi.

Copy alongwith the above enclosure to:

1. Shri Satyendra Prakash, ADG, DAVP.
2. Shri Prashant Pathrabe, Director (DAVP).

Subject: **Estimate and LoA transfer**
To: pankaj.sinha88@nic.in, g.vijaykumar.moud@gmail.com
Date: 09/15/17 06:26 PM
From: "FACILITATION CELL, DAVP" <ad.davp@gmail.com>

452.pdf (45kB) OM For Funds .pdf (486kB)

Dear sir,
PFA the estimate of the advt as requested.

2.To issue the advt it is requested to place 100% amount of Estimate, as specified in the Ministry of I and B's enclosed order, through **ONLY** LoA.
3. Please send LoA to following address - **Campaign Wing I, DIRECTORATE OF ADVERTISING & VISUAL PUBLICITY, R.No. 289, SOOCHNA BHAVAN, C.G.O. COMPLEX, LODHI ROAD, NEW DELHI-110003** Tel: 011-24369599/94 .
4.the release order of the advertisement shall be issued only upon receipt of LoA.
6. Alongwith LoA please send fresh advt. matter in good quality pdf.
7. Please quote the estimate/R.O number in future correspondence
Regards,
Campaign Wing
DAVP Ph: 011-24369599/94

CHECK LIST FOR APPROVAL

USER : **CO2** **DATE** **9/15/2017**

ESTIMATE NO : 201700452
RO NO : REF. & DATE : K-14012/101(11)/2017-SCM-III(V)/CBUD - 9/8/2017 12:00:00 AM
KEY NO : CONT.PERSON : G VIJAY KUMAR ENGLISH 22.00 X 12.00
AD TYPE : CL.DISPLAY DESIG. : UNDER SECRETARY HINDI 22.00 X 12.00
B.W/COL : B & W ADDRESS : CAPACITY BUILDING FOR URBAN OTHERS 22.00 X 12.00
CATEGORY : TENDER DEVELOPMENT CBUD DIVISION ENGLISH PAGES 0.00
ROOM NO - 202 C WING HINDI PAGES 0.00
NIRMAN BHAWAN OTHER PAGES 0.00
NEW DELHI - 110108

S. NO.	CODE	NAME	CITY	LAN	PERIOD	CIRC	INS DATE	LAST DATE	INST	INS	COST
BIG											
1	100025	THE HINDUSTAN TIMES	DELHI	ENGLISH	DAILY(M)	941020	22/09/2017	22/09/2017	B2	1	84072.00
2	127628	AMAR UJALA	DELHI	HINDI	DAILY(M)	204000	22/09/2017	22/09/2017	B3	1	18225.00
3	120192	PUNJAB KESARI	DELHI	HINDI	DAILY(M)	350363	22/09/2017	22/09/2017	B3	1	31302.00
4	100294	THE TIMES OF INDIA	MUMBAI	ENGLISH	DAILY(M)	820108	22/09/2017	22/09/2017	B2	1	73271.00

PAPER TYPE	NO	AMOUNT	%AGE
BIG	4	206870.00	100.000000
MEDIUM	0	0.00	0.000000
SMALL	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

LANGUAGE	NO	AMOUNT	%AGE
ENGLISH	2	157343.00	76.060000
HINDI	2	49527.00	23.940000
OTHERS	0	0.00	0.000000
TOTAL	**4**	**206870.00**	**100.000000**

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Minutes of the Meeting of Procurement Committee for **"Shortlisting of Consulting Firms for Assessment of Liveability in selected Cities under Capacity Building for Urban Development (CBUD) Project"** held on 24-25 October 2017

The meeting of the Procurement Committee for shortlisting of applications received in respect of the Request for Expression of Interest (REOI) for the assignment of "**Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**" was held under the chairmanship of Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA consecutively on 24-25 October 2017 in Room No. 232C, Nirman Bhawan, N. Delhi.

The following were present in the meeting:

1. Shri Sudhir Kumar Tewari, Economic Advisor (Coord), MoHUA.
2. Shri Sajeesh Kumar N, Director (Smart Cities), MoHUA
3. Shri Yogendra Singh Awana, Deputy Secretary (UPA-II & CBUD), MoHUA.
4. Ms. Yashodhara Vijayan, Deputy Secretary, IFD, MoHUA.
5. Shri G. Vijay Kumar, Under Secretary (CBUD), MoHUA
6. Shri Rakesh Gujral, Financial Management Specialist, PMU, CBUD.
7. Shri Nilesh Rajadhyaksha, Capacity Building Expert, PMU, CBUD.
8. Ms. Vasavi Narla, Urban Management Specialist, PMU, CBUD.

2. As per clause 3 of the Request for Expression of Interest (REOI), the criteria for evaluation is as under:

S.No	Parameter	Maximum Marks
1	General Experience of the Firm	10
2	Financial Strength of the Firm	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	20
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

(a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

3. It was noted by the Committee that applications were invited from the eligible consulting firms through REOI published on 8th September 2017 on www. eprocure.gov.in with the last date of 03rd October 2017. As per the World Bank's requirements, the REOI was also published in STEP, World Bank and subsequently published on UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS. Besides, The REOI was published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017.

4. For evaluating proposals, following detailed examination criteria was adopted.

Sl No	Parameter	Maximum Marks	Details
1.	General Experience of the Firm (Number of years)	**10**	1 Mark for Each Year
2.	Financial Strength of the Firm (Turnover)	**15**	<5 crore- 0 Marks, <=10 crore - 5 Marks >10 crore-<20 crore- 10 Marks => 20 crore 15 Marks
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons: 20 marks > 20 persons - 25 marks
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/	**10**	5 Marks for each project with a maximum of 10 marks

Imran

	departments, para-statals, ULBs and multilateral agencies		
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks
Total		**100**	

5. Accordingly, the 28 applications were evaluated by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project in its meeting held on 24-25 October 2017. The detailed Evaluation Sheet is attached as **Annexure.**

6. On the basis of above evaluation, the Procurement Committee recommends the shortlisting of the following 6 consulting firms, who have secured more than 75 marks, for issuing the Request for Proposal (RFP), as per procedure.

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle Property Consultants India Private Limited**	-	-	-	-	**80**

Imran

4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

Nilesh Rajadhyaksha
Capacity Building
Expert, PMU,CBUD

Vasavi

Vasavi Narla
Urban Management
Specialist, PMU,CBUD

Rakesh Gujral
Financial Management
Specialist, PMU,CBUD

G. Vijay Kumar
Under Secretary
CBUD, MoHUA

Ms. Yashodara Vijayan
Deputy Secretary
IFD, MoHUA

Y. S. Awana
Deputy Secretary (CBUD)
MoHUA

Sajeesh Kumar N
Director (Smart Cities)
MoHUA

Sudhir Kumar Tewari
Economic Adviser (Coord)
MoHUA

Shortlist of Bidders for Assessment of Liveability Index of 116 cities of India

Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
Ipsos Research Pvt. Ltd.	Athena Infonomics India Pvt. Ltd.	The Economist Group Limited			100
PricewaterhouseCoopers					85
Jones Lang LaSalle Property Consultants India Pvt. Ltd.					80
Delloite Touche Tohmatsu India LLP	Insight Development Consultants Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild (ORG) India Private Limited	75
Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Consortium Partner 4 - Nielsen	75
CRISIL Risk and Infrastructure Solutions Limited, INDIA					75
IBI Consultancy India Private Limited					70
Ecorys Nederland BV	Ecorys India Pvt. Ltd.	BRIEF Private Limited			65
Urban Management Consulting Pvt. Ltd.	International City Manager's Association (ICMA)	Urban Management Centre			65
Oxford Policy Management	The Energy and Resources Institute (TERI)	Avalon Information Systems Pvt Ltd	pManifold Business Solutions Pvt Ltd		63
Ernst & Young LLP, India (EY)	Sambodhi Research & Communications Pvt. Ltd.				60
ICRA Management Consulting Services Limited					60
AMS Consulting (P) Limited	Academy of Management Studies				55
Hindusthan Thompson Associates Pvt. Ltd. (Division IMRB International)					50
Centre for Good Governance					50
Creative Circle India	MIR Projects & Consultants Pvt Ltd	Enviro Techno Consult Pvt Ltd (ETCPL)			50
Delhi Integrated Multi-Modal Transit System Ltd	Crux Cosultants Pvt. Ltd.				50
Voyants Solutions Private Limited, India					50
Mehta and Associates					45
Research & Development Initiatives Pvt Ltd*					45
Terracon Ecotech Pvt. Ltd.	M/s Sustainancy Consultants Pvt. Ltd.(Formerly M/s Sustainacy)	Konnect Resources LLP (Formerly M/s Krish Enterprises)			44
					35
Design Point Consult Pvt. Ltd					32
Caritas Eco System Private Limited	Maxwell Stamp KSA				
Environmental Technical services Pvt. Ltd.					10
All India Institute of Local Self Government					0
CRP Risk Management	Infrastructure Management and Advisory Services Pvt Ltd				0
ICLEI South Asia					0
MASHAL	College of Engineering, Pune	Abhinyas Consultancy Services LLP	Institute for Housing and Urban Development Studies Romania		0

AIILSG **Society Not Qualified**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

AMS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	15	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.75	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	90	
			Total for consortium	90	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	4	
			Total for consortium	4	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			55

Caritas

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	7	7
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.8	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	30	
			Total for consortium	30	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**32**

Centre for Good Governance -**Society Not Qualified**

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

Creative Circle

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	11.5	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	52	
			Total for consortium	52	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

CRISIL Risk and Infrastructure Solutions Limited - Public Limited Company

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	30	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	68.59	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	400	
			Total for consortium	400	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			75

CRP - Inconsistent documentation - Incorporation cenrtificate not given, financial statements do not match date of registration

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year		0
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		100			0

DIMMTS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	145.88	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	178	
			Total for consortium	178	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			50

Deloitte

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	915.9	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	220	
			Total for consortium	220	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			75

OPM

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	8	8
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	7.2	5
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	216	
			Total for consortium	216	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			63

Mehta&Ass

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	23	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	15.4	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	75	
			Total for consortium	75	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			45

MASHAL - Society not qualified

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

JLL

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	20	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1700	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	65	
			Total for consortium	65	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**80**

IPSOS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	167	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	726	
			Total for consortium	726	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	7	
			Total for consortium	7	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	7	
			Total for consortium	7	20
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	6	
			Total for consortium	6	20
Total		**100**			100

IDECK

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	17	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	19.6	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	1587	
			Total for consortium	1587	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
Total		**100**			**75**

ICRA

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	30	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	18	
			Total for consortium	18	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	2	
			Total for consortium	2	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			60

ICLEI - Society Not Qualified

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year		0
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks		0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks		
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks		
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks		
			Total for consortium	0	0
Total		**100**			**0**

IBI

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	11	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	17.8	10
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	50	
			Total for consortium	50	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			**70**

Hindustan Thompson (No work orders submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	79	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	615	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	32	
			Total for consortium	32	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

Yaser

E&Y (Work orders for only 2 eligible projects submitted)

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	12	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2202	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	10000	
			Total for consortium	10000	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
Total		**100**			**60**

ETS

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	22	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	0.6	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	0	
			Total for consortium	0	0
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**10**

Ecorys

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	16	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	276	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	53	
			Total for consortium	53	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			65

Designpoint

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.14	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	23	
			Total for consortium	23	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			35

R&D Ini

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	10	1 Mark for Each Year	18	10
2	Financial Strength of the Firm	15	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	3.27	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	25	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	6	
			Total for consortium	6	10
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	10	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	3	
			Total for consortium	3	15
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	20	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		100			45

PWC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	34	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1577	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	646	
			Total for consortium	646	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	3	
			Total for consortium	3	10
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	5	
			Total for consortium	5	20
Total		**100**			**85**

Terracon

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	9	9
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	2.63	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	19	
			Total for consortium	19	20
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	2	
			Total for consortium	2	10
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			44

UMC

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	10	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	1.13	0
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	25	
			Total for consortium	25	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	1	
			Total for consortium	1	5
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	1	
			Total for consortium	1	5
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	4	
			Total for consortium	4	20
Total		**100**			65

Voyants

S.No.	Parameter	Maximum Marks	Critera	Criteria Score	Marks Obtained
1	General Experience of the Firm	**10**	1 Mark for Each Year	13	10
2	Financial Strength of the Firm	**15**	<5 crores- 0 Marks, <=10 crores - 5 Marks >10 crores-<20 crores- 10 Marks => 20 crores 15 Marks	84.16	15
3	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment (Lead Firm)	**25**	<5 persons: Nil 5-10 persons: 10 marks >10 -20 persons : 20 marks > 20 persons - 25 marks	26	
			Total for consortium	26	25
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies (Lead Firm)	**10**	5 Marks for each project with a maximum of 10 marks	0	
			Total for consortium	0	0
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12(Lead Firm)	**20**	5 Marks for each project with a maximum of 20 marks	0	
			Total for consortium	0	0
Total		**100**			**50**

Vijay Kumar <g.vijaykumar.moud@gmail.com>

RE: Procurement Notice for Project: P099979 - Capacity Building for Urban Development Project - WB5294-09/17

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Oct 30, 2017 at 12:09 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: jsupa-mhupa@gov.in, dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

This is regarding selection of a consulting firm for the assignment of "**Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities under Capacity Building for Urban Development (CBUD) Project**", which is an activity under Procurement Plan of CBUD Project.

2. As per the World Bank's requirements, the Request for Expression of Interest (REOI) was published in STEP, World Bank and subsequently published in UN Development Business online with a Procurement Reference No. IN-MoUD-27866-CS-QCBS.

3. The applications were invited from the eligible consulting firms through REOI published on 8th September 2017 on www. eprocure.gov.in with the last date of 03rd October 2017. Besides, The REOI was also published on www.moud.gov.in and in leading English and Hindi daily Newspapers viz. The Hindustan Times, The Times of India, Amar Ujala and Punjab Kesari through DAVP. The applications were to be submitted online through www.eprocure.gov.in only. Accordingly, 28 applications were received by the last date of submission of applications viz. 03rd October 2017, and the bids were opened on 04th October 2017.

4. Further, 28 applications were evaluated by PMU for Capacity Building for Urban Development (CBUD) and reviewed by the Procurement Committee of CBUD Project in its meeting held on 24-25 October 2017. The detailed Evaluation Sheet is also attached..

5. On the basis of minutes/recommendations of the Procurement Committee, the Ministry has approved the shortlisting of the following 6 consulting firms, who

have secured more than 75 marks, for issuing the Request for Proposal (RFP).

Sl.No	Name of Lead Partner	Consortium Member 1	Consortium Member 2	Consortium Member 3	Consortium Member 4	Total Marks Obtained (Max.100)
1	**Ipsos Research Private Limited**	Athena Infonomics India Private Limited	The Economist Group Limited	-	-	**100**
2	**PricewaterhouseCoopers**	-	-	-	-	**85**
3	**Jones Lang LaSalle Property Consultants India Private Limited**	-	-	-	-	**80**
4	**Delloite Touche Tohmatsu India LLP**	Insight Development Consulting Group Pvt Ltd	Stesalit Systems Limited	Kadence International Pvt Ltd	Operations Research Guild India Pvt. Ltd.	**75**
5	**Infrastructure Development Corporation (Karnataka) Ltd (iDecK)**	Institute for Social and Economic Change (ISEC)	Public Affairs Centre (PAC)	Sigma Research & Consulting Pvt. Ltd	Nielsen (India) Private Limited	**75**
6	**CRISIL Risk and Infrastructure Solutions Limited, India**	-	-	-	-	**75**

6. You are requested to give the concurrence/comments of the World Bank for taking further necessary steps viz. issuance of RFP to the shortlisted consulting firms at the earliest.

[Quoted text hidden]

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs

(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

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2 attachments

Minutes of the meeting held on 24-25 October 2017.pdf
2816K

The deatailed Evaluation Sheet.pdf
14912K

Note No. #75 Attachment:File of Liveability Index (Noting portion)-Concurrence of IFD for RFP.pdf

Smart City Division

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Subject:- REOI for shortlisting of agencies for assessment of liveability index in selected cities.

***

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

02. The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework. The proposal has already been approved by IFD in another file.

03. An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains .

04. The selection of the agency shall be made through two tier procurement process of the World Bank. In first step REOI will be issued and based on the qualification criteria, as per World Bank procurement process, 6 consulting firms will be shortlisted. In the second step, RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

05. The budget for the assignment is estimated at Rs. 16.41 crore. World Bank has also given in principle approval for this assignment *(may be seen at correspondence side)*. IFD has given approval to the assignment in a separate file.

REOI is attached below for concurrence of the IFD please.

26/04/2017 2:42 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

May kindly be concurred please.

SS

26/04/2017 2:53 PM

SAMEER SHARMA
(AS (SC))

26/04/2017 5:02 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

26/04/2017 5:43 PM

Yashodhara Vijayan
(DS(FINANCE))

The general principle for shortlisting firms through EoI is that more weightage is to be given to past experience of the firms (60%), Experience of Key personnel(25%) and financial strength of Consulting firm 15%. In the REoI no weightage has been given to financial strength of the firm and weightage given to experience of key personnel is only 10.Appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

28/04/2017 6:58 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 1:06 PM

Jhanja Tripathy
(JS &FA)

03/05/2017 1:28 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 2:49 PM

Pankaj Kumar
(US(IFD-II))

As advised by IFD , the evaluation criteria has been modified. The revised REOI may be seen below. File may be sent to IFD for their concurrence.

03/05/2017 5:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Approved. Let us consult IFD.

SS

03/05/2017 5:27 PM

SAMEER SHARMA
(AS (SC))

03/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/05/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding REoI for shortlisting of agencies for assessment of liveability index in selected cities.

The draft REoI was examined in IFD at pg.2/N. and it was suggested that appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

Accordingly, the Programme division has provided weightage as under:

Experience of Key personnel	25%
Experience of Firm	60%
Financial strength of the firm	15%

We may now concur to the proposal.

04/05/2017 11:23 AM

Pankaj Kumar
(US(IFD-II))

The weightages given to each component are as were discussed with F.A. earlier and in accordance with instructions of M/o Finance.

REoI may issue as proposed.

05/05/2017 11:00 AM

Yashodhara Vijayan
(DS(FINANCE))

05/05/2017 12:46 PM

Pankaj Kumar
(US(IFD-II))

08/05/2017 10:24 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Smart Cities-III Division

*****

Subject:- Request for Proposal (RFP) for shortlisting of agencies for assessment of Liveability Index in selected cities.

After getting the concurrence by IFD, MoUD, **t**he National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment for procurement of Agency. Accordingly, **REOI was floated on 9th May 2017** with the l**ast date of 30th May 2017**(**PUC1**)

2. Meanwhile , RFP has been prepared and sent the World Bank for their comments/no objection. It may be mentioned that the **World Bank have already conveyed that technically the package meets their principal** approval vide their mail dated 13th April 2017.

3 . **The approximate cost for hiring the Agency is Rs. 16.41 cr.**(p. 9/ PUC2). RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

4. **We may send the file to IF for their concurrence for RFP for Liveability Index** (PUC3) and **Standard Form of Contract** (PUC4).

29/05/2017 3:40 PM

G Vijay Kumar
(US SC-III)

29/05/2017 5:24 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

As proposed, let us send to IFD.

SS

29/05/2017 5:25 PM

SAMEER SHARMA
(AS (SC))

29/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

30/05/2017 10:29 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding hiring of a consultant by NIUA for the consultancy services for “ assessment of Liveability Index in selected cities”.

2. After concurrence of IFD, NIUA floated REoI for which the last date was 30th May, 2017. It is not known whether the firms have been shortlisted. Meanwhile, due to urgency, the draft RfP has been prepared by the Programme Division (pg.60-122/c.) and sent it to IFD for vetting.

3. The draft RfP has been prepared as per the World Bank's guidelines on Selection and Employment of Consultants. The draft RfP seems to be in order. We may, therefore, concur to the proposal subject to vetting the same from the World Bank.

06/06/2017 12:24 PM

Pankaj Kumar
(US(IFD-II))

The Division may confirm that the firms to whom RfP has to be issued have been cleared by World Bank.

07/06/2017 11:09 AM

Yashodhara Vijayan
(DS(FINANCE))

07/06/2017 11:13 AM

Pankaj Kumar
(US(IFD-II))

We have already got the concurrence from bank. May kindly attach their remarks.

07/06/2017 12:11 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

The **Request for Proposal (RFP)** for the selection of Consultant for Assessment of **livability index**, to be procured by NIUA (on behalf of MoUD) **was cleared by the World Bank** vide email dated 31st May 2017. **(PUC3)**

07/06/2017 1:08 PM

G Vijay Kumar
(US SC-III)

With reference to RfP, the following clarifications may be furnished by the Division:-

1.Under the heading Instructions to Consultants – E. Data Sheet clause No. 16.2 it has been mentioned that price adjustment provision applies to remuneration rates.It has been mentioned in ToR that reimbursement will be adjusted every twelve months based on a formula. However, this is not normally done and remuneration is fixed for the entire period of contract. This may be revised.

2.Clause 25.1 only the basic contract price and service tax are to be included in the financial bill and not all taxes payable by the Consultants.

3.As per section-7.1(iv) of ToR, 116 cities will be covered in 1st year and the coverage of cities may be extended in subsequent years. As the number of Smart Cities is 100 (number of AMRUT cities 500, what is the criteria for selection of cities for liveability index).

09/06/2017 4:29 PM

Yashodhara Vijayan
(DS(FINANCE))

While I appreciate the observations, the matter is between NIUA and WB. Why is IFD in picture?

10/06/2017 1:38 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

12/06/2017 10:30 AM

Yashodhara Vijayan

(DS(FINANCE))

12/06/2017 10:39 AM

Pankaj Kumar
(US(IFD-II))

As per the observations of IFD, it has been decided that there will be no adjustment in the price. Appropriate modification has also been made in the updated RFP in the TOR Clause 7.1 (v),(vi),(vii) attached herewith to reflect the same.

2. The Basic Contract Price along with applicable GST will be payable by the client. Appropriate modification has been made to clause 25.1 in the updated RFP attached herewith.

3. The list of 116 Smart Cities represent shortlisted Smart Cities and other million plus cities which may not have been shortlisted. The number of million plus cities may increase in subsequent years and hence the statement that “the number of cities may be extended” has been included. In any case fresh procurement will be undertaken every year for the appointment of an agency(s) for undertaking the study with a fresh list of cities and fresh scope of work.

4. The REOI was issued by MoUD and the evaluation is under process. In a similar way, the RFP is also be issued by MoUD and the necessary modifications have been carried out in the revised RFP. The file may be sent to IFD for their concurrence.

03/07/2017 1:16 PM

G Vijay Kumar
(US SC-III)

03/07/2017 4:05 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/07/2017 6:01 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Observations of IFD have been incorporated in RfP. We may concur.

05/07/2017 12:58 PM

Yashodhara Vijayan
(DS(FINANCE))

Ministry of Urban Development has already developed a set of 79 standards across 15 categories to assess the liveability standards in cities. However, the need to assess the 'Liveability Index' from budgetary support without any defined outcome is not clear. There is already a service level benchmark for the schemes that are being implemented by the Ministry. The entire scheme of AMRUT rests on the outcome parameters that have been fixed on the foundation of these service level benchmark which has been carried out for 500 Urban Agglomerations by the states. This was an unique exercise in capacity building.

Secondly, MoUD also undertook a massive exercise of competition for Smart Cities which helped the cities spell out, in clear-cut terms, the scale and kind of development they wish for their cities to achieve. Towards this, we had empanelled a large number of consultancy firms to do the hand-holding for the cities, wherein a basic exercise was carried out by the cities along with its citizens and the consultants which realised the inherent lacunae in their cities and determine projects which will make their city 'Smart'. Accordingly, a number of cities and States changed policies to strengthen and enable their existing municipalities and parastatals.

Thirdly, there are also a list of urban reforms which determines the quantum of reform funds and funds of devolution of Finance Commission that the city will receive.

In view of the preceding scenario, wherein the cities already have a number of parameters to achieve with clearly defined measurable outcomes linked directly to funds disbursal and which has third-party verification (Bloomberg and MoUD through objective parameters), it is not prudent to clutter the area with another index which is not linked to any outcome. However, NIUA may carry out its own activity if it so desires.

I am unable to concur to the proposal under MoUD's budget.

12/07/2017 10:42 AM

Jhanja Tripathy
(JS &FA)
Digitally Signed

12/07/2017 11:40 AM

Yashodhara Vijayan
(DS(FINANCE))

12/07/2017 12:12 PM

Pankaj Kumar
(US(IFD-II))

12/07/2017 4:56 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

13/07/2017 10:31 AM

G Vijay Kumar
(US SC-III)

The ‘Liveability Standards in Cities’ is a unique effort initiated by the MoUD for assessing the standards of living in Indian cities. This is the first attempt by any country to systematically identify, track and improve upon critical parameters that define urban quality of life.

02. The framework touches upon all institutional, social, economic and physical aspects that impact the lives of citizens, captured through a detailed set of 79 indicators spread across hitherto unmapped aspects like safety, mixed land use and compactness, availability of open spaces, identity and culture, pollution etc. The framework also covers various traditionally non-urban aspects (not covered under urban missions) which are crucial for making cities more liveable such as health, education, availability of power etc.

03. On the other hand, the indicators adopted under AMRUT and other missions are limited and are meant to be specific milestones for measuring mission progress rather than assess the overall liveability.

04. The Standards have thus been envisioned both as a reference framework as well as a planning tool for cities. The ‘City Liveability Index’ developed will result in a ranking framework, thereby fostering a competitive environment amongst cities for improving their Liveability. The standards are also strongly linked to the Sustainable Development Goals and successful achievement of standards will contribute to the achievement of such SDGs.

05. The ‘Annual Assessment of Liveability Standards’ is an ambitious national project that will involve yearly survey (including field surveys) and compilation of a large number of datasets across the various indicators, analysis of such datasets, development of indexes and ranking of cities. This will require extensive human resources and field survey experience, which can be brought in through third party agencies. NIUA will coordinate and provide knowledge support on behalf of the MoUD.

06. The Liveability Standards document (conceptual framework) and the REOI for ‘Selection of Consulting firms for assessment of Liveability in 116 cities in India’ have both been approved by the IFD earlier.

07. The REOI was issued after concurrence of the IFD and in response, 21 applications were received. Procurement committee duly represented by IFD has shortlisted 6 firms based on their techno-financial capabilities to undertake the assignment. The RfP is in continuation of this process, which has already been concurred by the IFD.

08. It is expected that the implementation of this framework will help cities understand their baseline and pursue tangible outcomes over time,

and result in systematic transformation of Indian Cities over time. The assessment of liveability index was launched by Hon'ble UDM in the National Workshop on Urban Transformation held on 23.06.2017 at Vigyan Bhavan.

09. In light of the above, IFD is requested to reconsider and concur the RfP please.

(Sajeesh Kumar N)
Director (Smart Cities)
17.7.2017

AS (SC)

17/07/2017 4:00 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

17/07/2017 4:39 PM

SAMEER SHARMA
(AS (SC))

17/07/2017 5:10 PM

Jhanja Tripathy
(JS &FA)

It has already been pointed out in note#35 that concept of livability standards should have been part of the Smart City proposals. The proposals were prepared by professional agencies keeping in mind the standards of Smart living and Sustainability. It was expected that application of these concepts would improve the livability of these cities. Moreover, the cities are already competing for Smart City ranking, Swachh Sarvekshan ranking, Reforms incentives etc. As noted earlier, it would not be prudent to introduce another index which is not related to any outcome.

It is also not clear as to how the expenditure of Rs. 16.41 crore for this activity could be met out of CBUD funds since the entire amount of Rs 268.4 crores has already been either spent or committed as per the budget allocation of CBUD funds circulated by Smart City Division in May 2015.

25/07/2017 5:32 PM

Yashodhara Vijayan
(DS(FINANCE))

It has been indicated in Para-5 in preceding pages that this "is an ambitious project that will involve yearly survey (including field survey) and compilation of a large member of datasets, development of indexes and ranking of cities".

As stated by SCM Division, it will require large scale investment to engage human resources for carrying out field survey, data mining and data interpretation.

Before initiating a permanent ongoing yearly exercise of this scale, which tantamounts in its structure, ambition and expenditure , as a new scheme , it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC . The proposal, is its present format , cannot be considered for concurrence.

31/07/2017 2:17 PM

Jhanja Tripathy
(JS &FA)

Digitally Signed

01/08/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

01/08/2017 12:15 PM

Pankaj Kumar
(US(IFD-II))

For information pl.

01/08/2017 2:47 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

01/08/2017 2:49 PM

SAMEER SHARMA
(AS (SC))

02/08/2017 10:25 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/08/2017 12:20 PM

G Vijay Kumar
(US SC-III)

The concept of Liveability and the design of the annual assessment of Liveability has been vetted and approved at all levels before initiation of the REOI for the project. The approval of the Hon'ble UDM was received on 10th April 2017, after which the roll out design and modalities were duly vetted and approved by the IFD on 25th April 2017. Based on this the project was publicly launched by hon'ble UDM on 23rd June 2017.

Funding of the assignment under CBUD has been approved by IFD and the project has been acknowledged as one of the items for funding during the last PMB meeting of the CBUD Project. The procurement plan and budget of CBUD have also been duly realigned for this purpose. The REOI for procurement of consultants was also issued after concurrence of the IFD, and 6 firms have been shortlisted by the Procurement Committee. The RfP is in continuation of this process.

This RfP for assessment of Liveability Standards is only for 1 year. The assessment may be repeated in subsequent years on the basis of the outcomes achieved. It is pertinent to note that Swachh Sarvekshan (on similar lines) has been implemented as an initiative of the Ministry, but not as a separate scheme. This is also an annual exercise, which is now being repeated in the second year.

In light of the above, IFD is requested to reconsider and concur the RfP please.

03/08/2017 12:31 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

There are two other facts, (1) the Swacch Sarvekshan is similar (not a scheme), and (2) the idea of competition to rank cities based on revenue generation and service levels was also sent in a meeting held on PMO. Please get from Ravinder (CPHEO) and link up.

SS

03/08/2017 2:02 PM

SAMEER SHARMA
(AS (SC))

Reference remarks of AS (UA) above.

As brought out in the above note, *'Swachh Survekshan'* has been rolled out on similar lines as proposed liveability index (not as a scheme).

Moreover, the RoD of the meeting chaired by the Hon'ble PM to discuss the progress of 'Clean Ganga Mission' on 18th May 2017 may also kindly be perused at Annexure *(attached below)*. As per point No.XV of the RoD, it is observed that "*the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.*"

The Liveability Index is an effort in this direction. The Index aims to assess the performance of cities across four pillars such as institutional, social, economic and physical. The comprehensive assessment will also involve 79 indicators which include data on tax collection, capital expenditure, performance of utilities such as water supply, transportation, power supply, sewerage etc. The assessment of such liveability indicators and ranking of cities is thus, directly linked to the outcome being targeted under the various urban Missions. This kind of ranking will create a competitive

environment among cities to improve their overall performance and quality of life of citizens.

04/08/2017 2:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Notes on pre-pages may please be seen

This is not a new scheme, but a contract similar to what SBM has done in the Swacch Sarvekshan Survey. We have also completed the empanelment of six agencies and now the RfP has to be issued to them. Moreover, the Liveability standards are largely impact indicators which the Niti Aayog is monitoring through the IFD.

Most important, based on the approval of IFD, the Hon'ble Minister has announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications. After going forward so much retreat will cause great embarrassment to the government and loss of face for all of us.

In view of the above JS&FA may kindly concur.

SS

08/08/2017 7:04 PM

SAMEER SHARMA
(AS (SC))

09/08/2017 9:31 AM

Jhanja Tripathy
(JS &FA)

09/08/2017 9:47 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Integrated Finance Division

This is regarding concurrence of draft RfP for hiring a consultancy service by NIUA for “assessment of Liveability Index in selected cities”.

2. The proposal was last examined in IFD at p.13/N. and it was observed that the proposal is a permanent ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has informed that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. Further, it is in advanced stage and the Hon'ble Minister has already announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications.

4. Initially the Programme Division had stated that the World Bank had given their 'in-principle' approval to the REoI. Now it is understood that the World Bank has advised the Division to re-issue the EoI as proper procedure according to the WB guidelines was not followed while issuing /evaluating the EoI.

5. In view of above, there is no need to take any action at present.

18/08/2017 12:41 PM

Pankaj Kumar
(US(IFD-II))

18/08/2017 4:06 PM

Yashodhara Vijayan
(DS(FINANCE))

please discuss.

21/08/2017 3:39 PM

Jhanja Tripathy
(JS &FA)

23/08/2017 4:18 PM

Yashodhara Vijayan
(DS(FINANCE))

Ref. Discussion with JS&FA

This is regarding draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that since the proposal is an ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has stated that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. It may be mentioned that basic structures of SCM and SBM are very different.While a gap analysis and a Service Level Benchmark is already inbuilt in the Smart City Proposals prepared by various empanelled agencies and cities were selected after comprehensive analysis of the proposals, no such exercise was undertaken for SBM. Swachh Sarvekshan was carried out to gauge the progress of the Mission from the baseline.

4. However, the Division has referred to a meeting chaired by Hon'ble PM, wherein it was noted that the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of performance of key utilities. The Liveability Index is an effort in this direction.

5. In view of para 4 above and preceding notes of Programme Division , we may concur to the proposal for assessing the Livability Standards of proposed 116 cities for one year. This would also give a fairly good idea of the progress of the Scheme. The estimates may be pruned accordingly.

25/08/2017 2:53 PM

Jhanja Tripathy
(JS &FA)

25/08/2017 2:55 PM

Yashodhara Vijayan
(DS(FINANCE))

25/08/2017 3:21 PM

Pankaj Kumar
(US(IFD-II))

For information sir.

25/08/2017 4:09 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

26/08/2017 11:09 AM

SAMEER SHARMA
(AS (SC))

28/08/2017 9:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/09/2017 5:35 PM

G Vijay Kumar

(US SC-III)

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:42 PM

Parmod Kumar
(Dir(UD))

06/09/2017 11:07 AM

SHIV DAS MEENA
(JS (AMRUT))

The file is returned as per notes on the other file in this matter.

07/09/2017 3:04 PM

Shiv Pal Singh
(DIR (AMRUT))

Is it part of CBUD?

08/09/2017 4:04 PM

Sanjay Kumar
(JOINT SECRETARY)

08/09/2017 4:23 PM

Parmod Kumar
(Dir(UD))

Attach
JNS

REQUEST FOR EXPRESSIONS OF INTEREST (CONSULTING SERVICES – FIRMS SELECTION)

[*India*]
[***Capacity Building of Urban Development (CBUD)***]
Loan No./Credit No./ Grant No.: 4997-IN

Assignment Title: Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities
Reference No. (as per Procurement Plan): ____________________

The *Ministry of Urban Development, Government of India has received* financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include Assessment of Liveability in 116 cities. The assignment is for a period of 7 months.
The National Institute of Urban Affairs (NIUA) on behalf of Ministry of Urban Development now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	10
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	20
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	30

S.No.	Parameter	Maximum Marks
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**30**
	Total	**100**

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers* July, 2016 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a consortium and joint venture to enhance their qualifications.

A Consultant will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours [*Director, National Institute of Urban Affairs, Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road New Delhi 11003.0900 to 1700 hours*].

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [___________].

[*National Institute of Urban Affairs*]
Attn: [*insert name of officer & title*]
[*Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road*]
[*110028, New Delhi, India*]
Tel: [*include the country and city code*]
Fax: [*include the country and city code*]
E-mail: *[include e-mail address]*

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

_____, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.
f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.
g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.
h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link___________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:____________________ with copy to ________ and _________. The submission shall be electronically on the portal ___________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and _____________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal _______. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7 and 7A

	assessment of data related to governance, transportation, environment, housing and sanitation.	
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:

   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**

b. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

c. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

d. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection

bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

e. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**10**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**20**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**30**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of .... (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from .... (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we .... (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms........................ .... (name and residential address) who is presently employed with us and holding the position of .... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____

(Signature)

(Name, Title and Address)

Accepted

.... (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date

Name ____________________________

Place

Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)............**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only[2])(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. .... (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ....Day of ...., 201....

Name of the Applicant

....
Signature of the Authorised Person

....
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

______, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website __________ and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:______________________ with copy to _________ and __________. The submission shall be electronically on the portal ____________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

  i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

  ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

    a. Made a complete and careful examination of the REOI Document; and
    b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7

	assessment of data related to governance, transportation, environment, housing and sanitation.	and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams

consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Shortlisting Process;

d. “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. “**Restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and
Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. …………….. (Lead Member), and M/s …………….. (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………. being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	

4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)………..**	

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Description of actual services provided by your staff within the assignment:

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA

72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544

110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has received financing from the International Development Association (IDA) (the “Bank”) in the form of a credit (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called “Services”): “Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India”. More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants’ Guidelines which can be found at the following website: www.worldbank.org/procure.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

	(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant. (u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) "Services" means the work to be performed by the Consultant pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant’s Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client’s interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client’s staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank’s financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client’s country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____**21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, “16:00 local time”]* *[If appropriate, add translation of the warning marking [“Do not open....”] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

<table>
<tr><td></td><td>The opening shall take place at:
<i>[Insert:</i> "same as the Proposal submission address" <i>OR insert and fill in the following:</i>
Street Address: Maulana Azad Road
Floor, room number: Room No.____, ____Floor, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – "16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
<tr><td>(a)</td><td><i>Technical approach and Methodology</i></td><td>30</td></tr>
<tr><td>(b)</td><td><i>Work Plan</i></td><td>10</td></tr>
<tr><td>(c)</td><td><i>Organisation and staffing</i></td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (ii) –50 points
<i>{<u>Notes to Consultant</u>: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}</i></td><td>50</td></tr>
</table>
</td></tr>
</table>

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

▬	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel………../e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1			[*Home*]		▨	▨	▨	
N-2			[*Field*]		▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

   (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

   (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

   (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the ‘Liveability Standards in Cities’ document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format attached at Annexure X;
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

13|6|2017
Out Today

PRIME MINISTER'S OFFICE

******

No. 964
13/6/17

South Block,
New Delhi – 110 011

Please find enclosed, for information and further necessary action, copy of Record of Discussions (RoD) of the meeting chaired by the Prime Minister on 18.05.2017 to discuss the progress of 'Clean Ganga Mission'.

(Dr. Shrikar Pardeshi)
Director
Tel. No. 2301 8040

CEO, NITI Aayog
Secretary, M/o Water Resources, River Development & Ganga Rejuvenation
Secretary, M/o Environment, Forests and Climate Change
✓**Secretary, M/o Urban Development**
Secretary, M/o Drinking Water & Sanitation
DG, National Mission for Clean Ganga
Chairman, Central Pollution Control Board

PMO ID no. 4638569/PMO/2017-ES-2 Dated: 08.06.2017

1/3151890

Record of Discussions of the Meeting chaired by Hon. PM to discuss the progress of 'Clean Ganga Mission', 18th May 2017, 7 pm, South Block

Prime Minister chaired a meeting to discuss the progress of 'Clean Ganga Mission'. The list of the participants is attached.

2. Secretary, M/o Water Resources, River Development and Ganga Rejuvenation made a brief presentation on the concept. Following decisions were taken after detailed deliberations:

i. The voluntary organizations like that of Mata Amritanandmayee, who have made huge donations towards the cause of cleaning of Ganga, may be appropriately involved in the community awareness programmes.

(Action: NMCG)

ii. A system should be put in place to regularly cross-verify the performance of the Real Time Water Quality Monitoring Stations.

(Action: CPCB)

iii. Amongst the Grossly Polluting Industries (GPIs), those which are complying with the pollution control norms should be publicly felicitated, while names of those which are not complying with the pollution control norms may be prominently displayed at public places.

(Action: NMCG, CPCB)

iv. An effort be made to explore whether different eco-friendly technology could be used for the process of tanning by the tanneries, so as to reduce the pollution load in the Ganga.

(Action:MoWR, NMCG)

v. The big temple trusts in the country could be appealed to participate in the process of cleaning of ghats and banks of Ganga. An appropriate plan be made to allocate defined stretches of Ganga, across its length, to these temple trusts for cleaning.

(Action: NMCG)

vi. The possibility deploying of solar operated trash skimmers for river surface cleaning may be explored.

(Action: NMCG)

vii. The possibility of banning usage of plastic within certain zone from the banks of Ganga may be explored.

(Action:MoEF, NMCG)

viii. The works of construction of ghats and crematoria as well as that of cleaning of ghats etc. should be left to the local municipal / village administration and the State Governments. The NMCG should mainly focus on controlling and reducing the pollution of the river Ganga due to sewage and industrial effluents.

(Action: NMCG)

ix. An attempt be made to organize competition in the 5 States on the parameter of Swachhata in the villages located on the banks of the Ganga.

(Action: MoDWS)

x. Regarding the upcoming turtle sanctuary at Varanasi, a holistic view be taken about the location.

(Action: MoEF, NMCG)

xi. For increasing awareness amongst the citizens visiting Ganga, hoardings containing appropriate messages be put up at suitable places near the banks of the river.

(Action: NMCG)

xii. The administrative capacity of local self-governments along the banks of Ganga needs to be augmented. The Ministry should prepare a proposal on comprehensive reforms in UP Jal Nigam with technical assistance of experts.

(Action:MoWR, NMCG)

xiii. The mission should ensure dissemination of information about the works done and about the ongoing activities.

(Action: NMCG)

xiv. M/o Railways may be appealed to buy the treated and recycled water from the STPs.

(Action:M/oRailways, NMCG)

xv. The municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.

(Action: MoUD)

Annexure

LIST OF PARTICIPANTS

1. Shri. Amitabh Kant, CEO, NITI Aayog
2. Dr. Amarjit Singh, Secretary, Water Resources, RD & GR
3. Shri. Parameswaran Iyer, Secretary, Drinking Water & Sanitation
4. Shri. U.P. Singh, Addl. Secretary and DG, NMCG
5. Shri. S.P. Singh Parihar, Chairman, CPCB

Prime Minister's Office

1. Shri. Nripendra Misra, Principal Secretary to PM
2. Dr. P.K. Mishra, Addl. Principal Secretary to PM
3. Shri. A.K. Sharma, Joint Secretary to PM
4. Ms. Debashree Mukherjee, Joint Secretary to PM
5. Dr. Shrikar Pardeshi, Director

Rakesh Gujral

From:	Utpal Deka <utpal.deka@gmail.com>
Sent:	13 April 2017 11:49
To:	Raja Dawn
Cc:	Rakesh Gujral
Subject:	REOI-Consulting-English-October2011.docx
Attachments:	REOI-Consulting-English-October2011.docx

Sent from myMail for iOS

-------- Forwarded message --------
From: Vasudha Thawakar <vsarda@worldbank.org>
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, sajeesh.kr@gov.in <sajeesh.kr@gov.in>, utpal.deka@gmail.com <utpal.deka@gmail.com>
Date: Thursday, 13 April 2017, 11:16 +0530
Subject: RE: REOI_Liveability

Dear Mr. Kumar:

Technically, the package meets our principal approval. However, to begin procurement please:

- Send the REOI in Bank format, attached for reference
- Please include cost estimate
- Please update activity in STEP as all no objections will be online through STEP and not email

Please check the above parameters for the innovations package also.

Thanks and Best

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

+91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: Vijay Kumar [mailto:g.vijaykumar.moud@gmail.com]
Sent: Wednesday, April 05, 2017 6:30 PM
To: Vasudha Thawakar
Cc: sajeesh.kr@gov.in; utpal.deka@gmail.com; Rakesh Gujral
Subject: Fwd: REOI_Liveability

Dear Madam,

Please find enclosed herewith a REOI for shortlisting of firms for assessment of livability of selected cities out of 79 indicators (may be varied). At present, 114 cities have been identified and the same may be varied.

The procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

--

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Urban Development,

Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217

M. 9582576758

Justification for the Liveability Index Assessment Proposal

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework.

An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains (e.g. solid waste management, transport) and accredited with or belonging to inspection bodies (such as **Bureau Veritas** (India) Pvt. Ltd., **TUV SUD South Asia** Pvt. Ltd. etc.) having extensive experience in doing such kind of surveys and assessments.

Regional breakup of 116 cities is given as Annexure below – where it emerges that 9 Regional clusters having 13 cities each are formed, based on which city assessment costs are derived. Suggested indicators that require surveys are also described in Table 2. About 15 indicators are assumed to need surveys and/or laboratory tests which are costed tentatively, as survey sample size and need would vary as per indicator and the city. The agency estimates are based on charge-out rates (manpower + expenses + profits) as have been deployed in Project Management Unit (PMU) teams hired by the Ministry till date. Travel and other cost estimates are based on similar costs in other current projects, market trends and contracts given by the Ministry.

NIUA will deploy a team of 5 professionals to monitor the overall project, maintain quality & integrity of data & standards across cities, and capture lessons from the assessment exercise. This will include development of a standard methodology and software to be used by all the teams, so that the assessment is uniform and indexation is possible. The NIUA team is considered for 9 months (May 2017 to January 2018, inclusive) with the first 3 months given for internal team setup, agency procurement process and a universal software development for the Assessment. The next 6 months will be working in tandem with the different teams. The last month is kept for wrapping up the process for 2017 after the results are announced.

The NIUA team will consist of human resources as given in Table 1 below.

Table 1

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Specialist (cross sectoral)	Post Graduate degree in Planning from a recognised university/institution. Experience of planning projects or city development aspects across planning sectors of transport, environment, services, etc.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
IT Specialist/Software Developer	Post Graduate in Software development from a recognized university/institution. Experience in developing software for Database Management System and data analysis	10 years' experience in the field. Developed at least 2 software for similar nature.

NIUA team will also have an Administrative Officer / Office Manager (qualifications and experience to suit the requirement) to manage the above project and its related matters.

Professionals deployed by Agency at the National level

The National level team to be located at NIUA is considered for 7 months (July 2017 to January 2018, inclusive), of which 6 months are common with the regional teams who will do the assessment of the cities. There are 12 workshops planned overall to be attended by the qualified members of the national level team: 1 each at National level for pre-bid, launch with selected agencies and at closing; and 1 each at each of the 9 Regional Centres midway to ascertain progress. The national team will consist of human resources as given in Table 2 below.

Table 2

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

The national team will also have Data Entry Operators (4 Nos.).

The national level team will be responsible for aggregating data received from the teams, etc . An important function of the National level team will be quality control to ensure the authenticity of the data collected through surveys. The authenticity of data shall be ensured through visual backup like photographs etc. and using geo-tagging technology through hand held devices. A useful precedence is the *Swacch Sarvekshan*.

Teams for City level assessment aggregated at Regional Cluster levels

The data collection and ground surveys of all the cities will be carried out by teams deployed by the Agency at Regional levels and travelling to the cities in the cluster. Each City team will carry out the assessment of indicators across in 15 categories through verification of secondary data and deployment of necessary surveyors for each city, and the laboratory tests as required in some

indicators. About 15 indicators are assumed to need surveys and/or laboratory tests. Table 2 gives the details.

Table 2

Standard Category	No. of category	Expected expertise of Assessment Team members
Governance	1	Governance
Social	2	Identity and Cultural
	3	Education
	4	Health
	5	Safety and Security
Economic	6	Economic and Employment
Physical	7	Housing and Inclusive
	8	Public Open Spaces
	9	Mixed Land use & Compactness
	10	Power Supply
	11	Transport and Mobility
	12	Assured water supply
	13	Waste water management
	14	Solid Waste Management
	15	Reduced pollution management

Requirement of Funds:

Liveability Index Assessment - Estimated Budget				
1	**Agency Costs**			
A	**National level team costs**			
a	**Human Resource for 7 months (Jul 2017 - Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.50	7	31.50
2	Survey and Sampling Specialist	3.00	7	21.00
3	Data Analytics and Indexing Specialist	3.00	7	21.00
4	Urban Transport Specialist	3.00	7	21.00
5	Environment Specialist	3.00	7	21.00
6	GIS Specialist	3.00	7	21.00
7	Data Entry Operators (4 nos.)	0.50	28	14.00
	Human Resource Costs		**Sub Total**	**150.50**
b	**Travel & related costs**	**Rate**	**Units**	**Amount (Lakh)**
	Team Lead+5 members airfare to 9 regional nodes once	0.15	54	8.10
	Accommodation for above for 2 days per trip	0.05	108	5.40
	Local Travel costs for 2 days each trip	0.03	54	1.62
	Miscellaneous and out of pocket expenses		lumpsum	0.50
	Travel & related costs		**Sub Total**	**15.62**
c	**Other Costs (reimbursible)**	**Rate**	**Units**	**Amount (Lakh)**
	Hardware & basic software requirements	1.5	10	15.00
	Workshops (9 at regional nodes and 3 at National level)	as per CCBP	12	42.00
	Report Editing & Printing (200 copies)	0.05	200	10.00
	Other Costs		**Sub Total**	**67.00**
	TOTAL National Team Costs for one year assessment (a+b+c)			**233.12**
B	**Assessment Costs for Cities aggregated at Regional level**			
a	**Remuneration**	**Rate/PM**	**No. of Months**	**Amount**
	Assessment Teams for Cities at Regional level	6.00	6	36.00
	Hardware & basic software requirements	1.50	6	9.00
			Sub Total	**45.00**
b	**Assessment costs (assuming avg. 13 cities per region)**	**Rate**	**Unit**	**Amount**
1	Travel airfare by 4 members to cities in region	0.15	52	7.80
2	Lodging Boarding for 2 days on shared basis in region	0.05	52	2.60
4	Local Travel per day	0.03	52	1.56

6	Survey & Lab Test Costs (assuming 15 indicators needing same)	0.50	195	97.50
7	Documentation & Misc. communciation costs		lumpsum	2.00
	Total Cost per region		**Sub Total**	**111.46**
	TOTAL Cost of City Assessment per region (a+b)			**156.46**
	Total Cost for City Level Assessment for 9 regions (covering all 116 cities)			**1408.14**
	Total Agency Cost (National + City assessment Teams) for 116 cities (A+B)			**1641.26**
2	**Monitoring & Project Management Team at NIUA**			
A	**Human Resource for 9 months (May 2017 Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.00	9	36.00
2	Urban Specialist (cross-sectoral)	2.50	9	22.50
3	Data Analytics, Statistics and Indexing Specialist	2.50	9	22.50
4	IT Prof/Software Engineer	2.50	9	22.50
5	Administrative Officer/Office Manager	1.50	9	13.50
	Total Human Resource Costs		**Sub Total**	**117.00**
B	**Other Costs (reimbursible)**			
1	Server & Software Licenses (incl. GIS)		lumpsum	20.00
2	Standard methodology & software development		lumpsum	100.00
3	Training on Software for National & Assessment Teams		lumpsum	130.00
4	Miscellaneous running costs of PMU team at NIUA	1.00	9	9.00
	Total Other Costs		**Sub Total**	**259.00**
	TOTAL Costs of Monitoring & Project Management Team at NIUA			**376.00**
	Total Cost of Assessment (Agency + NIUA) (1+2 above)			**2017.26**

Payment Schedule:

For NIUA:

30% advance

30% at the end of 3rd month,

30% at the end of 6th month,

10% at the end of the 9 months and releasing of the index

The payments will be based on Utilization certificates

For Agency: As per the terms set in the Terms of Reference (TOR) of the Request for Proposal

List of Cities:

Cluster Classiciation of Cities			
Sl. No.	Name of State	Name of City	Population
CLUSTER 1			
1	Uttar Pradesh	Lucknow	2,817,105
2	Uttar Pradesh	Agra	1,585,704
3	Uttar Pradesh	Moradabad	887,871
4	Uttar Pradesh	Aligarh	874,408
5	Uttar Pradesh	Rampur	325,313
6	Uttar Pradesh	Rae Bareli	191,316
7	Uttar Pradesh	Bareilly	903,668
8	Uttar Pradesh	Jhansi	505,693
9	Uttar Pradesh	Saharanpur	705,478
10	Uttar Pradesh	Kanpur	2,765,348
11	Uttar Pradesh	Varanasi	1,198,491
12	Uttar Pradesh	Ghaziabad	1,648,643
13	Uttar Pradesh	Meerut	1,305,429
14	Uttar Pradesh	Allahabad	1,112,544
	TOTAL	**14**	**16,827,011**
CLUSTER 2			
15	Puducherry	Puducherry	244,377
16	Tamil Nadu	Salem	829,267
17	Tamil Nadu	Thanjavur	222,943
18	Tamil Nadu	Vellore	185,803
19	Tamil Nadu	Dindigul	207,327
20	Tamil Nadu	Erode	157,101
21	Tamil Nadu	Tiruchirappalli	847,387
22	Tamil Nadu	Thoothukkudi	237,830
23	Tamil Nadu	Tiruppur	444,352
24	Tamil Nadu	Tirunelveli	473,637
25	Tamil Nadu	Chennai	4,646,732
26	Tamil Nadu	Coimbatore	1,050,721
27	Tamil Nadu	Madurai	1,017,865
	TOTAL	**13**	**10,565,342**
CLUSTER 3			
28	Maharashtra	Solapur	951,558
29	Maharashtra	Pune	5,057,709
30	Maharashtra	Aurangabad	1,175,116
31	Maharashtra	Kalyan-Dombivali	1,247,327
32	Maharashtra	Nagpur	2,405,665
33	Maharashtra	Amravati	647,057
34	Maharashtra	Nashik	1,486,053
35	Maharashtra	Thane	1,841,488
36	Maharashtra	Greater Mumbai	12,442,373
37	Maharashtra	Navi Mumbai	1,120,547
38	Maharashtra	Pimpri Chinchwad	1,727,692
39	Maharashtra	Vasai-Virar City	1,222,390

	TOTAL	12	31,324,975
CLUSTER 4			
40	Dadar & Nagar Haveli	Silvassa	98,265
41	Daman & Diu	Diu	23,991
42	Gujarat	Ahmadabad	5,577,940
43	Gujarat	Surat	4,467,797
44	Gujarat	Vadodara	1,670,806
45	Gujarat	Gandhinagar	202,776
46	Gujarat	Dahod	791,685
47	Gujarat	Rajkot	1,286,678
48	Rajasthan	Udaipur	451,100
49	Rajasthan	Ajmer	542,321
50	Rajasthan	Jaipur	3,046,163
51	Rajasthan	Kota	1,001,694
52	Rajasthan	Jodhpur	1,033,756
	TOTAL	13	20,194,972
CLUSTER 5			
53	Bihar	Bhagalpur	410,210
54	Bihar	Muzaffarpur	354,462
55	Bihar	Biharsharif	297,268
56	Bihar	Patna	1,684,222
57	Chattishgarh	Bilaspur	331,030
58	Chhattisgarh	Naya Raipur	150,000
59	Chhattisgarh	Raipur	1,047,389
60	Jharkhand	Ranchi	1,073,427
61	Jharkhand	Dhanbad	1,162,472
62	Madhya Pradesh	Indore	1,964,086
63	Madhya Pradesh	Bhopal	1,798,218
64	Madhya Pradesh	Ujjain	515,215
65	Madhya Pradesh	Satna	280,222
66	Madhya Pradesh	Sagar	273,296
67	Madhya Pradesh	Jabalpur	1,055,525
68	Madhya Pradesh	Gwalior	1,069,276
	TOTAL	16	13,466,318
CLUSTER 6			
69	Chandigarh	Chandigarh	961,587
70	Haryana	Karnal	286,827
71	Haryana	Faridabad	1,414,050
72	Himachal Pradesh	Dharamshala	22,580
73	Himachal Pradesh	Shimla	169,578
74	Jammu & Kashmir	Jammu	502,197
75	Jammu & Kashmir	Srinagar	1,180,570
76	NCT of Delhi	NDMC	257,803
77	Punjab	Jalandhar	862,886
78	Punjab	Ludhiana	1,618,879
79	Punjab	Amritsar	1,132,383

80	Uttarakhand	Dehradun	569,578
	TOTAL	**12**	**8,978,918**
CLUSTER 7			
81	Goa	Panaji	40,017
82	Karnataka	Davanagere	434,971
83	Karnataka	Belagavi	488,157
84	Karnataka	Hubbali-Dharwad	943,788
85	Karnataka	Mangaluru	488,968
86	Karnataka	Shivamogga	322,505
87	Karnataka	Tumakuru	302,143
88	Karnataka	Bangalore	8,443,675
89	Kerala	Kochi	602,046
90	Kerala	Thiruvananthapuram	743,691
91	Lakshadweep	Kavaratti	11,210
	TOTAL	**11**	**12,821,171**
CLUSTER 8			
92	Arunachal Pradesh	Itanagar	59,490
93	Arunachal Pradesh	Pasighat	24,656
94	Assam	Guwahati	957,352
95	Manipur	Imphal	268,243
96	Meghalaya	Shillong	143,229
97	Mizoram	Aizawl	293,416
98	Nagaland	Kohima	99,039
99	Sikkim	Namchi	12,194
100	Tripura	Agartala	400,004
101	West Bengal	New Town Kolkata	36,541
102	West Bengal	Durgapur	566,517
103	West Bengal	Bidhan Nagar	618,358
104	West Bengal	Haldia	200,827
105	West Bengal	Kolkata	4,496,694
106	West Bengal	Haora	1,077,075
	TOTAL	**15**	**9,253,635**
CLUSTER 9			
107	Andaman Nicobar	Portblair	140,572
108	Andhra Pradesh	Kakinada	312,538
109	Andhra Pradesh	Visakhapatnam	1,728,128
110	Andhra Pradesh	Tirupati	287,482
111	Andhra Pradesh	Amaravati	103,000
112	Andhra Pradesh	Vijayawada	1,034,358
113	Odisha	Bhubaneswar	840,834
114	Odisha	Rourkela	320,000
115	Telengana	Warangal	819,406
116	Telengana	Karimnagar	261,185
	TOTAL	**10**	**5847503**
TOTAL Cities selected		**116**	**252712187**
Average Cities per cluster		**12.9**	**14364427.2**

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

9th May, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.
f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.
g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.
h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website
https://eprocure.gov.in/cppp,
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	9th May 2017
2.	Pre Application Conference	16th May, 2017 2.00 PM
3.	Last Date for receiving queries	19nd May 2017
4.	NIUA's response to queries latest by	23th May 2017
5.	**Last Date of Submission of EOI**	**30th May 2017 3.00PM**

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date: 16th May, 2017
Time: 2.00 PM
Venue: Conference Hall, National Institute of Urban Affairs, Core 4- B, Ist Floor, India Habitat Centre, Lodhi Road, New Delhi 110003

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

    i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

    ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website:
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email:niua@niua.org Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India)	Refer Appendix 6 and 6A

	Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
  a. is not received online as indicated at 2.11;
  b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
  c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
  d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………. ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)

Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date

Name ____

Place

Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. …………….. (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REOI FOR SHORTLISTING OF CONSULTING FIRMS FOR ASSESSMENT OF LIVEABILITY IN SELECTED CITIES

RESPONSE TO PRE-BID QUERIES

S.NO	QUERY	RESPONSE
	REGARDING ELIGIBILITY	
	'A business entity' - Government entities, formed by cabinet decisions are not incorporated in companies Act/LLP Act. There should be a provision for such entities.	Explained in Clause 2.2 (b) page 7. As per procurement guidelines, State-owned enterprises are eligible to compete if they are: i. Legally and financially autonomous ii. Operate under commercial law iii. Are not under supervision by the agency contracting them In any case, such entities can participate as a consortium partner
	EMD processing fee required in EOI phase or not?	No
	REGARDING FINANCIAL QUALIFICATION CRITERIA	
	How do you define 'financial strength of the organization'? (What secures full marks?)	Information needs to be provided as per Annexure 4 of the REOI. The Procurement Committee will decide the same.
	Financial strength of the firm (Pg. no. 15, 3.1 b) Vague statement: Is there any lower limit?	
	Elucidation required for 'Financial strength evaluation'.	
	Is there any limit of turnover to apply for this bid?	No
	Valuation of consortium to be for 'lead partner' or consortium as a whole?	Technical criteria valuation will be for all consortium partners. For financial strength Lead partner shall only be evaluated.

	REGARDING SCOPE	
	You give assignment in a single company for PAN India. (Can someone apply for few cities only?)	Single selected agency has to carry out the entire assignment for 116 cities.
	There are 116 cities given in Annexure - 1, whether NIUA is going to split this assignment among many organizations or will it be given to one agency?	
	Would single or multiple agencies be deployed to conduct the research? If multiple, what would be min/max size of deliverables(state wise/zone wise)?	
	Please clarify if this is a single project or how would the cities be packaged if multiple projects.	
	Will you select one agency for 116 cities or there will be multiple agencies?	
	Will the complete assignment be taken by a single firm?	
	In case the number of firms are to be engaged, how would the lot be divided?	
	How many bidders will be considered for contract award for all 130 cities/towns.	
	How many firms are to be selected?	
	Can a consultant bid for few states or it has to bid for all the 116 cities?	
	In the background, 114 cities is mentioned whereas Annexure A has names of 116 cities in the list. So what is the exact number?	116 cities

	Standard of Liveability is defined or it has to be redefined by the consultant?	Please refer to the "Liveability Standards in Cities" along with "Methodology for Collection and Computation of Liveability Standards in Cities " which may be downloaded at http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Is the methodology and related indices confirmed or are under development?	
	Do you expect us to contribute to development of indices and calculations?	No
	Once the data is submitted, does the research agency gets a role in policy defining?	No
	What all does city inspection report contains?	In case this refers to 'Inception Reports': Refer 1.2.1.b for details on City wise Inception Report
	What is the definition of a city - Municipality area or UA?	Municipal area
	Will there be separate reports for each city?	Yes
	REGARDING TECHNICAL QUALIFICATION CRITERIA	
	What is the type of expertise required for the assignment?	Refer Clause 3.1 of REOI
	Why is accreditation with B.V. or UV SUD or equivalent necessary?	To ensure quality
	Can 'equivalent' in the above query be elucidated?	Please follow the terms of reference.
	Why specific certification required when we have more experiences of Market Research/Field surveys urban slums surveys/socio- economic surveys?	
	Teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (india) pvt. Ltd., UV SUD South Asia pvt. or of equivalent status and	

	repute (Pg. no. 15, 3.1b) Which all bodies do include under this head? However, it is very difficult to get investigators/team for such a huge assignment	
	Section 3.1(e): Will ISO certifications quality? If yes, please specify how many projects or people to get 30 marks. If no, please specify the kind of accreditation.	
	Consideration of 30 marks in evaluation criteria for accreditation with Bureau veritas / UV SUD is too high. This criterion needs to be dropped to allow wider participation by industry in the project.	No change
	With respect to section 3 (b) of REOI on evaluation parameters, We have significant experience in undertaking field surveys and research and analysis in urban areas including household surveys, property survey and mapping etc. We have well laid out processes for data collection and quality assurance and are ISO 9001-2015 certified. As we mostly use in house survey designers, supervisors and data collectors, we have not worked with external terms specifically accredited by the specific organizations listed in REOI. The specific reference to inspection bodies may be removed in favour of generic quality assurance processes or certification or process demonstration.	
	From 3.1 Evaluation: Within each evaluation parameter, how will the marking be done? Is there any breakup of marks based on no. of assignments?	This will be decided by the Procurement Committee

	From 3.1 - Experience of staff- 25 marks: For how many similar assignments, maximum 25 marks will be awarded?	
	Point 3: Criteria for evaluation 3.1: Evaluation of applications a. What is the min number of experience for general experience? b. What is the minimum of staff having experience for similar assignment c. What is the minimum number of assignments related to market research and field survey in urban areas? d. What is the minimum number of assignments for experience of the firm in implementing assignments for analysis and assessment of data related to governance, transportation etc.	
	What is the score given to each assignment	
	The query is for the 'criteria for evaluation' marked at section 3. Under section 3.1 sub-point b, 4 parameters are grouped in 2 and marked as (3) and (4). The parameters include experience of the firm and the related assignments. The collective staff experience defines the firm's experience thus in that view the pointers are same except the expectations raised for the data collectors to be accredited with inspection bodies. Suggestion: In order to get more reliable data, one pointer should be added or weightage should be given to the consultants who are conducting the field work digitally.	

	Geotag information gives you more accuracy in terms of relying on data collected from that city itself.	
	On evaluation criteria what would be treated as Gold standard for each parameter i.e. what credential will make one eligible for full marks under each? What financial strength criteria will ensure 15 marks? How many projects as reference/experience?	
	Is the surveys held as large scale urban planning assignments will be counted or not?	Eligibility based on project details to be evaluated by the Procurement Committee
	Can we obtain global experience?	Yes
	Can study conducted in domain like governance, transportation, environment, conducted globally be shown in the experience?	Yes
	Is our global experience in similar studies relevant here?	Yes
	Reference Appendix 6 - Pg 28 ; Specific experience of the firm in implementing……….lead firm. Please clarify why pvt. Companies are mentioned and what kind of affiliation/equivalent status needed.	Self-Explanatory
	Reference Appendix 5,7 - Pg 26 and 30; A copy of the work order/agreement.........as per clause 2.19 Work order may not mention the survey work in most of the cases. But projects like PMAY are totally based on ground level survey as per the SOW mentioned by MOHUPA. Please consider these projects as under survey related work.	Project details to be submitted as per REOI

	REGARDING METHODOLOGY	
	Is primary data collection expected or the data needs to be collected from the ULB officials?	Both
	From 1.2 Brief TOR: What should be the methodology for data collection? Is this fixed or we have flexibility to opt for digital or other solutions?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Research mode : physical surveys, government data, online research about the city. These need to be defined (for accuracy) and how to submit data (pre defined formats)	
	Please elaborate on secondary data availability from different line departments and primary data collection requirements in the project.	
	Data collection and field survey- What would be the universe/TG selection process?	
	REOI refers to a detailed methodology already developed for this experience. Will the selected consultant be allowed to improvise it?	
	Will usage of 'lateral' or 'proxy' data sources such as satellite imagery to access traffic patterns, built density, green cover, water bodies, open spaces etc, telephone data on mobility patterns etc be supported or encouraged?	
	What does identification of data resources and submission of resources of data mean?	This will be part of the detailed Terms of Reference as part of the Request for Proposal

	Has there been a baseline study conducted on the availability of administrative data across all the indicators mentioned in REOI? If so, will that be made available to the consultants at RFP stage?	No.
	Will data collected previously under other mission and programs viz. Swachh Survekshan etc. be made available for Liveability Index? (Can be very useful and avoid duplication of efforts)	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Will the government agencies provide support? To what extent? How?	
	Can data collection be a 'computer assisted personal interview' using CAPI devices (hand handled). REOI does mention that 'maintain and submit raw data and data collection forms to NIUA'.	
	Are you okay with digital form of data collection as you mentioned to submit raw data and data collection forms?	
	How is data to be submitted? Digitally or manually?	
	REGARDING DURATION OF ASSIGNMENT	
	What is the duration of this assignment?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	What would be the expected duration of the project(s)?	
	Once the purpose is defined then the research will make more sense. Also regarding the research - What is the time frame?	
	How much time is available for the actual execution of the project?	

	OTHER QUERIES	
	Define the purpose of research.	Please refer to the "Liveability Standards in Cities" and the "Methodology for Collection and Computation of Liveability Standards in Cities " documents, which can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Assuming [that] in data collection for the government, [it is necessary] to identify the core areas which need to be addressed in the city, then the research need to be divided into three main parts - a. Physical structure - infrastructure b. social structure - occupation/education c. governance structure - how are things managed for a common man's life	
	Existing city infrastructure is required? Mapping the existing infrastructure in terms of connectivity, utilities, garbage management, education, employment opportunities and air quality.	
	Social structure : Liveability? What is the basic parameter which needs to be defined?	
	Governance structure : How is a common man's basic life and need governed? Who is accountable and answerable? Does the existing structure meets a common man's need?	
	Please provide the link for accessing liveability standards. Current link redirects to a page where it asks for EOI for Kakinada KMPs.	

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: *National Institute of Urban Affairs*
(An autonomous body under Ministry of Urban Affairs)

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

Issued on: [date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The National Institute of Urban affairs, (an autonomous body under Ministry of Urban Development), the implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Assessment of Liveability in 116 Cities cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposal (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank’s Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Form of Contract (Time Based)

6. Please inform us by *[insert date]*, in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal’s submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant*[1]*]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development (g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant. (h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract. (i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices). (j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

over-write, the provisions of the ITC.

(k) “Day” means a calendar day.

(l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) “Government” means Government of India.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) “MoUD” means Ministry of Urban Development

(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP.

(v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP.

(w) “Services” means the work to be performed by the Consultant

	pursuant to the Contract. (x) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) “TORs” (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants’ expense. 2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant’s Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client’s interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth

	below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

	services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and: (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

	To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of	**8.1.** The Consultant shall bear all costs associated with the

Preparation of Proposal	preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with

	Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and Amendment of RFP	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of

	all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial

Content	information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.
C. Submission, Opening and Evaluation	
17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form

of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]".

17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal.

17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any

	extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC. 19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable.

	20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall

	technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	

a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a

	Lump-Sum contract shall not be negotiated. 28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: National Institute of Urban Affairs (Autonomous body under** Government of India) under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated 2016 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

3	Not used
4.1	*NA*
5	Not used
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* http://web.worldbank.org/external/default/main?theSitePK=84266&contentMDK=64069844&menuPK=116730&pagePK=64148989&piPK=64148984&sort_on=SUPP_CTRY_NAME&sort_order=ascending&sort_data=text
7	Not used
8	Not used
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND

	2d Inner Envelope with the Financial Proposal (if applicable): (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input: 30 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.

16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates:** Yes
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes -reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **Floor** **Place**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____** 2017 *[for example, 15 June 2017]*

<table>
<tr><td></td><td>Time: 15:00 IST <i>[insert time in 24h format, for example, “16:00 local time”]</i>

<i>[If appropriate, add translation of the warning marking [“Do not open....”] in the national language to the outer sealed envelope]</i>

The Proposal submission address is: <u>[insert the web address]</u></td></tr>
<tr><td>19.1</td><td>An online option of the opening of the Technical Proposals is offered: Yes/No

The opening shall take place at:
<i>[Insert: “</i>same as the Proposal submission address<i>” OR insert and fill in the following:</i>
Street Address:
Floor, room number: Room No.____, ____Floor,
City: New Delhi
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – “16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>20</td><td>Not used</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
</table>
</td></tr>
</table>

(a)	*Technical approach and Methodology* *{Notes to Consultant:* *Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from* http://smartcities.gov.in/content/innerpage/otherstoolkit.php. *As part of their methodology, Consultants should indicate* ○ *A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same* ○ *The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.* ○ *The Methodology should also indicate the technology to be used for data collection and ensuring data veracity* The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing* *{Notes to Consultant:* *Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).* *Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.* *The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are*	10

	accredited must also be provided. *Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}*	
	Total points for criterion (ii) –50 points *{Notes to Consultant: The Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts.}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	10
Survey and Sampling Specialist	6
Data Analytics and Indexing Specialist	6
Urban Transport Specialist	6
Environment Specialist	6
GIS Specialist	6
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following two sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the two criteria*:* **100**

……

The minimum technical score (St) required to pass is*:75 (seventy five) points*

22	Not used

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
24	Not used
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse the Service Tax to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the

	weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, ___________, New Delhi -1100
29	Not used
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: _________________** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to National Institute of Urban Affairs in Carrying out surveys in 116 cities of India in order to assess Liveability Standards for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years. (Please give details of not more than 10 assignments)**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report or equivalent deliverable. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of..............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.

Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php.

As part of their methodology, Consultants should indicate
○ A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same
○ The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.
○ The Methodology should also indicate the technology to be used for data collection and ensuring data veracity
The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.}

d) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff

Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).

Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.

The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are accredited must also be provided.

Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables [1] (D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): _______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Signature Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Assessement of Liveability Standards in selected 116 cities of India in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1__	__________________________	_________	[*Home*]	_________	▨	▨	▨	
N-2__			[*Field*]	_________				
____	__________________________			_________	▨	▨	▨	
____								
____				_________				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];
- (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];
- (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];
- (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$$R_i=R_0 \text{ x } (I_i/I_0)$$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;

   b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;

   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not

available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format discussed and finalized with NIUA;
   b. All raw data and data sheets (digital format);
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection

Report	Time line	Documents	Deliverables and Contents
			geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

***** Timelines for subsequent years will be as decided by NIUA.

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development

and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Veritas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

7.6.1 Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

7.7 TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

7.7.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

STANDARD FORM OF CONTRACT

Section 8

Consultant's Services

Lump-Sum

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name: Capacity Building for Urban Development

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

[Credit #: 4997-IN

Contract No. CBUD/SD/17
between

National Institute of Urban Development, New Delhi
____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ______________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, **National Institute of Urban Affairs (NIUA)**(hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) The client is an autonomous body established by the Ministry of Urban Development, New Delhi (MoUD). MoUD hi has received a credit from the *International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions	1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings: (a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated July 2016. (b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time. (c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank. (e) "CBUD" Means Capacity Building for Urban Development (f) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant. (g) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract. (h) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices). (i) "Day" means a working day unless indicated otherwise. (j) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11. (k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

	(l) “Foreign Currency” means any currency other than the currency of the Client’s country. (m) “GCC” means these General Conditions of Contract. (n) “Government” means the government of India. (o) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (p) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal. (q) “Local Currency” means the currency of the Client’s country. (r) “MoUD” means ministry of Urban development (s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract. (t) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them. (u) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written. (v) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto. (w) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract. (x) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.
2. Relationship between the Parties	2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf

	hereunder.
3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must

	include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the “Effective Date”) of the Client’s notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not

	foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
b. No Breach of Contract	17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
c. Measures to be Taken	17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. 17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

	(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. 17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.
18. Suspension	18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.
19. Termination	19.1. This Contract may be terminated by either Party as per provisions set up below:
a. By the Client	19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f): (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to

	Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. 19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.
b. By the Consultant	19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause. (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue. (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days. (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1. (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.
c. Cessation of Rights and Obligations	19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and

	obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.
d. Cessation of Services	19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.
e. Payment upon Termination	19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: (a) payment for Services satisfactorily performed prior to the effective date of termination; and (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General	
a. Standard of Performance	20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties. 20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

	20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.
b. Law Applicable to Services	20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law. 20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country. 20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.
21. Conflict of Interests	21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
a. Consultant Not to Benefit from Commissions, Discounts, etc.	21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment. 21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any

	discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
b. **Consultant and Affiliates Not to Engage in Certain Activities**	21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.
c. **Prohibition of Conflicting Activities**	21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
d. **Strict Duty to Disclose Conflicting Activities**	21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
22. Confidentiality	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.
23. Liability of the Consultant	23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.
24. Insurance to be Taken out by the Consultant	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in

	Clause GCC 13.
25. Accounting, Inspection and Auditing	25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs. 25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)
26. Reporting Obligations	26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.
27. Proprietary Rights of the Client in Reports and Records	27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client. 27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.
28. Equipment, Vehicles and	28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the

Materials	Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value. 28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts	29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**
30. Replacement of Key Experts	30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.
31. Removal of Experts or Sub-consultants	31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

	31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions	32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.
33. Access to Project Site	33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client

	will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.
34. Change in the Applicable Law Related to Taxes and Duties	34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1
35. Services, Facilities and Property of the Client	35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**
36. Counterpart Personnel	36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**. 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
37. Payment Obligation	37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price	38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**. 38.2 Any change to the Contract price specified in Clause 38.1 can

	be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.
39. Taxes and Duties	39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**. 39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.
40. Currency of Payment	40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.
41. Mode of Billing and Payment	41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**. 41.2.1 *Advance payment:* No advance payment would be made to the consultant. 41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon

	promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**. 41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.
42. Interest on Delayed Payments	42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith	43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement	44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.
45. Dispute Resolution	45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

(ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

(iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** the *land*
4.1	**The language is : English**.
6.1 and 6.2	**The addresses are:** Client: National Institute of Urban Affairs, New Delhi ________________ Attention : ________________ Facsimile : ________________ E-mail (where permitted):________________ Consultant : ________________ ________________ Attention : ________________ Facsimile : ________________ E-mail (where permitted) :________________
8.1	*NA*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*________________ **For the Consultant:** *[name, title]*________________
11.1	**The effectiveness conditions are the following**: Signing of the contract.
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days[insert date]**.

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 12 (twelve) Months which may be extended upto two times for 12 months each upon successful completion of their and at the discretion of the client.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3 :** Yes

23.1	**No additional provisions.**
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability insurance, with a minimum coverage of** equivalent of the contract amount; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage as per Motor Vehicle Act 1988.; (c) Third Party liability insurance, with a minimum coverage of one million.; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.2	**The Consultant shall not use these** *.documents, database and software* **for purposes unrelated to this Contract without the prior written approval of the Client**.
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates**

	provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	**The Client warrants that "the Client shall reimburse the Consultant indirect taxes i.e. Service Tax imposed, under the applicable law in the Client's country, on the Consultant.**
41.2	**The payment schedule:** **For the local currency ; [Insert the Amount]** 1. Payment of remuneration will be as follows ➢ Inception Report : Twenty percent (20 %) will be paid on acceptance/ approval of the inception report. ➢ Draft City Assessment Report : Fifty percent (50 %) will be paid on acceptance/ approval of Draft Final Report. ➢ Final City Assessment Report : Thirtypercent (30 %) will be paid on acceptance/ approval of Draft Final Report. **Note: The Consulting firm will submit the invoice in the name of Project Director, CBUD Project, Ministry of Urban Development, Nirman Bhawan, Maulana Azad Road, New Delhi- 110011 to the client. The client, after reviewing the invoice of the Consultant, shall recommend the payment along with the letter of acceptance/approval of the deliverable and any other information desired by the Project Director, CBUD to the Ministry of Urban Development (MoUD) for making the payment.**
41.2.1	***Not Applicable***
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to

	arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Council of Arbitrators, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi (b) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

	4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in New Delhi; (b) the *English* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

1. Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Appendix D), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$R_i = R_0 \times (I_i / I_0)$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

2. Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

3. Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Appendix D). The study shall inter-alia include:
    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;
    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
    c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:
    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;
    b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;
    c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection

methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format discussed and finalized with NIUA;
   b. All raw data and data sheets (digital format);
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

4. Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

5. Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed

Report	Time line	Documents	Deliverables and Contents
			and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

6. ***** Timelines for subsequent years will be as decided by NIUA.

7. Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

8. TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

8.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;

b. Provide support for organizing various State and city level workshops and meetings;.

c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

8.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

……

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - LIST OF CITIES

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788

Sl. No.	Name of State	Name of City	Population
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100

Sl. No.	Name of State	Name of City	Population
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358

Sl. No.	Name of State	Name of City	Population
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RFP on Liveability Index

2 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Thu, May 25, 2017 at 4:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Utpal Deka <utpal.deka@gmail.com>, nrajadhyaksha@ipeglobal.com

Dear Madam,

Please find enclosed herewith a RFP for shortlisting of firms for assessment of livability of selected cities out of 79 indicators. At present, 116 cities have been identified and the same may be varied.

As communicated earlier, the procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The REOI was already issued by NIUA. The RFP will be issued to the shortlisted firms. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

Regards,

G Vijay Kumar

Under Secretary the Government of India,
Ministry of Urban Development,
Smart Cities Division, Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Part I RFP Liveability Index draft V5.docx
269K

Vasudha Thawakar <vsarda@worldbank.org> Wed, May 31, 2017 at 1:50 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, "Raja@meghrajindia.com" <Raja@meghrajindia.com>, "nrajadhyaksha@ipeglobal.com"

<hrajadhyaksha@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>;
Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr. Kumar:

Thank you for the below attached email for the selection of Consultant for Assessment of livability index, to be procured by NIUA (on behalf of MoUD), subject to following :

(i) The PMU provides hand holding support to NIUA for the procurement process

(ii) Bank's Guidelines for Selection of Consultants – January 2011, updated July 2014 is followed

(iii) Bank's standard format for REoI, RFP, TER and Contract Agreement is used

(iv) Use of STEP for the procurement process

From the below email, we observe that the REoI has already been advertised. Since this is a prior review contract, the REoI and subsequent steps, needs to be cleared by Bank (through STEP). You may kindly advise the Client to send the documents through STEP for Bank's review.

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

Begin forwarded message:

From: "Vijay Kumar" <g.vijaykumar.moud@gmail.com>
To: "Vasudha Thawakar" <vsarda@worldbank.org>, "Raja Dawn"

<Raja@meghrajindia.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>,
"utpal.deka@gmail.com" <utpal.deka@gmail.com>,
"nrajadhyaksha@ipeglobal.com" <nrajadhyaksha@ipeglobal.com>
Subject: RFP on Liveability Index

[Quoted text hidden]

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank’s Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal’s submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) “Affiliate(s)” means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) “Applicable Guidelines” means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) “Applicable Law” means the laws and any other instruments having the force of law in the Client’s country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) “Bank” means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) “Borrower” means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f)“CBUD” means Capacity Building for Urban Development

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[1] *[“loan agreement” term is used for IBRD loans; “financing agreement” is used for IDA credits; and “grant agreement” is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) “Client” means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) “Consultant” means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) “Contract” means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) “Data Sheet” means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) “Day” means a calendar day.

(l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) “Government” means Government of India.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provides the shortlisted Consultants with all information needed to prepare their Proposals.

(q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) “MoUD” means Ministry of Urban Development

	(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant. (u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) “Services” means the work to be performed by the Consultant pursuant to the Contract. (x) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) “TORs” (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants’ expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant’s representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant’s authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts’ availability may result in the rejection of the Consultant’s Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client’s inputs, the special conditions of the Contract, and finalizing the “Description of Services” part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant’s tax liability in the Client’s country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:** ____21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

	The opening shall take place at: *[Insert: "*same as the Proposal submission address*" OR insert and fill in the following:* Street Address: Maulana Azad Road Floor, room number: Room No.____, ____Floor, Nirman Bhawan City: New Delhi 110001 Country: India **Date**: same as the submission deadline indicated in 17.7. **Time:** *[insert time in 24h format, for example – "16:00 local time]* *[The time should be immediately after the time for the submission deadline stated in 17.7]*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals NA**
21.1 (for FTP)	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –50 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

……

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1 **An online option of the opening of the Financial Proposals is offered:** Yes

25.1 For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices
If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.

All applicable taxes shall be paid by the Consulting firm

The Client shall reimburse GST to the consultant as per the applicable rates

26.1 **The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which “Sf” is the financial score, “Fm” is the lowest price, and “F” the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ________________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): __________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Signature Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____________________

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	____________	______	*[Home]*	______	▨	▨	▨	
N-2			*[Field]*	______	▨	▨	▨	
____	____________			______	▨	▨	▨	
____				______	▨	▨	▨	
____				______	▨	▨	▨	
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];

  (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

---

[4] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

[7] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format attached at Annexure X;
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

3 messages

STEP Admin <noreply@worldbankgroup.org> Fri, Nov 3, 2017 at 5:39 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the shortlist evaluation report for the above-mentioned consulting services, submitted to the Bank on 2017/10/30. Based on the information provided, the Bank has no objection to the following qualified consultants being included in the shortlist.

However, we observe that there are 2 firms from outside India, in the longlist. As per Bank's Consultant's guidelines, para 2.6 : "Short lists shall comprise six firms with a wide geographic spread, with no more than two firms from any one country unless there are no other qualified firms identified to meet this requirement".

In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.

Name of Consultant/Firm	Country
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India

PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	**Country**
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

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Bank Users - Click here

Vijay Kumar <g.vijaykumar.moud@gmail.com> Mon, Nov 13, 2017 at 3:25 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Jyoti Sriram <jsriram@worldbank.org>, Abhijit Sankar Ray <aray3@worldbank.org>
Cc: jsupa-mhupa@gov.in, dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

We have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.

No other firms {(including foreign firms) among 28 applications} have been qualified for shortlisting.

We have already submitted the Request for Proposal (RFP) and Standard Form of Contract in STEP on 10th November 2017 and awaiting the consent/approval from the World Bank for further uploading the same on www.eprocure.gov.in and thereby issuing the RFP to the 6 six shortlisted firms.

You are requested to give the concurrence/views at the earliest.

On Fri, Nov 3, 2017 at 5:39 PM, STEP Admin <noreply@worldbankgroup.org> wrote:

> Dear G. Vijay Kumar;
>
> India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970 No-Objection to Shortlist for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS
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>
> **In view of above, MoUD is advised to include the 2 foreign firms along with the 6 shortlisted firms, provided the 2 foreign firms are qualified, irrespective of the marks given.**

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DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India

M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

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Best Regards,

Vasudha Thawakar

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Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),

Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Smart City
MISSION TRANSFORM-NATION
Ministry of Housing and Urban Affairs, Government of India

Vasudha Thawakar <vsarda@worldbank.org> Tue, Nov 14, 2017 at 6:26 AM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, "jsupa-mhupa@gov.in" <jsupa-mhupa@gov.in>, "dir-nulm@nic.in" <dir-nulm@nic.in>, Rakesh Gujral <rgujral@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr Kumar,

Please see below. We have already provided no objection with a request to issue RFP to the foreign firms (up to two) irrespective of their marks in addition to the six firms shortlisted.

Thanks and best
Vasudha Thawakar

On 13-Nov-2017, at 6:55 PM, Vijay Kumar <g.vijaykumar.moud@gmail.com> wrote:

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>
> We have already provided six shortlisted firms which were recommended by the Procurement Committee of CBUD and approved by the Project Director, CBUD, Ministry of Housing and Urban Affairs.
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STESALIT SYSTEMS LIMITED	India
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CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
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NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
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SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India

THE ECONOMIST GROUP LIMITED	United Kingdom

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To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

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Bank Users - Click here

--

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Ministry of Housing and Urban Affairs, Government of India
Smart City
MISSION TRANSFORM-NATION

Gmail Vijay Kumar <g.vijaykumar.moud@gmail.com>

No Objection to Evaluation of Expression of Interest and Short List of Consultants submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

Vijay Kumar <g.vijaykumar.moud@gmail.com> Wed, Nov 15, 2017 at 7:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: dir-nulm@nic.in, Rakesh Gujral <rgujral@ipeglobal.com>

Dear Madam,

Reference is invited to your email dated 14th November 2017.

In this regard, it is to inform you that the criteria for evaluation of applications as per approved REOI is given below. According to this, minimum of 75 marks were fixed for qualification of firms.

a) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
4	Experience of the Firm in implementing assignments related to market research and surveys for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	**10**
5	Specific experience of the Firm in implementing assignments related to market research and field surveys in the urban areas detailed in Annexure 1 to section 2.12 for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies.	**20**
6	Experience of Applicant in implementing assignments related to development of indices, preparation of national/international reports related to the areas mentioned in the Annexure 1 to section 2.12	**20**
Total		**100**

(Note: The projects mentioned in the evaluation criteria 4, 5 and 6 are mutually exclusive and will not be counted in more than one category for the purpose of evaluation)

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

The REOI was issued with approval of the World Bank. Based on the Evaluation Criteria, only six firms have been qualified, all of which are registered/incorporated in India. Further, out of 28 responses, only one firm i.e. Ecorys Netherlands BV is registered out of India and could obtain only 65 marksand could not qualify as per evaluation criteria.

In view of the above, urgent response is requested from the World Bank through STEP on issuing RFP to the six shortlisted firms.

On Tue, Nov 14, 2017 at 6:26 AM, Vasudha Thawakar <vsarda@worldbank.org> wrote:

> Dear Mr Kumar,
>
> Please see below. We have already provided no objection with a request to issue RFP to the foreign firms (up to two) irrespective of their marks in addition to the six firms shortlisted.
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DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India

ATENA INFONOMICS INDIA PRIVATE LIMITED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The following consultants may be held ‘in reserve’ in case any of the shortlisted consultants withdraws during the period allowed for submission of proposals.

Name of Consultant/Firm	Country
To be completed by preparer	

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. We look forward to receiving the draft RFP which should include this shortlist for our review and no objection.

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

--

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

SMART CITIES MISSION
Smart City
MISSION TRANSFORM-NATION
Ministry of Housing and Urban Affairs, Government of India

--

Regards,

G Vijay Kumar

Under Secretary to the Government of India,
Ministry of Housing and Urban Affairs
(earlier Ministry of Urban Development),
Nirman Bhavan, New Delhi.
Ph. 23063217
M. 9582576758

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Interim Response to Short List and Draft Request for Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

---

STEP Admin <noreply@worldbankgroup.org> Tue, Nov 21, 2017 at 11:02 AM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Interim Response has been issued by Vasudha Thawakar for Short List and Draft Request for Proposals for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS

Dear Mr. Kumar,

Please find attached herewith comments on RFP.

Based on your recommendation that the foreign firm from The Netherlands is not qualified for the assignment, we are fine with the Shortlist.

Kindly incorporate the comments and resend the RFP for Bank's review and no objection. We note that MOUD would like to follow e-procurement and the RFP will need to be modified to suit the same.

Warm Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Comments on the RFP for liveability index.docx
15K

Comments on the RFP for liveability index :

1) The contact details of the firms to whom the RFP is issued may be deleted.
2) Data Sheet : Please delete the Notes to Client at the beginning of the Data Sheet
3) Data Sheet 1 (c) : Shall be “Law of Republic of India”
4) Data Sheet 12.1 : Please enter the date at the time of issuing the RFP
5) Data Sheet 13.1 : Please change the date according to the date of issue of RFP. It should be mid way between date of issue of RFP and last date of proposal submission
6) Data Sheet 16.1 : Please include the list of reimbursable expenses as per standard RFP
7) Data Sheet 16.3 : Please replace service tax with GST and any other applicable tax
8) Data Sheet 17.1 : e-procurement clauses are not incorporated in ITC whereas in the Datasheet it is indicated that proposals shall be submitted on e-procurement portal. Further, in Data Sheet Clause 17.4 it is indicated that hard copy of original proposal shall be submitted which is not allowed in e-procurement. Please modify e-procurement provisions in line with Bank’s modified RFP for e-procurement (sent separately in email), in case e-procurement is envisaged.
9) Data Sheet Clause 17.7 and 17.9 : Please change the date as per RFP issuance date. Proposals to be submitted manually or else the RFP needs to be substantially modified to incorporate all e-procurement provisions.
10) Data Sheet 19.1 Same as above
11) Data Sheet 21.1 : Criteria no. (ii) Adequacy of the proposal, methodology and work plan, the total marks may be reduced to 30 and for criteria no. (ii) the total marks may be increased to 60. Marks for individual key experts may be accordingly adjusted.
12) Data Sheet 23.1 : Please incorporate all e-procurement provisions.
13) Data Sheet 30.2 please insert approximate date, say 15 days from contract signing
14) ToR para 7.8 : For Bank funded CBUD project the IA is MoUD. Therefore, the contract shall be signed by MoUD
15) SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.

SUMMARY DESCRIPTION

STANDARD REQUEST FOR PROPOSALS
(for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India)

PART I – SELECTION PROCEDURES AND REQUIREMENTS

Section 1: Letter of Invitation (LOI)

This Section is a template of a letter from the Client addressed to a shortlisted consulting firm inviting it to submit a proposal for a consulting assignment. The LOI includes a list of all shortlisted firms to whom similar letters of invitation are sent, and a reference to the selection method and applicable guidelines or policies of the financing institution that govern the selection and award process.

Section 2: Instructions to Consultants and Data Sheet

This Section consists of two parts: “Instructions to Consultants” and “Data Sheet”. “Instructions to Consultants” contains provisions that are to be used without modifications. “Data Sheet” contains information specific to each selection and corresponds to the clauses in “Instructions to Consultants” that call for selection-specific information to be added. This Section provides information to help shortlisted consultants prepare their proposals. Information is also provided on the submission, opening and evaluation of proposals, contract negotiation and award of contract. Information in the Data Sheet indicates whether a Full Technical Proposal (FTP) or a Simplified Technical Proposal (STP) shall be used.

Section 3: Technical Proposal – Standard Forms

This Section includes the forms for FTP and STP that are to be completed by the shortlisted consultants and submitted in accordance with the requirements of Section 2.

Section 4: Financial Proposal – Standard Forms

This Section includes the financial forms that are to be completed by the shortlisted consultants, including the consultant’s costing of its technical proposal, which are to be submitted in accordance with the requirements of Section 2.

Section 5: Eligible Countries

This Section contains information regarding eligible countries.

Section 6: Bank's Policy – Corrupt and Fraudulent Practices

This Section provides shortlisted consultants with the reference to the Bank's policy in regard to corrupt and fraudulent practices applicable to the selection process. This Section is also incorporated in the standard forms of contract (Section 8) as Attachment 1.

Section 7: Terms of Reference (TORs)

This Section describes the scope of services, objectives, goals, specific tasks required to implement the assignment, and relevant background information; provides details on the required qualifications of the key experts; and lists the expected deliverables. This Section shall not be used to over-write provisions in Section 2.

PART II – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section 8: Standard Forms of Contract

This Section includes two types of standard contract forms for large or complex assignments: a Time-Based Contract and a Lump-Sum Contract. Each type includes General Conditions of Contract ("GCC") that shall not be modified, and Special Conditions of Contract ("SCC"). The SCC include clauses specific to each contract to supplement the General Conditions.

Each standard form of contract incorporates "Bank's Policy – Corrupt and Fraudulent Practices" (Section 6 of Part I) in a form of Attachment 1.

SELECTION OF CONSULTANTS

REQUEST FOR PROPOSALS

Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India

Client: Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI)

Country: India

Project: Capacity Building for Urban Development (CBUD)

Issued on: [22nd November, 2017]

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PART I

Section 1. Letter of Invitation

RFP No. …..; **Credit No**.- 4997-IN
[insert: India and Date*]*

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016	1. Athena Infonomics 2. The Economics Group Limited
2	PricewaterhouseCoopers		-
3	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028	-
4	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	Plot No. - 46, Sector - 44, Opposite Provident Fund Office Gurgaon - 122003, India	-

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has receive financing from the International Development Association (IDA)*]* (the “Bank”) in the form of a “credit” (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of

this credit to eligible payments under the contract for which this Request for Proposals is issued. The *[*Client/ Recipient*]* intends to apply the funds to eligible payments under the contract for which this Request for Proposals is issued.] Payments by the Bank will be made only at the request of the Ministry of Housing and Urban Affairs, GOI and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan agreement. The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the *[*Borrower/Client/Recipient*]* shall derive any rights from the loan agreement or have any claims to the proceeds of the loan.

2. The Client now invites proposals to provide the following consulting services (hereinafter called “Services”): *Assessment of Liveability Indices for 116 cities in India*. More details on the Services are provided in the Terms of Reference (Section 7).

3. This electronic Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	Ipsos Public Affairs	801, 8th Floor, Vipul Square,Sushant Lok, B Block Gurgaon-122016	1. Athena Infonomics India Pvt Ltd. 2. The Economic Group Limited
2	PricewaterhouseCoopers		
3	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028	
4	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	Plot No. - 46, Sector - 44, Opposite Provident Fund Office	

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
		Gurgaon - 122003, India	

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under *QCBS* procedures and in a Full Technical Proposal (FTP) format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal (FTP) - Standard Forms
   Section 4 - Financial Proposal - Standard Forms
   Section 5 – Eligible Countries
   Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
   Section 7 - Terms of Reference
   Section 8 - Standard Forms of Contract (Lump-Sum)

7. The RFP is available online at https://eprocure.gov.in/cppp/ for the short-listed consultants only. The short-listed consultants are required to register on this website at no cost and prior to the submission of proposals. Consultant is also required to have a Digital Signature (DSC) from one of the Government of India authorized Certifying Authorities in order to submit a proposal on line at the web address indicated above. The list of the authorized Certifying Authorities can be found https://eprocure.gov.in/eprocure/app;jsessionid=F5C7CAFAAD521D191038BF8A4FD03B4F.eprocgep1?page=HelpForContractors&service=page

8. Please inform us by *1st December, 2017* by E-mail on : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com

   (a) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

9. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,
Under Secretary to the Government of India
on behalf of Project Director, CBUD, MoHUA, Nirman Bhavan, New Delhi.

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the loan agreement with the Bank.

(f) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(h) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(i) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(j) "Day" means a calendar day.

(k) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(l) “Government” means the government of the Client’s country.

(m) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(n) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(o) “ITC” (this Section 2 of the e-RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(p) “LOI” (this Section 1 of the e-RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(r) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(s) “RFP” means the Request for Proposals to be prepared by the Client for the electronic selection of Consultants, based on the SRFP.

(t) “SRFP” means the trial version of Standard Request for Proposals for the use in electronic procurement issued by the Bank, which must be used by the Client as the basis for the preparation of the RFP.

(u) "Services" means the work to be performed by the Consultant pursuant to the Contract.

(v) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract.

(w) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction

2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**.

2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant.

2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.

3. Conflict of Interest

3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work.

3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank.

3.2.1 Without limitation on the generality of the foregoing, and unless stated otherwise in the **Data Sheet**, the Consultant shall not be hired under the circumstances set forth below:

a. Conflicting activities

(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.

b. Conflicting assignments

(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.

c. Conflicting relationships

(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.

4. Unfair Competitive Advantage

4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this e-RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.

5. Corrupt and Fraudulent Practices

5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.

6. Eligibility

6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects.

6.2 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines.

6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:

a. Sanctions

6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.

b. Prohibitions

6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

c. Restrictions for Government-owned Enterprises

6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.

d. Restrictions for public employees

6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they

(i) are on leave of absence without pay, or have resigned or retired;

(ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring

> (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and

(iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7.	**General Considerations**	7.1 In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8.	**Cost of Preparation of Proposal**	8.1 The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9.	**Language**	9.1 The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10.	**Documents Comprising the Proposal**	10.1 The Proposal shall comprise the documents and forms listed in the **Data Sheet**. 10.2 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). 10.3 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11.	**Only One Proposal**	11.1 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12.	**Proposal Validity**	12.1 **The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline.

12.2 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

12.3 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period

12.4 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, by notifying all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. Mode of notifications is specified in the **Data Sheet.**

12.5 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts.

12.6 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

b. Substitution of Key Experts at Validity Extension

12.7 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert.

12.8 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.

c. Sub-Contracting

12.9 The Consultant shall not subcontract the whole of the Services.

13. Clarification and Amendment of RFP

13.1 The Consultant may request an online clarification of any part of the RFP during the period and in accordance with the procedure indicated in the **Data Sheet** before the Proposals' submission deadline. The Client will respond online by uploading

the response on the portal (including an explanation of the query but without identifying its source) for information of all shortlisted Consultants. Should the Client deem it necessary to amend the e-RFP as a result of a clarification, it shall do so following the procedure described below:

13.1.1 At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment online in accordance with procedure described in Data Sheet The amendment shall be binding on all shortlisted Consultants.

13.1.2 If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals.

13.2 The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline, online, in accordance with the procedure described in the **Data Sheet**. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

14. Preparation of Proposals – Specific Considerations

14.1 While preparing the Proposal, the Consultant must give particular attention to the following:

14.1.1 If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member.

14.1.2 The Client may indicate in the **Data Sheet** the estimated Key Experts’ time input (expressed in person-month) or the Client’s estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant’s own estimates for the same.

14.1.3 If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts,

failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**.

14.1.4 For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.

15. Technical Proposal Format and Content

15.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.

15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive.

15.2 Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.

16. Financial Proposal

16.1 The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.

a. Price Adjustment

16.2 For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.

b. Taxes

16.3 The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.

c. Currency of Proposal

16.4 The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.

d. Currency of Payment

16.5 Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission of Proposals

11.1 The Consultant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done electronically through the website and in accordance with the procedures specified in the **Data Sheet.** Proposals submitted by any other means will be rejected.

11.1 An authorized representative of the Consultant shall digitally sign the submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Technical Proposal.

17.1.1 In the case of a Joint Venture, submission letters shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. The submission letters and the power of attorney shall then be scanned and uploaded together with the Technical Proposal.

17.2 Consultants should be aware that the electronic procurement system does not allow for any interlineations, erasures, or overwriting. Any modifications or revisions to the Proposal shall be done in accordance with Clause ITC 13.2.

17.3 The Proposal or its modifications must be uploaded on the portal no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline.

17.4 Once the Proposal is uploaded on the portal, the system will generate a unique identification number with the stamped submission time. The unique identification number with the time stamp represents an acknowledgement of the Proposal submission. Any other system's functionality requirements are specified in the **Data Sheet**.

18. Confidentiality

18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures.

18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.

19. Online Opening of Technical Proposals

19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals online immediately after the Proposals' submission deadline and following the procedure described in the Data Sheet. The folder with the Financial Proposal shall remain unopened, encrypted and shall be securely stored on the portal.

19.2 At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the Data Sheet.

20. Proposals Evaluation

20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable .

20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

21. Evaluation of Technical Proposals

21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.

22. Financial Proposals for QBS

22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract.

22.2 16.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.

23. Online Opening of Financial Proposals (for QCBS, FBS, and LCS methods)

17.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score by sending a notification through the means indicated in the **Data Sheet**. The notification shall also include information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion. Financial Proposals of those Consultants whose Technical Proposals did not meet the minimum qualifying score shall not be opened. In such case, a notification to that effect will be sent to the Consultant. The Client shall simultaneously notify those Consultants that have achieved the minimum overall technical score and inform them of the date, time and, if indicated in the **Data Sheet**, location for online opening of the Financial Proposals. The Consultant's attendance at the opening of the Financial Proposals (online, or in person, if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. If the Data Sheet provides an option of attending in person, the opening date should allow the Consultants sufficient time to make arrangements for attending the opening.

23.2 The Financial Proposals shall be opened online by the Client's evaluation committee as described in the Data Sheet. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud first and recorded online simultaneously. The Financial Proposals shall be then opened, the total prices read aloud and recorded online simultaneously. The records of the opening shall remain on the portal for the information of the Consultants who submitted Proposals and the Bank, unless the

Data Sheet provides for other means of sending notifications and the results of the financial opening.

24. Correction of Errors

24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

18.1.1 If a Time-Based contract form is included in the e-RFP, the e-procurement system automatically calculates the amount in words from the amount in figures and automatically calculates the total amount In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost. The evaluation committee will also adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal.

b. Lump-Sum Contracts

18.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.

25. Taxes

19.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.

26. Conversion to Single Currency

26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.

27. Combined Quality and Cost Evaluation

a. Quality- and Cost-Based Selection (QCBS)

27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.

b. Fixed-Budget Selection (FBS)

27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected.

27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.
	28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant.
	28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract.

28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank.

The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.

29. Conclusion of Negotiations

29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative.

29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.

30. Award of Contract

30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; promptly notify the other shortlisted Consultants and publish the award as per the instructions in the **Data Sheet.**

30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

A. General	
ITC Clause Reference	
1 (c)	Law of Republic of India
2.1	**Name of the Client:** Ministry of Housing and Urban Affairs (MoHUA), Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
2.3	**A pre-proposal conference will be held**: Yes Date of pre-proposal conference:4th December, 2017 Time:15.00 (3.00 PM) Address: 202-C, Nirman Bhawan, Maulana Azad Road, New Delhi. Telephone: 011-23063217 E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com Contact person/conference coordinator *: G.Vijay Kumar, US*
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals:** NA
4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr

B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language.***]* **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 OR **For SIMPLIFIED TECHNICAL PROPOSAL (STP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-4 (4) TECH-5 (5) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes

11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *and 90 days* calendar days after the proposal submission deadline (i.e., until: 15th March, 2018)
12.4	Validity of proposal will be intimated by e-mail to g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** **All requests for clarifications shall be made online through** mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by 1st December, 2017 **Clarifications sent through any other medium shall not be accepted.**
13.2	*[Describe the process for submitting modifications online.]*
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2 (do not use for Fixed Budget method)	**Estimated input of Key Experts' time-input: approx.. 22person-months.**
14.1.3 for time-based	*"Not applicable"*.

contracts only	
14.1.4 and 27.2 use for Fixed Budget method	**Not Applicable**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of items to be included in reimbursable expenses:* *(1) a per diem allowance, including hotel, for experts for every day of absence from the home office for the purposes of the Services;* *(2) cost of travel by the most appropriate means of transport and the most direct practicable route;* *(3) cost of office accommodation, including overheads and back-stop support;* *(4) communications costs;* *(5) cost of reports production (including printing) and delivering to the Client;*
16.2	**A price adjustment provision applies to remuneration rates:** No
16.3	***GST and other indirect and local taxes as applicable from time to time.***
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. ……………………………… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes

C. Submission, Opening and Evaluation	
17.1	**The Consultants shall submit their Proposals electronically by downloading them on the portal** https://eprocure.gov.in/cppp/**.** ***The electronic submission procedures is available at*** ***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
17.4	**The Proposals must be submitted online no later than:** **Date:** 15th December, 2017 **Time:** 15.00 Local Time (3.00 PM)
17.5	***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
19.1	**An online opening of the Technical Proposals will be conducted as defined in https://eprocure.gov.in** ***Consultants have an option to attend the opening of the Technical Proposals in person. The opening shall take place* at:** Street Address: : Maulana Azad Road Floor, room number: Room No.202 C, Nirman Bhawan City New Delhi 110001 Country: India **Date**: 15th December, 2017. **Time:** *15.00 Local Time (3.00 PM)*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals :** NA

21.1
(for FTP)

Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**30**
(a)	*Technical approach and Methodology*	15
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	5
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**30**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**60**

Position	**Total**
Team leader	20
Urban Management Specialist/ Planning Expert	15
Market Research Specialist	15
Statistician	10
Total	60

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) : 60%

	Total points for the three criteria*:* **100** **The minimum technical score (St) required to pass is***:75 (seventy five) points*
23.1	a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.
23.2	**The Financial Proposals shall be opened online as** *defined in ITB 23.2* **The procedure for notifying the Consultants on the results of the Financial opening shall be** *as in ITB 23.2*
25.1	For the purpose of the evaluation, the Client will exclude: (a) all local identifiable indirect taxes such GST, or similar taxes levied on the contract's invoices; and (b) all additional local indirect tax on the remuneration of services rendered by non-resident experts in the Client's country. If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is:** Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:**

	Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T =** 0.80, and **P =** 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations:** **Date**: 22nd December, 2017 **Address:** 202C, Nirman Bhawan, Maulana Azad Road, New Delhi.
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services:** **Date**:1st January, 2018

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: *[Name and address of Client]*

Dear Sirs:

We, the undersigned, offer to provide the consulting services for *[Insert title of assignment]* in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *[Select appropriate wording depending on the selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope" *or, if only a Technical Proposal is invited* "We hereby are submitting our Proposal, which includes this Technical Proposal only in a sealed envelope.*"]*.

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) *[Note to Client: Only if required in ITC10.2 (Data Sheet 10.2), include the following:* In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.*]*

(f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY)

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

---

1. List only previous similar assignments successfully completed in the last *[.....]* years.

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009– Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL)

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4 (FOR FULL TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the TORs in here.}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-4 (FOR SIMPLIFIED TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Form TECH-4: a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR and on counterpart staff and facilities)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

FORM TECH-5 (FOR FTP AND STP)

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:..............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6 (FOR FTP AND STP)

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

---

[1] For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.

[2] Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

[3] "Home" means work in the office in the expert's country of residence. "Field" work means work carried out in the Client's country or any other country outside the expert's country of residence.

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Expert's contact information: (e-mail …………………., phone……………)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized
Representative of the Consultant
(the same who signs the Proposal)
Signature
Date

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____

In the capacity of: ____
Address: ____
E-mail: _________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g., VAT or sales tax}				
(ii) {e.g., income tax on non-resident experts}				
(iii) {insert type of tax}				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ______________________________

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							
N-1			[*Home*]		▨	▨	▨	
N-2			[*Field*]		▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
	Total Costs							

Appendix A. Financial Negotiations - Breakdown of Remuneration Rates

1. **Review of Remuneration Rates**

1.1. The remuneration rates are made up of salary or a base fee, social costs, overheads, profit, and any premium or allowance that may be paid for assignments away from headquarters or a home office. An attached Sample Form can be used to provide a breakdown of rates.

1.2. If the RFP requests submission of a technical proposal only, the Sample Form is used by the selected Consultant to prepare for the negotiations of the Contract. If the RFP requests submission of the financial proposal, the Sample Form shall be completed and attached to the Financial Form-3. Agreed (at the negotiations) breakdown sheets shall form part of the negotiated Contract and included in its Appendix D or C.

1.3. At the negotiations the firm shall be prepared to disclose its audited financial statements for the last three years, to substantiate its rates, and accept that its proposed rates and other financial matters are subject to scrutiny. The Client is charged with the custody of government funds and is expected to exercise prudence in the expenditure of these funds.

1.4. Rate details are discussed below:

(i) Salary is the gross regular cash salary or fee paid to the individual in the firm's home office. It shall not contain any premium for work away from headquarters or bonus (except where these are included by law or government regulations).

(ii) Bonuses are normally paid out of profits. To avoid double counting, any bonuses shall not normally be included in the "Salary" and should be shown separately. Where the Consultant's accounting system is such that the percentages of social costs and overheads are based on total revenue, including bonuses, those percentages shall be adjusted downward accordingly. Where national policy requires that 13 months' pay be given for 12 months' work, the profit element need not be adjusted downward. Any discussions on bonuses shall be supported by audited documentation, which shall be treated as confidential.

(iii) Social Charges are the costs of non-monetary benefits and may include, inter alia, social security (including pension, medical, and life insurance costs) and the cost of a paid sick and/or annual leave. In this regard, a paid leave during public holidays or an annual leave taken during an assignment if no Expert's replacement has been provided is not considered social charges.

(iv) Cost of Leave. The principles of calculating the cost of total days leave per annum as a percentage of basic salary is normally calculated as follows:

$$\text{Leave cost as percentage of salary} = \frac{\text{total days leave x 100}}{[365 - w - ph - v - s]}$$

Where w = weekends, ph = public holidays, v = vacation, and s = sick leave.

Please note that leave can be considered as a social cost only if the Client is not charged for the leave taken.

(v) Overheads are the Consultant's business costs that are not directly related to the execution of the assignment and shall not be reimbursed as separate items under the Contract. Typical items are home office costs (non-billable time, time of senior Consultant's staff monitoring the project, rent of headquarters' office, support staff, research, staff training, marketing, etc.), the cost of Consultant's personnel not currently employed on revenue-earning projects, taxes on business activities, and business promotion costs. During negotiations, audited financial statements, certified as correct by an independent auditor and supporting the last three years' overheads, shall be available for discussion, together with detailed lists of items making up the overheads and the percentage by which each relates to basic salary. The Client does not accept an add-on margin for social charges, overhead expenses, etc. for Experts who are not permanent employees of the Consultant. In such case, the Consultant shall be entitled only to administrative costs and a fee on the monthly payments charged for sub-contracted Experts.

(vi) Profit is normally based on the sum of the Salary, Social costs, and Overheads. If any bonuses paid on a regular basis are listed, a corresponding reduction shall be made in the profit amount. Profit shall not be allowed on travel or any other reimbursable expenses.

(vii) Away from Home Office Allowance or Premium or Subsistence Allowances. Some Consultants pay allowances to Experts working away from headquarters or outside of the home office. Such allowances are calculated as a percentage of salary (or a fee) and shall not draw overheads or profit. Sometimes, by law, such allowances may draw social costs. In this case, the amount of this social cost shall still be shown under social costs, with the net allowance shown separately.

UNDP standard rates for the particular country may be used as reference to determine subsistence allowances.

Sample Form

Consultant: Country:
Assignment: Date:

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:

(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;

(b) attached are true copies of the latest pay slips of the Experts listed;

(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;

(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and

(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

____
[Name of Consultant]

______________________________________ ______________________
Signature of Authorized Representative Date

Name: ______________________________

Title: ______________________________

Consultant's Representations Regarding Costs and Charges
(Model Form I)

(Expressed in {insert name of currency*})

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges[1]	Overhead [1]	Subtotal	Profit[2]	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour	Proposed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Client's Country									

{* If more than one currency is used, use additional table(s), one for each currency}

1. Expressed as percentage of 1
2. Expressed as percentage of 4

FORM FIN-4 BREAKDOWN OF REIMBURSABLE EXPENSES

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses

N°	**Type of Reimbursable Expenses**	**Unit**	**Unit Cost**	**Quantity**	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
	{e.g., Per diem allowances**}	{Day}						
	{e.g., International flights}	{Ticket}						
	{e.g., In/out airport transportation}	{Trip}						
	{e.g., Communication costs between Insert place and Insert place}							
	{ e.g., reproduction of reports}							
	{e.g., Office rent}							
	....							
	{Training of the Client's personnel – if required in TOR}							
				Total Costs				

Legend:
"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): ________________ [list country/countries following approval by the Bank to apply the restriction *or* state "none"]

Under the ITC 6.3.2 (b): ________________ [list country/countries *or* indicate "none"]

Section 6. Bank Policy – Corrupt and Fraudulent Practices

(this Section 6 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

---

[1] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

---

[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

   a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

   b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

   c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;

   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format as mutually agreed
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed.b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post- graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

PART II

Section 8. Conditions of Contract and Contract Forms

Foreword

1. Part II includes two types of standard Contract forms for Consulting Services (a Time-Based Contract and a Lump-Sum Contract) that are based on the contract forms included in the harmonized Standard Request for Proposals (Master Document for Selection of Consultants prepared by participating Multilateral Development Banks (MDBs).

2. **Time-Based Contract**. This type of contract is appropriate when it is difficult to define or fix the scope and the duration of the services, either because they are related to activities carried out by others for which the completion period may vary, or because the input of the consultants required for attaining the objectives of the assignment is difficult to assess. In time-based contracts the Consultant provides services on a timed basis according to quality specifications, and Consultant's remuneration is determined on the basis of the time actually spent by the Consultant in carrying out the Services and is based on (i) agreed upon unit rates for the Consultant's experts multiplied by the actual time spent by the experts in executing the assignment, and (ii) reimbursable expenses using actual expenses and/or agreed unit prices. This type of contract requires the Client to closely supervise the Consultant and to be involved in the daily execution of the assignment.

3. **Lump-Sum Contract.** This type of contract is used mainly for assignments in which the scope and the duration of the Services and the required output of the Consultant are clearly defined. Payments are linked to outputs (deliverables) such as reports, drawings, bill of quantities, bidding documents, or software programs. Lump-sum contracts are easier to administer because they operate on the principle of a fixed price for a fixed scope, and payments are due on clearly specified outputs and milestones. Nevertheless, quality control of the Consultant's outputs by the Client is paramount.

4. The templates are designed for use in assignments with consulting firms and shall not be used for contracting of individual experts. These standard Contract forms are to be used for complex and/or large value assignments, and/or for contracts above US$300,000 equivalent or more unless otherwise approved by the Bank.

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971

Sl. No.	Name of State	Name of City	Population
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879

Sl. No.	Name of State	Name of City	Population
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544

Sl. No.	Name of State	Name of City	Population
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

STANDARD FORM OF CONTRACT

Consultant's Services

Time-Based

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES
Time-Based

Project Name ______________________________

***[Loan/Credit/Grant]* No.**______________________

Contract No. _______________________________

between

____

[Name of the Client]

and

____

[Name of the Consultant]

Dated: __________________________

I. Form of Contract

TIME-BASED

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the *[Insert as appropriate: International Bank for Reconstruction and Development (IBRD)* or *International Development Association (IDA)]* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 “Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Remuneration Cost Estimates
   Appendix D: Reimbursables Cost Estimates
   Appendix E: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C and Appendix D; Appendix E. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.]

For and on behalf of each of the members of the Consultant [insert the name of the Joint Venture]

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means the Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 ("Consultants' Guidelines").

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 48 & 49.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19. 1 This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1 The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 49.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2 Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3 The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clauses GCC 49.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 49.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4 Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5 Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6 Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) remuneration for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures for expenditures actually incurred prior to the effective date of termination; and pursuant to Clause 42;

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2 The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3 The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4 The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5 Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6 The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1 The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 41 through 46) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. **Consultant and Affiliates Not to Engage in Certain Activities**

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant’s Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. **Prohibition of Conflicting Activities**

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. **Strict Duty to Disclose Conflicting Activities**

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant’s liability under this Contract shall be as determined under the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants’, as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client’s request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services in such form and detail as will clearly identify relevant time changes and costs.

25.2. The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and time-input estimates to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

29.2 If required to comply with the provisions of Clause GCC 20a, adjustments with respect to the estimated time-input of Key Experts set forth in **Appendix B** may be made by the Consultant by a written notice to the Client, provided (i) that such adjustments shall not alter the original time-input estimates for any individual by more than 10% or one week, whichever is larger; and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GCC 41.2.

29.3 If additional work is required beyond the scope of the Services specified in **Appendix A**, the estimated time-input for the Key Experts may be increased by agreement in writing between the Client and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GCC 41.1, the Parties shall sign a Contract amendment.

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Approval of Additional Key Experts

31.1 If during execution of the Contract, additional Key Experts are required to carry out the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs). If the Client does not object in writing (stating the reasons for the objection) within twenty two (22) days from the date of receipt of such CVs, such additional Key Experts shall be deemed to have been approved by the Client.

The rate of remuneration payable to such new additional Key Experts shall be based on the rates for other Key Experts position which require similar qualifications and experience.

32. Removal of Experts or Sub-consultants

32.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant’s Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client’s written request, provide a replacement.

32.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

32.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

33. Replacement/ Removal of Experts – Impact on Payments

33.1 Except as the Client may otherwise agree, (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Experts provided as a replacement shall not exceed the remuneration which would have been payable to the Experts replaced or removed.

34. Working Hours, Overtime, Leave, etc.

34.1 Working hours and holidays for Experts are set forth in **Appendix B**. To account for travel time to/from the Client’s country, experts carrying out Services inside the Client’s country shall be deemed to have commenced or finished work in respect of the Services such number of days before their arrival in, or after their departure from, the Client’s country as is specified in **Appendix B**.

34.2 The Experts shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in **Appendix B**, and the Consultant’s remuneration shall be deemed to cover these items.

34.3 Any taking of leave by Key Experts shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and or impact adequate supervision of the Services.

E. OBLIGATIONS OF THE CLIENT

35. Assistance and Exemptions

35.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

36. Access to Project Site

36.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

37. Change in the Applicable Law Related to Taxes and Duties

37.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GCC 41.1

38. Services, Facilities and Property of the Client

38.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

38.2 In case that such services, facilities and property shall not be made available to the Consultant as and when specified in **Appendix A**, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultant for the performance of the Services, (ii) the manner in which the Consultant shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause GCC 41.3.

39. Counterpart Personnel

39.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

39.2 If counterpart personnel are not provided by the Client to the Consultant as and when specified in **Appendix A**, the Client and the Consultant shall agree on (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Client to the Consultant as a result thereof pursuant to Clause GCC 41.3.

39.3 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

40. Payment Obligation

40.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

41. Ceiling Amount

41.1 An estimate of the cost of the Services is set forth in **Appendix C** (Remuneration) and **Appendix D** (Reimbursable expenses).

41.2 Payments under this Contract shall not exceed the ceilings in foreign currency and in local currency specified in the **SCC**.

41.3 For any payments in excess of the ceilings specified in GCC41.2, an amendment to the Contract shall be signed by the Parties referring to the provision of this Contract that evokes such amendment.

42. Remuneration and Reimbursable Expenses

42.1 The Client shall pay to the Consultant (i) remuneration that shall be determined on the basis of time actually spent by each Expert in the performance of the Services after the date of commencing of Services or such other date as the Parties shall agree in writing; and (ii) reimbursable expenses that are actually and reasonably incurred by the Consultant in the performance of the Services.

42.2 All payments shall be at the rates set forth in **Appendix C** and **Appendix D**.

42.3 Unless the **SCC** provides for the price adjustment of the remuneration rates, said remuneration shall be fixed for the duration of the Contract.

42.4 The remuneration rates shall cover: (i) such salaries and allowances as the Consultant shall have agreed to pay to the Experts as well as factors for social charges and overheads (bonuses or other means of profit-sharing shall not be allowed as an element of overheads), (ii) the cost of backstopping by home office staff not included in the Experts' list in **Appendix B**, (iii) the Consultant's profit, and (iv) any other items as specified in the **SCC**.

42.5 Any rates specified for Experts not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable remuneration rates and allowances are known.

43. Taxes and Duties

43.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

43.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

44. Currency of Payment

44.1 Any payment under this Contract shall be made in the currency(ies) specified in the **SCC.**

45. Mode of Billing and Payment

45.1 Billings and payments in respect of the Services shall be made as follows:

(a) *Advance payment*. Within the number of days after the Effective Date, the Client shall pay to the Consultant an advance payment as specified in the **SCC**. Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix E**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal installments against the statements for the number of months of the Services specified in the **SCC** until said advance payments have been fully set off.

(b) *The Itemized Invoices.* As soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time interval otherwise indicated in the **SCC**, the Consultant shall submit to the Client, in duplicate, itemized invoices, accompanied by the receipts or other appropriate supporting documents, of the amounts payable pursuant to Clauses GCC 44 and GCC 45 for such interval, or any other period indicated in the **SCC**. Separate invoices shall be submitted for expenses incurred in foreign currency and in local currency. Each invoice shall show remuneration and reimbursable expenses separately.

(c) The Client shall pay the Consultant's invoices within sixty (60) days after the receipt by the Client of such itemized invoices with supporting documents. Only such portion of an invoice that is not satisfactorily supported may be withheld from payment.

Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Client may add or subtract the difference from any subsequent payments.

(d) *The Final Payment* .The final payment under this Clause shall be made only after the final report and a final invoice, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final invoice shall be deemed approved by the Client as satisfactory ninety (90) calendar days after receipt of the final report and final invoice by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final invoice. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount that the Client has paid or has caused to be paid in accordance with this Clause in excess of the amounts payable in accordance with the provisions of this Contract shall be reimbursed by the Consultant to the Client within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final invoice approved by the Client in accordance with the above.

(e) All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

(f) With the exception of the final payment under (d) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.

46. Interest on Delayed Payments

46.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 45.1 (c), interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

47. Good Faith

47.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

48. Amicable Settlement

48.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

48.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

49. Dispute Resolution

49.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

 (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[7];

 (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[8];

 (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[9];

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[7] *For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.*

[8] *For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.*

[9] *For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.*

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[10];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[11], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[12] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[10] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[11] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[12] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** *Republic of India.* *[Note: The Bank-financed contracts normally designate the law of the [Government's/Client's] country as the law governing the contract. However, the Parties may designate the law of another country, in which case the name of the respective country should be inserted, and the square brackets should be removed.]*
4.1	**The language is: English.**
6.1 and 6.2	**The addresses are:** Client : ______________________________ ______________________________ Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted):________________________ Consultant : ______________________________ ______________________________ Attention : ______________________________ Facsimile : ______________________________ E-mail (where permitted) :________________________
8.1	*[Note: If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ____________________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*________________________

	For the Consultant: *[name, title]*__________________________
11.1	*[Note: If there are no effectiveness conditions, state "N/A"]* *OR* *List here any conditions of effectiveness of the Contract, e.g., approval of the Contract by the Bank, effectiveness of the Bank [loan/credit/grant], receipt by the Consultant of an advance payment, and by the Client of an advance payment guarantee (see Clause SCC45.1(a)), etc.]* **The effectiveness conditions are the following**: *[insert "N/A" or list the conditions]*
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be** _______________________ *[insert time period, e.g.: four months]*.
13.1	**Commencement of Services:** **The number of days shall be**_________________ *[e.g.: ten]*. Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** ________________________ *[insert time period, e.g.: twelve months]*.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes______ No _____

23.1	**No additional provisions.** *[OR:* The following limitation of the Consultant's Liability towards the Client can be subject to the Contract's negotiations: **"Limitation of the Consultant's Liability towards the Client:** **(a) Except in the case of gross negligence or willful misconduct on the part of the Consultant or on the part of any person or a firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused by the Consultant to the Client's property, shall not be liable to the Client:** **(i) for any indirect or consequential loss or damage; and** **(ii) for any direct loss or damage that exceeds [insert a multiplier, e.g.: one, two, three] times the total value of the Contract;** **(b) This limitation of liability shall not** **(i) affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in carrying out the Services;** **(ii) be construed as providing the Consultant with any limitation or exclusion from liability which is prohibited by the** *[insert "***Applicable Law***", if it is the law of the Client's country, or insert "***applicable law in the Client's country***", if the Applicable Law stated in Clause SCC1.1 (b) is different from the law of the Client's country].* *[Notes to the Client and the Consultant: Any suggestions made by the Consultant in the Proposal to introduce exclusions/limitations of the Consultant's liability under the Contract should be carefully scrutinized by the Client and discussed with the Bank prior to accepting any changes to what was included in the issued RFP. In this regard, the Parties should be aware of the Bank's policy on this matter which is as follows:* *To be acceptable to the Bank, any limitation of the Consultant's liability should at the very least be reasonably related to (a) the damage the Consultant might potentially cause to the Client, and (b) the*

	Consultant's ability to pay compensation using its own assets and reasonably obtainable insurance coverage. The Consultant's liability shall not be limited to less than a multiplier of the total payments to the Consultant under the Contract for remuneration and reimbursable expenses. A statement to the effect that the Consultant is liable only for the re-performance of faulty Services is not acceptable to the Bank. Also, the Consultant's liability should never be limited for loss or damage caused by the Consultant's gross negligence or willful misconduct. *The Bank does not accept a provision to the effect that the Client shall indemnify and hold harmless the Consultant against Third Party claims, except, of course, if a claim is based on loss or damage caused by a default or wrongful act of the Client to the extent permissible by the law applicable in the Client's country.]*
24.1	**The insurance coverage against the risks shall be as follows:** *[Note: Delete what is not applicable except (a)].* **(a) Professional liability insurance, with a minimum coverage of** ______________________ *[insert amount and currency which should be not less than the total ceiling amount of the Contract]*; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (c) Third Party liability insurance, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.

27.1	*[If applicable, insert any exceptions to proprietary rights provision______________________________]*
27.2	*[If there is to be no restriction on the future use of these documents by either Party, this Clause SCC 27.2 should be deleted. If the Parties wish to restrict such use, any of the following options, or any other option agreed to by the Parties, could be used:* *[***The Consultant shall not use these** *[insert what applies……* ***documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the Client.**] *OR* [**The Client shall not use these** *[insert what applies……..* ***documents and software……….***] **for purposes unrelated to this Contract without the prior written approval of the Consultant.**] *OR* ***[*****Neither Party shall use these** *[insert what applies……..* ***documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the other Party.*****]***
35.1 **(a) through (e)**	*[List here any changes or additions to Clause GCC 35.1. If there are no such changes or additions, delete this Clause SCC 35.1.]*
35.1(f)	*[List here any other assistance to be provided by the Client. If there is no such other assistance, delete this Clause SCC 35.1(f).]*
41.2	**The ceiling in foreign currency or currencies is: ______________________** *[insert amount and currency for each currency] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **The ceiling in local currency is: _____________________** *[insert amount and currency] [indicate:* **inclusive** *or* **exclusive**] **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.** **The amount of such taxes is ______________________** *[insert the amount as finalized at the Contract's negotiations on the basis of the*

	estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.]
42.3	**Price adjustment on the remuneration …………….. [***insert* **"applies"** *or* **" does not apply"]** *[If the Contract is less than 18 months, price adjustment does not apply.* *If the Contract has duration of more than 18 months, a price adjustment provision on the remuneration for foreign and/or local inflation shall be included here. The adjustment should be made every 12 months after the date of the contract for remuneration in foreign currency and – except if there is very high inflation in the Client's country, in which case more frequent adjustments should be provided for – at the same intervals for remuneration in local currency. Remuneration in foreign currency should be adjusted by using the relevant index for salaries in the country of the respective foreign currency (which normally is the country of the Consultant) and remuneration in local currency by using the corresponding index for the Client's country. A sample provision is provided below for guidance:* Payments for remuneration made in [foreign *and/or* local] currency shall be adjusted as follows: (1) Remuneration paid in foreign currency on the basis of the rates set forth in **Appendix C** shall be adjusted every 12 months (and, the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract Effectiveness date) by applying the following formula: $R_f = R_{fo} \times \frac{I_f}{I_{fo}}$ {or $R_f = R_{fo} \times [\ 0.1 + 0.9 \frac{I_f}{I_{fo}}\ ]$} where R_f is the adjusted remuneration; R_{fo} is the remuneration payable on the basis of the remuneration rates (**Appendix C**) in foreign currency; I_f is the official index for salaries in the country of the foreign currency for the first month for which the adjustment is supposed to have effect; and I_{fo} is the official index for salaries in the country of the foreign currency for the month of the date of the Contract. The Consultant shall state here the name, source institution, and any necessary identifying characteristics of the official index for salaries corresponding to I_f and I_{fo} in the adjustment formula for

	remuneration paid in foreign currency: [*Insert the name, source institution, and necessary identifying characteristics of the index for foreign currency, e.g. "Consumer Price Index for all Urban Consumers (CPI-U), not seasonally adjusted; U.S. Department of Labor, Bureau of Labor Statistics"*] (2) Remuneration paid in local currency pursuant to the rates set forth in **Appendix D** shall be adjusted every *[insert number]* months (and, for the first time, with effect for the remuneration earned in the *[insert number]*the calendar month after the date of the Contract) by applying the following formula: $R_l = R_{lo} \times \frac{I_l}{I_{lo}}$ {or $R_l = R_{lo} \times [\ 0.1 + 0.9 \frac{I_l}{I_{lo}}\ ]$} where R_l is the adjusted remuneration; R_{lo} is the remuneration payable on the basis of the remuneration rates (**Appendix D**) in local currency; I_l is the official index for salaries in the Client's country for the first month for which the adjustment is to have effect; and I_{lo} is the official index for salaries in the Client's country for the month of the date of the Contract. The Client shall state here the name, source institution, and any necessary identifying characteristics of the official index for salaries corresponding to I_l and I_{lo} in the adjustment formula for remuneration paid in local currency: [*Insert the name, source institution, and necessary identifying characteristics of the index for foreign currency*] (3) Any part of the remuneration that is paid in a currency different from the currency of the official index for salaries used in the adjustment formula, shall be adjusted by a correction factor X_0/X. X_0 is the number of units of currency of the country of the official index, equivalent to one unit of the currency of payment on the date of the contract. X is the number of units of currency of the country of the official index, equivalent to one unit of the currency of payment on the first day of the first month for which the adjustment is supposed to have effect.
43.1 and 43.2	*[The Bank leaves it to the Client to decide whether the Consultant (i) should be exempted from indirect local tax, or (ii) should be reimbursed by the Client for any such tax they might have to pay (or that the Client would pay such tax on behalf of the Consultant]*

The Client warrants that *[choose one applicable option consistent with the ITC 16.3 and the outcome of the Contract's negotiations (Form FIN-2, part B "Indirect Local Tax – Estimates"):*

If ITC16.3 indicates a tax exemption status, include the following: "**the Consultant, the Sub-consultants and the Experts shall be exempt from**"

OR

If ITC16.3 does not indicate the exemption and, depending on whether the Client shall pay the withholding tax or the Consultant has to pay, include the following:

*"***the Client shall pay on behalf of the Consultant, the Sub-consultants and the Experts,***" OR "***the Client shall reimburse the Consultant, the Sub-consultants and the Experts***"]*

any indirect taxes, duties, fees, levies and other impositions imposed, under the applicable law in the Client's country, on the Consultant, the Sub-consultants and the Experts in respect of:

(a) any payments whatsoever made to the Consultant, Sub-consultants and the Experts (other than nationals or permanent residents of the Client's country), in connection with the carrying out of the Services;

(b) any equipment, materials and supplies brought into the Client's country by the Consultant or Sub-consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn by them;

(c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client;

(d) any property brought into the Client's country by the Consultant, any Sub-consultants or the Experts (other than nationals or permanent residents of the Client's country), or the eligible dependents of such experts for their personal use and which will subsequently be withdrawn by them upon their respective departure from the Client's country, provided that:

(i) the Consultant, Sub-consultants and experts shall follow the usual customs procedures of the Client's country in importing property into the Client's country; and

	(ii) **if the Consultant, Sub-consultants or Experts do not withdraw but dispose of any property in the Client's country upon which customs duties and taxes have been exempted, the Consultant, Sub-consultants or Experts, as the case may be, (a) shall bear such customs duties and taxes in conformity with the regulations of the Client's country, or (b) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Client's country.**
44.1	**The currency [currencies] of payment shall be the following:** *[list currency(ies) which should be the same as in the Financial Proposal, Form FIN-2]*
45.1(a)	*[The advance payment could be in either the foreign currency, or the local currency, or both; select the correct wording in the Clause here below. The advance bank payment guarantee should be in the same currency(ies)]* The following provisions shall apply to the advance payment and the advance bank payment guarantee: (1) An advance payment [of *[insert amount]* in foreign currency] [and of *[insert amount]* in local currency] shall be made within *[insert number]* days after the Effective Date. The advance payment will be set off by the Client in equal installments against the statements for the first *[insert number]* months of the Services until the advance payment has been fully set off. (2) The advance bank payment guarantee shall be in the amount and in the currency of the currency(ies) of the advance payment.
45.1(b)	*[Delete this Clause SCC 45.1(b) if the Consultant shall have to submit its itemized statements monthly. Otherwise, the following text can be used to indicate the required intervals:* **The Consultant shall submit to the Client itemized statements at time intervals of __________________** *[e.g. "every quarter", "every six months", "every two weeks", etc.]*.
45.1(e)	**The accounts are:**

	for foreign currency: *[insert account]*. for local currency: *[insert account]*.
46.1	**The interest rate is**: *[insert rate]*.
49.	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *[name an appropriate international professional body, e.g., the Federation Internationale des Ingenieurs-Conseil (FIDIC) of Lausanne, Switzerland]* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *[insert the name of the same professional body as above]* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *[name an appropriate international appointing authority, e.g., the Secretary General of the Permanent Court of Arbitration,*

	The Hague; the Secretary General of the International Centre for Settlement of Investment Disputes, Washington, D.C.; the International Chamber of Commerce, Paris; etc.]. (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *[name the same appointing authority as in said paragraph (b)]* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[**Note**: If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[**Note**: If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or

	(d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in *[select a country which is neither the Client's country nor the Consultant's country]*; (b) the *[type of language]* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 in the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

If the Services consist of or include the supervision of civil works, the following action that require prior approval of the Client shall be added to the "Reporting Requirements" section of the TORs: Taking any action under a civil works contract designating the Consultant as "Engineer", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required.**]**

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

[Specify Hours of Work for Key Experts: List here the hours of work for Key Experts; travel time to/from the Client's country; entitlement, if any, to leave pay; public holidays in the Client's country that may affect Consultant's work; etc. Make sure there is consistency with Form TECH-6. In particular: one month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.]

APPENDIX C – REMUNERATION COST ESTIMATES

1. Monthly rates for the Experts:

[Insert the table with the remuneration rates. The table shall be based on [Form FIN-3] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if

any. The footnote shall list such changes made to [Form FIN-3] at the negotiations or state that none has been made.]

2. *[When the Consultant has been selected under Quality-Based Selection method, or the Client has requested the Consultant to clarify the breakdown of very high remuneration rates at the Contract's negotiations also add the following:*

> *"The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.*
>
> *Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract."*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D – REIMBURSABLE EXPENSES COST ESTIMATES

1. *[Insert the table with the reimbursable expenses rates. The table shall be based on [Form FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-4] at the negotiations or state that none has been made.*

2. All reimbursable expenses shall be reimbursed at actual cost, unless otherwise explicitly provided in this Appendix, and in no event shall reimbursement be made in excess of the Contract amount.]

APPENDIX E - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 45.1 (a) and SCC 45.1(a)]

Bank Guarantee for Advance Payment

______________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

---

[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: *All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.*

---

[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”

STANDARD FORM OF CONTRACT

Consultant's Services

Lump-Sum

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including Attachment 1, shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name ______________________________

[Loan/Credit/Grant] **No.**______________________

Contract No. _______________________________

between

____

[Name of the Client]

and

____

[Name of the Consultant]

Dated: __________________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the [*insert as relevant, International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 “Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price
   Appendix D: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[13];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[14];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[15];

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[13] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[14] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[15] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[16];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[17], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[18] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[16] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[17] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[18] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** *Republic of India*.
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** Client : Ministry of Housing and Urban Affairs (MoHUA) Attention : ______________________ Facsimile : ______________________ E-mail (where permitted):______________________ Consultant : ______________________ ______________________ Attention : ______________________ Facsimile : ______________________ E-mail (where permitted) :______________________
8.1	*[If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ______________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______________________ **For the Consultant:** *[name, title]*______________________
11.1	*[Note: If there are no effectiveness conditions, state "N/A"]* *OR*

	List here any conditions of effectiveness of the Contract, e.g., approval of the Contract by the Bank, effectiveness of the Bank [loan/credit/grant], receipt by the Consultant of an advance payment, and by the Client of an advance payment guarantee (see Clause SCC45.1(a)), etc.] **The effectiveness conditions are the following**: *[insert "N/A" or list the conditions]*
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be _______________________** *[insert time period, e.g.: four months]*.
13.1	**Commencement of Services:** **The number of days shall be_________________** *[e.g.: ten]*. Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be ________________________** *[insert time period, e.g.: twelve months]*.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	**No additional provisions.** *[OR* The following limitation of the Consultant's Liability towards the Client can be subject to the Contract's negotiations: **"Limitation of the Consultant's Liability towards the Client:** **(a) Except in the case of gross negligence or willful misconduct on the part of the Consultant or on the part of any person or a firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused by the Consultant to the Client's property, shall not be liable to the Client:** **(i) for any indirect or consequential loss or damage; and** **(ii) for any direct loss or damage that exceeds [insert a multiplier, e.g.: one, two, three] times the total value of the Contract;** **(b) This limitation of liability shall not** **(i) affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in carrying out the Services;** **(ii) be construed as providing the Consultant with any limitation or exclusion from liability which is prohibited by the** *[insert "***Applicable Law***", if it is the law of the Client's country, or insert "***applicable law in the Client's country***", if the Applicable Law stated in Clause SCC1.1 (b) is different from the law of the Client's country].* *[Notes to the Client and the Consultant: Any suggestions made by the Consultant in the Proposal to introduce exclusions/limitations of the Consultant's liability under the Contract should be carefully scrutinized by the Client and discussed with the Bank prior to accepting any changes to what was included in the issued RFP. In this regard, the Parties should be aware of the Bank's policy on this matter which is as follows:* *To be acceptable to the Bank, any limitation of the Consultant's liability should at the very least be reasonably related to (a) the damage the Consultant might potentially cause to the Client, and (b) the*

	Consultant's ability to pay compensation using its own assets and reasonably obtainable insurance coverage. The Consultant's liability shall not be limited to less than a multiplier of the total payments to the Consultant under the Contract for remuneration and reimbursable expenses. A statement to the effect that the Consultant is liable only for the re-performance of faulty Services is not acceptable to the Bank. Also, the Consultant's liability should never be limited for loss or damage caused by the Consultant's gross negligence or willful misconduct. *The Bank does not accept a provision to the effect that the Client shall indemnify and hold harmless the Consultant against Third Party claims, except, of course, if a claim is based on loss or damage caused by a default or wrongful act of the Client to the extent permissible by the law applicable in the Client's country.]*
24.1	**The insurance coverage against the risks shall be as follows:** *[Delete what is not applicable except (a)]*. **(a) Professional liability insurance, with a minimum coverage of** _______________________ *[insert amount and currency which should be not less than the total ceiling amount of the Contract]*; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (c) Third Party liability insurance, with a minimum coverage of *[insert amount and currency or state "in accordance with the applicable law in the Client's country"]*; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.

27.1	*[If applicable, insert any exceptions to proprietary rights provision*______________________________________*]*
27.2	*[If there is to be no restriction on the future use of these documents by either Party, this Clause SCC 27.2 should be deleted. If the Parties wish to restrict such use, any of the following options, or any other option agreed to by the Parties, could be used:* [**The Consultant shall not use these** *[insert what applies…….**documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the Client**.] *[OR]* [**The Client shall not use these** *[insert what applies…….**documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the Consultant**.**]** *[OR]* **[Neither Party shall use these** *[insert what applies…….**documents and software……….]*** **for purposes unrelated to this Contract without the prior written approval of the other Party**.**]**
32.1 **(a) through (e)**	*[List here any changes or additions to Clause GCC 35.1. If there are no such changes or additions, delete this Clause SCC 35.1.]*
32.1(f)	*[List here any other assistance to be provided by the Client. If there is no such other assistance, delete this Clause SCC 35.1(f).]*
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.**

	The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	*[The Bank leaves it to the Client to decide whether the Consultant (i) should be exempted from indirect local tax, or (ii) should be reimbursed by the Client for any such tax they might have to pay (or that the Client would pay such tax on behalf of the Consultant]* **The Client warrants that** *[choose one applicable option consistent with the ITC 16.3 and the outcome of the Contract's negotiations (Form FIN-2, part B "Indirect Local Tax – Estimates"):* *If ITC16.3 indicates a tax exemption status, include the following:* "**the Consultant, the Sub-consultants and the Experts shall be exempt from**" *OR* *If ITC16.3 does not indicate the exemption and, depending on whether the Client shall pay the withholding tax or the Consultant has to pay, include the following:* "**the Client shall pay on behalf of the Consultant, the Sub-consultants and the Experts,**" *OR* "**the Client shall reimburse the Consultant, the Sub-consultants and the Experts**"*]* **any indirect taxes, duties, fees, levies and other impositions imposed, under the applicable law in the Client's country, on the Consultant, the Sub-consultants and the Experts in respect of:** **(a) any payments whatsoever made to the Consultant, Sub-consultants and the Experts (other than nationals or permanent residents of the Client's country), in connection with the carrying out of the Services;** **(b) any equipment, materials and supplies brought into the Client's country by the Consultant or Sub-consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn by them;** **(c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client;** **(d) any property brought into the Client's country by the Consultant, any Sub-consultants or the Experts (other than**

	nationals or permanent residents of the Client's country), or the eligible dependents of such experts for their personal use and which will subsequently be withdrawn by them upon their respective departure from the Client's country, provided that: **(i) the Consultant, Sub-consultants and experts shall follow the usual customs procedures of the Client's country in importing property into the Client's country; and** **(ii) if the Consultant, Sub-consultants or Experts do not withdraw but dispose of any property in the Client's country upon which customs duties and taxes have been exempted, the Consultant, Sub-consultants or Experts, as the case may be, (a) shall bear such customs duties and taxes in conformity with the regulations of the Client's country, or (b) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Client's country.**
41.2	**The payment schedule:** **For the Local Currency (Rs.____________)** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD),Project, Ministry of housing and Urban Affairs, Nirman hawan, Maulana Azad Road, New Delhi-110011.
41.2.1	*[*The following provisions shall apply to the advance payment and the advance bank payment guarantee: (1) An advance payment [of *[insert amount]* in foreign currency] [and of *[insert amount]* in local currency] shall be made within *[insert number]* days after the receipt of an advance bank payment guarantee by the Client. The advance payment will be set off by the Client in equal portions against [list the payments against which the advance is offset]. (2) The advance bank payment guarantee shall be in the amount and in the currency of the currency(ies) of the advance payment.

	(3) The bank guarantee will be released when the advance payment has been fully set off.
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi*

	(c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.
A	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder:

	(a) proceedings shall, unless otherwise agreed by the Parties, be held in *[select a country which is neither the Client's country nor the Consultant's country]*; (b) the *[type of language]* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements and list of deliverables against which the payments to the Consultant will be made; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks or actions that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 of the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……………………………………………………………………………………………

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or

inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 41.2.1 and SCC 41.2.1]

Bank Guarantee for Advance Payment

______________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: __________________ *[Name and Address of Client]*

Date: _________________

ADVANCE PAYMENT GUARANTEE No.: __________________

We have been informed that _____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. ______________ *[reference number of the contract]* dated _____________ with you, for the provision of ___________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ____________ *[amount in figures]* (____________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we ________________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ____________ *[amount in figures]* (____________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ____________ at __________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

---

[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: *All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.*

---

[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Short List and Draft Request for Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

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STEP Admin <noreply@worldbankgroup.org> Fri, Nov 24, 2017 at 3:07 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Draft Request for Proposals for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS.

We have reviewed the RFP based on your email dated November 23, 2017 that the package is a lump sum contract. We have no objection to the RFP subject to incorporation of the comments given below. Please note that the contract forms are almost blank which needs to be filled-in before issuing the same to the Consultants. Also, the Time Based contract forms along with Appendix-A needs to be deleted.

We have reviewed the draft Request for Proposals (including the shortlist) for the above-mentioned consulting services, submitted to the Bank on 2017/11/22 and based on the information provided the Bank has no objection to the Request for Proposals and to the following qualified consultants being included in the shortlist.

Name of Consultant/Firm	Country
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India
STESALIT SYSTEMS LIMITED	India
KADENCE INTERNATIONAL PVT. LTD.	India
OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India

CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India
JONES LANG LASALLE PROPERTY CONSULTANTS	India
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK)	India
NIELSON(INDIA) PRIVATE LIMITED	India
PUBLIC AFFAIR CENTRE (PAC)	India
INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India
SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India
IPSOS RESEARCH PRIVATE LIMITED	India
ATENA INFONOMICS INDIA PRIVATE LIMTED	India
THE ECONOMIST GROUP LIMITED	United Kingdom

The RFP is cleared by Bank subject to incorporation of the following comments :

(1) In ITB, Clause no. 17, 23, 24 & 25; the serial number of respective sub-clauses needs to be corrected.

(2) Data Sheet, Cl. 13.1 - Since minimum 28 days time should be given for proposal submission, the pre-proposal conference should be scheduled mid-way, i.e. after 14 days from issuance of RFP.

(3) Data Sheet, Cl. 13.2 – The process for submitting proposal modification in the online system, before due date is not indicated. The same may please be specified or reference to any procedure available on the portal may be indicated.

(4) Data Sheet, Cl. 17.4 and 19.1 - At least 28 days' time should be allowed for proposal submission.

(5) Delete “Foreword” from Section-8 “Conditions of Contract and Contract Forms”.

(6) The RFP contains both - Time-Based and Lumpsum contract forms. As confirmed through email, please delete the Time-based contract forms including corresponding GCC & SCC. Retain only the Lumpsum contract Forms along with corresponding GCC & SCC.

(7)SCC Cl. 11.1 - Nothing is specified. Please delete the instructions and insert relevant option whether "N/A" or the effectiveness conditions.

(8) SCC 12.1 - Nothing is indicated. Please insert time period for effectiveness of contract termination. Generally as a standard practice, one month from show-cause notice is stipulated.

(9) SCC 13.1 - Noting is specified. Please insert number of days for commencement of services.

(10) SCC 14.1 - Nothing is mentioned. Please insert the time period.

(11) SCC 23.1 : Please insert relevant option

(12) SCC 24.1 : Please indicate the professional liability insurance coverage amount, third party motor vehicle liability insurance coverage, third party liability insurance coverage amount. Delete the instruction in brackets at the top of the clause.

(13) SCC 27.1 : either delete this clause from SCC or insert any applicable exceptions

(14) SCC 27.2 : Insert relevant option

(15) SCC 32.1 (a) through (e) : and 32.1 (f) Either delete these clauses from SCC or insert relevant changes/additions.

(16) SCC 39.1 & 39.2 : insert relevant option.

(17) SCC 41.2.1 : Either insert advance percentage which typically should not exceed 10% or if not applicable then delete the clause from SCC.

(18) SCC 42.1 - Indicate the interest rate for delay in payments. For payments in local currency it should be equivalent to the rate of inflation (Please indicate in percentage).

For payments in foreign currency, it should be LIBOR + 2%.

(19) SCC 45.1 Delete the instructions in brackets.

(20) SCC 45.1 (2) : At the end of the para please mention that for any dispute between a domestic Consultant, the proceedings, shall be in accordance with Indian Arbitration Act 1996.

(21) SCC Clause 45.1 5 (a) Please replace with the following : “The proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.

In order to avoid any perception of preference or ranking please ensure the names of the consultants and their countries of registration are included in the invitation (RFP) in alphabetical order. Please send the RFP to the qualified consultants ensuring they are given at least 28 days (4 weeks) for the submission of their proposals.

We look forward to receiving in due course the technical evaluation report for our review and no objection.

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Government electronic Procurement notification for the tender.

6 messages

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: vanshikha.bhat@in.pwc.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the tender**

eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

We would like to inform that you are invited for participating in the following tender.
Please visit the portal for participating in the Tender.

Tender Id	:	**2017_MoUD_267064_1**
Tender reference no	:	**K-14012/101(11)/2017- SCM-III(V)**
Organisation Chain	:	**Ministry of Urban Development,MoUD||Smart Cities Division MoUD**

In case of any clarifications or feed back, you may contact Tender Inviting Authority(TIA).

We wish you all the best,

Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

---

etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: sudha@idfc.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System **Government electronic Procurement notification for the**

tender
eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

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Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: ravi.poddar@crisil.com
Cc: g.vijaykumar.moud@gmail.com

Government electronic Procurement notification for the tender
eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

Sub: Intimation for the tender published

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: tripti.sharma@ipsos.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System

Government electronic Procurement notification for the tender

eProcurement System Government of India

Date: 27-Nov-2017

Dear User,

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Tender Inviting Authority

[**Note :** This is an auto generated mail from the eprocurement system. Please do not reply to this e-mail id.]

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: simon.thomas@ap.jll.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System

Government electronic Procurement notification for the tender

eProcurement System Government of India

Date: 27-Nov-2017

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etender-nic@nic.in <etender-nic@nic.in> Mon, Nov 27, 2017 at 3:51 PM
To: vudgirkar@deloitte.com
Cc: g.vijaykumar.moud@gmail.com

Government eProcurement System

Government electronic Procurement notification for the tender

eProcurement System Government of India

Date: 27-Nov-2017

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Tender Inviting Authority

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SUMMARY DESCRIPTION

STANDARD REQUEST FOR PROPOSALS (for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India)

PART I – SELECTION PROCEDURES AND REQUIREMENTS

Section 1: Letter of Invitation (LOI)

This Section is a template of a letter from the Client addressed to a shortlisted consulting firm inviting it to submit a proposal for a consulting assignment. The LOI includes a list of all shortlisted firms to whom similar letters of invitation are sent, and a reference to the selection method and applicable guidelines or policies of the financing institution that govern the selection and award process.

Section 2: Instructions to Consultants and Data Sheet

This Section consists of two parts: “Instructions to Consultants” and “Data Sheet”. “Instructions to Consultants” contains provisions that are to be used without modifications. “Data Sheet” contains information specific to each selection and corresponds to the clauses in “Instructions to Consultants” that call for selection-specific information to be added. This Section provides information to help shortlisted consultants prepare their proposals. Information is also provided on the submission, opening and evaluation of proposals, contract negotiation and award of contract. Information in the Data Sheet indicates whether a Full Technical Proposal (FTP) or a Simplified Technical Proposal (STP) shall be used.

Section 3: Technical Proposal – Standard Forms

This Section includes the forms for FTP and STP that are to be completed by the shortlisted consultants and submitted in accordance with the requirements of Section 2.

Section 4: Financial Proposal – Standard Forms

This Section includes the financial forms that are to be completed by the shortlisted consultants, including the consultant’s costing of its technical proposal, which are to be submitted in accordance with the requirements of Section 2.

Section 5: Eligible Countries

This Section contains information regarding eligible countries.

Section 6: Bank’s Policy – Corrupt and Fraudulent Practices

This Section provides shortlisted consultants with the reference to the Bank's policy in regard to corrupt and fraudulent practices applicable to the selection process. This Section is also incorporated in the standard forms of contract (Section 8) as Attachment 1.

Section 7: Terms of Reference (TORs)

This Section describes the scope of services, objectives, goals, specific tasks required to implement the assignment, and relevant background information; provides details on the required qualifications of the key experts; and lists the expected deliverables. This Section shall not be used to over-write provisions in Section 2.

PART II – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section 8: Standard Forms of Contract

This Section includes two types of standard contract forms for large or complex assignments: a Time-Based Contract and a Lump-Sum Contract. Each type includes General Conditions of Contract ("GCC") that shall not be modified, and Special Conditions of Contract ("SCC"). The SCC include clauses specific to each contract to supplement the General Conditions.

Each standard form of contract incorporates "Bank's Policy – Corrupt and Fraudulent Practices" (Section 6 of Part I) in a form of Attachment 1.

SELECTION OF CONSULTANTS

REQUEST FOR PROPOSALS

Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India

**Client: Ministry of Housing and Urban Affairs (MoHUA),
Government of India (GoI)**

Country: India

Project: Capacity Building for Urban Development (CBUD)

Issued on: 27th November, 2017

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PART I

Section 1. Letter of Invitation

RFP No. E3136811 **Credit No**.- 4997-IN India and 27th November 2017

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

Dear Mr. /Ms.:

1. The Government of India (hereinafter called “Borrower”) has receive financing from the International Development Association (IDA)*]* (the “Bank”) in the form of a “credit” (hereinafter called “credit”) toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Housing and Urban Affairs (MoHUA), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. The *[*Client/ Recipient*]* intends to apply the funds to eligible payments under the

contract for which this Request for Proposals is issued.] Payments by the Bank will be made only at the request of the Ministry of Housing and Urban Affairs, GOI and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan agreement. The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the *[*Borrower/Client/Recipient*]* shall derive any rights from the loan agreement or have any claims to the proceeds of the loan.

2. The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): *Assessment of Liveability Indices for 116 cities in India.* More details on the Services are provided in the Terms of Reference (Section 7).

3. This electronic Request for Proposals (RFP) has been addressed to the following shortlisted Consultants:

S.No.	Name of Lead Firm	Address of Lead Firm	Consortium member
1	CRISIL Risk and Infrastructure Solutions Limited,	Plot No. - 46, Sector - 44, Opposite Provident Fund Office, Gurgaon - 122003, India	-
2	Delloite Touche Tohmatsu India LLP	12, Dr. Annie Besant Road, Opp. ShivSagar Estate, Worli, Mumbai – 400 018 India	1. Insight Development Group Pvt Ltd 2. Stesalit Systems Limited 3. Kadence International Pvt Ltd 4. Operations Research Guild (ORG) India Private Limited
3	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	9/7, K.C.N.Bhavan, Yamunabai Road, Madhavnagar Extension, Off Race Course Road, Bangalore 560001, India	1. Institute for Social and Economic Change (ISEC) 2. Public Affairs Centre (PAC) 3. Sigma Research & Consulting Pvt. Ltd 4. Consortium Partner 4 - Nielsen
4	Ipsos Public Affairs	801, 8th Floor, Vipul Square, Sushant Lok, B Block Gurgaon-122016, India	1. Athena Infonomics India Pvt Ltd. 2. The Economics Group Limited
5	Jones Lang LaSalle	Level – 8, Tower II, TVH Beliciaa Tower MRC Nagar, Block No.94, Chennai – 600 028, India	-
6	PricewaterhouseCoopers	252 Veer Savarkar Marg, Shivaji Park, Dadri (W), Mumbai-400028, India	-

4. It is not permissible to transfer this invitation to any other firm.

5. A firm will be selected under *QCBS* procedures and in a Full Technical Proposal (FTP) format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

6. The RFP includes the following documents:
   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal (FTP) - Standard Forms
   Section 4 - Financial Proposal - Standard Forms
   Section 5 – Eligible Countries
   Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
   Section 7 - Terms of Reference
   Section 8 - Standard Forms of Contract (Lump-Sum)

7. The RFP is available online at https://eprocure.gov.in/cppp/ for the short-listed consultants only. The short-listed consultants are required to register on this website at no cost and prior to the submission of proposals. Consultant is also required to have a Digital Signature (DSC) from one of the Government of India authorized Certifying Authorities in order to submit a proposal on line at the web address indicated above. The list of the authorized Certifying Authorities can be found https://eprocure.gov.in/eprocure/app;jsessionid=F5C7CAFAAD521D191038BF8A4FD03B4F.eprocgep1?page=HelpForContractors&service=page

8. Please inform us by 8th December, *2017 by 3.00 pm* by E-mail on : g.vijaykumar@nic.in & g.vijaykumar.moud@gmail.com
   (a) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

9. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

G. Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi. (Ph. 23063217)
on behalf of Project Director, CBUD, MoHUA, Nirman Bhavan, New Delhi.

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions

(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant.

(b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP.

(c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time.

(d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(e) "Borrower" means the Government, Government agency or other entity that signs the loan agreement with the Bank.

(f) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(g) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(h) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(i) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(j) "Day" means a calendar day.

(k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(l) "Government" means the government of the Client's country.

(m) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(n) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(o) "ITC" (this Section 2 of the e-RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(p) "LOI" (this Section 1 of the e-RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(r) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant.

(s) "RFP" means the Request for Proposals to be prepared by the Client for the electronic selection of Consultants, based on the SRFP.

(t) "SRFP" means the trial version of Standard Request for Proposals for the use in electronic procurement issued by the Bank, which must be used by the Client as the basis for the preparation of the RFP.

(u) "Services" means the work to be performed by the Consultant pursuant to the Contract.

(v) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while

remaining responsible to the Client during the performance of the Contract.

(w) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.

2. Introduction

2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**.

2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant.

2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.

3. Conflict of Interest

3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work.

3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank.

3.2.1 Without limitation on the generality of the foregoing, and unless stated otherwise in the **Data Sheet**, the Consultant shall not be hired under the circumstances set forth below:

a. Conflicting activities

(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.

b. Conflicting assignments

(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.

c. Conflicting relationships

(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.

4. Unfair Competitive Advantage

4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this e-RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.

5. Corrupt and Fraudulent Practices

5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.

6. Eligibility

6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects.

6.2 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines.

6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:

a. Sanctions

6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.

b. Prohibitions

6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

c. Restrictions for Government-owned Enterprises

6.3.3 Government-owned enterprises or institutions in the Borrower’s country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii)

operate under commercial law, and (iii) that they are not dependent agencies of the Client

To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.

d. Restrictions for public employees

6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they

(i) are on leave of absence without pay, or have resigned or retired;

(ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring

(in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and

(iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7. General Considerations

7.1 In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.

8. Cost of Preparation of Proposal

8.1 The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.

9. Language

9.1 The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.

10. Documents Comprising the Proposal

10.1 The Proposal shall comprise the documents and forms listed in the **Data Sheet**.

10.2 If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery).

10.3 The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).

11. Only One Proposal

11.1 The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity

12.1 **The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline.

12.2 During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price.

12.3 If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.

a. Extension of Validity Period

12.4 The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, by notifying all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. Mode of notifications is specified in the **Data Sheet.**

12.5 If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts.

12.6 The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

b. Substitution of Key Experts at Validity Extension

12.7 If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert.

12.8 If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.

c. Sub-Contracting

12.9 The Consultant shall not subcontract the whole of the Services.

13. Clarification and Amendment of RFP

13.1 The Consultant may request an online clarification of any part of the RFP during the period and in accordance with the procedure indicated in the **Data Sheet** before the Proposals' submission deadline. The Client will respond online by uploading

the response on the portal (including an explanation of the query but without identifying its source) for information of all shortlisted Consultants. Should the Client deem it necessary to amend the e-RFP as a result of a clarification, it shall do so following the procedure described below:

13.1.1 At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment online in accordance with procedure described in Data Sheet The amendment shall be binding on all shortlisted Consultants.

13.1.2 If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals.

13.2 The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline, online, in accordance with the procedure described in the **Data Sheet**. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.

14. Preparation of Proposals – Specific Considerations

14.1 While preparing the Proposal, the Consultant must give particular attention to the following:

14.1.1 If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member.

14.1.2 The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same.

14.1.3 If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts,

failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**.

14.1.4 For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.

15. Technical Proposal Format and Content

15.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.

15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive.

15.2 Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.

16. Financial Proposal

16.1 The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.

a. Price Adjustment

16.2 For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.

b. Taxes

16.3 The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.

c. Currency of Proposal

16.4 The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.

d. Currency of Payment

16.5 Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission of Proposals

17.1 The Consultant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done electronically through the website and in accordance with the procedures specified in the **Data Sheet.** Proposals submitted by any other means will be rejected.

17.2 An authorized representative of the Consultant shall digitally sign the submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Technical Proposal.

17.2.1 In the case of a Joint Venture, submission letters shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. The submission letters and the power of attorney shall then be scanned and uploaded together with the Technical Proposal.

17.3 Consultants should be aware that the electronic procurement system does not allow for any interlineations, erasures, or overwriting. Any modifications or revisions to the Proposal shall be done in accordance with Clause ITC 13.2.

17.4 The Proposal or its modifications must be uploaded on the portal no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline.

17.5 Once the Proposal is uploaded on the portal, the system will generate a unique identification number with the stamped submission time. The unique identification number with the time stamp represents an acknowledgement of the Proposal submission. Any other system's functionality requirements are specified in the **Data Sheet**.

18. Confidentiality

18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award

recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures.

18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.

19. Online Opening of Technical Proposals

19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals online immediately after the Proposals' submission deadline and following the procedure described in the Data Sheet. The folder with the Financial Proposal shall remain unopened, encrypted and shall be securely stored on the portal.

19.2 At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the Data Sheet.

20. Proposals Evaluation

20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable .

20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

21.	**Evaluation of Technical Proposals**	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.
22.	**Financial Proposals for QBS**	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 16.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23.	**Online Opening of Financial Proposals (for QCBS, FBS, and LCS methods)**	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score by sending a notification through the means indicated in the **Data Sheet**. The notification shall also include information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion. Financial Proposals of those Consultants whose Technical Proposals did not meet the minimum qualifying score shall not be opened. In such case, a notification to that effect will be sent to the Consultant. The Client shall simultaneously notify those Consultants that have achieved the minimum overall technical score and inform them of the date, time and, if indicated in the **Data Sheet**, location for online opening of the Financial Proposals. The Consultant's attendance at the opening of the Financial Proposals (online, or in person, if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. If the Data Sheet provides an option of attending in person, the opening date should allow the Consultants sufficient time to make arrangements for attending the opening. 23.2 The Financial Proposals shall be opened online by the Client's evaluation committee as described in the Data Sheet. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud first and recorded online simultaneously. The Financial Proposals shall be then opened, the total prices read

aloud and recorded online simultaneously. The records of the opening shall remain on the portal for the information of the Consultants who submitted Proposals and the Bank, unless the **Data Sheet** provides for other means of sending notifications and the results of the financial opening.

24. Correction of Errors

24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

24.2 If a Time-Based contract form is included in the e-RFP, the e-procurement system automatically calculates the amount in words from the amount in figures and automatically calculates the total amount In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost. The evaluation committee will also adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal.

b. Lump-Sum Contracts

24.3 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.

25. Taxes

The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.

26. Conversion to Single Currency

26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.

27. Combined Quality and Cost Evaluation

a. Quality- and Cost-Based Selection (QCBS)

27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.

b. Fixed-Budget Selection (FBS)

27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected.

27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection

27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations

28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant.

28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.

a. Availability of Key Experts

28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant.

28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.

b. Technical negotiations

28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.

c. Financial negotiations

28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract.

28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank.

The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.

29. Conclusion of Negotiations

29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative.

29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.

30. Award of Contract

30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; promptly notify the other shortlisted Consultants and publish the award as per the instructions in the **Data Sheet.**

30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

A. General	
ITC Clause Reference	
1 (c)	Law of Republic of India
2.1	**Name of the Client:** Ministry of Housing and Urban Affairs (MoHUA), Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost Based Selection (QCBS) **Applicable Guidelines**: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
2.3	**A pre-proposal conference will be held**: Yes Date of pre-proposal conference: **12th December, 2017** Time:15.00 (3.00 PM) Address: 202-C, Nirman Bhawan, Maulana Azad Road, New Delhi. Telephone: 011-23063217 E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com Contact person/conference coordinator *: G.Vijay Kumar, Under Secretary*
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals:** NA
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website**: www.worldbank.org/debarr
B. Preparation of Proposals	

9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language.** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 OR **For SIMPLIFIED TECHNICAL PROPOSAL (STP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-4 (4) TECH-5 (5) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes

11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *and 90 days* calendar days after the proposal submission deadline (i.e., until**: 27th March, 2018)**
12.4	Validity of proposal will be intimated by e-mail to g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com
13.1	**Clarifications may be requested no later than 15 days prior to the submission deadline.** **All requests for clarifications shall be made online through** mail at g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com by **8th December 2017, 3.00 pm.** **Clarifications sent through any other medium shall not be accepted.**
13.2	The process for submitting modifications to the Proposal is as per e- procurement manual available at https://eprocure.gov.in/cppp/
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s): No** **or** **(b) other shortlisted Consultants: No**
14.1.2	**Estimated input of Key Experts' time-input: approx.. 22person-months.**
14.1.3	*"Not applicable".*
14.1.4 and 27.2	**Not Applicable**

15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of items to be included in reimbursable expenses:* *(1) a per diem allowance, including hotel, for experts for every day of absence from the home office for the purposes of the Services;* *(2) cost of travel by the most appropriate means of transport and the most direct practicable route;* *(3) cost of office accommodation, including overheads and back-stop support;* *(4) communications costs;* *(5) cost of reports production (including printing) and delivering to the Client;*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	***GST and other indirect and local taxes as applicable from time to time.***
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants shall submit their Proposals electronically by downloading them on the portal** https://eprocure.gov.in/cppp/. ***The electronic submission procedures is available at*** ***https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page***
17.4	**The Proposals must be submitted online no later than:** **Date: 27th December, 2017**

	Time: 15.00 Local Time (3.00 PM)
17.5	As per https://eprocure.gov.in/eprocure/app?page=BiddersManualKit&service=page
19.1	An online opening of the Technical Proposals will be conducted as defined in https://eprocure.gov.in *Consultants have an option to attend the opening of the Technical Proposals in person. The opening shall take place* at*:* Street Address: : Maulana Azad Road Floor, room number: Room No.202 C, Nirman Bhawan City New Delhi 110001 Country: India Date: **28th December, 2017**. Time: *15.00 Local Time (3.00 PM)*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals :** NA
21.1	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10

	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) : 60%

Total points for the three criteria*:* **100**

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	a)The Consultants whose proposals were considered non responsive and did not meet the minimum qualifying technical score and (b) Consultants who have passed the minimum technical score and are invited to the opening of the Financial Proposal will be informed through email. The location, date and time of opening of the financial proposal shall also be intimated through email.
23.2	**The Financial Proposals shall be opened online as** *defined in ITB 23.2* **The procedure for notifying the Consultants on the results of the Financial opening shall be** *as in ITB 23.2*

25.1	For the purpose of the evaluation, the Client will exclude: (a) all local identifiable indirect taxes such GST, or similar taxes levied on the contract's invoices; and (b) all additional local indirect tax on the remuneration of services rendered by non-resident experts in the Client's country. If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant.
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is:** Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T =** 0.80, and **P =** 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations:** **Date**: **10th January 2018** **Address:** 202C, Nirman Bhawan, Maulana Azad Road, New Delhi.
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done**

	as following: www. moud.gov.in The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services:** **Date**:**15th January, 2018**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
“√ “ If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
“√” If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant’s Organization and Experience.	
√		TECH-2A	A. Consultant’s Organization	
√		TECH-2B	B. Consultant’s Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: *[Name and address of Client]*

Dear Sirs:

We, the undersigned, offer to provide the consulting services for *[Insert title of assignment]* in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *[Select appropriate wording depending on the selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope" *or, if only a Technical Proposal is invited* "We hereby are submitting our Proposal, which includes this Technical Proposal only in a sealed envelope.*"].*

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) *[Note to Client: Only if required in ITC10.2 (Data Sheet 10.2), include the following:* In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.*]*

(f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ________________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ___________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY)

CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1. List only previous similar assignments successfully completed in the last *[.....]* years.

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL)

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4 (FOR FULL TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the TORs in here.}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-4 (FOR SIMPLIFIED TECHNICAL PROPOSAL ONLY)

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Form TECH-4: a description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR and on counterpart staff and facilities)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc.}

FORM TECH-5 (FOR FTP AND STP)

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6 (FOR FTP AND STP)

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)												Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY EXPERTS																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.

2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

[3] “Home” means work in the office in the expert’s country of residence. “Field” work means work carried out in the Client’s country or any other country outside the expert’s country of residence.

█ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Expert's contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Representative of the Consultant (the same who signs the Proposal) Signature Date

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A "Financial Negotiations - Breakdown of Remuneration Rates" in the case of QBS method
FIN-4	Remboursable expanses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____

In the capacity of: ____
Address: ____
E-mail: ________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax· e.g., VAT or sales tax}				
(ii) {e.g., income tax on non-resident experts}				
(iii) {insert type of tax}				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
____	**Key Experts**							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
____	**Non-Key Experts**							
N-1			[*Home*]		▨	▨	▨	
N-2			[*Field*]		▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
					▨	▨	▨	
				Total Costs				

Appendix A. Financial Negotiations - Breakdown of Remuneration Rates

1. **Review of Remuneration Rates**

1.1. The remuneration rates are made up of salary or a base fee, social costs, overheads, profit, and any premium or allowance that may be paid for assignments away from headquarters or a home office. An attached Sample Form can be used to provide a breakdown of rates.

1.2. If the RFP requests submission of a technical proposal only, the Sample Form is used by the selected Consultant to prepare for the negotiations of the Contract. If the RFP requests submission of the financial proposal, the Sample Form shall be completed and attached to the Financial Form-3. Agreed (at the negotiations) breakdown sheets shall form part of the negotiated Contract and included in its Appendix D or C.

1.3. At the negotiations the firm shall be prepared to disclose its audited financial statements for the last three years, to substantiate its rates, and accept that its proposed rates and other financial matters are subject to scrutiny. The Client is charged with the custody of government funds and is expected to exercise prudence in the expenditure of these funds.

1.4. Rate details are discussed below:

(i) Salary is the gross regular cash salary or fee paid to the individual in the firm's home office. It shall not contain any premium for work away from headquarters or bonus (except where these are included by law or government regulations).

(ii) Bonuses are normally paid out of profits. To avoid double counting, any bonuses shall not normally be included in the "Salary" and should be shown separately. Where the Consultant's accounting system is such that the percentages of social costs and overheads are based on total revenue, including bonuses, those percentages shall be adjusted downward accordingly. Where national policy requires that 13 months' pay be given for 12 months' work, the profit element need not be adjusted downward. Any discussions on bonuses shall be supported by audited documentation, which shall be treated as confidential.

(iii) Social Charges are the costs of non-monetary benefits and may include, inter alia, social security (including pension, medical, and life insurance costs) and the cost of a paid sick and/or annual leave. In this regard, a paid leave during public holidays or an annual leave taken during an assignment if no Expert's replacement has been provided is not considered social charges.

(iv) Cost of Leave. The principles of calculating the cost of total days leave per annum as a percentage of basic salary is normally calculated as follows:

$$\text{Leave cost as percentage of salary} = \frac{\text{total days leave x 100}}{[365 - w - ph - v - s]}$$

Where w = weekends, ph = public holidays, v = vacation, and s = sick leave.

Please note that leave can be considered as a social cost only if the Client is not charged for the leave taken.

(v) Overheads are the Consultant's business costs that are not directly related to the execution of the assignment and shall not be reimbursed as separate items under the Contract. Typical items are home office costs (non-billable time, time of senior Consultant's staff monitoring the project, rent of headquarters' office, support staff, research, staff training, marketing, etc.), the cost of Consultant's personnel not currently employed on revenue-earning projects, taxes on business activities, and business promotion costs. During negotiations, audited financial statements, certified as correct by an independent auditor and supporting the last three years' overheads, shall be available for discussion, together with detailed lists of items making up the overheads and the percentage by which each relates to basic salary. The Client does not accept an add-on margin for social charges, overhead expenses, etc. for Experts who are not permanent employees of the Consultant. In such case, the Consultant shall be entitled only to administrative costs and a fee on the monthly payments charged for sub-contracted Experts.

(vi) Profit is normally based on the sum of the Salary, Social costs, and Overheads. If any bonuses paid on a regular basis are listed, a corresponding reduction shall be made in the profit amount. Profit shall not be allowed on travel or any other reimbursable expenses.

(vii) Away from Home Office Allowance or Premium or Subsistence Allowances. Some Consultants pay allowances to Experts working away from headquarters or outside of the home office. Such allowances are calculated as a percentage of salary (or a fee) and shall not draw overheads or profit. Sometimes, by law, such allowances may draw social costs. In this case, the amount of this social cost shall still be shown under social costs, with the net allowance shown separately.

UNDP standard rates for the particular country may be used as reference to determine subsistence allowances.

Sample Form

Consultant: Country:
Assignment: Date:

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:

(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;

(b) attached are true copies of the latest pay slips of the Experts listed;

(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;

(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and

(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

____
[Name of Consultant]

____ ________________________
Signature of Authorized Representative Date

Name: __________________________________

Title: ___________________________________

Consultant's Representations Regarding Costs and Charges
(Model Form I)

(Expressed in {insert name of currency*})

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour	Proposed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Client's Country									

{* If more than one currency is used, use additional table(s), one for each currency}

1. Expressed as percentage of 1
2. Expressed as percentage of 4

FORM FIN-4 BREAKDOWN OF REIMBURSABLE EXPENSES

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for calculation of the Contract ceiling amount, to calculate applicable taxes at contract negotiations and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-Sum contracts

B. Reimbursable Expenses________________________________

N°	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	{Currency # 1- as in FIN-2}	{Currency # 2- as in FIN-2}	{Currency# 3- as in FIN-2}	{Local Currency- as in FIN-2}
__	{e.g., Per diem allowances**}	{Day}		________				
__	{e.g., International flights}	{Ticket}		________				
__	{e.g., In/out airport transportation}	{Trip}						
	{e.g., Communication costs between Insert place and Insert place}				____________			
	{ e.g., reproduction of reports}				____________			
	{e.g., Office rent}				____________			
	....				____________			
	{Training of the Client's personnel – if required in TOR}				____________			
				Total Costs				

Legend*:*
"Per diem allowance" is paid for each night the expert is required by the Contract to be away from his/her usual place of residence. Client can set up a ceiling.

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): ________________ [list country/countries following approval by the Bank to apply the restriction *or* state "none"]

Under the ITC 6.3.2 (b): ________________ [list country/countries *or* indicate "none"]

Section 6. Bank Policy – Corrupt and Fraudulent Practices

(this Section 6 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

   (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

   (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

---

[1] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

---

[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources,

preferred timelines, key nodal officers etc.;

b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:

a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;

c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

a. Database of aggregate data in the format as mutually agreed

b. All raw data and data sheets;

c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

Sl. No.	Name of State	Name of City	Population
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886

Sl. No.	Name of State	Name of City	Population
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429

Sl. No.	Name of State	Name of City	Population
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

PART II

Section 8. Conditions of Contract and Contract Forms

1. Part II includes two types of standard Contract forms for Consulting Services (a Time-Based Contract and a Lump-Sum Contract) that are based on the contract forms included in the harmonized Standard Request for Proposals (Master Document for Selection of Consultants prepared by participating Multilateral Development Banks (MDBs).

2. **Time-Based Contract**. This type of contract is appropriate when it is difficult to define or fix the scope and the duration of the services, either because they are related to activities carried out by others for which the completion period may vary, or because the input of the consultants required for attaining the objectives of the assignment is difficult to assess. In time-based contracts the Consultant provides services on a timed basis according to quality specifications, and Consultant's remuneration is determined on the basis of the time actually spent by the Consultant in carrying out the Services and is based on (i) agreed upon unit rates for the Consultant's experts multiplied by the actual time spent by the experts in executing the assignment, and (ii) reimbursable expenses using actual expenses and/or agreed unit prices. This type of contract requires the Client to closely supervise the Consultant and to be involved in the daily execution of the assignment.

3. **Lump-Sum Contract.** This type of contract is used mainly for assignments in which the scope and the duration of the Services and the required output of the Consultant are clearly defined. Payments are linked to outputs (deliverables) such as reports, drawings, bill of quantities, bidding documents, or software programs. Lump-sum contracts are easier to administer because they operate on the principle of a fixed price for a fixed scope, and payments are due on clearly specified outputs and milestones. Nevertheless, quality control of the Consultant's outputs by the Client is paramount.

4. The templates are designed for use in assignments with consulting firms and shall not be used for contracting of individual experts. These standard Contract forms are to be used for complex and/or large value assignments, and/or for contracts above US$300,000 equivalent or more unless otherwise approved by the Bank.

STANDARD FORM OF CONTRACT

Consultant's Services

Lump-Sum

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Preface

1. The standard Contract form consists of four parts: the Form of Contract to be signed by the Client and the Consultant, the General Conditions of Contract (GCC), including Attachment 1 (Bank's Policy – Corrupt and Fraudulent Practices); the Special Conditions of Contract (SCC); and the Appendices.

2. The General Conditions of Contract, including Attachment 1, shall not be modified. The Special Conditions of Contract that contain clauses specific to each Contract intend to supplement, but not over-write or otherwise contradict, the General Conditions.

CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name ______________________________

***[Loan/Credit/Grant]* No.**______________________

Contract No. ________________________________

between

____
[Name of the Client]

and

____
[Name of the Consultant]

Dated: ________________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the "Contract") is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client or Recipient]* (hereinafter called the "Client") and, on the other hand, *[name of Consultant]* (hereinafter called the "Consultant").

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: "…(hereinafter called the "Client") and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the "Consultant").]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received [*or* has applied for] a loan [*or* credit *or* grant] from the [*insert as relevant, International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this [loan/credit/grant] to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference
   Appendix B: Key Experts
   Appendix C: Breakdown of Contract Price
   Appendix D: Form of Advance Payments Guarantee

   In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

   (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) “Foreign Currency” means any currency other than the currency of the Client’s country.

(l) “GCC” means these General Conditions of Contract.

(m) “Government” means the government of the Client’s country.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.

(p) “Local Currency” means the currency of the Client’s country.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.

(s) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[7];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[8];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[9];

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[7] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[8] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[9] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[10];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[11], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[12] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[10] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[11] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[12] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** Client : Ministry of Housing and Urban Affairs (MoHUA) Attention : ______________________ Facsimile : ______________________ E-mail (where permitted):______________________ Consultant : ______________________ ______________________ Attention : ______________________ Facsimile : ______________________ E-mail (where permitted) :______________________
8.1	*[If the Consultant consists only of one entity, state "N/A";* *OR* *If the Consultant is a Joint Venture consisting of more than one entity, the name of the JV member whose address is specified in Clause SCC6.1 should be inserted here.]* **The Lead Member on behalf of the JV is** ____________ ______________________ *[insert name of the member]*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*______________________ **For the Consultant:** *[name, title]*______________________
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days**

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 20 Weeks
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall** *[insert as appropriate: "***be paid***" or "***reimbursed***"]* **by the Client** *[insert as appropriate:"***for" or "to***"]* **the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency (Rs.____________)** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD),Project, Ministry of housing and Urban Affairs, Nirman hawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint,

	upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of:

	(a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

[This Appendix shall include the final Terms of Reference (TORs) worked out by the Client and the Consultant during the negotiations; dates for completion of various tasks; location of performance for different tasks; detailed reporting requirements and list of deliverables against which the payments to the Consultant will be made; Client's input, including counterpart personnel assigned by the Client to work on the Consultant's team; specific tasks or actions that require prior approval by the Client.

Insert the text based on the Section 7 (Terms of Reference) of the ITC in the RFP and modified based on the Forms TECH-1 through TECH-5 of the Consultant's Proposal. Highlight the changes to Section 7 of the RFP]

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

……………………………………………………………………………………………

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *“*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP “Consultants' Representations regarding Costs and Charges” submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or

inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract*."]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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* If more than one currency, add a table

Signature: ______________________ Date: ______________________

Name and Title: ______________________

APPENDIX D - FORM OF ADVANCE PAYMENTS GUARANTEE

[See Clause GCC 41.2.1 and SCC 41.2.1]

Bank Guarantee for Advance Payment

_____________________________ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: _________________ *[Name and Address of Client]*

Date: ________________

ADVANCE PAYMENT GUARANTEE No.: _________________

We have been informed that ____________ *[name of Consultant or a name of the Joint Venture, same as appears on the signed Contract]* (hereinafter called "the Consultant") has entered into Contract No. _____________ *[reference number of the contract]* dated ____________ with you, for the provision of __________________ *[brief description of Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of ___________ *[amount in figures]* (___________) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Consultant, we _______________ *[name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ___________ *[amount in figures]* (___________) *[amount in words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant are in breach of their obligation under the Contract because the Consultant have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultant on their account number ___________ at _________________ *[name and address of bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultant as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultant has made full repayment of the

amount of the advance payment, or on the __ day of ___________, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

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[1] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

____

[signature(s)]

Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.

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[2] Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

ATTENDANCE SHEET

Meeting on Pre-application conference on Assessment of Liveability in Selected Cities under CBUD on 12th December, 2017 in Room No. 120-G

Sl No.	Name of the Officers & Designation	Signature with Mob No.
1	Rakesh Gujral, PMU.CBUD	
2	VASAVI. N, PMU.CBUD	Vasavi
3	A. SHANKAR, JLL	
4	POONAM AGARWAL, JLL	
5	Siddharta Dutt, CRISIL	
6	Vaibhav Sharma, Deloitte 3	
7	Anubhav Jangra, IDCG	
8	Sunil Pillai, Kadence International AVP.	
9	Ankita Singh, Deloitte	
10	Meena Pahwa, Sigma Research	Meena
11	Raja Venkataramani 4, IDECK	
12	Ashish Suri, PwC 5	
13	Sumit Srivastava, PwC	Sumit
14	Sachin Singhal, IPSOS 6	
15	Pramod Bhatt, IPSOS	Bhatt

16 G. Vijay Kumar, Under Secretary CBUD

17. Yogendra Singh Awana, Deputy Secretary, CBUD

Clarification to the issues raised by the Consulting firms – RFO on Assessment of Liveability Index

Date:12th December 2017, Venue: 120G, NBO Building, NIRMAN BHAVAN

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
1.	**IDeck**	**Page No. 25 Clause 17.4**	**Data Sheet** The Proposals must be submitted online no later than: Date: 27th December, 2017	Kindly provided 2 weeks extension from the date of issue of pre bid clarification.	**The timelines given in the RFP document stand**
2.		**Page No. 52**	Sample Form: Consultant's Representation Regarding b. Attached True Copes of the latest Pay Slips of Experts Listed.	For any Organization it is not ethically possible to share the Pay Slips of the individuals. Hence requesting you to remove the clause.	**This is a Standard World Bank document.**
3.		**Page No. 61 Clause i**	**Initiation Activities** Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal.	It is practically time consuming activity to conduct workshops at each state level. Can consultant conduct workshops at zonal level (East, West, North and South)?	**As per RFP.**
4.		**Page No. 61 Clause iii**	**Initiation Activities** Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia.	Can Consultant submit combined Inception Report for all 116 Cities?	**As per RFP.**
5.		**Page No. 61**	**Data Collection and Field Surveys.**	• What should the common year of reference for data collection in all given sector be?	**Please refer to the methodology document available on the website of the Ministry.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				• What if, the year of reference is separate for each indicator within a ULB? • What if, across the same indicator the year of reference is different for each ULB?	**This should also be part of methodology to be submitted by the bidder.**
6.		**Page No. 62 Clause XI**	**Data Collection and Field Surveys** Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;	What is the minimum number of feedback (sample size) that has be collected in each city?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
7.		**Page No. 63 Clause 7.5**	**Timelines and Deliverables for Year 1** **Inception Report**- 8 weeks from start date as per contract **Draft City Assessment Report**- 12 weeks from start date as per contract **Final City Assessment Report**- 20 weeks from start date as per contract	We feel the time duration allocated for each activity are very less. Kindly change project duration as follows. **Inception Report**- 12 weeks from start date as per contract **Draft City Assessment Report**- 28 weeks from start date as per contract **Final City Assessment Report**- 52 weeks from start date as per contract	**Timelines as per RFP Stand**
8.		**Page No. 63 Clause 7.5**	**Deliverables and Contents**	Kindly specify the number of copies to be submitted in each delivery stage.	**Two hard copies and one Electronic Copy.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				RFP demands for separate reports for each city in Inception, Draft City Assessment and Final City Assessment report submission stages. As 116 cities are part of the scope, unless the copies are specified it is difficult to quantify the cost.	**As per RFP.**
9.		**Page No. 65 Clause 7.7**	**Core Team (CV to be evaluated)** **Statistician-**Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	Can the statistician (core team member) hold a PhD degree in Economics (Econometrician by profession) instead of a Master's Degree in Statistics?	**The personnel should have requisite qualification as per RFP.**
10.			General	Can the consortium subcontract some parts of the project work?	**The condition 14.1.1 of Data Sheet Stands.**
11.			General	In case the ULB is unable to provide the data, how long should the Field Assessor wait for?	**To be decided on merit of each case.**
12.			General	What has to be done in case of data gaps (non- availability, not a ULB functions etc.)?	**Please refer to the methodology document available on the web site.** **It should also be part of the methodology to be submitted by the consulting firms.**
13.			General	How does the Ministry assure cooperation from the ULBs? We have previously experienced that the city	**Ministry will provide support as defined in TOR.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				ULBs require letters from the respective State, instead the Centre, before agreeing to share data. Ministry needs to ensure that the survey teams get both the letters from the Centre and the respective states before going out to the field.	
14.	**IPSOS**	**7.2 (ii) Objective of the assignment**		Please clarify if MoUHA is looking for any specific structure / format like MIS dash board or a micro site or is it only an electronic database/raw data from the 1st round	**Please refer to the TOR.**
15.		**7.3 (i) Description of tasks -Initiation of activities**		Please provide an indicative count on the number of participants for state level workshops, if possible	**This should be decided by the Consulting firm in consultation with States. Ideally it should be designed to cover the broad areas.**
16.		**7.3 -Description of tasks**		Please let us know the extent of flexibility possible to incorporate any suggestions/ inputs from state/ city level stakeholders for a particular indice data collection and calculation of the indices	**As per methodology and TOR.**
17.		**7.3 -Description of tasks**		Is/ will MoHUA convey in advance to all cities of the assessment, methodology, and timelines vide a circular/ email etc or the inception meeting is to be considered as first intimation	**Ministry will send the communications.**
18.		**7.3 (xv) National workshop**		National level workshop costs to be included- participants from 116 cities should travel and stay expenses for participants also be included in the costs?	**Please refer to the TOR.** **Travel/Stay expenses will be be borne by States/Cities.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
19.		**7.3 (xiii)**		With respect to the time limit for initiating and completing the verification we assume this will be concurrently planned or within one month of completion of data collection. Please confirm our assumption	**This is for firm to decide as part of their work plan and methodology.**
20.		**7.7 Core Team**		As per our observation the Content for Minimum Qualifications & Skills for the Team Leader is not legible after the 11th row. Kindly provide with the detailed content for the same.	**Re produced as per RFP.** Qualification - **Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University** **In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects** **Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments**
21.		**7.6 & 7.7 (Team Composition)**		With s to Urban Specialist (Urban Planner/ Urban Economist) under section	**There is no ambiguity. The qualification for the Urban**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				7.6 the requirement is "with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis". But under section 7.7 the requirement is "At least 15 years of experience in the Urban Sector". Please clarify.	**Specialists at Field Teams for 10 years' experience and other qualification is for the Core Team.**
22.		**7.6 - Team Composition**		It is mentioned that each field team per city should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. Please clarify if we will have to provide profiles for 116 Urban Specialists with the specified criteria.	**This is for the firm to decide as part of the work plan and methodology to be submitted.**
23.		**7.5. Timelines & Deliverables**		We would like to request the extend the deadline of submission of Draft City Assessment Report to 15 weeks from start date of contract; to account for training of field staff, data validation of secondary data provided by cities (wherever required). Please let us know if this is possible.	**Time lines as per TOR stand.**
24.		**Section 8 - Conditions of contract**		We have reviewed the contract terms and conditions from legal point of view and would like to include proposed changes/ revisions to the draft contract document.	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				Please let us know to what extent there is scope to consider these suggestions	
25.		**II. General Conditions of the Contract - 41. Mode of billing & payment**		Since the first payment would be released only after inception report can we have relaxation in Bank Guarantee?	**No Bank Guarantee is required as no Advance payment is being made.**
26.		**III. Special Conditions of Contract. Clause: 27.2**		We assume MoUHA will provide the specific documents and type of softwares to be used for this study. Please confirm our assumption	**No software will be provided by the MoHUA.**
27.		**III. Special Conditions of Contract. Clause: 41.2**		Please let us know if we could propose a different invoice terms than proposed in the RFP that are linked to inputs and expenses incurred for each of the phases	**Payment conditions as per RFP stand.**
28.		**III. Special Conditions of Contract**		Since SCC does not mention about Bank Guarantee, we assume that this project does not attract a Bank Guarantee. Please confirm our assumption.	**Already replied at point 25.**
29.		**Form Tech-2**		For Form Tech-2, there is a requirement for a Board of Directors and beneficial ownership. Does the client require proof of this such as certification etc.	**The documentation should be as per Form Tech 2.**
30.		**All Form Tech**		For Form Tech-1, Tech-2 and Tech-6; we assume that there is no need for notarization and/or company letterhead like in the earlier stages. Please confirm our assumption	**As per requirement of RFP please.**
31.		**Financial proposal**		Is there any requirement for providing salary slips etc., as those are confidential and we assume that they are not required Please confirm our assumption	**Already replied at point 2.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
32.		**Form Tech-2 (Consultant's experience)**		As noted in the earlier stages, we can sometimes reveal either the client or the value of the project but contractual clauses mean that we do not list both. Please confirm if client names can be masked, else we will have to provide experiences which involves no contractual obligations from clients in disclosing the project details	**Documents as required under RFP shall be provided please.**
33.	**JLL**	**Clause 7.5**	For Draft City Assessment Report- duration is 12 weeks from the start date of the assignment	As majority of the scope covers data collection and conducting surveys in 116 cities, it will take more time to complete this task. We request you to kindly consider deliverable timeline of Draft Report as 12 weeks from date of approval of Inception Report instead of 12 weeks from date of issue of work order	**Timelines as per TOR Stand**
34.			Date of submission of the proposal	We request for an extension of submission of proposal for another 3 weeks preferably as 18th Jan 2018	**The submission date as per RFP stands please.**
35.		**Clause 7.3**	Data Collection and Field Surveys	Request you to kindly elaborate the sample size to be covered in each city	**Please refer to the methodology available on the website of the Ministry. This should also be part of methodology to be submitted by the bidder.**
36.		**Clause 7.7**	Core team/ Statistician	Master’s Degree in **Management**/ Statistics/Any other with relevant experience shall also be considered	**The qualification and experience as per TOR only.**
37.	**PWC**		PwC has the right experience (both within		**Please refer to section 14.1.1 of Data sheet.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			India & at Global level) and an extensive national level reach to execute the project successfully. We are still keen to substantiate our value proposition by partnering with relevant firm(s) to deliver higher value to the assignment. As per Section 1, Point 8 of the RFP document, we would thus like inform our keenness to explore suitable associate firm(s) as part of our value proposition to MoUHA. Should you have any queries on the same feel free to reach out to me.		
38.	**Deloitte**	**Section 2. Instructions to Consultants and Data Sheet; 3. Conflict of Interest; 3.2; Page #7**	The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract	We are assuming that MoHUA is the client for this assignment and 'Bank' should be replaced by 'MoHUA'.	**This is World Bank funded project, hence the condition stands.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			and/or sanctions by the Bank		
39.		**Data Sheet; 3.c - Conflicting relationships; Page #8**	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.	We request that this clause be made applicable to the core team members being proposed as part of the project. As, given the size and scale of operations of the firms, it may be difficult to confirm / adhere to the clause.	**The clause of Data sheet stands please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
40.		**Section 2. Instructions to Consultants and Data Sheet; Subsection E. Data Sheet Clause 17.4; Page #25**	The Proposals must be submitted online no later than: Date: 27th December, 2017 Time: 15.00 Local Time (3.00 PM)	We request the extension of the submission deadline to at least 3 weeks after the publishing of the responses to the pre-bid queries.	**The time lines defined in RFP stand**
41.		**Section 3. Technical Proposal – Standard Forms FORM TECH-2 (FOR FULL TECHNICAL PROPOSAL ONLY) B - Consultant's Experience; Page #34**	1. List only previous similar assignments successfully completed in the last [.....] years	We are assuming that the citations mentioned in the EoI and the corresponding number of years shall be acceptable	**RFP is self-explanatory.**
42.		**Section 3. Technical Proposal – Standard Forms FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL) A – On the Terms of Reference; Page #36**	{improvements to the Terms of Reference, if any}	We assume that any comments we may have on 'Methodology for Collection and Computation of Liveability Standards in Cities' shall be a part of this sub-section	**The RFP is very clear in this regard.**
43.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of**	Non-Key Experts	Given that most of the non-key experts will be involved in survey activities, we would request that the requirement of providing person-month remuneration	**Please submit proposal as per RFP**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Remuneration; Page #49		rates for this category of resources be waived.	
44.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Consultant's Representation Regarding Costs and Charges (Model Form I); Page #53**	Basic Remuneration Rate per Working Month/Day/Year	We shall provide per month rates assuming 22 days in a month and 8 hours in a day.	**Refer to RFP.**
45.		**Section 7. Terms of Reference** **Sub Section 7.3 Description of Tasks, Point No. i.; Page #60** **Section 7. Terms of Reference** **Sub Section 7.3 Description of Tasks, Point No. xv.; Page #62**	Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.	1. Given the tight timelines of the assignment, conducting state-level workshops separately for each individual state shall be difficult. We propose that region-level workshops having representation from multiple states be considered for this purpose. 2. We assume that for conducting the workshops, sending out invitations to stakeholders and other logistical issues shall be done by MoHUA. The consultant shall be responsible for conducting the technical aspects of the workshops. 3. It is being assumed that the workshop costs will be restricted to event related costs for venue, facilities, food and other related amenities infrastructure and will not include travel or other participant related costs.	**Already replied at point 18.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
46.		**Section 7. Terms of Reference Sub Section 7.3, Point No. iv; Page #61**	Convey the finalized schedule and Plan of Action to cities allowing them to mobilize support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys	We suggest that the 15 days of preparation time be provided from the date of state or region level workshops, and not from the submission of the inception report.	**Timelines given in the RFP stand.**
47.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Draft City Assessment Report 12 weeks from start date as per contract Final City Assessment Report 20 weeks from start date as per contract	We Propose the following: Report Timeline Draft City Assessment Report 16 weeks from start date as per contract Draft of Final City Assessment Report 20 weeks from start date as per contract Final City Assessment Report 24 weeks from start date as per contract	**Timelines given in RFP stand.**
48.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Timelines for subsequent years will be as decided by MoHUA	For budgeting purposes, we are considering the timelines suggested for Year 1 only.	**RFP is very clear.**
49.		**Section 7. Terms of Reference Sub Section 7.6 Team Composition and Qualification Requirement for key Experts, Point c; Page #64**	Field Teams per city: should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from	We propose that the minimum experience required for field team leader be reduced to 5 years.	**The requirements of RFP shall stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis.		
50.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Team Leader	We request that the minimum experience be reduced to at least 15 years of which at least last 10 years must have been for the Urban Sector	**The qualification and experience as per RFP only.**
51.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Urban Management Specialist/ Planning Expert	We request that the minimum experience be reduced to at least 10 years of experience in the Urban Sector	**The qualification and experience as per RFP only.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
52.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Market Research Specialist	1. We request that the minimum qualification requirement be change to Master's Degree in Management/Statistics from a recognized University 2. We request that the minimum experience be reduced to at least 10 years of which at least last 7 years must have been in the field of Market Research	**The qualification and experience as per RFP only.**
53.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Statistician	We would request that the position of Statistician be expanded to include Analytics Expert(s). The proposed qualification for this purpose should also be expanded to include Bachelors in Engineering or Masters in Management, with demonstrated experience in analytics based solutions. The requirement of specific experience in the urban sector may also be waived.	**The qualification and experience as per RFP only.**
54.		**Standard Form of Contract – II. General Conditions of Contract Clause 22. Confidentiality; Page #92**	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of,	We propose below language as last sentence of the paragraph The confidentiality obligations shall survive the termination of this Contract / completion of services for a period of one (1) year	**There cannot be any change in the clause.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			or as a result of, the Services.		
55.		**II. General Conditions of Contract Clause 24. Insurance to be Taken out by the Consultant; Page #92**	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.	While most advisory/consulting organizations would have adequate insurance coverage, these would be guided by the terms and conditions of the insurance companies. Hence, we would request that existing insurance policies be considered under this clause	**There cannot be any change in the clause**
56.		**II. General Conditions of Contract Clause 25. Accounting,**	25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to	The clause may be altered to say that the client can visit the Consultant's project office and audit the relevant documents, as visit to our premises and auditing our system is not acceptable considering the	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Inspection and Auditing; Page #93	inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)	confidential information of other clients and we are bound by Non-Disclosure Agreements.	
57.		**Standard Form of Contract – III. Special Conditions of Contract Clause 23.1; Page #103**	No additional provisions	We request the incorporation of the following clause: "Notwithstanding anything contained in the contract, Client agrees that the Vendor/ Bidder / Consultant shall not be liable to Client, for any losses, claims,	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				damages, liabilities, cost or expenses (“Losses”) of any nature whatsoever, for an aggregate amount in excess of the fee paid under the contract for the services provided under the contract, except where such Losses are finally judicially determined to have arisen primarily from fraud or bad faith of the Vendor/ Bidder / Consultant. In no event shall the Vendor/ Bidder / Consultant, be liable for any consequential (including loss of profit and loss of data), special indirect, incidental, punitive, or exemplary loss, damage, or expense relating to the services provided pursuant to this Contract.”	
58.	**CRISIL**	**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Data collection**: • Kindly clarify how we treat non-availability of data against particular indicators in certain cities/cases (especially small and medium towns). Do we consider data provided by department to be true in all aspects? Kindly clarify.	**As defined in methodology document available on web site**
59.			**Description of Tasks**	**Collection of data related to pollution**: • We understand as per the methodology prescribed by MoHUA that sample tests have to be conducted for air, water and noise pollution to arrive at data required for pollution indices. Pollution data have to be collected throughout the year and have to be averaged for a city to estimate the actual pollution level of the city. This data is	**As defined in methodology document available on web site.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				normally available at the pollution control board/departments of various states/cities. Further, given the time allowed for execution of the scope it would be difficult for selected consultant to conduct test samples and arrive at data, more so because it is a cyclical activity. Additionally it is difficult to preempt which cities will need to do monitoring (in case secondary data of same year is not available) and allocate a budget in the survey. Hence, we request that the selected consultant be allowed to collect only whatever data is available with the pollution control board/departments.	
60.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Sample field survey:** The scope mentions that field survey has to be conducted for statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. Can you kindly clarify for which parameters will these be applicable?	**It should be part of the methodology to be submitted by the Consulting firm.**
61.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Final Output**: What is the the kind of output expected from consultant? Is the consultant expected to submit data for individual city level indicators or we need to also arrive at city wise overall and thematic indices? Kindly clarify the same.	**All tasks as defined under clause 7.3 of the TOR.**
62.		**1Page Number 63; Section 7 – Terms of Reference; Clause 7.5**	**Timelines and Deliverables for Year**	**Extension of timeline for executing scope of the assignment** The time provided for execution is too short (20 weeks) considering the scope of the	**The timelines given in TOR stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				assignment. We request you to extend the time line by at least 2 months (please make total assignment duration 28 weeks) to allow for more time for city survey.	
63.		**Page 89; II-General Conditions of the contract; Clause 19 (c)**	**Cessation of Rights and Obligations**	**Contract clause related to termination:** - Kindly modify the by clause by adding the line highlighted below: "Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit, **for a period of one (1) year from the date of termination of this Contract**", and (iv) any right which a Party may have under the Applicable Law."	**As per RFP**
64.			**Replacement of Key Experts** Page 94; II-General Conditions of the contract; Clause 30.2 **Replacement of Key Experts** Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the	We request you to kindly add situations like resignation or separation from employment as additional situations as well	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			reasonable control of the Consultant, including **but not limited to death or medical incapacity**. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration		
65.		**Page 103; III-Special Conditions of the contract; Clause 23.1**	No additional provisions	Kindly mention the following clause: “"Notwithstanding anything to the contrary, the aggregate maximum liability of the consultant shall in no event exceed the fees paid to the consultant under this Contract."	As per RFP
		Page 104; III-Special Conditions of the contract; Clause 45.1	**Selection of Arbitrators.**	• We request you to modify the clause as follows: 1. “Selection of Arbitrators: Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator who would be mutually appointed by both parties for dispute resolution” Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.” 2. Rules of Procedure: For any dispute between a domestic consultants, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				the same manner as the original arbitrator. 4. Miscellaneous: In any arbitration proceeding hereunder: (a)_proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and • (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.	
		Page Number 104; III-Special Conditions of the Contract	**Payment Schedule**	As the scope of the assignment is primarily survey based and would involve intensive travel in the first two phase to cities/states, we propose the following payment schedule: ➢ On mobilization **Ten Percent (10%)** will be paid ➢ 1st payment: Inception report: **Forty Percent (40%)** will be paid on **submission** of the inception report ➢ Draft City Assessment Report: **Fifty Percent** (**30**%) will be paid on **submission** of Draft Final Report Final City Assessment Report: **Twenty percent (20%)** will be paid on submission of Final Report	As per RFP.

Clarification to the issues raised by the Consulting firms – RFP on Assessment of Liveability Index

Date: 12th December 2017, Venue: 120G, NBO Building, NIRMAN BHAVAN

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
1.	**IDeck**	**Page No. 25 Clause 17.4**	**Data Sheet** The Proposals must be submitted online no later than: Date: 27th December, 2017	Kindly provided 2 weeks extension from the date of issue of pre bid clarification.	**The timelines given in the RFP document stand**
2.		**Page No. 52**	Sample Form: Consultant's Representation Regarding b. Attached True Copes of the latest Pay Slips of Experts Listed.	For any Organization it is not ethically possible to share the Pay Slips of the individuals. Hence requesting you to remove the clause.	**This is a Standard World Bank document.**
3.		**Page No. 61 Clause i**	**Initiation Activities** Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal.	It is practically time consuming activity to conduct workshops at each state level. Can consultant conduct workshops at zonal level (East, West, North and South)?	**As per RFP.**
4.		**Page No. 61 Clause iii**	**Initiation Activities** Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia.	Can Consultant submit combined Inception Report for all 116 Cities?	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
5.		**Page No. 61**	**Data Collection and Field Surveys.**	• What should the common year of reference for data collection in all given sector be? • What if, the year of reference is separate for each indicator within a ULB? • What if, across the same indicator the year of reference is different for each ULB?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
6.		**Page No. 62 Clause XI**	**Data Collection and Field Surveys** Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;	What is the minimum number of feedback (sample size) that has be collected in each city?	**Please refer to the methodology document available on the website of the Ministry.** **This should also be part of methodology to be submitted by the bidder.**
7.		**Page No. 63** **Clause 7.5**	**Timelines and Deliverables for Year 1** **Inception Report**- 8 weeks from start date as per contract **Draft City Assessment Report**- 12 weeks from start date as per contract **Final City Assessment Report**- 20 weeks from start date as per contract	We feel the time duration allocated for each activity are very less. Kindly change project duration as follows. **Inception Report**- 12 weeks from start date as per contract **Draft City Assessment Report**- 28 weeks from start date as per contract **Final City Assessment Report**- 52 weeks from start date as per contract	**Timelines as per RFP Stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
8.		**Page No. 63 Clause 7.5**	**Deliverables and Contents**	Kindly specify the number of copies to be submitted in each delivery stage. RFP demands for separate reports for each city in Inception, Draft City Assessment and Final City Assessment report submission stages. As 116 cities are part of the scope, unless the copies are specified it is difficult to quantify the cost.	**Two hard copies and one Electronic Copy.** **As per RFP.**
9.		**Page No. 65 Clause 7.7**	**Core Team (CV to be evaluated)** **Statistician-**Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	Can the statistician (core team member) hold a PhD degree in Economics (Econometrician by profession) instead of a Master's Degree in Statistics?	**The personnel should have requisite qualification as per RFP.**
10.			General	Can the consortium subcontract some parts of the project work?	**The condition 14.1.1 of Data Sheet Stands.**
11.			General	In case the ULB is unable to provide the data, how long should the Field Assessor wait for?	**To be decided on merit of each case.**
12.			General	What has to be done in case of data gaps (non- availability, not a ULB functions etc.)?	**Please refer to the methodology document available on the web site.** **It should also be part of the methodology to be submitted by the consulting firms.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
13.			General	How does the Ministry assure cooperation from the ULBs? We have previously experienced that the city ULBs require letters from the respective State, instead the Centre, before agreeing to share data. Ministry needs to ensure that the survey teams get both the letters from the Centre and the respective states before going out to the field.	**Ministry will provide support as defined in TOR.**
14.	**IPSOS**	**7.2 (ii) Objective of the assignment**		Please clarify if MoUHA is looking for any specific structure / format like MIS dash board or a micro site or is it only an electronic database/raw data from the 1st round	**Please refer to the TOR.**
15.		**7.3 (i) Description of tasks -Initiation of activities**		Please provide an indicative count on the number of participants for state level workshops, if possible	**This should be decided by the Consulting firm in consultation with States. Ideally it should be designed to cover the broad areas.**
16.		**7.3 -Description of tasks**		Please let us know the extent of flexibility possible to incorporate any suggestions/ inputs from state/ city level stakeholders for a particular indice data collection and calculation of the indices	**As per methodology and TOR.**
17.		**7.3 -Description of tasks**		Is/ will MoHUA convey in advance to all cities of the assessment, methodology, and timelines vide a circular/ email etc or the inception meeting is to be considered as first intimation	**Ministry will send the communications.**
18.		**7.3 (xv) National workshop**		National level workshop costs to be included- participants from 116 cities should travel and stay expenses for participants also be included in the costs?	**Please refer to the TOR.** **Travel/Stay expenses will be be borne by States/Cities.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
19.		**7.3 (xiii)**		With respect to the time limit for initiating and completing the verification we assume this will be concurrently planned or within one month of completion of data collection. Please confirm our assumption	**This is for firm to decide as part of their work plan and methodology.**
20.		**7.7 Core Team**		As per our observation the Content for Minimum Qualifications & Skills for the Team Leader is not legible after the 11th row. Kindly provide with the detailed content for the same.	**Re produced as per RFP.** Qualification - **Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University** **In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects** **Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments**
21.		**7.6 & 7.7 (Team Composition)**		With s to Urban Specialist (Urban Planner/ Urban Economist) under section 7.6 the	**There is no ambiguity. The qualification for the Urban**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				requirement is "with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis". But under section 7.7 the requirement is "At least 15 years of experience in the Urban Sector". Please clarify.	**Specialists at Field Teams for 10 years' experience and other qualification is for the Core Team.**
22.		**7.6 - Team Composition**		It is mentioned that each field team per city should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. Please clarify if we will have to provide profiles for 116 Urban Specialists with the specified criteria.	**This is for the firm to decide as part of the work plan and methodology to be submitted.**
23.		**7.5. Timelines & Deliverables**		We would like to request the extend the deadline of submission of Draft City Assessment Report to 15 weeks from start date of contract; to account for training of field staff, data validation of secondary data provided by cities (wherever required). Please let us know if this is possible.	**Time lines as per TOR stand.**
24.		**Section 8 - Conditions of contract**		We have reviewed the contract terms and conditions from legal point of view and would like to include proposed changes/ revisions to the draft contract document. Please let us know to what extent there is scope to consider these suggestions	**As per RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
25.		**II. General Conditions of the Contract - 41. Mode of billing & payment**		Since the first payment would be released only after inception report can we have relaxation in Bank Guarantee?	**No Bank Guarantee is required as no Advance payment is being made.**
26.		**III. Special Conditions of Contract. Clause: 27.2**		We assume MoUHA will provide the specific documents and type of softwares to be used for this study. Please confirm our assumption	**No software will be provided by the MoHUA.**
27.		**III. Special Conditions of Contract. Clause: 41.2**		Please let us know if we could propose a different invoice terms than proposed in the RFP that are linked to inputs and expenses incurred for each of the phases	**Payment conditions as per RFP stand.**
28.		**III. Special Conditions of Contract**		Since SCC does not mention about Bank Guarantee, we assume that this project does not attract a Bank Guarantee. Please confirm our assumption.	**Already replied at point 25.**
29.		**Form Tech-2**		For Form Tech-2, there is a requirement for a Board of Directors and beneficial ownership. Does the client require proof of this such as certification etc.	**The documentation should be as per Form Tech 2.**
30.		**All Form Tech**		For Form Tech-1, Tech-2 and Tech-6; we assume that there is no need for notarization and/or company letterhead like in the earlier stages. Please confirm our assumption	**As per requirement of RFP please.**
31.		**Financial proposal**		Is there any requirement for providing salary slips etc., as those are confidential and we assume that they are not required Please confirm our assumption	**Already replied at point 2.**
32.		**Form Tech-2 (Consultant's experience)**		As noted in the earlier stages, we can sometimes reveal either the client or the value of the project but contractual clauses mean that we do not list both. Please confirm if	**Documents as required under RFP shall be provided please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				client names can be masked, else we will have to provide experiences which involves no contractual obligations from clients in disclosing the project details	
33.	**JLL**	**Clause 7.5**	For Draft City Assessment Report- duration is 12 weeks from the start date of the assignment	As majority of the scope covers data collection and conducting surveys in 116 cities, it will take more time to complete this task. We request you to kindly consider deliverable timeline of Draft Report as 12 weeks from date of approval of Inception Report instead of 12 weeks from date of issue of work order	**Timelines as per TOR Stand**
34.			Date of submission of the proposal	We request for an extension of submission of proposal for another 3 weeks preferably as 18thJan 2018	**The submission date as per RFP stands please.**
35.		**Clause 7.3**	Data Collection and Field Surveys	Request you to kindly elaborate the sample size to be covered in each city	**Please refer to the methodology available on the website of the Ministry. This should also be part of methodology to be submitted by the bidder.**
36.		**Clause 7.7**	Core team/ Statistician	Master’s Degree in **Management**/ Statistics/Any other with relevant experience shall also be considered	**The qualification and experience as per TOR only.**
37.	**PWC**			PwC has the right experience (both within India & at Global level) and an extensive national level reach to execute the project successfully. We are still keen to substantiate our value proposition by partnering with relevant firm(s) to deliver higher value to the assignment. As per Section 1, Point 8 of the RFP document, we would thus like inform	**Please refer to section 14.1.1 of Data sheet.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				our keenness to explore suitable associate firm(s) as part of our value proposition to MoUHA. Should you have any queries on the same feel free to reach out to me.	
38.	**Deloitte**	**Section 2. Instructions to Consultants and Data Sheet; 3. Conflict of Interest; 3.2; Page #7**	The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank	We are assuming that MoHUA is the client for this assignment and 'Bank' should be replaced by 'MoHUA'.	**This is World Bank funded project, hence the condition stands.**
39.		**Data Sheet; 3.c - Conflicting relationships; Page #8**	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing)	We request that this clause be made applicable to the core team members being proposed as part of the project. As, given the size and scale of operations of the firms, it may be difficult to confirm / adhere to the clause.	**The clause of Data sheet stands please.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.		
40.		**Section 2. Instructions to Consultants and Data Sheet; Subsection E. Data Sheet Clause 17.4; Page #25**	The Proposals must be submitted online no later than: Date: 27th December, 2017 Time: 15.00 Local Time (3.00 PM)	We request the extension of the submission deadline to at least 3 weeks after the publishing of the responses to the pre-bid queries.	**The time lines defined in RFP stand**
41.		**Section 3. Technical Proposal – Standard Forms** **FORM TECH-2 (FOR FULL**	1. List only previous similar assignments successfully completed in the last [.....] years	We are assuming that the citations mentioned in the EoI and the corresponding number of years shall be acceptable	**RFP is self-explanatory.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		TECHNICAL PROPOSAL ONLY) B - Consultant's Experience; Page #34			
42.		**Section 3. Technical Proposal – Standard Forms FORM TECH-3 (FOR FULL TECHNICAL PROPOSAL) A – On the Terms of Reference; Page #36**	{improvements to the Terms of Reference, if any}	We assume that any comments we may have on 'Methodology for Collection and Computation of Liveability Standards in Cities' shall be a part of this sub-section	**The RFP is very clear in this regard.**
43.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Page #49**	Non-Key Experts	Given that most of the non-key experts will be involved in survey activities, we would request that the requirement of providing person-month remuneration rates for this category of resources be waived.	**Please submit proposal as per RFP**
44.		**Section 4. Financial Proposal – Standard Forms, Form FIN-3 Breakdown of Remuneration; Consultant's Representation Regarding Costs and Charges (Model Form I); Page #53**	Basic Remuneration Rate per Working Month/Day/Year	We shall provide per month rates assuming 22 days in a month and 8 hours in a day.	**Refer to RFP.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
45.		**Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. i.; Page #60 Section 7. Terms of Reference Sub Section 7.3 Description of Tasks, Point No. xv.; Page #62**	Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.	1. Given the tight timelines of the assignment, conducting state-level workshops separately for each individual state shall be difficult. We propose that region-level workshops having representation from multiple states be considered for this purpose. 2. We assume that for conducting the workshops, sending out invitations to stakeholders and other logistical issues shall be done by MoHUA. The consultant shall be responsible for conducting the technical aspects of the workshops. 3. It is being assumed that the workshop costs will be restricted to event related costs for venue, facilities, food and other related amenities infrastructure and will not include travel or other participant related costs.	**Already replied at point 18.**
46.		**Section 7. Terms of Reference Sub Section 7.3, Point No. iv; Page #61**	Convey the finalized schedule and Plan of Action to cities allowing them to mobilize support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys	We suggest that the 15 days of preparation time be provided from the date of state or region level workshops, and not from the submission of the inception report.	**Timelines given in the RFP stand.**
47.		**Section 7. Terms of Reference Sub section 7.5 Timelines and**	Draft City Assessment Report 12 weeks from start date as per contract	We Propose the following: Report Timeline Draft City Assessment Report 16 weeks from start date as per contract	**Timelines given in RFP stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Deliverables for Year 1*; Page #63	Final City Assessment Report 20 weeks from start date as per contract	Draft of Final City Assessment Report 20 weeks from start date as per contract Final City Assessment Report 24 weeks from start date as per contract	
48.		**Section 7. Terms of Reference Sub section 7.5 Timelines and Deliverables for Year 1*; Page #63**	Timelines for subsequent years will be as decided by MoHUA	For budgeting purposes, we are considering the timelines suggested for Year 1 only.	**Scope of the RFP is for the Year 1 only**
49.		**Section 7. Terms of Reference Sub Section 7.6 Team Composition and Qualification Requirement for key Experts, Point c; Page #64**	Field Teams per city: should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data	We propose that the minimum experience required for field team leader be reduced to 5 years.	**The requirements of RFP shall stand.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis.		
50.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Team Leader	We request that the minimum experience be reduced to at least 15 years of which at least last 10 years must have been for the Urban Sector	**The qualification and experience as per RFP only.**
51.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Urban Management Specialist/ Planning Expert	We request that the minimum experience be reduced to at least 10 years of experience in the Urban Sector	**The qualification and experience as per RFP only.**
52.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Market Research Specialist	1. We request that the minimum qualification requirement be change to Master’s Degree in Management/Statistics from a recognized University 2. We request that the minimum experience be reduced to at least 10 years of which at least last 7 years must have been in the field of Market Research	**The qualification and experience as per RFP only.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
53.		**Section 7. Terms of Reference Sub section 7.7 Core Team (CV to be evaluated); Page #65**	Statistician	We would request that the position of Statistician be expanded to include Analytics Expert(s). The proposed qualification for this purpose should also be expanded to include Bachelors in Engineering or Masters in Management, with demonstrated experience in analytics based solutions. The requirement of specific experience in the urban sector may also be waived.	**The qualification and experience as per RFP only.**
54.		**Standard Form of Contract – II. General Conditions of Contract Clause 22. Confidentiality; Page #92**	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.	We propose below language as last sentence of the paragraph The confidentiality obligations shall survive the termination of this Contract / completion of services for a period of one (1) year	**There cannot be any change in the clause.**
55.		**II. General Conditions of Contract Clause 24. Insurance to be Taken out by the**	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as	While most advisory/consulting organizations would have adequate insurance coverage, these would be guided by the terms and conditions of the insurance companies. Hence, we would request that existing insurance policies be considered under this clause	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
		Consultant; Page #92	the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.		
56.		**II. General Conditions of Contract Clause 25. Accounting, Inspection and Auditing; Page #93**	25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the	The clause may be altered to say that the client can visit the Consultant's project office and audit the relevant documents, as visit to our premises and auditing our system is not acceptable considering the confidential information of other clients and we are bound by Non-Disclosure Agreements.	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)		
57.		**Standard Form of Contract – III. Special Conditions of Contract Clause 23.1; Page #103**	No additional provisions	We request the incorporation of the following clause: "Notwithstanding anything contained in the contract, Client agrees that the Vendor/ Bidder / Consultant shall not be liable to Client, for any losses, claims, damages, liabilities, cost or expenses ("Losses") of any	**There cannot be any change in the clause**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				nature whatsoever, for an aggregate amount in excess of the fee paid under the contract for the services provided under the contract, except where such Losses are finally judicially determined to have arisen primarily from fraud or bad faith of the Vendor/ Bidder / Consultant. In no event shall the Vendor/ Bidder / Consultant, be liable for any consequential (including loss of profit and loss of data), special indirect, incidental, punitive, or exemplary loss, damage, or expense relating to the services provided pursuant to this Contract."	
58.	**CRISIL**	**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Data collection**: • Kindly clarify how we treat non-availability of data against particular indicators in certain cities/cases (especially small and medium towns). Do we consider data provided by department to be true in all aspects? Kindly clarify.	**As defined in methodology document available on web site**
59.			**Description of Tasks**	**Collection of data related to pollution**: • We understand as per the methodology prescribed by MoHUA that sample tests have to be conducted for air, water and noise pollution to arrive at data required for pollution indices. Pollution data have to be collected throughout the year and have to be averaged for a city to estimate the actual pollution level of the city. This data is normally available at the pollution control board/departments of various states/cities.	**As defined in methodology document available on web site.**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				Further, given the time allowed for execution of the scope it would be difficult for selected consultant to conduct test samples and arrive at data, more so because it is a cyclical activity. Additionally it is difficult to preempt which cities will need to do monitoring (in case secondary data of same year is not available) and allocate a budget in the survey. Hence, we request that the selected consultant be allowed to collect only whatever data is available with the pollution control board/departments.	
60.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Sample field survey:** The scope mentions that field survey has to be conducted for statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. Can you kindly clarify for which parameters will these be applicable?	**It should be part of the methodology to be submitted by the Consulting firm.**
61.		**Page Number 60-62; Section 7 – Terms of Reference; Clause 7.3**	**Description of Tasks**	**Final Output**: What is the the kind of output expected from consultant? Is the consultant expected to submit data for individual city level indicators or we need to also arrive at city wise overall and thematic indices? Kindly clarify the same.	**All tasks as defined under clause 7.3 of the TOR.**
62.		**1Page Number 63; Section 7 – Terms of Reference; Clause 7.5**	**Timelines and Deliverables for Year**	**Extension of timeline for executing scope of the assignment** The time provided for execution is too short (20 weeks) considering the scope of the assignment. We request you to extend the time line by at least 2 months (please make total assignment duration 28 weeks) to allow for more time for city survey.	**The timelines given in TOR stand**

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
63.		**Page 89; II-General Conditions of the contract; Clause 19 (c)**	**Cessation of Rights and Obligations**	**Contract clause related to termination:** • Kindly modify the by clause by adding the line highlighted below: "Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit, **for a period of one (1) year from the date of termination of this Contract**", and (iv) any right which a Party may have under the Applicable Law."	**As per RFP**
64.			**Replacement of Key Experts** Page 94; II-General Conditions of the contract; Clause 30.2 **Replacement of Key Experts** Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including **but not limited to death or medical incapacity**. In	We request you to kindly add situations like resignation or separation from employment as additional situations as well	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
			such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration		
65.		**Page 103; III-Special Conditions of the contract; Clause 23.1**	No additional provisions	Kindly mention the following clause: “"Notwithstanding anything to the contrary, the aggregate maximum liability of the consultant shall in no event exceed the fees paid to the consultant under this Contract."	As per RFP
		Page 104; III-Special Conditions of the contract; Clause 45.1	**Selection of Arbitrators.**	• We request you to modify the clause as follows: 1. “Selection of Arbitrators: Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator who would be mutually appointed by both parties for dispute resolution” Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.” 2. Rules of Procedure: For any dispute between a domestic consultants, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Miscellaneous: In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue.	As per RFP.

Sl No	Bidder	Page No & Clause	RFP Terms	Clarifications Sought	Clarifications by MoHUA
				(b) the English language shall be the official language for all purposes; and • (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.	
		Page Number 104; III-Special Conditions of the Contract	**Payment Schedule**	As the scope of the assignment is primarily survey based and would involve intensive travel in the first two phase to cities/states, we propose the following payment schedule: ➢ On mobilization **Ten Percent (10%)** will be paid ➢ 1st payment: Inception report: **Forty Percent (40%)** will be paid on **submission** of the inception report ➢ Draft City Assessment Report: **Fifty Percent** (**30**%) will be paid on **submission** of Draft Final Report Final City Assessment Report: **Twenty percent (20%)** will be paid on submission of Final Report	As per RFP.

Minutes of the Meeting of Procurement Committee for evaluation of technical proposals for Assessment of Liveability Indices for 116 cities in India

The meetings of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for evaluation of technical proposals of firms for **Assessment of Liveability Indices for 116 cities in India** was held on 3rd January and 5th January, 2018 in the chamber of Economic Advisor, (room No. 232-C), Nirman Bhawan, New Delhi for the evaluation of the technical proposals.

The following were present:

- Mr. Sudhir Kumar Tiwari, Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD
- Mr. Sajeesh Kumar N., Director (SC)
- Mr Shiv Pal Singh, Director (AMRUT) only on 3rd January, 2018.
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM)
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Mr Amit Gupta, PMU, CBUD

The Final RFP with shortlist was forwarded to World Bank on 30th October, 2017 whose 'No Objection' was received on 24th November, 2017. The RFP was issued to shortlisted consultants on 27th November, 2017. A pre proposal meeting was held on 12th December, 2017 and minutes were issued on 14th December, 2018. No addendum was issued. The last date and time of submission of the proposal was 15.00 hours on 27th December, 2017. Till last date and time, following proposals were received from following shortlisted consultants:

1	Ipsos Public Affairs	• Athena Infonomics India Pvt Ltd. • The Economic Group Limited
2	PricewaterhouseCoopers	
3	Jones Lang LaSalle	
4	Delloite Touche Tohmatsu India LLP	• Insight Development Group Pvt Ltd • Stesalit Systems Limited • Kadence International Pvt Ltd • Operations Research Guild (ORG) India Private Limited
5	Infrastructure Development Corporation (Karnataka) Ltd (iDecK)	• Institute for Social and Economic Change (ISEC) • Public Affairs Centre (PAC) • Sigma Research & Consulting Pvt. Ltd • Consortium Partner 4 - Nielsen
6	CRISIL Risk and Infrastructure Solutions Limited, INDIA	

The technical proposals received till deadline were opened by the Procurement Committee on 28th December, 2017. The Financial Proposals were securely stored. It was noted that as per clause 5.2 of RFP, "*The Evaluation Committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet*". The evaluation criteria indicated at Data sheet of RFP is as follows:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –30 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	40

Position	**Total**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	**40**

The Committee evaluated the Technical Proposals on the basis of firm's responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and rating system as specified in the RFP. The Summary based on average score for shortlisted firms, which submitted the proposal, is at **Annexure 1**. The evaluation sheet of individual committee members is at **Annexure 2**.

As per the evaluation, the technical scores of each firm are as follows:

			Name of Bidder					
			Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6
			IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
		Max.Marks	Obtained Marks					
Criteria 1	SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT	10	10	6	2	2	10	10
Criteria 2	ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR							
a.	Approach & Methodology							
	Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
	Initiation Activites	5	4.8	3.0	3.0	3.0	3.5	2.0
	Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
		30	**28.3**	**17.0**	**13.0**	**15.0**	**20.0**	**15.5**
b.	Work Plan	10	9.5	7.0	5.0	7.0	7.0	6.0
c.	Organisation & Staffing	10	9.3	8.0	5.0	5.0	8.0	6.0
Criteria 3	KEY EXPERTS *							
	Positions							
	Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
	Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
	Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
	Statistician	8	8	7.0	3.0	7.3	5.7	7.3
		40	**36.6**	**28.0**	**17.0**	**31.5**	**32.6**	**24.6**
	Grand Total (Criteria 1+Criteria2+Criteria3)	**100**	**93.7**	**66.0**	**42.0**	**60.5**	**77.6**	**62.1**

As per RFP, minimum technical score required to qualify and eligible for opening of financial proposals is 75 out of maximum of 100 points. As such financial proposal of following firms is recommended to be opened:

1. M/s IPSOS Public Affairs in consortia with Athena Infonomics India Pvt Ltd. and The Economic Group Limited
2. Delloite Touche Tohmatsu India LLP in consortia with Insight Development Group,Pvt Ltd, Stesalit Systems Limited, Kadence International Pvt Ltd, Operations Research Guild (ORG) India Private Limited

Ms. Vasavi Narla,
PMU (CBUD)
(member 6)

Mr. Amit Gupta,
PMU, CBUD
(member 7)

Rakesh Gujral,
PMU,CBUD
(member 5)

Mr. Yogendra Singh Awana,
Dy, Secretary(NULM)
(member 1)

Mr. Sajeesh Kumar N
Director (SC)
(member 3)

Mr. Shailendra Vikram Singh
Director (IFD)
(member 4)

Mr. Sudhir Kumar Tiwari,
Economic Advisor
(member 2)

Selection of Bidders for Assessment of Liveability Index of 116 Citiesof India

Final Summary Sheet of Technical Evaluation

				Name of Bidder					
				Firm 1	**Firm 2**	**Firm 3**	**Firm 4**	**Firm 5**	**Firm 6**
				IPSOS	PWC	JLL	CRISIL	Deloitte	IDecK
			Max.Marks	Obtained Marks					
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	6	2	2	10	10
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**							
	a.	**Approach & Methodology**							
		Understanding of the objective and project appreciation	5	4.5	3.0	2.0	3.0	3.5	3.5
		Initiation Activites	5	4.8	3.0	3.0	3.0	3.5	2.0
		Data Collection field surveys and analysis	20	19.0	11.0	8.0	9.0	13.0	10.0
			30	**28.3**	**17.0**	**13.0**	**15.0**	**20.0**	**15.5**
	b.	**Work Plan**	**10**	**9.5**	**7.0**	**5.0**	**7.0**	**7.0**	**6.0**
	c.	**Organisation & Staffing**	**10**	**9.3**	**8.0**	**5.0**	**5.0**	**8.0**	**6.0**
C	Criteria 3	**KEY EXPERTS ***							
		Positions							
		Team Leader	16	14.6	8.6	5.4	10.2	13.9	5
		Urban Management Specialist/Planning Expert	8	6.8	6.8	1.6	6.4	5.8	6
		Market Research Specialist	8	7.2	5.6	7.0	7.6	7.2	6.3
		Statistician	8	8	7.0	3.0	7.3	5.7	7.3
			40	**36.6**	**28.0**	**17.0**	**31.5**	**32.6**	**24.6**
		Grand Total (Criteria 1+Criteria2+Criteria3)	**100**	**93.7**	**66.0**	**42.0**	**60.5**	**77.6**	**62.1**

*Detail evaluation sheet of each key expert is enclosed saperately

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

5/1/18
Sajeesh Kumar .N
(Member 3)

Evaluation of Technical Proposal of IPSOS
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by Mem 1	Marks given by Mem 2	Marks given by Mem 3	Marks given by Mem 4	Marks given by Mem 5	Marks given by Mem 6	Marks given by Mem 7	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	4.2	4.8	4.7	4.3	4.5	4.8	4.2	**4.5**
		Initiation Activites	5	4.6	4.9	4.5	4.7	4.9	4.9	4.9	**4.8**
		Data Collection field surveys and analysis	20	19.0	19.5	18.0	19.5	19.0	19.0	19.0	**19.0**
			30	**27.8**	**29.2**	**27.2**	**28.5**	**28.4**	**28.7**	**28.1**	**28.3**
	b.	**Work Plan**	**10**	**9.0**	**10.0**	**9.5**	**10.0**	**9.0**	**9.5**	**9.5**	**9.5**
	c.	**Organisation & Staffing***	**10**	**9.5**	**9.0**	**9.5**	**9.5**	**9.5**	**9.0**	**9.0**	**9.3**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	14.6	14.6	14.6	14.6	14.6	14.6	14.6	**14.6**
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	**6.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	8	8	8	8	8	8	8	**8.0**
			40	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**	**36.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**92.9** ✓	**94.8** ✓	**92.8** ✓	**94.6**	**93.5** ✓	**93.8** ✓	**93.2** ✓	**93.7** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

(SK Kumar)

5/01/18
Sajeesh Kumar .N
(Member: 3)

Laseri

Evaluation of Technical Proposal of -PWC
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	6	6	6	6	6	6	6	6
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	2.5	3.0	2.5	2.5	**3.0**
		Initiation Activites	5	2.5	3.0	4.0	3.0	3.5	2.5	2.5	**3.0**
		Data Collection field surveys and analysis	20	10.0	12.0	10.0	12.0	10.0	12.0	11.0	**11.0**
			30	**15.5**	**19.0**	**17.5**	**17.5**	**16.5**	**17.0**	**16.0**	**17.0**
	b.	**Work Plan**	**10**	7.0	7.5	6.0	6.5	8.0	6.5	7.5	**7.0**
	c.	**Organisation & Staffing***	**10**	9.0	7.0	8.0	7.0	9.0	9.0	7.0	**8.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	8.6	8.6	8.6	8.6	8.6	8.6	8.6	**8.6**
		Urban Management Specialist/Planning Expert	8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	**6.8**
		Market Research Specialist	8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	**5.6**
		Statistician	8	7	7	7	7	7	7	7	**7.0**
			40	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28.0**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**65.5** ✓	**67.5** ✓	**65.5** ✓	**65** ✓	**67.5** ✓	**66.5** ✓	**64.5** ✓	**66.0** ✓

Member1 Member2 Member3 Member4 Member5 Member6 Member7

5/01/18

Sajesh Kumar N
(Member: 3)

05.01.19
S.AWANA

Evaluation of Technical Proposal of - JLL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	2	2	2	2	2	2	2	**2**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.0	2.0	2.0	2.0	2.0	1.5	**2.0**
		Initiation Activites	5	2.0	3.0	3.0	3.5	2.5	3.5	3.5	**3.0**
		Data Collection field surveys and analysis	20	5.0	10.0	5.0	10.0	10.0	8.0	8.0	**8.0**
			30	**9.5**	**15.0**	**10.0**	**15.5**	**14.5**	**13.5**	**13.0**	**13.0**
	b.	**Work Plan**	**10**	**6.0**	**6.0**	**4.0**	**5.0**	**4.0**	**4.0**	**6.0**	**5.0**
	c.	**Organisation & Staffing***	**10**	**4.0**	**6.0**	**6.0**	**6.0**	**5.0**	**4.0**	**4.0**	**5.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5.4	5.4	5.4	5.4	5.4	5.4	5.4	**5.4**
		Urban Management Specialist/Planning Expert	8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	**1.6**
		Market Research Specialist	8	7	7	7	7	7	7	7	**7.0**
		Statistician	8	3	3	3	3	3	3	3	**3.0**
			40	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17.0**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**38.5** ✓	**46** ✓	**39** ✓	**45.5** ✓	**42.5** ✓	**40.5** ✓	**42** ✓	**42.0** ✓

Member1 Member2 Member3 Member4 Member5 Member6 Member7

Imran
05.01.18
(Y.S. AWANA)

Sajeesh
5/01/18
Sajeesh Kumar N
(Member.3)

Evaluation of Technical Proposal of - CRISIL
Average of Marks given by 7 Evaluation Committe Members

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	2	2	2	2	2	2	2	**2**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	2.5	2.5	3.0	4.0	3.0	2.5	3.5	**3.0**
		Initiation Activites	5	3.0	2.5	3.5	3.5	3.0	2.5	3.0	**3.0**
		Data Collection field surveys and analysis	20	10.0	10.0	8.0	10.0	7.0	9.0	9.0	**9.0**
			30	**15.5**	**15.0**	**14.5**	**17.5**	**13.0**	**14.0**	**15.5**	**15.0**
	b.	**Work Plan**	**10**	**8.0**	**6.0**	**7.0**	**5.0**	**8.0**	**8.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**4.0**	**5.0**	**6.0**	**5.0**	**6.0**	**4.0**	**5.0**	**5.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	10.2	10.2	10.2	10.2	10.2	10.2	10.2	**10.2**
		Urban Management Specialist/Planning Expert	8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	**6.4**
		Market Research Specialist	8	7.6	7.6	7.6	7.6	7.6	7.6	7.6	**7.6**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**	**31.5**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**61**	**59.5** ✓	**61** ✓	**61**	**60.5**	**59.5**	**61**	**60.5**

Signature

Member1

05.07.18
(Y.S.AWANA)

Member2

Sajeesh 5/07/18

Member3

Sajeesh kumar.N
(Member 3)

Member4

Member5

Member6

Member7

Evaluation of Technical Proposal of - Deloitte
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : Deloitte

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.5	4.5	3.5	3.0	3.0	**3.5**
		Initiation Activites	5	4.0	3.0	3.0	4.5	3.5	3.0	3.5	**3.5**
		Data Collection field surveys and analysis	20	10.0	13.0	14.0	14.0	10.0	15.0	15.0	**13.0**
			30	**17.0**	**20.0**	**20.5**	**23.0**	**17.0**	**21.0**	**21.5**	**20.0**
	b.	**Work Plan**	**10**	**8.0**	**8.0**	**6.0**	**7.0**	**6.0**	**7.0**	**7.0**	**7.0**
	c.	**Organisation & Staffing***	**10**	**8.0**	**9.0**	**8.0**	**8.0**	**7.0**	**9.0**	**7.0**	**8.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	13.9	13.9	13.9	13.9	13.9	13.9	13.9	**13.9**
		Urban Management Specialist/Planning Expert	8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	**5.8**
		Market Research Specialist	8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	**7.2**
		Statistician	8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	**5.7**
			40	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**	**32.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**75.6** ✓	**79.6** ✓	**77.1**	**80.6** ✓	**72.6** ✓	**79.6** ✓	**78.1**	**77.6** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

5/1/18

05.01.18
(Y.S.AWANA)

Sajush kumar.N.I
(Member 3).

Evaluation of Technical Proposal of - IDECK ✓
Average of Marks given by 7 Evaluation Committe Members

Name of Consultant : IDECK ✓

			Max. Marks	Marks given by **Mem 1**	Marks given by **Mem 2**	Marks given by **Mem 3**	Marks given by **Mem 4**	Marks given by **Mem 5**	Marks given by **Mem 6**	Marks given by **Mem 7**	**Avg. Marks Obtained**
A	Criteria 1	**SPECIFIC EXPERIENCE OF THE CONSULTANT (as a firm) RELATED TO THE ASSIGNMENT**	**10**	10	10	10	10	10	10	10	**10**
B	Criteria 2	**ADEQUACY AND QUALITY OF THE PROPOSED METHODOLOGY AND WORK PLAN IN RESPONDING TO THE TOR**									
	a.	**Approach & Methodology**									
		Understanding of the objective and project appreciation	5	3.0	4.0	3.0	3.0	3.5	4.0	4.0	**3.5**
		Initiation Activites	5	2.0	2.0	2.0	2.0	1.5	2.0	2.5	**2.0**
		Data Collection field surveys and analysis	20	10.0	9.0	12.0	9.0	12.0	10.0	8.0	**10.0**
			30	**15.0**	**15.0**	**17.0**	**14.0**	**17.0**	**16.0**	**14.5**	**15.5**
	b.	**Work Plan**	**10**	**6.0**	**5.0**	**5.0**	**7.0**	**7.0**	**6.0**	**6.0**	**6.0**
	c.	**Organisation & Staffing***	**10**	**7.0**	**7.0**	**5.0**	**5.0**	**6.0**	**7.0**	**5.0**	**6.0**
C	Criteria 3	**KEY EXPERTS**									
		Positions									
		Team Leader	16	5	5	5	5	5	5	5	**5.0**
		Urban Management Specialist/Planning Expert	8	6	6	6	6	6	6	6	**6.0**
		Market Research Specialist	8	6.3	6.3	6.3	6.3	6.3	6.3	6.3	**6.3**
		Statistician	8	7.3	7.3	7.3	7.3	7.3	7.3	7.3	**7.3**
			40	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**	**24.6**
		Total (Criteria 1+Criteria2+Criteria3)	**100**	**62.6** ✓	**61.6** ✓	**61.6** ✓	**60.6** ✓	**64.6** ✓	**63.6** ✓	**60.1** ✓	**62.1** ✓

Signature

Member1 Member2 Member3 Member4 Member5 Member6 Member7

05.01.18
(Y.S.AWANA)

5/01/18

Sajush Kumar.N
(Member 3)

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

No Objection to Evaluation of Technical Proposals submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

---

STEP Admin <noreply@worldbankgroup.org> Fri, Jan 12, 2018 at 8:54 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "vsarda@worldbank.org" <vsarda@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Technical Evaluation Report for Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the Technical Evaluation Report for the above-mentioned consulting services, submitted to the Bank on 2018/01/09. Based on the information provided, including that sent by email on January 13, 2018 (as per format) the Bank has no objection to the outcome of the evaluation as follows:

Name of Consultant/Firm	Country	Points
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD STESALIT SYSTEMS LIMITED KADENCE INTERNATIONAL PVT. LTD. OPERATIONS RESEARCH GUILD INDIA PVT. LTD	India India India India India	77.60
PRICEWATERHOUSECOOPERS INDIA PRIVATE LIMITED	India	66.00
CRISIL RISK AND INFRASTRUCTURE SOLUTIONS LTD., (INDIA)	India	60.50
JONES LANG LASALLE PROPERTY CONSULTANTS	India	42.00
M/S INFRASTRUCTURE DEVELOPMENT CORPORATION (KARNATAKA) LTD., BANGALORE (IDECK) NIELSON(INDIA) PRIVATE LIMITED PUBLIC AFFAIR CENTRE (PAC) INSTITUTE OF SOCIAL AND ECONOMIC CHANGE (ISEC)	India India India India	62.10

SIGMA RESEARCH AND CONSULTING PRIVATE LIMITED	India	
IPSOS RESEARCH PRIVATE LIMITED ATENA INFONOMICS INDIA PRIVATE LIMTED THE ECONOMIST GROUP LIMITED	India India United Kingdom	93.70

Please inform those consultants that have received the minimum passing technical score of the date when financial proposals will be opened. Please ensure you leave sufficient time (at least 7 days) for those firms to make necessary arrangement to attend should they wish. The opening of financial proposals should be made in public.

Please also inform those consultants that failed to achieve the minimum passing technical score of their scores and that their financial proposals will be returned to them unopened after signature of the contract.

We note that there is a significant gap between the two technically qualified firms which is mainly on Approach and methodology scoring. Both qualified firms have issues with reliability of secondary data and for Deloitte even the primary survey is very restricted. This weaknesses could be resolved at the negotiation without any cost implications or quality of deliverables. Subject to this, the evaluation is cleared.

We look forward to receiving the Combined Technical and Financial Evaluation a draft initialed negotiated contract for our review and no objection in due course.

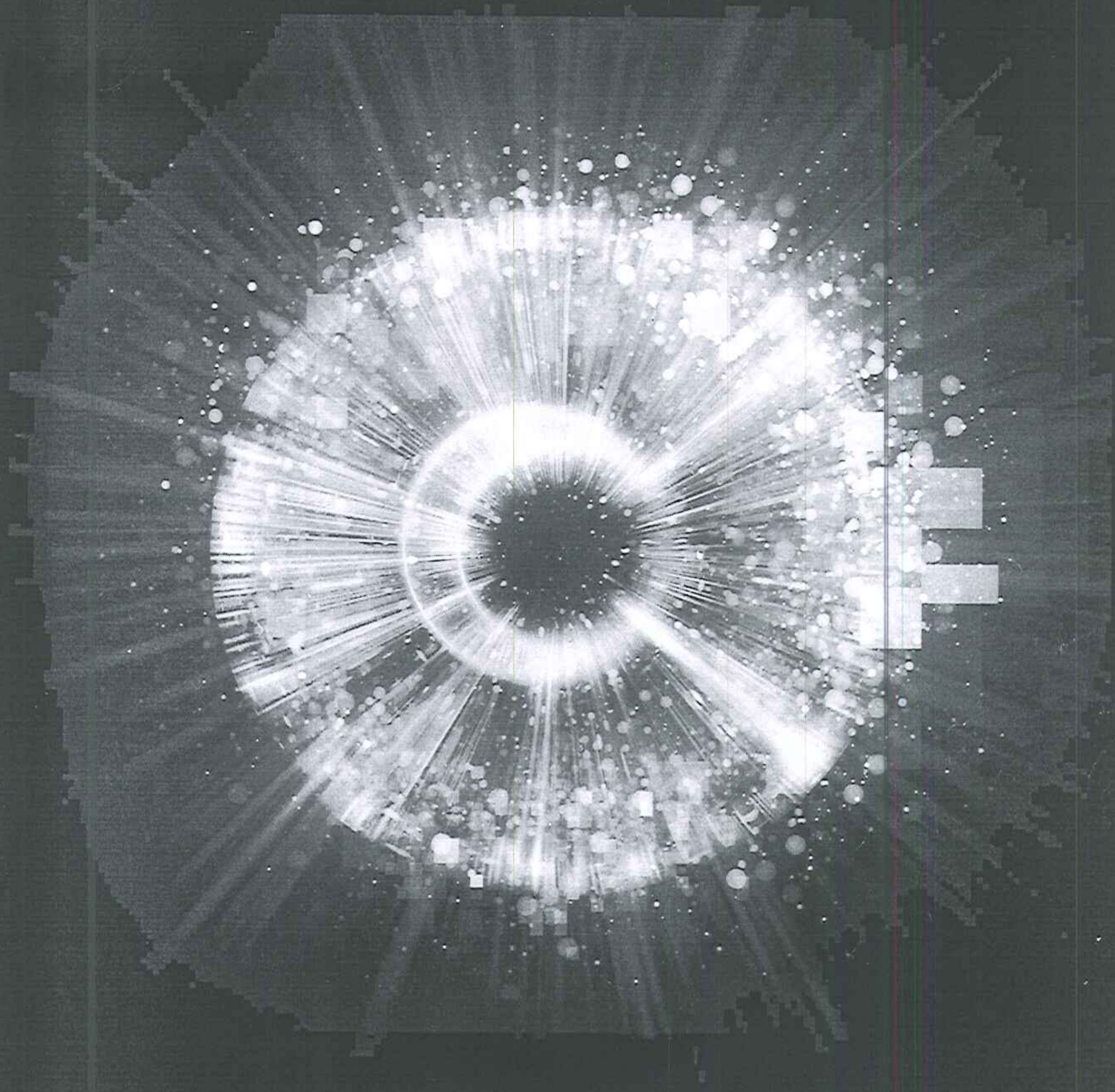
Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Deloitte.



Assessment of Liveability Indices for 116 cities in India
Ministry of Housing and Urban Affairs (MoHUA)

RFP No. E3136811

Part 2: Financial proposal
Private and confidential
December 2017

15.01.18

Umang

15/01/2018

Meghna Aggarwal
(Deloitte)

Introduction

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FORM FIN-3: Breakdown of Remuneration 4
FORM FIN-4: Breakdown of Reimbursable expenses 5

Umang

Meghna Aggarwal

Form FIN-1: Financial Proposal Submission form

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Meghna Aggarwal (Deloitte)

Anindya Mallick

Umang

Deloitte.

Deloitte Touche Tohmatsu
India LLP
7th Floor, Building 10, Tower B
DLF Cyber City Complex
DLF City, Phase II
Gurgaon-122002
Haryana
India
Tel.: +91 (124) 6792000
Fax: +91 (124) 6792012

Gurgaon, 27th December 2017

To: G, Vijay Kumar,
Under Secretary to the Government of India,
Room No. 202C, Nirman Bhavan, New Delhi.
Phone numer: +91 (11) 2306 3217

Dear Sirs:

We, the undersigned, offer to provide the consulting services for "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India", in accordance with your Request for Proposal dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for the amount of Rupees Thirteen Crores Forty Lakhs Five Hundred and Forty Nine (INR 13,40,00,549), excluding all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is Rupees Two Crores Forty One Lakhs Twenty Thousand and Ninety Nine (INR 2,41,20,099) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Anindya Mallick

Authorized Signature {In full and initials}:

Name and Title of Signatory: **Anindya Mallick, Partner, Deloitte Touche Tohmatsu India LLP (DTTI LLP)**

In the capacity of Authorized Signatory

Address: DLF Cyber City Complex,
Tower B, DLF City Phase II,
7th Floor, Building 10,
Gurgaon (New Delhi) 122 002

E-mail: anmallick@deloitte.com

Rajesh

15.01.18

Umang

Meghna Aggarwal (Deloitte)

FORM FIN-2: Summary of costs

FORM FIN-2: Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
Including:	
(1) Remuneration	5,68,05,293
(2) Reimbursables	7,71,95,256
Total Cost of the Financial Proposal:	**13,40,00,549**
Indirect Local Tax Estimates- to be discussed and finalized at the negotiation if the Contract is awarded	
GST (@18%)	2,41,20,099
Total Estimate for Indirect Local Tax	2,41,20,099

15.01.18

Anindya Mallick

Umang

Meghna Aggarwal

2017 Deloitte Touche Tohmatsu India LLP

FORM FIN-3: Breakdown of Remuneration

FORM FIN-3: Breakdown of Remuneration

A. Remuneration

No.	Name	Position (as in TECH-6)	Location (C)	Person-month Remuneration Rate	Time Input in Person/ Month (from Tech-6)	Total Remuneration (INR)
	Key Experts					
K-1	Ravi Anand	Team Leader	[Home]	577500	2.5	14,43,750
			[Field}	577500	2.5	14,43,750
K-2	Shubham Gupta	Urban Management Specialist/ Planning Expert	[Home]	697394	2.5	17,43,486
			[Field}	697394	2.5	17,43,486
K-3	Sunil Pillai	Market Research Specialist	[Home]	462000	2.5	11,55,000
			[Field}	462000	2.5	11,55,000
K-4	Dr. Ramachandran	Statistician	[Home]	462000	2.5	11,55,000
			[Field}	462000	2.5	11,55,000
	Non- Key Experts					
N-1 - N-10	Zonal Team Leader (10 number)	Zonal Team Leader (10 number)	[Home]			0
			[Field}	519211	30	1,55,76,334
N-11 - N-20	Zonal Project Manager (10 number)	Zonal Project Manager (10 number)	[Home]			0
			[Field}	348790	30	1,04,63,687
N-21 - N-30	Zonal Field Support Senior (10 number)	Zonal Field Support Senior (10 number)	[Home]			0
			[Field}	295000	30	88,50,000
N-31 - N-40	Zonal Field Support Junior (10 number)	Zonal Field Support Junior (10 number)	[Home]			0
			[Field}	210000	30	63,00,000
N 41	IT/ Analytics Team Leader	IT/ Analytics Team Leader	[Home]	519211	3.62	18,79,544
			[Field}	519211	1	5,19,211
N 42	IT/ Analytics Senior Consultant	IT/ Analytics Senior Consultant	[Home]	268023	3.62	9,70,243
			[Field}	268023	1	2,68,023
N 43	IT/ Analytics Consultant	IT/ Analytics Consultant	[Home]	212939	3.62	7,70,839
			[Field}	212939	1	2,12,939
					TOTAL	**5,68,05,293**

15.01.18

Anindya Mallick

15/01

15/01/2016

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Meghna Aggarwal

FORM FIN-4: Breakdown of Reimbursable expenses

FORM FIN-4: Breakdown of Reimbursable Expenses

B. Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Amount in INR
1	Survey of the Cities	{per City}	4,35,000	116	5,04,60,000
2	Development of IT Portal	{lumpsum}			83,53,256
3	National, State, City Workshops/ Interactions/ Engagements/ Discussions	{lumpsum}			69,00,000
4	Airfare	{Trip}	12,000	400	48,00,000
5	Train fare	{Trip}	3,000	150	4,50,000
6	Per diem allowances	{per day}	2,500	2400	60,00,000
7	Reproduction of Reports	{per Reports}	1000	232	2,32,000
				Total Cost	**7,71,95,256**

15.01.18

Anindya Mallick

15/01

15/01/2018

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Meghna Aggarwal

Deloitte.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see www.deloitte.com/about for a more detailed description of DTTL and its member firms.

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Deloitte Touche Tohmatsu India Private Limited (U74140MH1995PTC093339), a private company limited by shares, was converted into Deloitte Touche Tohmatsu India LLP, a limited liability partnership (LLP Identification No. AAE-8458),with effect from October 1, 2015.

15/11

Meghna Aggarwal

Umang

TENDER REF. NO.: K14012/101 (11)/2017-SCM-III (V)

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Financial Proposal

Parijat Chakraborty - IPSOS

Meghna Aggarwal (Deloitte)

Umang.

17/01

17/01/2018

Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos

Ipsos Public Affairs
A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1,
Gurgaon – 122016, Haryana,

And

ATHENA INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited
#15, Arcot Street, T Nagar, Chennai 600017, Tamil Nadu, India

The Economist Intelligence Unit

The Economist Group Limited
(Sub-Consultant)

15/01

15/1/2018

Umang

Meghna Aggarwal

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15/01

16/1/2018

Umang.

Meghna Aggarwal

FIN 1:
Financial Proposal Submission Form

15/01 Umang

Meghna Aggarwal

Fin-1: Financial Proposal Submission Form

{New Delhi, 26th December 2017}

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for **INR 10,94,28,200 (INR Ten Crores Ninety-Four Lakhs Twenty-Eight Thousand and Two Hundred Only)**, excluding of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is INR 1,96,97,076 (INR One Crore Ninety-Six Lakhs Ninety-Seven Thousand & Seventy-Six Only) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution
We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Authorized Signature {In full and initials}: Parijat Chakraborty
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist
In the capacity of: Authorised signatory for the consortia
Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

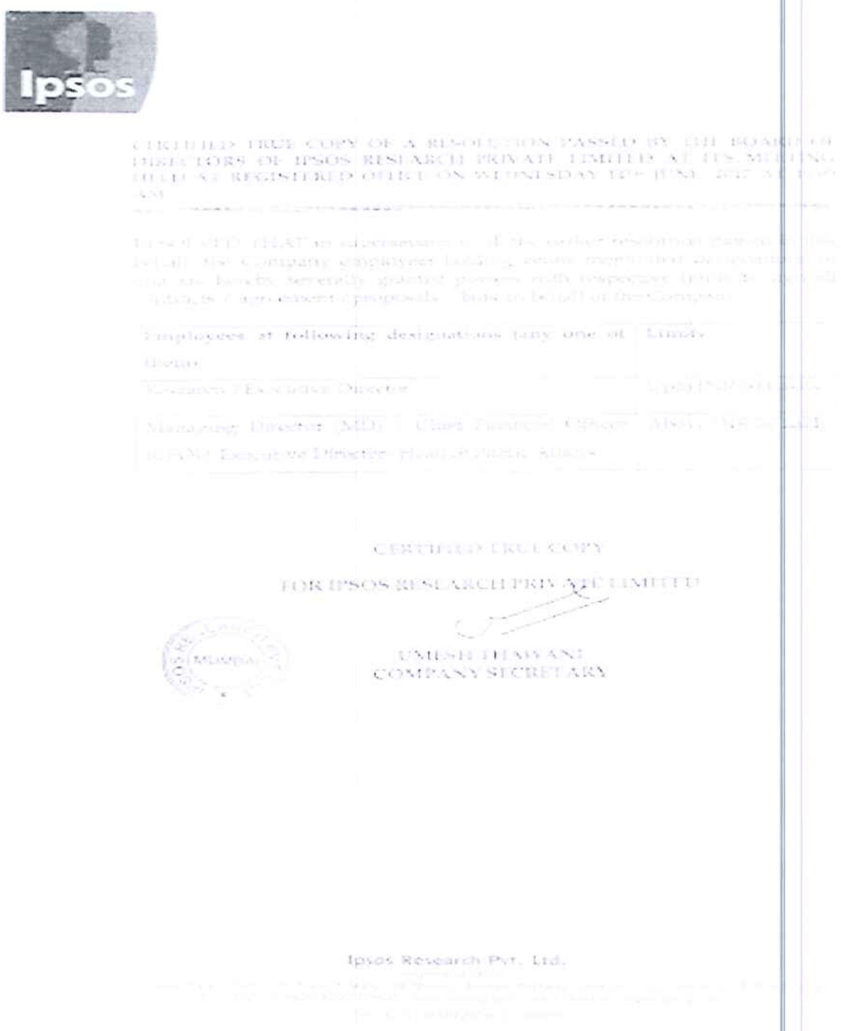
15/01

Umang - Meghna Aggarwal

Ipsos Authorisation

Power of Attorney

The proposal has been signed by Executive Director – head of public affairs authorized by board resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY [illegible] JUNE 2017 AT [illegible] AM

RESOLVED THAT in supersession of all the earlier resolution passed in this behalf the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreements / proposals / bids on behalf of the Company.

Employees at following designations (any one of them)	Limits
Country / Executive Director	Upto INR [illegible]
Managing Director (MD) / Chief Financial Officer (CFO)/ Executive Director- Head, Public Affairs	Above INR [illegible]

CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

UMESH THAWANI
COMPANY SECRETARY

MUMBAI

Ipsos Research Pvt. Ltd.

Umang

Meghna Aggarwal

Consortia's Partners - Authorisation- Athena Infonomics India Pvt. Ltd.

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

Athena Infonomics India Pvt Ltd
Chennai 17

2016

Power of Attorney

Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project").

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project

Umang.

Meghna Aggarwal

NOW THIS POWER OF ATTORNEY WITNESS THAT:

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

Vasan

Umang

Meghna Aggarwal

FORM FIN 2:
Summary of Costs

Umang
Meghna Aggarwal

Fin-2 – Summary of Costs

Item		Cost (INR)
Cost of the Financial Proposal		
(1) Remuneration		**7,20,33,500**
(2) Reimbursable		**3,73,94,700**
Total Cost of the Financial Proposal		**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded		
(i) GST		1,96,97,076
Total Estimate for Indirect Local Tax:		1,96,97,076

Imran

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13/01/2018

Meghna Aggarwal
(Deloitte)

FORM FIN 3:
Breakdown of Remuneration

Umang

Meghna Aggarwal

Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

Meghna Aggarwal

N-15	Tripti Sharma	Project Coordinator	Field	1122000	0.5	561000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	682000	4	2728000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	550000	10	5500000
			Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

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Meghna Aggarwal

Sample Form

Consultant: Ipsos Research Pvt. Ltd. In Joint Venture with Athena Infonomics India Pvt. Ltd, and The Economist Intelligence Unit as the Sub-consultant
Country: India

Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Date: 27th December 2017

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:
(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;
(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;
(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and
(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

Ipsos Research Pvt. Ltd.
[Name of Consultant]

Signature of Authorized Representative Date

Name: Parijat Chakraborty

Title: Executive Director and Head of Public Affairs

Meghna Aggarwal

Model Form - Consultant's Representations Regarding Costs and Charges

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

Meghna Aggarwal

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FORM FIN 4:
Breakdown of Reimbursable Expenses

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Meghna Aggarwal

Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

Umang. Meghna Aggarwal

	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
		State Level Workshops			
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
		National Level Workshop			
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
		City Level Meetings			
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**

Umang
Meghna Aggarwal

	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

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Meghna Aggarwal

STATEMENT OF UNDERTAKING

We confirm to observe, in competing for and executing a contract, the Client country's (India) laws against fraud and corruption (including bribery).

Authorized Signature {in full and initials}: Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

Umang

Meghna Aggarwal

Minutes of the Meeting of Procurement Committee for opening of Financial Bids and final evaluation of bids for Assessment of Liveability Indices for 116 cities in India

The meeting of the Procurement Committee of Capacity Building for Urban Development (CBUD) Project for opening of financial proposals and final combined technical and financial evaluation for the assignment of **Assessment of Liveability Indices for 116 cities in India** was held on 15th January 2018 in the chamber of Economic Advisor, (Room No. 232-C), Nirman Bhawan, New Delhi. The technical evaluation by the procurement committee has been reviewed and approved by the World Bank as communicated vide email dated 12th January, 2018.

The following were present in the meeting:

- Mr. Sudhir Kumar Tewari, Economic Adviser and Chairperson
- Mr. Shailendra Vikram Singh, Director (IFD)
- Mr. Sajeesh Kumar N., Director (Smart Cities)
- Mr. Yogendra Singh Awana, Dy. Secretary (NULM & CBUD)
- Mr. G Vijay Kumar, Under Secretary, CBUD
- Mr. Rakesh Gujral, PMU CBUD
- Ms. Vasavi Narla, PMU CBUD
- Ms. Umang H Raina, PMU, CBUD

The Technical Scores of shortlisted Consulting firms are as follows:

Name of Consultant/Firm	Country	Points
IPSOS RESEARCH PRIVATE LIMITED	India	**93.70**
ATENA INFONOMICS INDIA PRIVATE LIMTED	India	
THE ECONOMIST GROUP LIMITED	United Kingdom	
DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	**77.60**
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Financial proposals were opened publicly on 15th January 2018 in the presence of the two technically qualified bidders' representatives; Ms. Meghna Aggarwal, M/s Deloitte and Mr. Parijat Chakrabarty, M/s IPSOS research Private Limited. Financial Proposals were then opened, and the total prices read aloud; recorded and briefly detailed below. The financial proposals of non-qualified bidders were not opened.

Vasavi

Umang

The Financial proposals of the shortlisted consulting firms are annexed.

Total cost of the Financial Proposal of M/s IPSOS is Rs. 10,94,28,200/- (excluding taxes)

Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)

The Procurement Committee reviewed the financial proposals in accordance with the Procurement Guidelines of CBUD and in accordance with the Quality and Cost Based Selection method (in the ration of 80:20) set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers. The financial scores of the firms and combined evaluation and ranking is as follows:

Summary of Combined Technical & Financial Score of the Bidders as per QCBS

The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-
T=0.80, and P=0.20

Name of Consultant	**Technical**			**Financial**			**Combined Evaluation**	
	Technical score	T	**Weighted scores**	**Financial scores**	**P**	**Weighted scores**	**Combined Scores**	
	S(t)		**S(t)*T**	**S(f)**		**S(f) ´ P**	**S(t) T + S(f) F**	**Rank**
IPSOS	93.70	0.80	74.96	100.00	0.20	20.00	**94.96**	**1**
DELOITTE	77.60	0.80	62.08	81.66	0.20	16.33	**78.41**	**2**
Award recommendation	To highest combined technical/financial score. **Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)**							

S(t) = Technical Scores of the bidder
S(f) = Financial Score of the bidder

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

(Vasavi Narla)
PMU (CBUD)

(Umang H Raina,)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

2 messages

STEP Admin <noreply@worldbankgroup.org> Tue, Jan 16, 2018 at 5:08 PM
Reply-To: noreply@worldbankgroup.org
To: "vsarda@worldbank.org" <vsarda@worldbank.org>
Cc: "pmmadan@worldbank.org" <pmmadan@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

G. Vijay Kumar - PMU CBUD Ministry of Urban Development has submitted Opening of Financial Proposals/Minutes for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS to the Bank for notification. Review is not required.

Dear Madam,

Please find attached herewith the minutes of meeting for opening of financial proposals and Form Fin 2 from two technically qualified bidders for your approval.

Best Regards..

G. Vijay Kumar

STEP System Users - Click here

Bank Users - Click here

Vasudha Thawakar <vsarda@worldbank.org> Wed, Jan 17, 2018 at 11:53 AM
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>

Cc: Payal Malik Madan <pmmadan@worldbank.org>, Radha Narayan <rnarayan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>, Debabrata Chakraborti <debu.chakraborti@gmail.com>, Jyoti Sriram <jsriram@worldbank.org>, "rgujral@ipeglobal.com" <rgujral@ipeglobal.com>, Ketan Kumar Vora <kkvora@ipeglobal.com>

Dear Mr. Kumar,

Please proceed with the negotiations and submit us the draft negotiated contract (DNC) for review. We shall review the DNC along with the financial proposal.

Thanks and Best,

Vasudha Thawakar

Senior Urban Development Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: STEP Admin [mailto:noreply@worldbankgroup.org]
Sent: Tuesday, January 16, 2018 5:09 PM
To: Vasudha Thawakar <vsarda@worldbank.org>
Cc: Payal Malik Madan <pmmadan@worldbank.org>; Radha Narayan <rnarayan@worldbank.org>; g.vijaykumar.moud@gmail.com; Swayamsiddha Mohanty <smohanty1@worldbank.org>; pankaj.sinha88@nic.in
Subject: Notification of Opening of Financial Proposals/Minutes submission by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

[Quoted text hidden]

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DELOITTE TOUCHE TOHMATSU INDIA PRIVATE LIMITED	India	77.60
INSIGHT DEVELOPEMNT CONSULTING GROUP PVT LTD	India	
STESALIT SYSTEMS LIMITED	India	
KADENCE INTERNATIONAL PVT. LTD.	India	
OPERATIONS RESEARCH GUILD INDIA PVT. LTD		

Umang

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- **Total cost of the Financial Proposal of M/s Deloitte is Rs. 13,40,00,549/-(excluding taxes)**

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<table>
<tr><th colspan="9">Summary of Combined Technical & Financial Score of the Bidders as per QCBS</th></tr>
<tr><td colspan="9">The weights given to the Technical (T) and Financial (P) Proposals as per RFP are :-</td></tr>
<tr><td colspan="9">T=0.80, and P=0.20</td></tr>
<tr><td>Name of Consultant</td><td colspan="3">Technical</td><td colspan="3">Financial</td><td colspan="2">Combined Evaluation</td></tr>
<tr><td></td><td>Technical score</td><td>T</td><td>Weighted scores</td><td>Financial scores</td><td>P</td><td>Weighted scores</td><td>Combined Scores</td><td></td></tr>
<tr><td></td><td>S(t)</td><td></td><td>S(t)*T</td><td>S(f)</td><td></td><td>S(f) ´ P</td><td>S(t) T + S(f) F</td><td>Rank</td></tr>
<tr><td>IPSOS</td><td>93.70</td><td>0.80</td><td>74.96</td><td>100.00</td><td>0.20</td><td>20.00</td><td>94.96</td><td>1</td></tr>
<tr><td>DELOITTE</td><td>77.60</td><td>0.80</td><td>62.08</td><td>81.66</td><td>0.20</td><td>16.33</td><td>78.41</td><td>2</td></tr>
<tr><td rowspan="2">Award recommendation</td><td colspan="8">To highest combined technical/financial score.</td></tr>
<tr><td colspan="8">Consultant's Name: M/s IPSOS Research Private Limited(India), ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)</td></tr>
<tr><td colspan="9">S(t) = Technical Scores of the bidder</td></tr>
<tr><td colspan="9">S(f) = Financial Score of the bidder</td></tr>
</table>

As per the statement, the highest ranked firm **M/s IPSOS Research Private Limited(India) in consortium with ATHENA Infonomics India Pvt Ltd (India), The Economic Group Ltd (United Kingdom)** is recommended for selection as the Consultant and to be invited for the contract negotiations, subject to the approval of Secretary (MoHUA).

Vasavi
(Vasavi Narla)
PMU (CBUD)

Umang
(Umang H Raina,)
PMU, CBUD

(Rakesh Gujral)
PMU,CBUD

(G. Vijay Kumar)
Under Secretary, CBUD

(Yogendra Singh Awana)
Deputy Secretary
(NULM&CBUD)

Mr. Sajeesh Kumar N
Director (SC)

(Shailendra Vikram Singh)
Director (IFD)

(Sudhir Kumar Tiwari)
Economic Advisor

Smart City Division

***

Subject:- REOI for shortlisting of agencies for assessment of liveability index in selected cities.

***

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

02. The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework. The proposal has already been approved by IFD in another file.

03. An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains .

04. The selection of the agency shall be made through two tier procurement process of the World Bank. In first step REOI will be issued and based on the qualification criteria, as per World Bank procurement process, 6 consulting firms will be shortlisted. In the second step, RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

05. The budget for the assignment is estimated at Rs. 16.41 crore. World Bank has also given in principle approval for this assignment *(may be seen at correspondence side)*. IFD has given approval to the assignment in a separate file.

REOI is attached below for concurrence of the IFD please.

26/04/2017 2:42 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

May kindly be concurred please.

SS

26/04/2017 2:53 PM

SAMEER SHARMA
(AS (SC))

26/04/2017 5:02 PM

Jhanja Tripathy
(JS &FA)

26/04/2017 5:43 PM

Yashodhara Vijayan
(DS(FINANCE))

The general principle for shortlisting firms through EoI is that more weightage is to be given to past experience of the firms (60%), Experience of Key personnel(25%) and financial strength of Consulting firm 15%. In the REoI no weightage has been given to financial strength of the firm and weightage given to experience of key personnel is only 10.Appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

28/04/2017 6:58 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 1:06 PM

Jhanja Tripathy
(JS &FA)

03/05/2017 1:28 PM

Yashodhara Vijayan
(DS(FINANCE))

03/05/2017 2:49 PM

Pankaj Kumar
(US(IFD-II))

As advised by IFD , the evaluation criteria has been modified. The revised REOI may be seen below. File may be sent to IFD for their concurrence.

03/05/2017 5:25 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Approved. Let us consult IFD.

SS

03/05/2017 5:27 PM

SAMEER SHARMA
(AS (SC))

03/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/05/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding REoI for shortlisting of agencies for assessment of liveability index in selected cities.

The draft REoI was examined in IFD at pg.2/N. and it was suggested that appropriate weightages may be assigned to different parameters as per Manual of Policy and Procedures for Employment of Consultants.

Accordingly, the Programme division has provided weightage as under:

Experience of Key personnel	25%
Experience of Firm	60%
Financial strength of the firm	15%

We may now concur to the proposal.

04/05/2017 11:23 AM

Pankaj Kumar
(US(IFD-II))

The weightages given to each component are as were discussed with F.A. earlier and in accordance with instructions of M/o Finance.

REoI may issue as proposed.

05/05/2017 11:00 AM

Yashodhara Vijayan
(DS(FINANCE))

05/05/2017 12:46 PM

Pankaj Kumar
(US(IFD-II))

08/05/2017 10:24 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Smart Cities-III Division

*****

Subject:- Request for Proposal (RFP) for shortlisting of agencies for assessment of Liveability Index in selected cities.

After getting the concurrence by IFD, MoUD, the National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment for procurement of Agency. Accordingly, **REOI was floated on 9th May 2017** with the l**ast date of 30th May 2017**(**PUC1**)

2. Meanwhile , RFP has been prepared and sent the World Bank for their comments/no objection. It may be mentioned that the **World Bank have already conveyed that technically the package meets their principal** approval vide their mail dated 13th April 2017.

3 . **The approximate cost for hiring the Agency is Rs. 16.41 cr.**(p. 9/ PUC2). RFP will be issued to the Shortlisted firms and based on QCBS method of selection, the eligible firm will be selected for carrying out the assignment. The QCBS wil be on the basis of 80:20.

4. **We may send the file to IF for their concurrence for RFP for Liveability Index** (PUC3) and **Standard Form of Contract** (PUC4).

29/05/2017 3:40 PM

G Vijay Kumar
(US SC-III)

29/05/2017 5:24 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

As proposed, let us send to IFD.

SS

29/05/2017 5:25 PM

SAMEER SHARMA
(AS (SC))

29/05/2017 5:27 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

30/05/2017 10:29 AM

Yashodhara Vijayan
(DS(FINANCE))

Integrated Finance Division

This is regarding hiring of a consultant by NIUA for the consultancy services for “ assessment of Liveability Index in selected cities”.

2. After concurrence of IFD, NIUA floated REoI for which the last date was 30th May, 2017. It is not known whether the firms have been shortlisted. Meanwhile, due to urgency, the draft RfP has been prepared by the Programme Division (pg.60-122/c.) and sent it to IFD for vetting.

3. The draft RfP has been prepared as per the World Bank's guidelines on Selection and Employment of Consultants. The draft RfP seems to be in order. We may, therefore, concur to the proposal subject to vetting the same from the World Bank.

06/06/2017 12:24 PM

Pankaj Kumar
(US(IFD-II))

The Division may confirm that the firms to whom RfP has to be issued have been cleared by World Bank.

07/06/2017 11:09 AM

Yashodhara Vijayan
(DS(FINANCE))

07/06/2017 11:13 AM

Pankaj Kumar
(US(IFD-II))

We have already got the concurrence from bank. May kindly attach their remarks.

07/06/2017 12:11 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

The **Request for Proposal (RFP)** for the selection of Consultant for Assessment of **livability index**, to be procured by NIUA (on behalf of MoUD) **was cleared by the World Bank** vide email dated 31st May 2017. **(PUC3)**

07/06/2017 1:08 PM

G Vijay Kumar
(US SC-III)

With reference to RfP, the following clarifications may be furnished by the Division:-

1.Under the heading Instructions to Consultants – E. Data Sheet clause No. 16.2 it has been mentioned that price adjustment provision applies to remuneration rates.It has been mentioned in ToR that reimbursement will be adjusted every twelve months based on a formula. However, this is not normally done and remuneration is fixed for the entire period of contract. This may be revised.

2.Clause 25.1 only the basic contract price and service tax are to be included in the financial bill and not all taxes payable by the Consultants.

3.As per section-7.1(iv) of ToR, 116 cities will be covered in 1st year and the coverage of cities may be extended in subsequent years. As the number of Smart Cities is 100 (number of AMRUT cities 500, what is the criteria for selection of cities for liveability index).

09/06/2017 4:29 PM

Yashodhara Vijayan
(DS(FINANCE))

While I appreciate the observations, the matter is between NIUA and WB. Why is IFD in picture?

10/06/2017 1:38 PM

Jhanja Tripathy
(JS &FA)

12/06/2017 10:30 AM

Yashodhara Vijayan

(DS(FINANCE))

12/06/2017 10:39 AM

Pankaj Kumar
(US(IFD-II))

As per the observations of IFD, it has been decided that there will be no adjustment in the price. Appropriate modification has also been made in the updated RFP in the TOR Clause 7.1 (v),(vi),(vii) attached herewith to reflect the same.

2. The Basic Contract Price along with applicable GST will be payable by the client. Appropriate modification has been made to clause 25.1 in the updated RFP attached herewith.

3. The list of 116 Smart Cities represent shortlisted Smart Cities and other million plus cities which may not have been shortlisted. The number of million plus cities may increase in subsequent years and hence the statement that “the number of cities may be extended” has been included. In any case fresh procurement will be undertaken every year for the appointment of an agency(s) for undertaking the study with a fresh list of cities and fresh scope of work.

4. The REOI was issued by MoUD and the evaluation is under process. In a similar way, the RFP is also be issued by MoUD and the necessary modifications have been carried out in the revised RFP. The file may be sent to IFD for their concurrence.

03/07/2017 1:16 PM

G Vijay Kumar
(US SC-III)

03/07/2017 4:05 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/07/2017 6:01 PM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Observations of IFD have been incorporated in RfP. We may concur.

05/07/2017 12:58 PM

Yashodhara Vijayan
(DS(FINANCE))

Ministry of Urban Development has already developed a set of 79 standards across 15 categories to assess the liveability standards in cities. However, the need to assess the 'Liveability Index' from budgetary support without any defined outcome is not clear. There is already a service level benchmark for the schemes that are being implemented by the Ministry. The entire scheme of AMRUT rests on the outcome parameters that have been fixed on the foundation of these service level benchmark which has been carried out for 500 Urban Agglomerations by the states. This was an unique exercise in capacity building.

Secondly, MoUD also undertook a massive exercise of competition for Smart Cities which helped the cities spell out, in clear-cut terms, the scale and kind of development they wish for their cities to achieve. Towards this, we had empanelled a large number of consultancy firms to do the hand-holding for the cities, wherein a basic exercise was carried out by the cities along with its citizens and the consultants which realised the inherent lacunae in their cities and determine projects which will make their city 'Smart'. Accordingly, a number of cities and States changed policies to strengthen and enable their existing municipalities and parastatals.

Thirdly, there are also a list of urban reforms which determines the quantum of reform funds and funds of devolution of Finance Commission that the city will receive.

In view of the preceding scenario, wherein the cities already have a number of parameters to achieve with clearly defined measurable outcomes linked directly to funds disbursal and which has third-party verification (Bloomberg and MoUD through objective parameters), it is not prudent to clutter the area with another index which is not linked to any outcome. However, NIUA may carry out its own activity if it so desires.

I am unable to concur to the proposal under MoUD's budget.

12/07/2017 10:42 AM

Jhanja Tripathy
(JS &FA)
Digitally Signed

12/07/2017 11:40 AM

Yashodhara Vijayan
(DS(FINANCE))

12/07/2017 12:12 PM

Pankaj Kumar
(US(IFD-II))

12/07/2017 4:56 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

13/07/2017 10:31 AM

G Vijay Kumar
(US SC-III)

The ‘Liveability Standards in Cities’ is a unique effort initiated by the MoUD for assessing the standards of living in Indian cities. This is the first attempt by any country to systematically identify, track and improve upon critical parameters that define urban quality of life.

02. The framework touches upon all institutional, social, economic and physical aspects that impact the lives of citizens, captured through a detailed set of 79 indicators spread across hitherto unmapped aspects like safety, mixed land use and compactness, availability of open spaces, identity and culture, pollution etc. The framework also covers various traditionally non-urban aspects (not covered under urban missions) which are crucial for making cities more liveable such as health, education, availability of power etc.

03. On the other hand, the indicators adopted under AMRUT and other missions are limited and are meant to be specific milestones for measuring mission progress rather than assess the overall liveability.

04. The Standards have thus been envisioned both as a reference framework as well as a planning tool for cities. The ‘City Liveability Index’ developed will result in a ranking framework, thereby fostering a competitive environment amongst cities for improving their Liveability. The standards are also strongly linked to the Sustainable Development Goals and successful achievement of standards will contribute to the achievement of such SDGs.

05. The ‘Annual Assessment of Liveability Standards’ is an ambitious national project that will involve yearly survey (including field surveys) and compilation of a large number of datasets across the various indicators, analysis of such datasets, development of indexes and ranking of cities. This will require extensive human resources and field survey experience, which can be brought in through third party agencies. NIUA will coordinate and provide knowledge support on behalf of the MoUD.

06. The Liveability Standards document (conceptual framework) and the REOI for ‘Selection of Consulting firms for assessment of Liveability in 116 cities in India’ have both been approved by the IFD earlier.

07. The REOI was issued after concurrence of the IFD and in response, 21 applications were received. Procurement committee duly represented by IFD has shortlisted 6 firms based on their techno-financial capabilities to undertake the assignment. The RfP is in continuation of this process, which has already been concurred by the IFD.

08. It is expected that the implementation of this framework will help cities understand their baseline and pursue tangible outcomes over time,

and result in systematic transformation of Indian Cities over time. The assessment of liveability index was launched by Hon'ble UDM in the National Workshop on Urban Transformation held on 23.06.2017 at Vigyan Bhavan.

09. In light of the above, IFD is requested to reconsider and concur the RfP please.

(Sajeesh Kumar N)
Director (Smart Cities)
17.7.2017

AS (SC)

17/07/2017 4:00 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

17/07/2017 4:39 PM

SAMEER SHARMA
(AS (SC))

17/07/2017 5:10 PM

Jhanja Tripathy
(JS &FA)

It has already been pointed out in note#35 that concept of livability standards should have been part of the Smart City proposals. The proposals were prepared by professional agencies keeping in mind the standards of Smart living and Sustainability. It was expected that application of these concepts would improve the livability of these cities. Moreover, the cities are already competing for Smart City ranking, Swachh Sarvekshan ranking, Reforms incentives etc. As noted earlier, it would not be prudent to introduce another index which is not related to any outcome.

It is also not clear as to how the expenditure of Rs. 16.41 crore for this activity could be met out of CBUD funds since the entire amount of Rs 268.4 crores has already been either spent or committed as per the budget allocation of CBUD funds circulated by Smart City Division in May 2015.

25/07/2017 5:32 PM

Yashodhara Vijayan
(DS(FINANCE))

It has been indicated in Para-5 in preceding pages that this "is an ambitious project that will involve yearly survey (including field survey) and compilation of a large member of datasets, development of indexes and ranking of cities".

As stated by SCM Division, it will require large scale investment to engage human resources for carrying out field survey, data mining and data interpretation.

Before initiating a permanent ongoing yearly exercise of this scale, which tantamounts in its structure, ambition and expenditure , as a new scheme , it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC . The proposal, is its present format , cannot be considered for concurrence.

31/07/2017 2:17 PM

Jhanja Tripathy
(JS &FA)
Digitally Signed

01/08/2017 9:52 AM

Yashodhara Vijayan
(DS(FINANCE))

01/08/2017 12:15 PM

Pankaj Kumar
(US(IFD-II))

For information pl.

01/08/2017 2:47 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

01/08/2017 2:49 PM

SAMEER SHARMA
(AS (SC))

02/08/2017 10:25 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

03/08/2017 12:20 PM

G Vijay Kumar
(US SC-III)

The concept of Liveability and the design of the annual assessment of Liveability has been vetted and approved at all levels before initiation of the REOI for the project. The approval of the Hon'ble UDM was received on 10th April 2017, after which the roll out design and modalities were duly vetted and approved by the IFD on 25th April 2017. Based on this the project was publicly launched by hon'ble UDM on 23rd June 2017.

Funding of the assignment under CBUD has been approved by IFD and the project has been acknowledged as one of the items for funding during the last PMB meeting of the CBUD Project. The procurement plan and budget of CBUD have also been duly realigned for this purpose. The REOI for procurement of consultants was also issued after concurrence of the IFD, and 6 firms have been shortlisted by the Procurement Committee. The RfP is in continuation of this process.

This RfP for assessment of Liveability Standards is only for 1 year. The assessment may be repeated in subsequent years on the basis of the outcomes achieved. It is pertinent to note that Swachh Sarvekshan (on similar lines) has been implemented as an initiative of the Ministry, but not as a separate scheme. This is also an annual exercise, which is now being repeated in the second year.

In light of the above, IFD is requested to reconsider and concur the RfP please.

03/08/2017 12:31 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

There are two other facts, (1) the Swacch Sarvekshan is similar (not a scheme), and (2) the idea of competition to rank cities based on revenue generation and service levels was also sent in a meeting held on PMO. Please get from Ravinder (CPHEO) and link up.

SS

03/08/2017 2:02 PM

SAMEER SHARMA
(AS (SC))

Reference remarks of AS (UA) above.

As brought out in the above note, *'Swachh Survekshan'* has been rolled out on similar lines as proposed liveability index (not as a scheme).

Moreover, the RoD of the meeting chaired by the Hon'ble PM to discuss the progress of 'Clean Ganga Mission' on 18th May 2017 may also kindly be perused at Annexure *(attached below)*. As per point No.XV of the RoD, it is observed that "*the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.*"

The Liveability Index is an effort in this direction. The Index aims to assess the performance of cities across four pillars such as institutional, social, economic and physical. The comprehensive assessment will also involve 79 indicators which include data on tax collection, capital expenditure, performance of utilities such as water supply, transportation, power supply, sewerage etc. The assessment of such liveability indicators and ranking of cities is thus, directly linked to the outcome being targeted under the various urban Missions. This kind of ranking will create a competitive

environment among cities to improve their overall performance and quality of life of citizens.

04/08/2017 2:14 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

Notes on pre-pages may please be seen

This is not a new scheme, but a contract similar to what SBM has done in the Swacch Sarvekshan Survey. We have also completed the empanelment of six agencies and now the RfP has to be issued to them. Moreover, the Liveability standards are largely impact indicators which the Niti Aayog is monitoring through the IFD.

Most important, based on the approval of IFD, the Hon'ble Minister has announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications. After going forward so much retreat will cause great embarrassment to the government and loss of face for all of us.

In view of the above JS&FA may kindly concur.

SS

08/08/2017 7:04 PM

SAMEER SHARMA
(AS (SC))

09/08/2017 9:31 AM

Jhanja Tripathy
(JS &FA)

09/08/2017 9:47 AM

SHAILENDRA VIKRAM SINGH
(DIRECTOR(IFD))

Integrated Finance Division

This is regarding concurrence of draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that the proposal is a permanent ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has informed that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. Further, it is in advanced stage and the Hon'ble Minister has already announced the start of the survey to assess the Liveability of cities and this fact has also been informed to the PMO in several meetings and communications.

4. Initially the Programme Division had stated that the World Bank had given their 'in-principle' approval to the REoI. Now it is understood that the World Bank has advised the Division to re-issue the EoI as proper procedure according to the WB guidelines was not followed while issuing /evaluating the EoI.

5. In view of above, there is no need to take any action at present.

18/08/2017 12:41 PM

Pankaj Kumar
(US(IFD-II))

18/08/2017 4:06 PM

Yashodhara Vijayan
(DS(FINANCE))

please discuss.

21/08/2017 3:39 PM

Jhanja Tripathy
(JS &FA)

23/08/2017 4:18 PM

Yashodhara Vijayan
(DS(FINANCE))

Ref. Discussion with JS&FA

This is regarding draft RfP for hiring a consultancy service by NIUA for "assessment of Liveability Index in selected cities".

2. The proposal was last examined in IFD at p.13/N. and it was observed that since the proposal is an ongoing yearly exercise, which tantamounts in its structure, ambition and expenditure, as a new scheme, it will necessitate an in-principle approval of Ministry of Finance, consultations with NITI Ayog, etc. followed by an EFC.

3. The Programme Div. has stated that this is not a new scheme, but a contract similar to what SBM has done in the Swachh Sarvekshan Survey. It may be mentioned that basic structures of SCM and SBM are very different.While a gap analysis and a Service Level Benchmark is already inbuilt in the Smart City Proposals prepared by various empanelled agencies and cities were selected after comprehensive analysis of the proposals, no such exercise was undertaken for SBM. Swachh Sarvekshan was carried out to gauge the progress of the Mission from the baseline.

4. However, the Division has referred to a meeting chaired by Hon'ble PM, wherein it was noted that the municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of performance of key utilities. The Liveability Index is an effort in this direction.

5. In view of para 4 above and preceding notes of Programme Division , we may concur to the proposal for assessing the Livability Standards of proposed 116 cities for one year. This would also give a fairly good idea of the progress of the Scheme. The estimates may be pruned accordingly.

25/08/2017 2:53 PM

Jhanja Tripathy
(JS &FA)

25/08/2017 2:55 PM

Yashodhara Vijayan
(DS(FINANCE))

25/08/2017 3:21 PM

Pankaj Kumar
(US(IFD-II))

For information sir.

25/08/2017 4:09 PM

Sajeesh Kumar N
(DIRECTOR(SC-II))

26/08/2017 11:09 AM

SAMEER SHARMA
(AS (SC))

28/08/2017 9:54 AM

Sajeesh Kumar N
(DIRECTOR(SC-II))

04/09/2017 5:35 PM

G Vijay Kumar

(US SC-III)

As directed by JS(NULM) the relevant file is being transferred to AMRUT for taking necessary action please

04/09/2017 5:42 PM

Parmod Kumar
(Dir(UD))

06/09/2017 11:07 AM

SHIV DAS MEENA
(JS (AMRUT))

The file is returned as per notes on the other file in this matter.

07/09/2017 3:04 PM

Shiv Pal Singh
(DIR (AMRUT))

Is it part of CBUD?

08/09/2017 4:04 PM

Sanjay Kumar
(JOINT SECRETARY)

08/09/2017 4:23 PM

Parmod Kumar
(Dir(UD))

Attach
JNS

REQUEST FOR EXPRESSIONS OF INTEREST (CONSULTING SERVICES – FIRMS SELECTION)

[*India*]
[***Capacity Building of Urban Development (CBUD)***]
Loan No./Credit No./ Grant No.: 4997-IN

Assignment Title: Shortlisting of Consulting Firms for Assessment of Liveability in Selected Cities
Reference No. (as per Procurement Plan): ____________________

The *Ministry of Urban Development, Government of India has received* financing from the World Bank toward the cost of the Capacity Building for Urban Development, and intends to apply part of the proceeds for consulting services.

The consulting services ("the Services") include Assessment of Liveability in 116 cities. The assignment is for a period of 7 months.
The National Institute of Urban Affairs (NIUA) on behalf of Ministry of Urban Development now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	10
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	10
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	20
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	30

S.No.	Parameter	Maximum Marks
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	30
	Total	**100**

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers* July, 2016 ("Consultant Guidelines"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms in the form of a consortium and joint venture to enhance their qualifications.

A Consultant will be selected in accordance with the QCBS method set out in the Consultant Guidelines.

Further information can be obtained at the address below during office hours [*Director, National Institute of Urban Affairs, Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road New Delhi 11003.0900 to 1700 hours*].

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by [____________].

[*National Institute of Urban Affairs*]
Attn: [*insert name of officer & title*]
[*Core 4-B, 1st Floor, India Habitat Centre, Lodhi Road*]
[*110028, New Delhi, India*]
Tel: [*include the country and city code*]
Fax: [*include the country and city code*]
E-mail: *[include e-mail address]*

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For
Assessment of Liveability in Selected Cities

_____, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link__________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:______________________ with copy to _________ and __________. The submission shall be electronically on the portal ____________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as "Consortium")

  The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and _____________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7 and 7A

	assessment of data related to governance, transportation, environment, housing and sanitation.	
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
  a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:

a. is not received online as indicated at 2.11;

b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);

c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and

d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**

b. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

c. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

d. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection

bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

e. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**10**
2.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**10**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**20**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**30**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………………………… (Hereinafter referred to as "the Applicant"), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we .... (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms........................ .... (name and residential address) who is presently employed with us and holding the position of .... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities**", including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

.... (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)

(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date

Name ______________________________

Place

Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria [i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)....**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	Criteria [ii]	Number and Name of Cities
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only[2])(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

---

[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. .... (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on _________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ....Day of ...., 201....

Name of the Applicant

....
Signature of the Authorised Person

....
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

_____, 2017

Disclaimer

The information contained in this Request for Expression of Interest ("REOI") document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development ("MoUD"), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards' are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in the various standards and develop a 'City Liveability Index' of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.
b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.
c) Data Collection and Field Surveys.
d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website ___________and __________.

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link_________________.**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	
2.	Pre Application Conference	
3.	Last Date for receiving queries	
4.	NIUA's response to queries latest by	
5.	**Last Date of Submission of EOI**	

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date:
Time:
Venue: Conference Hall, Nirman Bhawan, New Delhi – 110108

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:_______________________ with copy to _________ and __________. The submission shall be electronically on the portal _____________.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

   a. Category 1: Single Business Entity
   b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

   The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

   a. The number of members in the Consortium would be limited to Five(5) including the lead member;
   b. The Application should contain the information required from each member;
   c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

   i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and

   ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it's Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

  a. Made a complete and careful examination of the REOI Document; and
  b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

a) At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: _____________.

b) Any Addendum thus issued will also be posted on the website: _______.

c) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email: __________with copy to ______________ and ______________. The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 'Schedule of Shortlisting Process'. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: ________.

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of

the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal ________. Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	Refer Appendix 6 and 6A
g.	Experience of Applicant in implementing assignments of undertaking analysis and	Refer Appendix 7

	assessment of data related to governance, transportation, environment, housing and sanitation.	and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
   a. At any time, a material misrepresentation is made or discovered; or

b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
   a. is not received online as indicated at 2.11;
   b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
   c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
   d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification

to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**
d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**
e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams

consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**

.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of ……………………. ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we ……………………………………………. (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ………………………………………. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the “Project”),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium’s bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium’s bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.

b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	Criteria[i]	Number and Name of Cities
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	

4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only)**(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)..........**	

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Description of actual services provided by your staff within the assignment:

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as”________”, which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, (“Project”) as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties’ rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427

34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA

72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544

110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: ________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

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Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: www.worldbank.org/procure.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) "Day" means a calendar day.

(l) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) "Government" means Government of India.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant's proposal.

(p) "ITC" (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) "LOI" (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) "MoUD" means Ministry of Urban Development

	(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant. (u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) “Services” means the work to be performed by the Consultant pursuant to the Contract. (x) “Sub-consultant” means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) “TORs” (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants’ expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant’s responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with “Anti-Corruption Guidelines” shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.

B. Preparation of Proposals

7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal. 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative. 17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal. 17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail. 17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**." 17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**." 17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its “no objection”, if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client’s evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client’s evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant’s overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. ▪▪ **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:** ____21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* ____ *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is:** **[insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

	The opening shall take place at: *[Insert:* "same as the Proposal submission address" *OR insert and fill in the following:* Street Address: Maulana Azad Road Floor, room number: Room No.____, ____Floor, Nirman Bhawan City: New Delhi 110001 Country: India **Date**: same as the submission deadline indicated in 17.7. **Time:** *[insert time in 24h format, for example – "16:00 local time]* *[The time should be immediately after the time for the submission deadline stated in 17.7]*
19.2	**In addition, the following information will be read aloud at the opening of the Technical Proposals NA**
21.1 (for FTP)	Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –50 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

……………………………………………………………

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ______________________________
Name of Consultant (company's name or JV's name):
In the capacity of: ______________________________

Address: ______________________________
Contact information (phone and e-mail): ______________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.}**

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	**Name**	**Expert's input (in person/month) per each Deliverable (listed in TECH-5)**													**Total time-input (in Months)**		
		Position		**D-1**		**D-2**		**D-3**	**........**		**D-...**				**Home**	**Field**	**Total**
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	[*Home*]	[2 month]		[1.0]		[1.0]								▨	
			[*Field*]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[*Home*]													▨	
			[*Field*]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■	Full time input
▨	Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): _______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature Date

{day/month/year}

Name of authorized Signature Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	Cost			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	Name	Position (as in TECH-6)	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1___	______________	________	[*Home*]	________	▨	▨	▨	
N-2___			[*Field*]	________				
___	______________			________	▨	▨	▨	
___								
___				________				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];
- (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];
- (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];
- (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

    a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;
    b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;
    c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
    c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

  b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;
  c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:
  a. Database of aggregate data in the format attached at Annexure X;
  b. All raw data and data sheets;
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

8388 2017
13/6/2017
Out Today

PRIME MINISTER'S OFFICE

******

No. 964
13/6/17

South Block,
New Delhi – 110 011

Please find enclosed, for information and further necessary action, copy of Record of Discussions (RoD) of the meeting chaired by the Prime Minister on 18.05.2017 to discuss the progress of 'Clean Ganga Mission'.

Pardeshi

(Dr. Shrikar Pardeshi)
Director
Tel. No. 2301 8040

CEO, NITI Aayog
Secretary, M/o Water Resources, River Development & Ganga Rejuvenation
Secretary, M/o Environment, Forests and Climate Change
✓ **Secretary, M/o Urban Development**
Secretary, M/o Drinking Water & Sanitation
DG, National Mission for Clean Ganga
Chairman, Central Pollution Control Board

PMO ID no. 4638569/PMO/2017-ES-2 Dated: 08.06.2017

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1/3151890

Record of Discussions of the Meeting chaired by Hon. PM to discuss the progress of 'Clean Ganga Mission', 18th May 2017, 7 pm, South Block

Prime Minister chaired a meeting to discuss the progress of 'Clean Ganga Mission'. The list of the participants is attached.

2. Secretary, M/o Water Resources, River Development and Ganga Rejuvenation made a brief presentation on the concept. Following decisions were taken after detailed deliberations:

i. The voluntary organizations like that of Mata Amritanandmayee, who have made huge donations towards the cause of cleaning of Ganga, may be appropriately involved in the community awareness programmes.

(Action: NMCG)

ii. A system should be put in place to regularly cross-verify the performance of the Real Time Water Quality Monitoring Stations.

(Action: CPCB)

iii. Amongst the Grossly Polluting Industries (GPIs), those which are complying with the pollution control norms should be publicly felicitated, while names of those which are not complying with the pollution control norms may be prominently displayed at public places.

(Action: NMCG, CPCB)

iv. An effort be made to explore whether different eco-friendly technology could be used for the process of tanning by the tanneries, so as to reduce the pollution load in the Ganga.

(Action:MoWR, NMCG)

v. The big temple trusts in the country could be appealed to participate in the process of cleaning of ghats and banks of Ganga. An appropriate plan be made to allocate defined stretches of Ganga, across its length, to these temple trusts for cleaning.

(Action: NMCG)

vi. The possibility deploying of solar operated trash skimmers for river surface cleaning may be explored.

(Action: NMCG)

vii. The possibility of banning usage of plastic within certain zone from the banks of Ganga may be explored.

(Action:MoEF, NMCG)

viii. The works of construction of ghats and crematoria as well as that of cleaning of ghats etc. should be left to the local municipal / village administration and the State Governments. The NMCG should mainly focus on controlling and reducing the pollution of the river Ganga due to sewage and industrial effluents.

(Action: NMCG)

ix. An attempt be made to organize competition in the 5 States on the parameter of Swachhata in the villages located on the banks of the Ganga.

(Action: MoDWS)

x. Regarding the upcoming turtle sanctuary at Varanasi, a holistic view be taken about the location.

(Action: MoEF, NMCG)

xi. For increasing awareness amongst the citizens visiting Ganga, hoardings containing appropriate messages be put up at suitable places near the banks of the river.

(Action: NMCG)

xii. The administrative capacity of local self-governments along the banks of Ganga needs to be augmented. The Ministry should prepare a proposal on comprehensive reforms in UP Jal Nigam with technical assistance of experts.

(Action:MoWR, NMCG)

xiii. The mission should ensure dissemination of information about the works done and about the ongoing activities.

(Action: NMCG)

xiv. M/o Railways may be appealed to buy the treated and recycled water from the STPs.

(Action:M/oRailways, NMCG)

xv. The municipal administration in India needs major reforms to make the cities sustainable in terms of generating own revenue to run the operations of basic utilities. In this regard, MoUD can think of ranking the cities in terms of own revenue generated and performance of key utilities.

(Action: MoUD)

Annexure

LIST OF PARTICIPANTS

1. Shri. Amitabh Kant, CEO, NITI Aayog
2. Dr. Amarjit Singh, Secretary, Water Resources, RD & GR
3. Shri. Parameswaran Iyer, Secretary, Drinking Water & Sanitation
4. Shri. U.P. Singh, Addl. Secretary and DG, NMCG
5. Shri. S.P. Singh Parihar, Chairman, CPCB

Prime Minister's Office

1. Shri. Nripendra Misra, Principal Secretary to PM
2. Dr. P.K. Mishra, Addl. Principal Secretary to PM
3. Shri. A.K. Sharma, Joint Secretary to PM
4. Ms. Debashree Mukherjee, Joint Secretary to PM
5. Dr. Shrikar Pardeshi, Director

Rakesh Gujral

From: Utpal Deka <utpal.deka@gmail.com>
Sent: 13 April 2017 11:49
To: Raja Dawn
Cc: Rakesh Gujral
Subject: REOI-Consulting-English-October2011.docx
Attachments: REOI-Consulting-English-October2011.docx

Sent from myMail for iOS

-------- Forwarded message --------
From: Vasudha Thawakar <vsarda@worldbank.org>
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>
Cc: Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>, Swayamsiddha Mohanty <smohanty1@worldbank.org>, sajeesh.kr@gov.in <sajeesh.kr@gov.in>, utpal.deka@gmail.com <utpal.deka@gmail.com>
Date: Thursday, 13 April 2017, 11:16 +0530
Subject: RE: REOI_Liveability

Dear Mr. Kumar:

Technically, the package meets our principal approval. However, to begin procurement please:

- Send the REOI in Bank format, attached for reference
- Please include cost estimate
- Please update activity in STEP as all no objections will be online through STEP and not email

Please check the above parameters for the innovations package also.

Thanks and Best

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

+91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

From: Vijay Kumar [mailto:g.vijaykumar.moud@gmail.com]
Sent: Wednesday, April 05, 2017 6:30 PM
To: Vasudha Thawakar
Cc: sajeesh.kr@gov.in; utpal.deka@gmail.com; Rakesh Gujral
Subject: Fwd: REOI_Liveability

Dear Madam,

Please find enclosed herewith a REOI for shortlisting of firms for assessment of livability of selected cities out of 79 indicators (may be varied). At present, 114 cities have been identified and the same may be varied.

The procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

--

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Urban Development,

Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217

M. 9582576758

Justification for the Liveability Index Assessment Proposal

The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards of Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. About 79 standards are proposed across 15 different categories. Based on this framework, the Ministry proposes to conduct an 'Annual Assessment of Liveability and develop a 'City Liveability Index' as well as sub-indices across 15 categories. To start with, only 116 cities will be assessed on liveability during 2017-18.

The National Institute of Urban Affairs (NIUA) has been asked to undertake the overall assignment through a professional firm. NIUA will be overall responsible for releasing the Liveability Index every year during 2017 to 2020. The index will be made public on the first day of January starting from 2018. Accordingly, NIUA has prepared an action plan to procure agency/agencies for data collection and other activities connected to the assessment. NIUA will follow GFR in all their procurement processes and payments, operations and CBUD (World Bank Funds) norms during 2017-18. Below are given the details of implementing the framework.

An agency will be hired by NIUA to provide professionals at the National level (to be located at NIUA) and Regional team to do the assessments of cities. City level assessments including surveys, collection of samples, etc. will be done by data collectors having expertise in different domains (e.g. solid waste management, transport) and accredited with or belonging to inspection bodies (such as **Bureau Vertitas** (India) Pvt. Ltd., **TUV SUD South Asia** Pvt. Ltd. etc.) having extensive experience in doing such kind of surveys and assessments.

Regional breakup of 116 cities is given as Annexure below – where it emerges that 9 Regional clusters having 13 cities each are formed, based on which city assessment costs are derived. Suggested indicators that require surveys are also described in Table 2. About 15 indicators are assumed to need surveys and/or laboratory tests which are costed tentatively, as survey sample size and need would vary as per indicator and the city. The agency estimates are based on charge-out rates (manpower + expenses + profits) as have been deployed in Project Management Unit (PMU) teams hired by the Ministry till date. Travel and other cost estimates are based on similar costs in other current projects, market trends and contracts given by the Ministry.

NIUA will deploy a team of 5 professionals to monitor the overall project, maintain quality & integrity of data & standards across cities, and capture lessons from the assessment exercise. This will include development of a standard methodology and software to be used by all the teams, so that the assessment is uniform and indexation is possible. The NIUA team is considered for 9 months (May 2017 to January 2018, inclusive) with the first 3 months given for internal team setup, agency procurement process and a universal software development for the Assessment. The next 6 months will be working in tandem with the different teams. The last month is kept for wrapping up the process for 2017 after the results are announced.

The NIUA team will consist of human resources as given in Table 1 below.

Table 1

Position	Minimum Qualifications & skills	Minimum Experience
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Specialist (cross sectoral)	Post Graduate degree in Planning from a recognised university/institution. Experience of planning projects or city development aspects across planning sectors of transport, environment, services, etc.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
IT Specialist/Software Developer	Post Graduate in Software development from a recognized university/institution. Experience in developing software for Database Management System and data analysis	10 years' experience in the field. Developed at least 2 software for similar nature.

NIUA team will also have an Administrative Officer / Office Manager (qualifications and experience to suit the requirement) to manage the above project and its related matters.

Professionals deployed by Agency at the National level

The National level team to be located at NIUA is considered for 7 months (July 2017 to January 2018, inclusive), of which 6 months are common with the regional teams who will do the assessment of the cities. There are 12 workshops planned overall to be attended by the qualified members of the national level team: 1 each at National level for pre-bid, launch with selected agencies and at closing; and 1 each at each of the 9 Regional Centres midway to ascertain progress. The national team will consist of human resources as given in Table 2 below.

Table 2

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

The national team will also have Data Entry Operators (4 Nos.).

The national level team will be responsible for aggregating data received from the teams, etc . An important function of the National level team will be quality control to ensure the authenticity of the data collected through surveys. The authenticity of data shall be ensured through visual backup like photographs etc. and using geo-tagging technology through hand held devices. A useful precedence is the *Swacch Sarvekshan*.

Teams for City level assessment aggregated at Regional Cluster levels

The data collection and ground surveys of all the cities will be carried out by teams deployed by the Agency at Regional levels and travelling to the cities in the cluster. Each City team will carry out the assessment of indicators across in 15 categories through verification of secondary data and deployment of necessary surveyors for each city, and the laboratory tests as required in some

indicators. About 15 indicators are assumed to need surveys and/or laboratory tests. Table 2 gives the details.

Table 2

Standard Category	No. of category	Expected expertise of Assessment Team members
Governance	1	Governance
Social	2	Identity and Cultural
	3	Education
	4	Health
	5	Safety and Security
Economic	6	Economic and Employment
Physical	7	Housing and Inclusive
	8	Public Open Spaces
	9	Mixed Land use & Compactness
	10	Power Supply
	11	Transport and Mobility
	12	Assured water supply
	13	Waste water management
	14	Solid Waste Management
	15	Reduced pollution management

Requirement of Funds:

	Liveability Index Assessment - Estimated Budget			
1	**Agency Costs**			
A	**National level team costs**			
a	**Human Resource for 7 months (Jul 2017 - Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.50	7	31.50
2	Survey and Sampling Specialist	3.00	7	21.00
3	Data Analytics and Indexing Specialist	3.00	7	21.00
4	Urban Transport Specialist	3.00	7	21.00
5	Environment Specialist	3.00	7	21.00
6	GIS Specialist	3.00	7	21.00
7	Data Entry Operators (4 nos.)	0.50	28	14.00
	Human Resource Costs		**Sub Total**	**150.50**
b	**Travel & related costs**	**Rate**	**Units**	**Amount (Lakh)**
	Team Lead+5 members airfare to 9 regional nodes once	0.15	54	8.10
	Accommodation for above for 2 days per trip	0.05	108	5.40
	Local Travel costs for 2 days each trip	0.03	54	1.62
	Miscellaneous and out of pocket expenses		lumpsum	0.50
	Travel & related costs		**Sub Total**	**15.62**
c	**Other Costs (reimbursible)**	**Rate**	**Units**	**Amount (Lakh)**
	Hardware & basic software requirements	1.5	10	15.00
	Workshops (9 at regional nodes and 3 at National level)	as per CCBP	12	42.00
	Report Editing & Printing (200 copies)	0.05	200	10.00
	Other Costs		**Sub Total**	**67.00**
	TOTAL National Team Costs for one year assessment (a+b+c)			**233.12**
B	**Assessment Costs for Cities aggregated at Regional level**			
a	**Remuneration**	**Rate/PM**	**No. of Months**	**Amount**
	Assessment Teams for Cities at Regional level	6.00	6	36.00
	Hardware & basic software requirements	1.50	6	9.00
			Sub Total	**45.00**
b	**Assessment costs (assuming avg. 13 cities per region)**	**Rate**	**Unit**	**Amount**
1	Travel airfare by 4 members to cities in region	0.15	52	7.80
2	Lodging Boarding for 2 days on shared basis in region	0.05	52	2.60
4	Local Travel per day	0.03	52	1.56

6	Survey & Lab Test Costs (assuming 15 indicators needing same)	0.50	195	97.50
7	Documentation & Misc. communciation costs		lumpsum	2.00
	Total Cost per region		**Sub Total**	**111.46**
	TOTAL Cost of City Assessment per region (a+b)			**156.46**
	Total Cost for City Level Assessment for 9 regions (covering all 116 cities)			**1408.14**
	Total Agency Cost (National + City assessment Teams) for 116 cities (A+B)			**1641.26**
2	**Monitoring & Project Management Team at NIUA**			
A	**Human Resource for 9 months (May 2017 Jan 2018)**	**Rate/PM**	**No. of Months**	**Amount (Lakh)**
1	Team Leader	4.00	9	36.00
2	Urban Specialist (cross-sectoral)	2.50	9	22.50
3	Data Analytics, Statistics and Indexing Specialist	2.50	9	22.50
4	IT Prof/Software Engineer	2.50	9	22.50
5	Administrative Officer/Office Manager	1.50	9	13.50
	Total Human Resource Costs		**Sub Total**	**117.00**
B	**Other Costs (reimbursible)**			
1	Server & Software Licenses (incl. GIS)		lumpsum	20.00
2	Standard methodology & software development		lumpsum	100.00
3	Training on Software for National & Assessment Teams		lumpsum	130.00
4	Miscellaneous running costs of PMU team at NIUA	1.00	9	9.00
	Total Other Costs		**Sub Total**	**259.00**
	TOTAL Costs of Monitoring & Project Management Team at NIUA			**376.00**
	Total Cost of Assessment (Agency + NIUA) (1+2 above)			**2017.26**

Payment Schedule:

For NIUA:

30% advance

30% at the end of 3rd month,

30% at the end of 6th month,

10% at the end of the 9 months and releasing of the index

The payments will be based on Utilization certificates

For Agency: As per the terms set in the Terms of Reference (TOR) of the Request for Proposal

List of Cities:

Cluster Classiciation of Cities			
Sl. No.	Name of State	Name of City	Population
CLUSTER 1			
1	Uttar Pradesh	Lucknow	2,817,105
2	Uttar Pradesh	Agra	1,585,704
3	Uttar Pradesh	Moradabad	887,871
4	Uttar Pradesh	Aligarh	874,408
5	Uttar Pradesh	Rampur	325,313
6	Uttar Pradesh	Rae Bareli	191,316
7	Uttar Pradesh	Bareilly	903,668
8	Uttar Pradesh	Jhansi	505,693
9	Uttar Pradesh	Saharanpur	705,478
10	Uttar Pradesh	Kanpur	2,765,348
11	Uttar Pradesh	Varanasi	1,198,491
12	Uttar Pradesh	Ghaziabad	1,648,643
13	Uttar Pradesh	Meerut	1,305,429
14	Uttar Pradesh	Allahabad	1,112,544
	TOTAL	**14**	**16,827,011**
CLUSTER 2			
15	Puducherry	Puducherry	244,377
16	Tamil Nadu	Salem	829,267
17	Tamil Nadu	Thanjavur	222,943
18	Tamil Nadu	Vellore	185,803
19	Tamil Nadu	Dindigul	207,327
20	Tamil Nadu	Erode	157,101
21	Tamil Nadu	Tiruchirappalli	847,387
22	Tamil Nadu	Thoothukkudi	237,830
23	Tamil Nadu	Tiruppur	444,352
24	Tamil Nadu	Tirunelveli	473,637
25	Tamil Nadu	Chennai	4,646,732
26	Tamil Nadu	Coimbatore	1,050,721
27	Tamil Nadu	Madurai	1,017,865
	TOTAL	**13**	**10,565,342**
CLUSTER 3			
28	Maharashtra	Solapur	951,558
29	Maharashtra	Pune	5,057,709
30	Maharashtra	Aurangabad	1,175,116
31	Maharashtra	Kalyan-Dombivali	1,247,327
32	Maharashtra	Nagpur	2,405,665
33	Maharashtra	Amravati	647,057
34	Maharashtra	Nashik	1,486,053
35	Maharashtra	Thane	1,841,488
36	Maharashtra	Greater Mumbai	12,442,373
37	Maharashtra	Navi Mumbai	1,120,547
38	Maharashtra	Pimpri Chinchwad	1,727,692
39	Maharashtra	Vasai-Virar City	1,222,390

	TOTAL	12	**31,324,975**
CLUSTER 4			
40	Dadar & Nagar Haveli	Silvassa	98,265
41	Daman & Diu	Diu	23,991
42	Gujarat	Ahmadabad	5,577,940
43	Gujarat	Surat	4,467,797
44	Gujarat	Vadodara	1,670,806
45	Gujarat	Gandhinagar	202,776
46	Gujarat	Dahod	791,685
47	Gujarat	Rajkot	1,286,678
48	Rajasthan	Udaipur	451,100
49	Rajasthan	Ajmer	542,321
50	Rajasthan	Jaipur	3,046,163
51	Rajasthan	Kota	1,001,694
52	Rajasthan	Jodhpur	1,033,756
	TOTAL	13	**20,194,972**
CLUSTER 5			
53	Bihar	Bhagalpur	410,210
54	Bihar	Muzaffarpur	354,462
55	Bihar	Biharsharif	297,268
56	Bihar	Patna	1,684,222
57	Chattishgarh	Bilaspur	331,030
58	Chhattisgarh	Naya Raipur	150,000
59	Chhattisgarh	Raipur	1,047,389
60	Jharkhand	Ranchi	1,073,427
61	Jharkhand	Dhanbad	1,162,472
62	Madhya Pradesh	Indore	1,964,086
63	Madhya Pradesh	Bhopal	1,798,218
64	Madhya Pradesh	Ujjain	515,215
65	Madhya Pradesh	Satna	280,222
66	Madhya Pradesh	Sagar	273,296
67	Madhya Pradesh	Jabalpur	1,055,525
68	Madhya Pradesh	Gwalior	1,069,276
	TOTAL	16	**13,466,318**
CLUSTER 6			
69	Chandigarh	Chandigarh	961,587
70	Haryana	Karnal	286,827
71	Haryana	Faridabad	1,414,050
72	Himachal Pradesh	Dharamshala	22,580
73	Himachal Pradesh	Shimla	169,578
74	Jammu & Kashmir	Jammu	502,197
75	Jammu & Kashmir	Srinagar	1,180,570
76	NCT of Delhi	NDMC	257,803
77	Punjab	Jalandhar	862,886
78	Punjab	Ludhiana	1,618,879
79	Punjab	Amritsar	1,132,383

80	Uttarakhand	Dehradun	569,578
	TOTAL	12	8,978,918
CLUSTER 7			
81	Goa	Panaji	40,017
82	Karnataka	Davanagere	434,971
83	Karnataka	Belagavi	488,157
84	Karnataka	Hubbali-Dharwad	943,788
85	Karnataka	Mangaluru	488,968
86	Karnataka	Shivamogga	322,505
87	Karnataka	Tumakuru	302,143
88	Karnataka	Bangalore	8,443,675
89	Kerala	Kochi	602,046
90	Kerala	Thiruvananthapuram	743,691
91	Lakshadweep	Kavaratti	11,210
	TOTAL	11	12,821,171
CLUSTER 8			
92	Arunachal Pradesh	Itanagar	59,490
93	Arunachal Pradesh	Pasighat	24,656
94	Assam	Guwahati	957,352
95	Manipur	Imphal	268,243
96	Meghalaya	Shillong	143,229
97	Mizoram	Aizawl	293,416
98	Nagaland	Kohima	99,039
99	Sikkim	Namchi	12,194
100	Tripura	Agartala	400,004
101	West Bengal	New Town Kolkata	36,541
102	West Bengal	Durgapur	566,517
103	West Bengal	Bidhan Nagar	618,358
104	West Bengal	Haldia	200,827
105	West Bengal	Kolkata	4,496,694
106	West Bengal	Haora	1,077,075
	TOTAL	15	9,253,635
CLUSTER 9			
107	Andaman Nicobar	Portblair	140,572
108	Andhra Pradesh	Kakinada	312,538
109	Andhra Pradesh	Visakhapatnam	1,728,128
110	Andhra Pradesh	Tirupati	287,482
111	Andhra Pradesh	Amaravati	103,000
112	Andhra Pradesh	Vijayawada	1,034,358
113	Odisha	Bhubaneswar	840,834
114	Odisha	Rourkela	320,000
115	Telengana	Warangal	819,406
116	Telengana	Karimnagar	261,185
	TOTAL	10	5847503
TOTAL Cities selected		116	252712187
Average Cities per cluster		12.9	14364427.2

REQUEST FOR EXPRESSION OF INTEREST DOCUMENT

सत्यमेव जयते

National Institute of Urban Affairs

(An Autonomous body under MoUD)

Request for Expression of Interest

For

Shortlisting of Consulting Firms For Assessment of Liveability in Selected Cities

9th May, 2017

Disclaimer

The information contained in this Request for Expression of Interest (“REOI”) document or subsequently provided to Applicant/s, whether verbally or in documentary form by National Institute of Urban Affairs (NIUA), an autonomous body under the Ministry of Urban Development (“MoUD”), is provided to Applicant(s) on the terms and conditions set out in this REOI Document and any other terms and conditions subject to which such information is provided.

This REOI Document is not an agreement and is neither an offer nor an invitation by the NIUA to any other party. The purpose of this REOI Document is to provide interested parties with information to assist the formulation of their Application for Shortlisting pursuant to this REOI Document. This REOI Document includes statements, which reflect various assumptions and assessments arrived at by NIUA in relation to the Project. Such assumptions and statements, in this REOI Document do not purport to contain all the information that each Applicant may require. This REOI Document may not be appropriate for all persons, and it is not possible for NIUA to consider the investment objectives, financial situation and particular needs of each party who reads or uses this REOI Document. The assumptions, assessments, information and statements contained in this REOI Document may not be accurate, adequate and complete and each Applicant should conduct its own enquiries and analyses, and should check the accuracy, reliability and completeness of the assumptions, assessments, information and statements in this REOI Document, and obtain independent advice from appropriate sources.

NIUA makes no representation or warranty and shall incur no liability to any person, including any Applicant or Bidder, under any law, statute, rule or regulation, principles of restitution or unjust enrichment or otherwise for any loss, damages cost or expense which may arise from or be incurred or suffered on account of anything contained in this REOI Document or otherwise, including the accuracy, reliability or completeness of the REOI Document and any assessment, assumption or information contained therein or deemed to form part of this REOI Document or arising in any way with qualification of Applicants for participation in the Bidding Process.

The NIUA may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this REOI Document.

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1 INTRODUCTION

1.1 Background

a) The Government of India along with State and Local Governments is implementing several flagship urban missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable. This will not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunities.

b) In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context Ministry of Urban Development has developed a set of ‘Liveability Standards of Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards’ are available at Smart City website.

c) A total of 79 different standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in the various standards and develop a ‘City Liveability Index’ of the liveability standards in selected cities.

d) A total of 114 Cities have been selected. Shortlisting process is being undertaken to identify a panel of consultants who will be eligible for selection to do assessment of liveability standards in selected cities.

1.2 Brief Terms of Reference

1.2.1 Scope of work for the Smart City Agencies

The broad tasks to be performed and key activities under the assignment ***(This is indicative and detailed scope of work will be provided in the RFP to be issued to the shortlisted empanelled Firms)*** will include:

a) Conduct a Reconnaissance Study of all cities included in the project. The study shall include City level kick off meetings with key officials from city government and other stakeholders. Study City demography, socio economic stratification and geography. Identification of data sources.

b) Prepare and submit to the NIUA, a City wise Inception Report. The Inception Report shall include Plan of Action, timelines for city field visits. Finalised schedule and Plan of Action in consultation with NIUA.

c) Data Collection and Field Surveys.

d) Maintain and submit raw data and data collection forms to NIUA.

e) Develop and maintain a digital data base of all data sets collected.

f) Conduct analysis of the raw data through Analytics team prepare aggregate data sets for all the standards and submit to NIUA.

g) Submit Draft Assessment reports to the cities and NIUA separate for each City along with aggregate data in the prescribed format, all raw data, sources of data, assumptions if any, record of discussions and other relevant documents.

h) Final City Assessment Report to the NIUA after including agreed recommendations of the NIUA,

The Details Terms of reference including payment schedule and implementation arrangement shall be provided in the Request for Proposal (RfP) to be issued by NIUA to the shortlisted consultants.

1.3 Availability of REOI Document

The document may be downloaded from the following website
https://eprocure.gov.in/cppp,
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

1.4 Validity of Applications

The Application shall be valid for a period of not less than 90 (Ninety) days from the Application Due Date hereinafter called "**Application Validity Period**". NIUA reserves the right to reject any or all the Applications without assigning any reason whatsoever.

1.5 Scope and Description of Shortlisting Process

a) NIUA proposes to adopt a single stage process to evaluate Applications received based on criteria set out in this REOI Document. Based on this evaluation a panel of consultants shall be prepared.

b) NIUA proposes to empanel eligible consultants through this process.

c) **The details of Cities are at Annexure "A".**

d) **The 'Liveability Standards for Cities' and methodology for assessment is available at link http://smartcities.gov.in/content/innerpage/others.php**

e) The purpose of Shortlisting process is to shortlist a panel of consulting firms that can carry out the assignment of assessment of liveability standards. However, by virtue of getting shortlisted with NIUA does not entitle shortlisted consultancy firms to claim their expenses incurred, if any, in the process of shortlisted nor to claim for any assignment, whatsoever, it may be.

f) The NIUA will invite technical and financial proposals from selected shortlisted consultancy firms by issuing RFP which will contain detailed scope of work and other details related to the assignment.

1.6 Schedule of Shortlisting Process

NIUA would endeavour to adhere to the following schedule:

Sr. No.	Event Description	Indicative Dates
1.	Date of Issue of REOI	9th May 2017
2.	Pre Application Conference	16th May, 2017 2.00 PM
3.	Last Date for receiving queries	19nd May 2017
4.	NIUA's response to queries latest by	23th May 2017
5.	**Last Date of Submission of EOI**	**30th May 2017 3.00PM**

1.7 Pre-Application Conference

The date, time and venue of Pre-Application Conference shall be:

Date: 16th May, 2017
Time: 2.00 PM
Venue: Conference Hall, National Institute of Urban Affairs, Core 4- B, Ist Floor, India Habitat Centre, Lodhi Road, New Delhi 110003

1.8 Communications

All communications excluding the submission of Application shall be addressed to Email:niua@niua.org Telephone No.01124643284.

2 Instructions to Applicants

A. General

2.1 Scope of Application

a) NIUA shall receive Applications from eligible entities for the assignment in order to shortlist a panel of consultants.

b) The Applicant shall submit its Application in the form and manner specified in this REOI.

2.2 Eligible Applicants

a) The Applicant eligible for participating in the qualification process shall be any one of the following two categories:

  a. Category 1: Single Business Entity
  b. Category 2: A consortium of Business Entities (hereinafter referred to as “Consortium”)

  The term Applicant would hereinafter apply to both the above-mentioned categories.

b) For the purpose of this REOI, a Business Entity shall mean a company incorporated in India under the provisions of the Companies Act, 2013 or under LLP Act or under the equivalent law in case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Application.

c) A Consortium of a maximum of Five (5) members of above such entities including Lead Member shall be allowed and shall hereinafter be referred as "Consortium".

d) The Applicant should submit a Power of Attorney as per the format enclosed at **Appendix 2**, authorising the signatory of the Application to commit the Applicant.

e) Applications submitted by a Consortium should comply with the following additional requirements:

  a. The number of members in the Consortium would be limited to Five(5) including the lead member;
  b. The Application should contain the information required from each member;
  c. The Application should include a description of the roles and responsibilities of all the members;

d. Members of the Consortium shall nominate one member as the Lead Member and that member must be an entity as defined in clause 2.2.(b);

e. An Applicant who has applied for Shortlisting in its individual capacity or as part of a Consortium cannot participate as a member of any other Consortium applying for the Shortlisting;

f. The members of the Consortium shall execute a Power of Attorney for Lead Member of Consortium as per the format enclosed at **Appendix 1**; and

g. The members of the Consortium shall enter into a Memorandum of Understanding (MoU), as per the format provided under **Appendix 8** for the purpose of submission of the Application. The MoU should, inter alia,

  i. Clearly outline the proposed roles and responsibilities of each member of the Consortium; and
  ii. Include a statement to the effect that all members of the Consortium shall be liable jointly and severally for the assignments arising out of the States, Union Territories and million plus cities, as the case may be and in accordance with the terms of the contract agreement therefore;

A copy of the MoU signed by all members should be submitted with the Application. The MoU entered into between the members of the Consortium should contain the above requirements, failing which the Application shall be considered non-responsive.

f) An Applicant or member of Consortium which has earlier been barred by NIUA or blacklisted by any state government or central government / department / agency in India/ from participating in Bidding Process shall not be eligible to submit an Application, either individually or as member of a Consortium, if such bar subsists as on the Application Due Date. The Applicant or the member of Consortium shall be required to furnish an affidavit that there is no such bar imposed and existing as on the Application Due Date as per format provided in **Appendix 7**. In case the Applicant or member of Consortium gets banned by NIUA blacklisted by any state government or central government / department / agency during the Shortlisting Period such Applicant shall cease to be empanelled with NIUA.

g) A firm declared ineligible by the International Bank for Reconstruction and Development (IBRD), Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A Bank ("Bank") in accordance with the Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants or debarred from providing consultancy services by and government agency in India shall be ineligible to submit an Application. In case the Applicant or member of Consortium is declared ineligible by the Bank or any government agency in India during the Shortlisting Period then such Applicant shall cease to be shortlisted with NIUA.

h) An Applicant or member of Consortium should have, during the last three years, neither failed to perform on any agreement, as evidenced by

imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or member of Consortium. In case the Applicant or member of Consortium during period of Shortlisting, fails to perform on any legal agreement, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award against the Applicant or member of Consortium, or been expelled from any project or agreement or have had any agreement terminated for breach by such Applicant or member of Consortium, such Applicant shall cease to be empanelled with NIUA.

i) While submitting an Application, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

2.3 Change in Consortium Composition

Any change in the composition of a Consortium during the term of Shortlisting shall be permitted only with prior written approval from NIUA.. After Shortlisting no change in the consortium will be allowed.

2.4 Number of Applications

Each Applicant shall submit only one (1) Application for the assignment. Any Applicant, who submits or participates in more than one Application for the Shortlisting will be disqualified and will also cause the disqualification of the Consortium of which it is a member.

2.5 Application Preparation Cost

The Applicant shall be responsible and shall bear all costs and expenses associated with the preparation of its Application and its participation in the Shortlisting. It is clarified that NIUA shall be not responsible or in any way liable for such costs, expenses regardless of the conduct or outcome of the Shortlisting.

2.6 Acknowledgement by the Applicant

a) It is desirable that each Applicant submits it’s Application after collection of required information and analysis or any other matter considered relevant by it.

b) It would be deemed that by submitting the Application, the Applicant has:

   a. Made a complete and careful examination of the REOI Document; and
   b. Received all relevant information requested from NIUA.

c) NIUA shall not be liable for any mistake or error on the part of the Applicant in respect of the above.

2.7 Right to Accept or Reject any of the Applications

a) Notwithstanding anything contained in this REOI Document, NIUA reserves the right to accept or reject any Application or to annul the Shortlisting Process or reject all Applications at any time, without assigning any reasons thereof and without any liability or any obligation, of any nature whatsoever, for such rejection or annulment.

b) NIUA reserves the right to reject any Application if:
   a. At any time, a material misrepresentation is made or discovered; or
   b. The Applicant does not respond promptly and diligently to requests for additional information or clarification required for evaluation of the Application.

c) Rejection of the Application by NIUA, as aforesaid, would lead to the disqualification of the Applicant. If the Applicant is a part of Consortium, then the entire Consortium would be disqualified.

2.8 Amendment of REOI Document

At any time prior to the Application Due Date, NIUA may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the REOI Document by the issuance of Addenda posted on the website: https://eprocure.gov.in/cppp, Any Addendum thus issued will also be posted on the website:
http://moud.gov.in/cms/tendersandcorrigendum.php and
http://smartcities.gov.in/content/innerpage/rfps.php

a) In order to provide the Applicants a reasonable time to examine the Addendum, or for any other reason, NIUA may, at its own discretion, extend the Application Due Date.

2.9 Clarifications

An Applicant requiring any clarification on the REOI Document may request NIUA online through mail at Email:niua@niua.org Telephone No.01124643284.
The Applicants should send in their queries latest by the relevant date and time mentioned in Clause 1.7 ‘Schedule of Shortlisting Process’. NIUA would endeavour to respond to the queries by the date mentioned in the Schedule of Shortlisting Process. The responses will be uploaded on the website: https://eprocure.gov.in/cppp,

B. Preparation and Submission of Application

2.10 Language

The Application and all related correspondence and documents should be furnished by the Applicant with the Application in English or in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the translated in English language shall prevail.

2.11 Submission of Application

a) The Applicant would provide all the information in terms of this REOI Document. Only those Applications shall be evaluated that are received in the required format and complete in all respects. **The Application shall be submitted in maximum 100 pages.**

b) The Applicant shall submit a digitally signed, encrypted and complete Proposal comprising the documents and forms in accordance with Clause 2.12. The submission shall be done electronically on the portal https://eprocure.gov.in/cppp, Proposals submitted by any other means will be rejected.

2.12 Sealing and Marking of Applications

a) An authorized representative of the Applicant shall digitally sign the submission letters in the required format. The authorization shall be in the form of a written power of attorney scanned and uploaded together with the Application as per Appendix 2.

b) The Application shall contain the following (check-list):

a.	Letter of Application	Refer Appendix 1
b.	Power of Attorney for signing of the Application (in case of Consortium, this would need to be provided by all the m ember)	Refer Appendix 2
c.	In case of Consortium, Power of Attorney for signing of Application by the Lead Member	Refer Appendix 3
d.	Details of Applicant including financial strength (in case of Consortium, this would need to be provided by all the members)	Refer Appendix 4
e.	Experience of the Firm in implementing assignments related to market research and surveys.	Refer Appendix 5 and 5A
f.	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (India)	Refer Appendix 6 and 6A

	Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.	
g.	Experience of Applicant in implementing assignments of undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	Refer Appendix 7 and 7A
h.	Format for Affidavit Certifying that Entity/Directors(s) of Entity not Blacklisted	Refer Appendix 8
i.	Format for Memorandum of Understanding (MOU)	Refer Appendix 9
j.	Proof of registration of the Applicant (in case of Consortium, proof of registration of all the Members)	-

2.13 Application Due Date

a) The Application or its modifications must be uploaded on the portal no later than the deadline mentioned in the Schedule of Shortlisting Process (refer Clause 1.7), or any extension to this deadline. The electronic system will not accept any Proposal or its modification for uploading after the deadline. Applications submitted by either facsimile transmission or telex shall not be accepted.

b) NIUA may, in exceptional circumstances, and at its sole discretion, extend the Application Due Date by issuing an Addendum in accordance with Clause 2.8 (a), uniformly for all Applicants.

2.14 Late Applications

The electronic system will not accept any Application or its modification for uploading after the deadline.

Evaluation Process

2.15 Opening of Applications

The NIUA evaluation committee shall conduct the opening of the Applications online after the Application submission deadline.

2.16 Evaluation of Applications

a) The Applications, so received, would subsequently be examined and evaluated in accordance with the criteria set out in Section 3.

b) NIUA reserve the right to utilise the services of consultant/s or advisor/s, to assist in the examination, evaluation, and comparison of Applications.

c) NIUA reserves the right to reject any or all the Applications, if:
  a. At any time, a material misrepresentation is made or discovered; or
  b. The Applicant does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Application.

2.17 Confidentiality

a) Information relating to the examination, clarification, evaluation, and recommendation for the Shortlisted Applicants shall not be disclosed to any person not officially concerned with the Shortlisting Process. NIUA will treat all information submitted as part of Application in confidence and would require all those who have access to such material to treat the same in confidence. At the conclusion of the evaluation process, NIUA shall notify the list of Applicants who have been shortlisted.

b) NIUA shall not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.

2.18 Tests of Responsiveness

a) Prior to evaluation of Applications, it shall be determined whether each Application is responsive to the requirements of the REOI Document. An Application shall be considered non responsive if the Application:
  a. is not received online as indicated at 2.11;
  b. is not digitally signed with the submission letters as stipulated in Clause 2.12 (a);
  c. does not contains all the information and documents as set out in Clause 2.12 (b) and in the formats set out in this REOI Document; and
  d. Does not mentions the Application Validity Period as set out in Clause 1.4.

b) NIUA reserves the right to reject any Application which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by NIUA in respect of such Applications.

2.19 Clarifications to Facilitate Evaluation

a) To facilitate evaluation of Applications, NIUA, at its sole discretion, seek clarifications in writing from any Applicant regarding its Application. Such clarifications shall be provided within the time specified by NIUA, as the case may be, for this purpose. Any request for clarifications and all clarifications shall be in writing.

b) If an Applicant does not provide clarifications sought under Sub-Clause 2.19 (a) above within the prescribed time, its Application shall be liable to be rejected. In case the Application is not rejected, NIUA may proceed to evaluate the Application by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation.

2.20 Conflict of Interest

a) NIUA requires that the Shortlisted Consultants provide professional, objective, and impartial advice and at all times hold paramount the interests of NIUA, strictly avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Shortlisted Consultants shall not accept or engage in any assignment that would be in conflict with, or that may place it in a position of not being able to carry out the assignment for which it has been engaged.

C. Shortlisting and Notification

2.21 Shortlisting of Consultants

a) After the evaluation of Applications, NIUA shall prepare a list of Applicants who meet the qualification criteria as set out in this REOI Document. Other Applicants may be informed that their Applications have been unsuccessful.

b) The shortlisted Applicants would be duly notified that they have been shortlisted for the assignment.

c) The NIUA reserves the right to make additions in the panel after following due process.

3 Criteria for Evaluation

3.1 Evaluation of Applications

a) This section provides the details of evaluation process. The Applications will be evaluated on the basis of the following parameters:

a. General Experience of the Firm: **Number of years' experience**
b. Financial Strength of the Firm
c. Staff having experience of carrying out similar assignments and having performed tasked related to the assignment: **Number of such staff.**

d. Experience of the firm in implementing assignments related to market research and field surveys in the urban areas: **Number of assignments.**

e. Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute: **Number of assignments**

f. Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation; **Number of assignments.**
.

b) The Applications will be evaluated on the basis of the following parameters for each of the three respective areas:

S.No.	Parameter	Maximum Marks
1.	General Experience of the Firm	**5**
2.	Financial Strength of the Firm	**15**
3.	Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	**25**
3	Experience of the firm in implementing assignments related to market research and field surveys in the urban areas	**10**
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute	**30**
4	Experience of the firm in implementing assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation.	**15**
	Total	**100**

a) The Applicants (firm) who secure a score of 75 marks or more out of 100 shall be considered for shortlisting.

b) After evaluation of the Applications and scoring of the same, the Applicants, with at least 75marks shall be ranked in descending order of the scores secured and based on that shortlisted panel will be prepared.

c) RFP will be issued to the shortlisted firms for selection on QCBS.

4 Fraud and Corrupt Practices

4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Shortlisting Process. Notwithstanding anything to the contrary contained in this REOI, NIUA shall reject a proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**") in the Shortlisting Process.

4.2 Without prejudice to the rights of NIUA under Clause 4.1 hereinabove, if an Applicant or Consultant, as the case may be, is found by the NIUA to have directly or indirectly or through an agent, engaged or indulged in any corrupt, fraudulent, coercive, undesirable or restrictive practice during the Shortlisting Process, or after the issue of the notification of Shortlisting, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by NIUA during a period of 2 (two) years from the date as the case may be.

4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Shortlisting Process; or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Shortlisting Process or after the issue of the Notification of Shortlisting as the case may be, any person in respect of any matter relating to the Shortlisting or Notification of Shortlisting, who at any time has been or is a legal, financial or technical consultant/ adviser of NIUA in relation to any matter concerning the Project;

b. "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Shortlisting Process;

c. "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Shortlisting Process;

d. "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the NIUA with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Shortlisting Process; or (ii) having a Conflict of Interest; and

e. "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of

restricting or manipulating a full and fair competition in the Shortlisting Process.

5 Pre-Application Conference

5.1 Pre-Application Conference of the Applicants shall be convened at the designated date, time and place. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.

5.2 During the course of Pre-Application Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of NIUA. NIUA shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Shortlisting Process.

6 Miscellaneous

6.1 The Shortlisting Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Shortlisting Process.

6.2 NIUA, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

a. Suspend and/or cancel the Shortlisting Process and/or amend and/or supplement the Shortlisting Process or modify the dates or other terms and conditions relating thereto;
b. Consult with any Applicant in order to receive clarification or further information;
c. Retain any information and/or evidence submitted to NIUA by, on behalf of and/or in relation to any Applicant; and/or
d. Independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

6.3 It shall be deemed that by submitting the Application, the Applicant agrees and releases NIUA, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

6.4 All documents and other information supplied by NIUA or submitted by an Applicant shall remain or become, as the case may be, the property of NIUA. NIUA will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

6.5 NIUA reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

Appendix 1: Format for Letter of Application

[On the Letter head of the Applicant (Lead Member in case of Consortium)]

Date:

To
Director,
National Institute of Urban Affairs,
____
____

Ref: **EOI for Assessment of Liveability standards in selected Cities**

Dear Sir,

Being duly authorized to represent and act on behalf of …………………… ……………. (Hereinafter referred to as “the Applicant”), and having gone through and fully understood all of the eligibility and qualification requirements and information provided, the undersigned hereby apply for Shortlisting for the captioned project.

We are enclosing our Application for Qualification in one (1) original, with the details as per the requirements of the REOI Document, for your evaluation.

We confirm that our Application is valid for a period of 120 (one hundred and twenty) days from ………… (Application Due Date)

Yours faithfully,

____

(Signature of Authorised Signatory)
(Name, Title and Address)

Appendix 2: Format for Power of Attorney for Signing of Application

(On Non – judicial stamp paper of Rs 100/- or such equivalent
Document duly attested by notary public)

Power of Attorney

Know all men by these presents, we …………………………………………… (name and address of the registered office) do hereby constitute, appoint and authorise Mr. / Ms.…………………… ………… (name and residential address) who is presently employed with us and holding the position of ……………………………………… as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our application for "**Assessment of Liveability in Selected Cities"**, including signing and submission of all documents and providing information / responses to NIUA, representing us in all matters before NIUA, and generally dealing with NIUA in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

____
(Signature)

(Name, Title and Address)

Accepted

………….. (Signature)

(Name, Title and Address of the Attorney)
Note:

- *To be executed by the Lead Member in case of a Consortium.*
- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*
- *In case the Application is signed by an authorised Director of the Applicant, a certified copy of the appropriate resolution/ document conveying such authority may be enclosed in lieu of the Power of Attorney.*

Appendix 3: Format for Power of Attorney for Lead Member of Consortium

(On Non – judicial stamp paper of Rs 100/- or such equivalent document
duly attested by notary public)

Power of Attorney

Whereas National Institute of Urban Affairs, has invited applications from interested parties for **Assessment of Liveability in Selected Cities** (the "Project"),

Whereas, the members of the Consortium are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Expression of Interest (REOI) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the REOI Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection the Consortium's bid for the Project.

NOW THIS POWER OF ATTORNEY WITNESS THAT;

We, M/s. ……………… (Lead Member), and M/s ……………… (the respective names and addresses of the registered office) do hereby designate M/s. ………………………………… being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with NIUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with NIUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this the ……Day of …….2016

…………………………………

(Executants)
(To be executed by all the members of the Consortium)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance g with the required procedure.

Appendix 4: Format for Details of Applicant

1. Details of Applicant

a.	Name of applicant with full address	:	
b.	Tel. No.	:	
c.	Fax No.	:	
d.	Email	:	
e.	Year of Incorporation.	:	
f.	Name and address of the person holding the Power of Attorney.	:	
g.	(i) Place of Business.	:	
	(ii) Date of Registration.	:	
h.	Name of Bankers with full address.	:	
i.	Service Tax Registration Number (copy).	:	
j.	Are you presently debarred / Black listed by any Government Department /Public Sector Undertaking /Any Employer? (If Yes, please furnished details)	:	
k.	Name and details (Tel / Mobile / E mail) of contact persons	:	

2. In case of a Consortium:

a. The information above should be provided for all the members of the consortium.
b. Information regarding role of each member should be provided as per table below:

Sr. No.	**Name of Member**	**Role** (Specify Lead Member/ Other Member)
1.		
2.		

3. Organisational Strength (staff strength in numbers)

Total Staff Strength of Organisation (Lead Firm)	
Total Staff Strength of Organisation (Consortium Partner)	
Total Staff Strength of Organisation (Consortium Partner)	

Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Lead Firm)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 1)	
Staff having experience of carrying out similar assignments and having performed tasks mentioned in the TOR (Consortium Partner 2)	

4. Turn-over of the Firm during last 3 years

Financial Year	**Turn Over (in Crores)**
2014-15	
2015-16	
2016-17	

(To be certified by the Chartered Accountant)

Certified that the above information is correct to the best of our knowledge and no relevant information is concealed. If at any time during or after the Shortlisting, it is proved that the information furnished by us is wrong, NIUA reserves the right to take necessary action against our firm as per applicable Laws/Rules of the land.

Signature of Authorized Representative of the Firm

Date Name ____

Place Designation

Tel No.

Mobile No.

E Mail ID

Seal/Stamp of the Firm

Appendix 5: Experience of the Firm in implementing assignments related to market research and field surveys the urban areas

Category No.	**Criteria** [i]	**Number and Name of Cities**
1	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only[1]) (Lead Firm)**	
2	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas . **(Substantially Completed only)(Consortium Partner 1)**	
3	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 2)**	
4	Experience of the Firm in implementing assignments related to market research and field surveys the urban areas **(Substantially Completed only)(Consortium Partner 3)….**	

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1 The Claims of completion shall be self-certified. A copy of work order/ agreement to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has submitted Draft Final Report or achieved equivalent milestone.

Appendix 5A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Experience of the firm in implementing assignments related to market research and field surveys in the urban areas.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 6: Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute

Category No.	**Criteria** [ii]	**Number and Name of Cities**
1	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only[2]) (Lead Firm)**	
2	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute. **(Substantially Completed only)(Consortium Partner 1)**	
3	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute **(Substantially Completed only)(Consortium Partner 2)**	
4	Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute (Substantially Completed only**)(Consortium Partner)…………**	

Appendix 6A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 5 .

Specific experience of the Firm in implementing assignments related to surveys and field research in the urban areas through teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Vertitas (India) Pvt. Ltd., UV SUD South Asia Pvt. or of equivalent status and repute.

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	

Appendix 7: Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation

Category No.	**Criteria**[1]	**Number and Name of Cities**
1	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only**[2]**)(Lead firm)**	
2	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation**. (Substantially Completed only) (Consortium partner 1)**	
3	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation **(Substantially Completed only) (Consortium partner 2)**	
4	Experience of the Applicant implementing assignments for undertaking analysis and assessment of data related governance, transportation, environment, housing and sanitation. **(Substantially Completed only) (Consortium partner 3)...........**	

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[1] The Claims of completion shall be self-certified. A copy of work order/ agreement is required to be submitted with this Application. NIUA may seek clarifications, if required, as per Clause 2.19.

[2] Substantially completed shall be considered in case the Applicant has completed Draft Final Report or has achieved equivalent milestone.

Appendix 7A: Format of Assignment Details of the Applicant

List projects (not more than 10) as mentioned in Appendix 6.

Experience of the firm in undertaking similar assignments for undertaking analysis and assessment of data related to governance, transportation, environment, housing and sanitation. **(Substantially Completed only)**

Assignment name:	Value of the contract (in current INR):
Country: Name of City/ Cities:	Duration of assignment (months):
Name of Client:	Total No of staff-months of the assignment:
Address:	Value of the contract per city (in current INR):
Start date (month/year): Completion date (month/year):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Notes: Use separate sheet for each Eligible Project

Appendix 8: Affidavit Certifying that Entity / Director/s of Entity are not Blacklisted

(On a Stamp Paper of relevant value)

Affidavit

I M/s. ……………… (Sole Applicant / Lead Member/ Other Member /s)), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred or blacklisted by any state government or central government / department / agency/PSU in India from participating in Project/s, either individually or as member of a Consortium as on ________________.

We further confirm that we are aware that as per Clause 2.7 (b), our Application for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of Clause 2.2 (f) or 2.2 (g) any stage of the Shortlisting Process or thereafter during the Shortlisting period.

Dated this ……………………..Day of …………………., 201….

Name of the Applicant

…………………………………………….
Signature of the Authorised Person

…………………………………………….
Name of the Authorised Person

Note:
To be executed separately by all the Members in case of Consortium

Appendix 9: Format for Memorandum of Understanding (MOU)

(On Non – judicial stamp paper of Rs 1000/- or such equivalent
Document duly attested by notary public)

This Memorandum of Understanding (MoU) entered into this _____day of ________ 2015 at __________ among _______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the First Part
and
_______ and having its registered office at _______, (hereinafter referred as"________", which expression unless repugnant to the context or meaning thereof includes its successors and permitted substitutes) of the Second Part
and

The parties are individually referred to as Party and collectively as Parties.

WHEREAS NIUA, has invited Request for Expression of Interest (REOI) from entities interested for **assessment of liveability**, ("Project") as per the terms contained in the REOI Document.

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

1. That the roles and the responsibilities of each Party at each stage of the Project shall be as follows:

2. That the Parties shall be jointly and severally liable for the execution of the Projects arising from the States, Union Territories, as the case may be and in accordance with in accordance with the terms of the Contract Agreement to be executed on award of the such Projects.

3. That this MoU shall be governed in accordance with the laws of India and courts in Delhi shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

1. First Party
2. Second Party
3. Third Party

Witness:

Annexure A- List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472

35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886

73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578

111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

REOI FOR SHORTLISTING OF CONSULTING FIRMS FOR ASSESSMENT OF LIVEABILITY IN SELECTED CITIES

RESPONSE TO PRE-BID QUERIES

S.NO	QUERY	RESPONSE
	REGARDING ELIGIBILITY	
	'A business entity' - Government entities, formed by cabinet decisions are not incorporated in companies Act/LLP Act. There should be a provision for such entities.	Explained in Clause 2.2 (b) page 7. As per procurement guidelines, State-owned enterprises are eligible to compete if they are: i. Legally and financially autonomous ii. Operate under commercial law iii. Are not under supervision by the agency contracting them In any case, such entities can participate as a consortium partner
	EMD processing fee required in EOI phase or not?	No
	REGARDING FINANCIAL QUALIFICATION CRITERIA	
	How do you define 'financial strength of the organization'? (What secures full marks?)	Information needs to be provided as per Annexure 4 of the REOI. The Procurement Committee will decide the same.
	Financial strength of the firm (Pg. no. 15, 3.1 b) Vague statement: Is there any lower limit?	
	Elucidation required for 'Financial strength evaluation'.	
	Is there any limit of turnover to apply for this bid?	No
	Valuation of consortium to be for 'lead partner' or consortium as a whole?	Technical criteria valuation will be for all consortium partners. For financial strength Lead partner shall only be evaluated.

	REGARDING SCOPE	
	You give assignment in a single company for PAN India. (Can someone apply for few cities only?)	Single selected agency has to carry out the entire assignment for 116 cities.
	There are 116 cities given in Annexure - 1, whether NIUA is going to split this assignment among many organizations or will it be given to one agency?	
	Would single or multiple agencies be deployed to conduct the research? If multiple, what would be min/max size of deliverables(state wise/zone wise)?	
	Please clarify if this is a single project or how would the cities be packaged if multiple projects.	
	Will you select one agency for 116 cities or there will be multiple agencies?	
	Will the complete assignment be taken by a single firm?	
	In case the number of firms are to be engaged, how would the lot be divided?	
	How many bidders will be considered for contract award for all 130 cities/towns.	
	How many firms are to be selected?	
	Can a consultant bid for few states or it has to bid for all the 116 cities?	
	In the background, 114 cities is mentioned whereas Annexure A has names of 116 cities in the list. So what is the exact number?	116 cities

	Standard of Liveability is defined or it has to be redefined by the consultant?	Please refer to the "Liveability Standards in Cities" along with "Methodology for Collection and Computation of Liveability Standards in Cities " which may be downloaded at http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Is the methodology and related indices confirmed or are under development?	
	Do you expect us to contribute to development of indices and calculations?	No
	Once the data is submitted, does the research agency gets a role in policy defining?	No
	What all does city inspection report contains?	In case this refers to 'Inception Reports': Refer 1.2.1.b for details on City wise Inception Report
	What is the definition of a city - Municipality area or UA?	Municipal area
	Will there be separate reports for each city?	Yes
	REGARDING TECHNICAL QUALIFICATION CRITERIA	
	What is the type of expertise required for the assignment?	Refer Clause 3.1 of REOI
	Why is accreditation with B.V. or UV SUD or equivalent necessary?	To ensure quality
	Can 'equivalent' in the above query be elucidated?	Please follow the terms of reference.
	Why specific certification required when we have more experiences of Market Research/Field surveys urban slums surveys/socio- economic surveys?	
	Teams consisting of data collectors accredited with or belonging to inspection bodies such as Bureau Veritas (india) pvt. Ltd., UV SUD South Asia pvt. or of equivalent status and	

	repute (Pg. no. 15, 3.1b) Which all bodies do include under this head? However, it is very difficult to get investigators/team for such a huge assignment	
	Section 3.1(e): Will ISO certifications quality? If yes, please specify how many projects or people to get 30 marks. If no, please specify the kind of accreditation.	
	Consideration of 30 marks in evaluation criteria for accreditation with Bureau veritas / UV SUD is too high. This criterion needs to be dropped to allow wider participation by industry in the project.	No change
	With respect to section 3 (b) of REOI on evaluation parameters, We have significant experience in undertaking field surveys and research and analysis in urban areas including household surveys, property survey and mapping etc. We have well laid out processes for data collection and quality assurance and are ISO 9001-2015 certified. As we mostly use in house survey designers, supervisors and data collectors, we have not worked with external terms specifically accredited by the specific organizations listed in REOI. The specific reference to inspection bodies may be removed in favour of generic quality assurance processes or certification or process demonstration.	
	From 3.1 Evaluation: Within each evaluation parameter, how will the marking be done? Is there any breakup of marks based on no. of assignments?	This will be decided by the Procurement Committee

	From 3.1 - Experience of staff- 25 marks: For how many similar assignments, maximum 25 marks will be awarded?	
	Point 3: Criteria for evaluation 3.1: Evaluation of applications a. What is the min number of experience for general experience? b. What is the minimum of staff having experience for similar assignment c. What is the minimum number of assignments related to market research and field survey in urban areas? d. What is the minimum number of assignments for experience of the firm in implementing assignments for analysis and assessment of data related to governance, transportation etc.	
	What is the score given to each assignment	
	The query is for the 'criteria for evaluation' marked at section 3. Under section 3.1 sub-point b, 4 parameters are grouped in 2 and marked as (3) and (4). The parameters include experience of the firm and the related assignments. The collective staff experience defines the firm's experience thus in that view the pointers are same except the expectations raised for the data collectors to be accredited with inspection bodies. Suggestion: In order to get more reliable data, one pointer should be added or weightage should be given to the consultants who are conducting the field work digitally.	

	Geotag information gives you more accuracy in terms of relying on data collected from that city itself.	
	On evaluation criteria what would be treated as Gold standard for each parameter i.e. what credential will make one eligible for full marks under each? What financial strength criteria will ensure 15 marks? How many projects as reference/experience?	
	Is the surveys held as large scale urban planning assignments will be counted or not?	Eligibility based on project details to be evaluated by the Procurement Committee
	Can we obtain global experience?	Yes
	Can study conducted in domain like governance, transportation, environment, conducted globally be shown in the experience?	Yes
	Is our global experience in similar studies relevant here?	Yes
	Reference Appendix 6 - Pg 28 ; Specific experience of the firm in implementing……….lead firm. Please clarify why pvt. Companies are mentioned and what kind of affiliation/equivalent status needed.	Self-Explanatory
	Reference Appendix 5,7 - Pg 26 and 30; A copy of the work order/agreement.........as per clause 2.19 Work order may not mention the survey work in most of the cases. But projects like PMAY are totally based on ground level survey as per the SOW mentioned by MOHUPA. Please consider these projects as under survey related work.	Project details to be submitted as per REOI

	REGARDING METHODOLOGY	
	Is primary data collection expected or the data needs to be collected from the ULB officials?	Both
	From 1.2 Brief TOR: What should be the methodology for data collection? Is this fixed or we have flexibility to opt for digital or other solutions?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Research mode : physical surveys, government data, online research about the city. These need to be defined (for accuracy) and how to submit data (pre defined formats)	
	Please elaborate on secondary data availability from different line departments and primary data collection requirements in the project.	
	Data collection and field survey- What would be the universe/TG selection process?	
	REOI refers to a detailed methodology already developed for this experience. Will the selected consultant be allowed to improvise it?	
	Will usage of 'lateral' or 'proxy' data sources such as satellite imagery to access traffic patterns, built density, green cover, water bodies, open spaces etc, telephone data on mobility patterns etc be supported or encouraged?	
	What does identification of data resources and submission of resources of data mean?	This will be part of the detailed Terms of Reference as part of the Request for Proposal

	Has there been a baseline study conducted on the availability of administrative data across all the indicators mentioned in REOI? If so, will that be made available to the consultants at RFP stage?	No.
	Will data collected previously under other mission and programs viz. Swachh Survekshan etc. be made available for Liveability Index? (Can be very useful and avoid duplication of efforts)	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	Will the government agencies provide support? To what extent? How?	
	Can data collection be a 'computer assisted personal interview' using CAPI devices (hand handled). REOI does mention that 'maintain and submit raw data and data collection forms to NIUA'.	
	Are you okay with digital form of data collection as you mentioned to submit raw data and data collection forms?	
	How is data to be submitted? Digitally or manually?	
	REGARDING DURATION OF ASSIGNMENT	
	What is the duration of this assignment?	This will be part of the detailed Terms of Reference as part of the Request for Proposal
	What would be the expected duration of the project(s)?	
	Once the purpose is defined then the research will make more sense. Also regarding the research - What is the time frame?	
	How much time is available for the actual execution of the project?	

	OTHER QUERIES	
	Define the purpose of research.	Please refer to the "Liveability Standards in Cities" and the "Methodology for Collection and Computation of Liveability Standards in Cities " documents, which can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php
	Assuming [that] in data collection for the government, [it is necessary] to identify the core areas which need to be addressed in the city, then the research need to be divided into three main parts - a. Physical structure - infrastructure b. social structure - occupation/education c. governance structure - how are things managed for a common man's life	
	Existing city infrastructure is required? Mapping the existing infrastructure in terms of connectivity, utilities, garbage management, education, employment opportunities and air quality.	
	Social structure : Liveability? What is the basic parameter which needs to be defined?	
	Governance structure : How is a common man's basic life and need governed? Who is accountable and answerable? Does the existing structure meets a common man's need?	
	Please provide the link for accessing liveability standards. Current link redirects to a page where it asks for EOI for Kakinada KMPs.	

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: *National Institute of Urban Affairs*
(An autonomous body under Ministry of Urban Affairs)

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

Issued on: [date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The National Institute of Urban affairs, (an autonomous body under Ministry of Urban Development), the implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Assessment of Liveability in 116 Cities cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposal (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank’s Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Form of Contract (Time Based)

6. Please inform us by *[insert date]*, in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal’s submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f) "CBUD" means Capacity Building for Urban Development (g) "Client" means the implementing agency that signs the Contract for the Services with the selected Consultant. (h) "Consultant" means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract. (i) "Contract" means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices). (j) "Data Sheet" means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

over-write, the provisions of the ITC.

(k) “Day” means a calendar day.

(l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) “Government” means Government of India.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provide~~s~~ the shortlisted Consultants with all information needed to prepare their Proposals.

(q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) “MoUD” means Ministry of Urban Development

(s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.

(t) “Proposal” means the Technical Proposal and the Financial Proposal of the Consultant.

(u) “RFP” means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP.

(v) “SRFP” means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP.

(w) “Services” means the work to be performed by the Consultant

	pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense. 2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth

	below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors,

	services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and: (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client

	To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country, whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of	**8.1.** The Consultant shall bear all costs associated with the

Preparation of Proposal	preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.
12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with

	Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and Amendment of RFP	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of

	all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial

Content	information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals	17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically. 17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form

of a written power of attorney attached to the Technical Proposal.

17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]".

17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal.

17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any

	extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC. 19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable.

	20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall

	technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	

a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.

D. Negotiations and Award

28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a

	Lump-Sum contract shall not be negotiated. 28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: National Institute of Urban Affairs (Autonomous body under** Government of India) under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated 2016 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:______________________________ Time: ____ Address: Telephone: ____ Facsimile: ____ E-mail: _______________________ Contact person/conference coordinator:*[insert name and title]* _______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

3	Not used
4.1	*NA*
5	Not used
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* http://web.worldbank.org/external/default/main?theSitePK=84266&contentMDK=64069844&menuPK=116730&pagePK=64148989&piPK=64148984&sort_on=SUPP_CTRY_NAME&sort_order=ascending&sort_data=text
7	Not used
8	Not used
	B. Preparation of Proposals
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND

	2d Inner Envelope with the Financial Proposal (if applicable): (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes
12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input: 30 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.

16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates:** Yes
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes -reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. …… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **Floor** **Place**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date: ____** 2017 *[for example, 15 June 2017]*

<table>
<tr><td></td><td>Time: 15:00 IST <i>[insert time in 24h format, for example, “16:00 local time”]</i>

<i>[If appropriate, add translation of the warning marking [“Do not open....”] in the national language to the outer sealed envelope]</i>

The Proposal submission address is: [insert the web address]</td></tr>
<tr><td>19.1</td><td>An online option of the opening of the Technical Proposals is offered: Yes/No

The opening shall take place at:
<i>[Insert: “</i>same as the Proposal submission address<i>” OR insert and fill in the following:</i>
Street Address:
Floor, room number: Room No.____, ____Floor,
City: New Delhi
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: <i>[insert time in 24h format, for example – “16:00 local time]</i>
<i>[The time should be immediately after the time for the submission deadline stated in 17.7]</i></td></tr>
<tr><td>19.2</td><td>In addition, the following information will be read aloud at the opening of the Technical Proposals NA</td></tr>
<tr><td>20</td><td>Not used</td></tr>
<tr><td>21.1
(for FTP)</td><td>Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

<table>
<tr><td></td><td>Description</td><td>Points</td></tr>
<tr><td>(i)</td><td>Specific experience of the Consultant (as a firm) relevant to the Assignment:</td><td>10</td></tr>
<tr><td></td><td>Total points for criterion (i)</td><td>10</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)</td><td>50</td></tr>
</table>
</td></tr>
</table>

(a)	*Technical approach and Methodology* *{Notes to Consultant:* *Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from* http://smartcities.gov.in/content/innerpage/otherstoolkit.php. *As part of their methodology, Consultants should indicate* ○ *A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same* ○ *The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.* ○ *The Methodology should also indicate the technology to be used for data collection and ensuring data veracity* The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing* *{Notes to Consultant:* *Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).* *Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.* *The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are*	10

	accredited must also be provided. *Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}*	
	Total points for criterion (ii) –50 points *{Notes to Consultant: The Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts.}*	**50**
(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	10
Survey and Sampling Specialist	6
Data Analytics and Indexing Specialist	6
Urban Transport Specialist	6
Environment Specialist	6
GIS Specialist	6
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following two sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the two criteria*:* **100**

……

The minimum technical score (St) required to pass is*:75 (seventy five) points*

22	Not used

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
24	Not used
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse the Service Tax to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees **The official source of the selling (exchange) rate is**: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest price, and "F" the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the

	weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, ___________, New Delhi -1100
29	Not used
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: ________________** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to National Institute of Urban Affairs in Carrying out surveys in 116 cities of India in order to assess Liveability Standards for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years. (Please give details of not more than 10 assignments)**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report or equivalent deliverable. The client may seek clarifications, if required

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., “Improvement quality of...............”: designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., “Support to sub-national government.....” : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3

COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.

Broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php.

As part of their methodology, Consultants should indicate
○ A complete list of data proposed to be collected in a tabular format, based on the documents on Liveability Index as stated above, indicating source for each dataset as well as an approximate timeline and format for the same
○ The proposed strategies that will be employed in cases where data is not available from the sources indicated in the document.
○ The Methodology should also indicate the technology to be used for data collection and ensuring data veracity
The final methodology to be adopted will be finalized in discussion with NIUA at the time of preparation of city inception reports.}

d) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff

Three levels of teams will be mobilized for the assignment as provided in 7.6 (Section 7 Terms of Reference).

Details of members of the Core Team will be evaluated as part of (iii) Key Experts' qualifications and competence for the Assignment.

The composition of the Analytics Team and Field Teams with names, qualification and name of institution with which they are accredited must also be provided.

Submission of such data for the Analytics and Field Teams is mandatory but will not receive any marks for purposes of technical evaluation.}

FORM TECH-5
WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact infor for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Assessement of Liveability Standards in selected 116 cities of India in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
______________________	______________________	______________________
______________________	______________________	______________________

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	*{Currency # 1- as in FIN-2}*	*{Currency # 2- as in FIN-2}*	*{Currency# 3- as in FIN-2}*	*{Local Currency- as in FIN-2}*
	Key Experts							
K-1			*[Home]*					▨
			[Field]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1			[*Home*]					
N-2			[*Field*]					
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“**Fraud and Corruption**

1.23 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];
- (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];
- (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];
- (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

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[4] For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

[7] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The ‘Liveability Standards in Cities’ document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability Standards in Cities’ and develop a ‘City Liveability Index’. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$$R_i = R_0 \ x \ (I_i / I_0)$$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;

   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

   c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:

   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;

   b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;

   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not

available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format discussed and finalized with NIUA;
  b. All raw data and data sheets (digital format);
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection

Report	Time line	Documents	Deliverables and Contents
			geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

***** Timelines for subsequent years will be as decided by NIUA.

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development

and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

7.7 TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

7.7.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

STANDARD FORM OF CONTRACT

Section 8

Consultant's Services

Lump-Sum

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name: Capacity Building for Urban Development

Name of Assignment: Selection of Consulting Firms for Assessment of Liveability in 116 Cities in India

[Credit #: 4997-IN

Contract No. CBUD/SD/17
between

National Institute of Urban Development, New Delhi

[Name of the Client]

and

[Name of the Consultant]

Dated: ______________________

I. Form of Contract

LUMP-SUM

(Text in brackets [ ] is optional; all notes should be deleted in the final text)

This CONTRACT (hereinafter called the “Contract”) is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, **National Institute of Urban Affairs (NIUA)**(hereinafter called the “Client”) and, on the other hand, *[name of Consultant]* (hereinafter called the “Consultant”).

[If the Consultant consist of more than one entity, the above should be partially amended to read as follows: “…(hereinafter called the “Client”) and, on the other hand, a Joint Venture (name of the JV) consisting of the following entities, each member of which will be jointly and severally liable to the Client for all the Consultant’s obligations under this Contract, namely, *[name of member]* and *[name of member]* (hereinafter called the “Consultant”).]

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the “Services”);

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) The client is an autonomous body established by the Ministry of Urban Development, New Delhi (MoUD). MoUD hi has received a credit from the *International Bank for Reconstruction and Development (IBRD) or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of this credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the [loan/financing/grant] agreement, including prohibitions of withdrawal from the [loan/credit/grant] account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan/financing/grant] agreement or have any claim to the [loan/credit/grant] proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

    (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
    (b) The Special Conditions of Contract;
    (c) Appendices:

    Appendix A: Terms of Reference
    Appendix B: Key Experts
    Appendix C: Breakdown of Contract Price

    In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

    (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
    (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[Name of Client]*

____

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant or Name of a Joint Venture]*

____

[Authorized Representative of the Consultant – name and signature]

[For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached.

For and on behalf of each of the members of the Consultant *[insert the Name of the Joint Venture]*

[Name of the lead member]

____

[Authorized Representative on behalf of a Joint Venture]

[add signature blocks for each member if all are signing]

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions	1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings: (a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated July 2016. (b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time. (c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank. (e) "CBUD" Means Capacity Building for Urban Development (f) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant. (g) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract. (h) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices). (i) "Day" means a working day unless indicated otherwise. (j) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11. (k) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

	(l) “Foreign Currency” means any currency other than the currency of the Client’s country. (m) “GCC” means these General Conditions of Contract. (n) “Government” means the government of India. (o) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract. (p) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal. (q) “Local Currency” means the currency of the Client’s country. (r) “MoUD” means ministry of Urban development (s) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract. (t) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them. (u) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written. (v) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto. (w) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract. (x) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.
2. Relationship between the Parties	2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf

	hereunder.
3. Law Governing Contract	3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
4. Language	4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
5. Headings	5.1. The headings shall not limit, alter or affect the meaning of this Contract.
6. Communications	6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**. 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
7. Location	7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
8. Authority of Member in Charge	8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
9. Authorized Representatives	9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**
10. Corrupt and Fraudulent Practices	10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
a. Commissions and Fees	10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must

	include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not

	foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies. 17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. 17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
b. No Breach of Contract	17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
c. Measures to be Taken	17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. 17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible. 17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. 17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

	(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred. 17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.
18. Suspension	18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.
19. Termination	19.1. This Contract may be terminated by either Party as per provisions set up below:
a. By the Client	19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f): (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18; (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to

	Clause GCC 45.1; (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days; (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract; (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13. 19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.
b. By the Consultant	19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause. (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue. (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days. (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1. (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.
c. Cessation of Rights and Obligations	19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and

	obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.
d. Cessation of Services	19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.
e. Payment upon Termination	19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: (a) payment for Services satisfactorily performed prior to the effective date of termination; and (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General	
a. Standard of Performance	20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties. 20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

	20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.
b. Law Applicable to Services	20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law. 20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country. 20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.
21. Conflict of Interests	21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
a. Consultant Not to Benefit from Commissions, Discounts, etc.	21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment. 21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any

	discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
b. Consultant and Affiliates Not to Engage in Certain Activities	21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.
c. Prohibition of Conflicting Activities	21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
d. Strict Duty to Disclose Conflicting Activities	21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
22. Confidentiality	22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.
23. Liability of the Consultant	23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.
24. Insurance to be Taken out by the Consultant	24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in

	Clause GCC 13.
25. Accounting, Inspection and Auditing	25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs. 25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)
26. Reporting Obligations	26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.
27. Proprietary Rights of the Client in Reports and Records	27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client. 27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.
28. Equipment, Vehicles and	28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the

Materials	Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value. 28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts	29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**
30. Replacement of Key Experts	30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts. 30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.
31. Removal of Experts or Sub-consultants	31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement. 31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement. 31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

	31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions	32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to: (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services. (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract. (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents. (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country. (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services. (f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.
33. Access to Project Site	33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client

	will be responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.
34. Change in the Applicable Law Related to Taxes and Duties	34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1
35. Services, Facilities and Property of the Client	35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**
36. Counterpart Personnel	36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**. 36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
37. Payment Obligation	37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price	38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**. 38.2 Any change to the Contract price specified in Clause 38.1 can

	be made only if the Parties have agreed to the revised scope of Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.
39. Taxes and Duties	39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**. 39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.
40. Currency of Payment	40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.
41. Mode of Billing and Payment	41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1. 41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**. 41.2.1 *Advance payment:* No advance payment would be made to the consultant. 41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon

	promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**. 41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.
42. Interest on Delayed Payments	42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith	43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement	44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation. 44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.
45. Dispute Resolution	45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];
- (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** the *land*
4.1	**The language is : English**.
6.1 and 6.2	**The addresses are:** Client: National Institute of Urban Affairs, New Delhi ________________ Attention : ________________ Facsimile : ________________ E-mail (where permitted):________________ Consultant : ________________ ________________ Attention : ________________ Facsimile : ________________ E-mail (where permitted) :________________
8.1	*NA*
9.1	**The Authorized Representatives are:** **For the Client:** *[name, title]*________________ **For the Consultant:** *[name, title]*________________
11.1	**The effectiveness conditions are the following**: Signing of the contract.
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**
13.1	**Commencement of Services:** **The number of days shall be 10 days[insert date]**.

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be** 12 (twelve) Months which may be extended upto two times for 12 months each upon successful completion of their and at the discretion of the client.
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3 :** Yes

23.1	**No additional provisions.**
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability insurance, with a minimum coverage of** equivalent of the contract amount; (b) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Client's country by the Consultant or its Experts or Sub-consultants, with a minimum coverage as per Motor Vehicle Act 1988.; (c) Third Party liability insurance, with a minimum coverage of one million.; (d) employer's liability and workers' compensation insurance in respect of the experts and Sub-consultants in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.2	**The Consultant shall not use these** *.**documents, database and software*** **for purposes unrelated to this Contract without the prior written approval of the Client**.
38.1	**The Contract price is: ____________________** *[insert amount and currency for each currency as applicable] [indicate:* **inclusive** *or* **exclusive***]* **of local indirect taxes.** **Indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be reimbursed by the Client to the Consultant.** **The amount of such taxes is ____________________ [insert the amount as finalized at the Contract's negotiations on the basis of the estimates**

	provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.
39.1 and 39.2	**The Client warrants that "the Client shall reimburse the Consultant indirect taxes i.e. Service Tax imposed, under the applicable law in the Client's country, on the Consultant.**
41.2	**The payment schedule:** **For the local currency ; [Insert the Amount]** 1. Payment of remuneration will be as follows ➢ Inception Report : Twenty percent (20 %) will be paid on acceptance/ approval of the inception report. ➢ Draft City Assessment Report : Fifty percent (50 %) will be paid on acceptance/ approval of Draft Final Report. ➢ Final City Assessment Report : Thirtypercent (30 %) will be paid on acceptance/ approval of Draft Final Report. **Note: The Consulting firm will submit the invoice in the name of Project Director, CBUD Project, Ministry of Urban Development, Nirman Bhawan, Maulana Azad Road, New Delhi- 110011 to the client. The client, after reviewing the invoice of the Consultant, shall recommend the payment along with the letter of acceptance/approval of the deliverable and any other information desired by the Project Director, CBUD to the Ministry of Urban Development (MoUD) for making the payment.**
41.2.1	***Not Applicable***
41.2.4	**The accounts are:** for foreign currency: *[insert account]*. for local currency: *[insert account]*.
42.1	**The interest rate is**: *[insert rate]*.
45.1	*[In contracts with foreign consultants, the Bank requires that the international commercial arbitration in a neutral venue is used.]* **Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to

arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions:

(a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Council of Arbitrators, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute.

(b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi

(b) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.

2. Rules of Procedure. Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India.

3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

	4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in New Delhi; (b) the *English* language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A – TERMS OF REFERENCE

1. Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The 'Liveability Standards in Cities' document can be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php;

iii. A total of 79 Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability Standards in Cities' and develop a 'City Liveability Index'. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Appendix D), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million

4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the National Institute of Urban Affairs (an autonomous body under Ministry of Urban Development) wishes to engage the services of a reputed national/international agency/institution for **Assessment of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the NIUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the NIUA for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will initially be valid for activities in Year 1 (as defined in Clause 7.5), and may be extended for a further period of 2 years upon successful completion of activities in Year 1, at the discretion of the NIUA;

vii. Remuneration paid in local currency pursuant to the rates submitted in Form Fin-2 shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:

$R_i=R_0 \ x \ (I_i/I_0)$

Where R_i is the adjusted remuneration, R_0 is the remuneration payable on the basis of the rates set forth in Form Fin-2 for remuneration payable in local currency in the first year. Similarly, R_0 and will be considered as the remuneration for the second year for calculation of the adjusted remuneration for the third year. I_i is the CPI (Urban) for Delhi as published by the Director General / Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, for the month in which the adjustment is to have effect and I_0 is the CPI (Urban) for Delhi as published by the authority named above for the month of the date of the contract.

2. Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the NIUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

3. Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct a Reconnaissance Study of all cities included in the project (as per Appendix D). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and alternate sources, preferred timelines, key nodal officers etc.;

  b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

  c. Study of existing reports, studies, alternative data sources etc.;

ii. Prepare and submit to the NIUA, an Inception Report, including inter-alia the following:

  a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA;

  b. Proposed timelines for city field visits as discussed and finalized with NIUA and State/City governments;

  c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with NIUA;

iii. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

iv. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

v. Collect data for all indicators based on the methodology finalized in discussion with the NIUA. It may be noted that broad guidance (indicator-wise) on data collection

methods, likely sources of secondary data, and standards for sampling size and regimen to be followed for physical surveys is given in "Methodology for Collection and Computation of Liveability Standards in Cities", which may be downloaded from http://smartcities.gov.in/content/innerpage/otherstoolkit.php. Where data is not available from the sources indicated in the document, alternate methodology will be suggested by the agency and finalized in discussion with NIUA at the time of preparation of city inception reports.

vi. Maintain and submit all raw data and data collection forms to NIUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

vii. Conduct analysis of the raw data through the Analytics Team (with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

viii. The authenticity of data shall be ensured through visual backup like photographs etc and using geo-tagging technology through hand held devices.

ix. The team at the National level will also conduct audit of the results.

x. Submit Draft City Assessment Report to the NIUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format discussed and finalized with NIUA;
  b. All raw data and data sheets (digital format);
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

xi. Submit Final City Assessment Report to the NIUA after including any recommendations of the NIUA and after suitably incorporating any valid feedback received from cities/states with the approval of the NIUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the NIUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide support in organizing national/regional workshops that maybe organized as part of this exercise by MoUD/NIUA.

xiv. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the NIUA for undertaking verification of the data;

xv. Provide any technical support as required by the NIUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xvi. Conduct a National workshop (1-day) on behalf of NIUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

4. Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the NIUA to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

5. Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	1 months from start date as per contract	Hard copies, and Electronic version	Including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc. for each city as discussed and finalized with NIUA; b. Proposed timelines for city field visits as discussed

Report	Time line	Documents	Deliverables and Contents
			and finalized with NIUA and State/City governments; c. Specific survey and raw data collection formats for the 78 standards as finalized in discussion with NIUA; d. Details of technology to be used for data collection geo-tagging through hand-held devices etc. The inception report must clearly describe data sets targeted to be geo tagged along with a Standard Operating procedure to be used by Surveyors to geo-tag data using Mobile apps e.g., Bhuvan-PMAY app (used in MGNREGA)
Draft City Assessment Report	4 Months from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data and calculation for all 79 indicators in a format as discussed and finalized with NIUA; b. All raw data and data sheets (digital format); c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kick-off meeting and other relevant documentation;
Final City Assessment Report	5 months from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the NIUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the NIUA.

6. ***** Timelines for subsequent years will be as decided by NIUA.

7. Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals having expertise in different domains as indicated in this TOR and accredited with or belonging to inspection bodies (such Bureau Vertitas (India) Pvt. Ltd., TUV SUD South Asia Pvt. Ltd . or equivalent in status and repute) having extensive experience in doing such king of surveys and assessments.

Core Team (CV to be evaluated)

Position	Minimum Qualifications & skills	Minimum Experience

Team Leader	Post Graduate degree in Engineering/Planning/Architecture/Economics/ Management/Mathematics/Statistics from a recognised University/Institution. Experience of working in Urban Sector. Experience of leading national/international level Urban Research assignments related to indexing of cities. Managed at least 1 projects of similar nature.	At least 20 years' experience in urban/management/research/ sector
Survey and Sampling Specialist	Post graduate level qualification in Statistics/Management (Marketing) from a recognised University/institution. Experience of designing and managing surveys and market research assignments.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Data Analytics and Indexing Specialist	Post graduate level qualification in Statistics from a recognised University/institution. Experience of data analysis developing composite indexes at national level.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Urban Transport Specialist	Post Graduate degree in Transport Planning from a recognised university/institution. Experience of designing and managing transport surveys, transport planning.	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
Environment Specialist	Post Graduate degree in Planning (Environment Focus)/ Environmental Sciences from a recognised university/institution. Experience in Environmental Impact Assessment and Environmental Management Plan	15 years professional experience. Managed/worked in at least 2 assignments of similar nature
GIS Specialist	Post Graduate degree in Geography/Urban Planning / Engineering from a recognized university/institution Experience of undertaking GIS mapping and analytics for urban local bodies	15 years professional experience. Managed/worked in at least 2 assignments of similar nature

8. TA management and counterpart staff

The assignment will be contracted by the NIUA for carrying out the assignment.

8.1 Items to be provided by the NIUA

a. The NIUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.

c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

8.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

……………………………………………………………………………………………

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]

When the Consultant has been selected under Quality-Based Selection method, also add the following:

> *"*The agreed remuneration rates shall be stated in the attached Model Form I. This form shall be prepared on the basis of Appendix A to Form FIN-3 of the RFP "Consultants' Representations regarding Costs and Charges" submitted by the Consultant to the Client prior to the Contract's negotiations.
>
> Should these representations be found by the Client (either through inspections or audits pursuant to Clause GCC 25.2 or through other means) to be materially incomplete or inaccurate, the Client shall be entitled to introduce appropriate modifications in the remuneration rates affected by such materially incomplete or inaccurate representations. Any such modification shall have retroactive effect and, in case remuneration has already been paid by the Client before any such modification, (i) the Client shall be entitled to offset any excess payment against the next monthly payment to the Consultants, or (ii) if there are no further payments to be made by the Client to the Consultants, the Consultants shall reimburse to the Client any excess payment within thirty (30) days of receipt of a written claim of the Client. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with Clause GCC 45.1(d) of this Contract.*"]*

Model Form I
Breakdown of Agreed Fixed Rates in Consultant’s Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client’s Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

---

* If more than one currency, add a table

Signature

Date

Name and Title:

APPENDIX D - LIST OF CITIES

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	NA
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Naya Raipur	NA
17	Chhattisgarh	Raipur	10,47,389
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	NA
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788

Sl. No.	Name of State	Name of City	Population
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000
71	Puducherry	Oulgaret	NA
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100

Sl. No.	Name of State	Name of City	Population
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Tamil Nadu	Salem	8,29,267
82	Tamil Nadu	Thanjavur	2,22,943
83	Tamil Nadu	Vellore	1,85,803
84	Tamil Nadu	Dindigul	2,07,327
85	Tamil Nadu	Erode	1,57,101
86	Tamil Nadu	Tiruchirappalli	8,47,387
87	Tamil Nadu	Thoothukkudi	2,37,830
88	Tamil Nadu	Tiruppur	4,44,352
89	Tamil Nadu	Tirunelveli	4,73,637
90	Tamil Nadu	Chennai	46,46,732
91	Tamil Nadu	Coimbatore	10,50,721
92	Tamil Nadu	Madurai	10,17,865
93	Telengana	Warangal	8,19,406
94	Telengana	Hyderabad	67,31,790
95	Tripura	Agartala	4,00,004
96	Uttar Pradesh	Lucknow	28,17,105
97	Uttar Pradesh	Agra	15,85,704
98	Uttar Pradesh	Moradabad	8,87,871
99	Uttar Pradesh	Aligarh	8,74,408
100	Uttar Pradesh	Rampur	3,25,313
101	Uttar Pradesh	Rae Bareli	1,91,316
102	Uttar Pradesh	Bareilly	9,03,668
103	Uttar Pradesh	Jhansi	5,05,693
104	Uttar Pradesh	Saharanpur	7,05,478
105	Uttar Pradesh	Kanpur	27,65,348
106	Uttar Pradesh	Varanasi	11,98,491
107	Uttar Pradesh	Ghaziabad	16,48,643
108	Uttar Pradesh	Meerut	13,05,429
109	Uttar Pradesh	Allahabad	11,12,544
110	Uttarakhand	Dehradun	5,69,578
111	West Bengal	New Town Kolkata	36,541
112	West Bengal	Durgapur	5,66,517
113	West Bengal	Bidhan Nagar	6,18,358

Sl. No.	Name of State	Name of City	Population
114	West Bengal	Haldia	2,00,827
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Haora	10,77,075

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

RFP on Liveability Index

2 messages

Vijay Kumar <g.vijaykumar.moud@gmail.com> Thu, May 25, 2017 at 4:49 PM
To: Vasudha Thawakar <vsarda@worldbank.org>, Raja Dawn <Raja@meghrajindia.com>, sajeesh.kr@gov.in, Utpal Deka <utpal.deka@gmail.com>, nrajadhyaksha@ipeglobal.com

Dear Madam,

Please find enclosed herewith a RFP for shortlisting of firms for assessment of livability of selected cities out of 79 indicators. At present, 116 cities have been identified and the same may be varied.

As communicated earlier, the procurement will be done by NIUA, which is an Institute under Ministry of Urban Development (MoUD), Government of India, on behalf of the MoUD. The REOI was already issued by NIUA. The RFP will be issued to the shortlisted firms. The payment for the assignment for the first round will be made by the Ministry directly to the selected agency on successful completion of assignment and duly certified by NIUA out of CBUD funds.

You are requested to convey no objection/comments of World bank at the earliest.

Regards,

G Vijay Kumar

Under Secretary the Government of India,

Ministry of Urban Development,
Smart Cities Division, Nirman Bhavan, New Delhi.

Ph. 23063217
M. 9582576758

Part I RFP Liveability Index draft V5.docx
269K

Vasudha Thawakar <vsarda@worldbank.org> Wed, May 31, 2017 at 1:50 PM
To: Vijay Kumar <g.vijaykumar.moud@gmail.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>
Cc: "utpal.deka@gmail.com" <utpal.deka@gmail.com>, "Raja@meghrajindia.com" <Raja@meghrajindia.com>, "nrajadhyaksha@ipeglobal.com"

<nrajadhyaksha@ipeglobal.com>, Swayamsiddha Mohanty <smohanty1@worldbank.org>;
Jyoti Sriram <jsriram@worldbank.org>, Payal Malik Madan <pmmadan@worldbank.org>

Dear Mr. Kumar:

Thank you for the below attached email for the selection of Consultant for Assessment of livability index, to be procured by NIUA (on behalf of MoUD), subject to following :

(i) The PMU provides hand holding support to NIUA for the procurement process

(ii) Bank's Guidelines for Selection of Consultants – January 2011, updated July 2014 is followed

(iii) Bank's standard format for REoI, RFP, TER and Contract Agreement is used

(iv) Use of STEP for the procurement process

From the below email, we observe that the REoI has already been advertised. Since this is a prior review contract, the REoI and subsequent steps, needs to be cleared by Bank (through STEP). You may kindly advise the Client to send the documents through STEP for Bank's review.

Vasudha Thawakar

Senior Urban Specialist

New Delhi, India

Tel: +91 11 4924 7664

WORLD BANK GROUP
Social, Urban, Rural & Resilience

Begin forwarded message:

From: "Vijay Kumar" <g.vijaykumar.moud@gmail.com>
To: "Vasudha Thawakar" <vsarda@worldbank.org>, "Raja Dawn"

<Raja@meghrajindia.com>, "sajeesh.kr@gov.in" <sajeesh.kr@gov.in>,
"utpal.deka@gmail.com" <utpal.deka@gmail.com>,
"nrajadhyaksha@ipeglobal.com" <nrajadhyaksha@ipeglobal.com>
Subject: RFP on Liveability Index

[Quoted text hidden]

REQUEST FOR PROPOSAL

RFP No.: CBUD/FIN/34

Client: _________*Municipal Corporation*

Country: INDIA

Credit #:4997-IN

Project Name: **Capacity Building for Urban Development**

Name of Assignment: Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India

Issued on:[date]

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PART I

Section 1. Letter of Invitation

RFP No. CBUD/FIN/34 **Credit No**.4997-IN

New Delhi ____/ March/2017

Dear Mr. /Ms.:

1. The Government of India (hereinafter called "Borrower") has received financing from the International Development Association (IDA) (the "Bank") in the form of a credit (hereinafter called "credit") toward the cost of Capacity Building for Urban Development (CBUD) Project. The Ministry of Urban Development (MoUD), Government of India, an implementing agency of the Client, intends to apply a portion of the proceeds of this credit to eligible payments under the contract for which this Request for Proposals is issued. Payments by the Bank will be made only at the request of the *Ministry of Urban Development* (client) and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the financing agreement. The financing agreement prohibits a withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the financing agreement or have any claims to the proceeds of the credit.

   The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): "Selection of Consulting Firms for Conducting Surveys for Assessment of Liveability Indices for 116 cities in India". More details on the Services are provided in the Terms of Reference (Section 7).

2. This Request for Proposals (RFP) has been addressed to all eligible Consultants:

3. Deleted.

4. A firm will be selected under Quality and Cost Based Selection method (QCBS) **(Lump Sum)** and in a Proposal format as described in this RFP, in accordance with the policies of the Bank detailed in the Consultants' Guidelines which can be found at the following website: *www.worldbank.org/procure*.

5. The RFP includes the following documents:

   Section 1 - Letter of Invitation
   Section 2 - Instructions to Consultants and Data Sheet
   Section 3 - Technical Proposal - Standard Forms
   Section 4 - Financial Proposal - Standard Forms

Section 5 – Eligible Countries
Section 6 – Bank's Policy – Corrupt and Fraudulent Practices
Section 7 - Terms of Reference
Section 8 - Standard Forms of Contract (Time Based)

6. Please inform us by *[insert date]*,in writing by E-mail *[insert e-mail address]*:

   (a) That you have received the Letter of Invitation; and
   (b) Whether you intend to submit a proposal alone or intend to enhance your experience by requesting permission to associate with other firm(s) (if permissible under Section 2, Instructions to Consultants (ITC), Data Sheet 14.1.1).

7. Details on the proposal's submission date, time and address are provided in Clauses 17.7 and 17.9 of the ITC.

Yours sincerely,

Section 2. Instructions to Consultants and Data Sheet

A. General Provisions

1. Definitions	(a) "Affiliate(s)" means an individual or an entity that directly or indirectly controls, is controlled by, or is under common control with the Consultant. (b) "Applicable Guidelines" means the policies of the Bank governing the selection and Contract award process as set forth in this RFP. (c) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Data Sheet**, as they may be issued and in force from time to time. (d) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA). (e) "Borrower" means the Government, Government agency or other entity that signs the *[loan/financing/grant[1]]* agreement with the Bank. (f)"CBUD" means Capacity Building for Urban Development

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[1] *["loan agreement" term is used for IBRD loans; "financing agreement" is used for IDA credits; and "grant agreement" is used for Recipient-Executed Trust Funds administered by IBRD or IDA]*

(g) “Client” means the implementing agency that signs the Contract for the Services with the selected Consultant.

(h) “Consultant” means a legally-established professional consulting firm or an entity that may provide or provides the Services to the Client under the Contract.

(i) “Contract” means a legally binding written agreement signed between the Client and the Consultant and includes all the attached documents listed in its Clause 1 (the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC), and the Appendices).

(j) “Data Sheet” means an integral part of the Instructions to Consultants (ITC) Section 2 that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITC.

(k) “Day” means a calendar day.

(l) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or Joint Venture member(s).

(m) “Government” means Government of India.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one Consultant where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant’s proposal.

(p) “ITC” (this Section 2 of the RFP) means the Instructions to Consultants that provides the shortlisted Consultants with all information needed to prepare their Proposals.

(q) “LOI” (this Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Consultants.

(r) “MoUD” means Ministry of Urban Development

	(s) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually. (t) "Proposal" means the Technical Proposal and the Financial Proposal of the Consultant. (u) "RFP" means the Request for Proposals to be prepared by the Client for the selection of Consultants, based on the SRFP. (v) "SRFP" means the Standard Request for Proposals, which must be used by the Client as the basis for the preparation of the RFP. (w) "Services" means the work to be performed by the Consultant pursuant to the Contract. (x) "Sub-consultant" means an entity to whom the Consultant intends to subcontract any part of the Services while remaining responsible to the Client during the performance of the Contract. (y) "TORs" (this Section 7 of the RFP) means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.
2. Introduction	2.1 The Client named in the **Data Sheet** intends to select a Consultant from those listed in the Letter of Invitation, in accordance with the method of selection specified in the **Data Sheet**. 2.2 The shortlisted Consultants are invited to submit a Technical Proposal and a Financial Proposal, or a Technical Proposal only, as specified in the **Data Sheet**, for consulting services required for the assignment named in the **Data Sheet**. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Consultant. 2.3 The Consultants should familiarize themselves with the local conditions and take them into account in preparing their Proposals, including attending a pre-proposal conference if one is specified in the **Data Sheet**. Attending any such pre-proposal conference is optional and is at the Consultants' expense.

	2.4 The Client will timely provide, at no cost to the Consultants, the inputs, relevant project data, and reports required for the preparation of the Consultant's Proposal as specified in the **Data Sheet**.
3. Conflict of Interest	3.1 The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. 3.2 The Consultant has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the Consultant or the termination of its Contract and/or sanctions by the Bank. 3.2.1 Without limitation on the generality of the foregoing, the Consultant shall not be hired under the circumstances set forth below:
a. Conflicting activities	(i) Conflict between consulting activities and procurement of goods, works or non-consulting services: a firm that has been engaged by the Client to provide goods, works, or non-consulting services for a project, or any of its Affiliates, shall be disqualified from providing consulting services resulting from or directly related to those goods, works, or non-consulting services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, or any of its Affiliates, shall be disqualified from subsequently providing goods or works or non-consulting services resulting from or directly related to the consulting services for such preparation or implementation.
b. Conflicting assignments	(ii) Conflict among consulting assignments: a Consultant (including its Experts and Sub-consultants) or any of its Affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant for the same or for another Client.
c. Conflicting relationships	(iii) Relationship with the Client's staff: a Consultant (including its Experts and Sub-consultants) that has a close business or family relationship with a professional staff of the Borrower (or of the Client, or of implementing agency, or of a recipient of a part of the Bank's financing) who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict

	stemming from this relationship has been resolved in a manner acceptable to the Bank throughout the selection process and the execution of the Contract.
4. Unfair Competitive Advantage	4.1 Fairness and transparency in the selection process require that the Consultants or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to the assignment in question. To that end, the Client shall indicate in the **Data Sheet** and make available to all shortlisted Consultants together with this RFP all information that would in that respect give such Consultant any unfair competitive advantage over competing Consultants.
5. Corrupt and Fraudulent Practices	5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6. 5.2 In further pursuance of this policy, Consultant shall permit and shall cause its agents, Experts, Sub-consultants, sub-contractors, services providers, or suppliers to permit the Bank to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Bank.
6. Eligibility	6.1 The Bank permits consultants (individuals and firms, including Joint Ventures and their individual members) from all countries to offer consulting services for Bank-financed projects. 6.2 Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by the Bank in the Applicable Guidelines. 6.3 As an exception to the foregoing Clauses 6.1 and 6.2 above:
a. Sanctions	6.3.1 A firm or an individual sanctioned by the Bank in accordance with the above Clause 5.1 or in accordance with "Anti-Corruption Guidelines" shall be ineligible to be awarded a Bank-financed contract, or to benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall determine. The list of debarred firms and individuals is available at the electronic address specified in the **Data Sheet**.
b. Prohibitions	6.3.2 Firms and individuals of a country or goods manufactured in a country may be ineligible if so indicated in Section 5 (Eligible Countries) and:

	(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the provision of Services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
c. Restrictions for Government-owned Enterprises	6.3.3 Government-owned enterprises or institutions in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority or has the ability to exercise influence or control over it.
d. Restrictions for public employees	6.3.4 Government officials and civil servants of the Borrower's country are not eligible to be included as Experts in the Consultant's Proposal unless such engagement does not conflict with any employment or other laws, regulations, or policies of the Borrower's country, and they (i) are on leave of absence without pay, or have resigned or retired; (ii) are not being hired by the same agency they were working for before going on leave of absence without pay, resigning, or retiring (in case of resignation or retirement, for a period of at least 6 (six) months, or the period established by statutory provisions applying to civil servants or government employees in the Borrower's country,

	whichever is longer. Experts who are employed by the government-owned universities, educational or research institutions are not eligible unless they have been full time employees of their institutions for a year or more prior to being included in Consultant's Proposal.; and (iii) their hiring would not create a conflict of interest.
B. Preparation of Proposals	
7. General Considerations	**7.1.** In preparing the Proposal, the Consultant is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.
8. Cost of Preparation of Proposal	**8.1.** The Consultant shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultant.
9. Language	**9.1.** The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Consultant and the Client, shall be written in the language(s) specified in the **Data Sheet**.
10. Documents Comprising the Proposal	**10.1.** The Proposal shall comprise the documents and forms listed in the **Data Sheet**. **10.2.** If specified in the **Data Sheet**, the Consultant shall include a statement of an undertaking of the Consultant to observe, in competing for and executing a contract, the Client country's laws against fraud and corruption (including bribery). **10.3.** The Consultant shall furnish information on commissions, gratuities, and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, Contract execution, as requested in the Financial Proposal submission form (Section 4).
11. Only One Proposal	**11.1.** The Consultant (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture in another Proposal. If a Consultant, including any Joint Venture member, submits or participates in more than one proposal, all such proposals shall be disqualified and rejected. This does not, however, preclude a Sub-consultant, or the Consultant's staff from participating as Key Experts and Non-Key Experts in more than one Proposal when circumstances justify and if stated in the **Data Sheet**.

12. Proposal Validity	**12.1. The Data Sheet** indicates the period during which the Consultant's Proposal must remain valid after the Proposal submission deadline. **12.2.** During this period, the Consultant shall maintain its original Proposal without any change, including the availability of the Key Experts, the proposed rates and the total price. **12.3.** If it is established that any Key Expert nominated in the Consultant's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation, and may be subject to sanctions in accordance with Clause 5 of this ITC.
a. Extension of Validity Period	**12.4.** The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all Consultants who submitted Proposals prior to the submission deadline to extend the Proposals' validity. **12.5.** If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the Key Experts. **12.6.** The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
b. Substitution of Key Experts at Validity Extension	**12.7.** If any of the Key Experts become unavailable for the extended validity period, the Consultant shall provide a written adequate justification and evidence satisfactory to the Client together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation score, however, will remain to be based on the evaluation of the CV of the original Key Expert. **12.8.** If the Consultant fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Client, such Proposal will be rejected with the prior Bank's no objection.
c. Sub-Contracting	**12.9.** The Consultant shall not subcontract the whole of the Services.
13. Clarification and	**13.1.** The Consultant may request a clarification of any part of the RFP during the period indicated in the **Data Sheet** before the Proposals' submission deadline. Any request for clarification must be sent in

Amendment of RFP	writing, or by standard electronic means, to the Client's address indicated in the **Data Sheet**. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 13.1.1. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment shall be sent to all shortlisted Consultants and will be binding on them. The shortlisted Consultants shall acknowledge receipt of all amendments in writing. 13.1.2. If the amendment is substantial, the Client may extend the proposal submission deadline to give the shortlisted Consultants reasonable time to take an amendment into account in their Proposals. **13.2.** The Consultant may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Technical or Financial Proposal shall be accepted after the deadline.
14. Preparation of Proposals – Specific Considerations	**14.1.** While preparing the Proposal, the Consultant must give particular attention to the following: 14.1.1. If a shortlisted Consultant considers that it may enhance its expertise for the assignment by associating with other consultants in the form of a Joint Venture or as Sub-consultants, it may do so with either (a) non-shortlisted Consultant(s), or (b) shortlisted Consultants if permitted in the **Data Sheet**. In all such cases a shortlisted Consultant must obtain the written approval of the Client prior to the submission of the Proposal. When associating with non-shortlisted firms in the form of a joint venture or a sub-consultancy, the shortlisted Consultant shall be a lead member. If shortlisted Consultants associate with each other, any of them can be a lead member. 14.1.2. The Client may indicate in the **Data Sheet** the estimated Key Experts' time input (expressed in person-month) or the Client's estimated total cost of the assignment, but not both. This estimate is indicative and the Proposal shall be based on the Consultant's own estimates for the same. 14.1.3. If stated in the **Data Sheet**, the Consultant shall include in its Proposal at least the same time input (in the same unit as

	indicated in the **Data Sheet**) of Key Experts, failing which the Financial Proposal will be adjusted for the purpose of comparison of proposals and decision for award in accordance with the procedure in the **Data Sheet**. 14.1.4. For assignments under the Fixed-Budget selection method, the estimated Key Experts' time input is not disclosed. Total available budget, with an indication whether it is inclusive or exclusive of taxes, is given in the **Data Sheet**, and the Financial Proposal shall not exceed this budget.
15. Technical Proposal Format and Content	**15.1.** The Technical Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive. 15.1.1 Consultant shall not propose alternative Key Experts. Only one CV shall be submitted for each Key Expert position. Failure to comply with this requirement will make the Proposal non-responsive. **15.2.** Depending on the nature of the assignment, the Consultant is required to submit a Full Technical Proposal (FTP), or a Simplified Technical Proposal (STP) as indicated in the **Data Sheet** and using the Standard Forms provided in Section 3 of the RFP.
16. Financial Proposal	**16.1.** The Financial Proposal shall be prepared using the Standard Forms provided in Section 4 of the RFP. It shall list all costs associated with the assignment, including (a) remuneration for Key Experts and Non-Key Experts, (b) reimbursable expenses indicated in the **Data Sheet**.
a. Price Adjustment	**16.2.** For assignments with a duration exceeding 18 months, a price adjustment provision for foreign and/or local inflation for remuneration rates applies if so stated in the **Data Sheet**.
b. Taxes	**16.3.** The Consultant and its Sub-consultants and Experts are responsible for meeting all tax liabilities arising out of the Contract unless stated otherwise in the **Data Sheet**. Information on taxes in the Client's country is provided in the **Data Sheet**.
c. Currency of Proposal	**16.4.** The Consultant may express the price for its Services in the currency or currencies as stated in the **Data Sheet**. If indicated in the **Data Sheet**, the portion of the price representing local cost shall be stated in the national currency.
d. Currency of Payment	**16.5.** Payment under the Contract shall be made in the currency or currencies in which the payment is requested in the Proposal.

C. Submission, Opening and Evaluation

17. Submission, Sealing, and Marking of Proposals

17.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by mail or by hand. If specified in the **Data Sheet**, the Consultant has the option of submitting its Proposals electronically.

17.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for both the Technical Proposal and, if applicable, the Financial Proposal and shall initial all pages of both. The authorization shall be in the form of a written power of attorney attached to the Technical Proposal.

> 17.2.1 A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

17.3 Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Proposal.

17.4 The signed Proposal shall be marked "ORIGINAL", and its copies marked "COPY" as appropriate. The number of copies is indicated in the **Data Sheet**. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

17.5 The original and all the copies of the Technical Proposal shall be placed inside of a sealed envelope clearly marked "**TECHNICAL PROPOSAL**", "[Name of the Assignment]", reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN UNTIL [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]**."

17.6 Similarly, the original Financial Proposal (if required for the applicable selection method) shall be placed inside of a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" followed by the name of the assignment, reference number, name and address of the Consultant, and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**."

17.7 The sealed envelopes containing the Technical and Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference

	number, the name of the assignment, Consultant's name and the address, and shall be clearly marked "**DO NOT OPEN BEFORE** [insert the time and date of the submission deadline indicated in the Data Sheet]". 17.8 If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal. 17.9 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Client no later than the deadline indicated in the **Data Sheet**, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.
18. Confidentiality	18.1 From the time the Proposals are opened to the time the Contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Consultants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information. 18.2 Any attempt by shortlisted Consultants or anyone on behalf of the Consultant to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal, and may be subject to the application of prevailing Bank's sanctions procedures. 18.3 Notwithstanding the above provisions, from the time of the Proposals' opening to the time of Contract award publication, if a Consultant wishes to contact the Client or the Bank on any matter related to the selection process, it should do so only in writing.
19. Opening of Technical Proposals	19.1 The Client's evaluation committee shall conduct the opening of the Technical Proposals in the presence of the shortlisted Consultants' authorized representatives who choose to attend (in person, or online if this option is offered in the **Data Sheet**). The opening date, time and the address are stated in the **Data Sheet**. The envelopes with the Financial Proposal shall remain sealed and shall be securely stored with a reputable public auditor or independent authority until they are opened in accordance with Clause 23 of the ITC.

	19.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Consultant or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope with the Financial Proposal; (iii) any modifications to the Proposal submitted prior to proposal submission deadline; and (iv) any other information deemed appropriate or as indicated in the **Data Sheet**.
20. Proposals Evaluation	20.1 Subject to provision of Clause 15.1 of the ITC, the evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded and the Bank issues its "no objection", if applicable. 20.2 The Consultant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 12.7 of this ITC. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.
21. Evaluation of Technical Proposals	21.1 The Client's evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and the RFP, applying the evaluation criteria, sub-criteria, and point system specified in the **Data Sheet**. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the **Data Sheet**.
22. Financial Proposals for QBS	22.1 Following the ranking of the Technical Proposals, when the selection is based on quality only (QBS), the top-ranked Consultant is invited to negotiate the Contract. 22.2 If Financial Proposals were invited together with the Technical Proposals, only the Financial Proposal of the technically top-ranked Consultant is opened by the Client's evaluation committee. All other Financial Proposals are returned unopened after the Contract negotiations are successfully concluded and the Contract is signed.
23. Public Opening of Financial Proposals (for QCBS, FBS, and LCS methods)	23.1 After the technical evaluation is completed and the Bank has issued its no objection (if applicable), the Client shall notify those Consultants whose Proposals were considered non-responsive to the RFP and TOR or did not meet the minimum qualifying technical score (and shall provide information relating to the Consultant's overall technical score, as well as scores obtained for each criterion and sub-criterion) that their Financial Proposals will be returned unopened after completing the selection process and Contract signing. The Client shall simultaneously notify in writing those

	Consultants that have achieved the minimum overall technical score and inform them of the date, time and location for the opening of the Financial Proposals. The opening date should allow the Consultants sufficient time to make arrangements for attending the opening. The Consultant's attendance at the opening of the Financial Proposals (in person, or online if such option is indicated in the **Data Sheet**) is optional and is at the Consultant's choice. 23.2 The Financial Proposals shall be opened by the Client's evaluation committee in the presence of the representatives of those Consultants whose proposals have passed the minimum technical score. At the opening, the names of the Consultants, and the overall technical scores, including the break-down by criterion, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals and to the Bank.
24. Correction of Errors	24.1 Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.
a. Time-Based Contracts	24.1.1 If a Time-Based contract form is included in the RFP, the Client's evaluation committee will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and the Client's evaluation committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.
b. Lump-Sum Contracts	24.2 If a Lump-Sum contract form is included in the RFP, the Consultant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made. The total price, net of taxes understood as per Clause

	ITC 25 below, specified in the Financial Proposal (Form FIN-1) shall be considered as the offered price.
25. Taxes	25.1 The Client's evaluation of the Consultant's Financial Proposal shall exclude taxes and duties in the Client's country in accordance with the instructions in the **Data Sheet**.
26. Conversion to Single Currency	26.1 For the evaluation purposes, prices shall be converted to a single currency using the selling rates of exchange, source and date indicated in the **Data Sheet**.
27. Combined Quality and Cost Evaluation	
a. Quality- and Cost-Based Selection (QCBS)	27.1 In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions in the **Data Sheet**. The Consultant achieving the highest combined technical and financial score will be invited for negotiations.
b. Fixed-Budget Selection (FBS)	27.2 In the case of FBS, those Proposals that exceed the budget indicated in Clause 14.1.4 of the **Data Sheet** shall be rejected. 27.3 The Client will select the Consultant that submitted the highest-ranked Technical Proposal that does not exceed the budget indicated in the RFP, and invite such Consultant to negotiate the Contract.

c. Least-Cost Selection	27.4 In the case of Least-Cost Selection (LCS), the Client will select the Consultant with the lowest evaluated total price among those consultants that achieved the minimum technical score, and invite such Consultant to negotiate the Contract.
D. Negotiations and Award	
28. Negotiations	28.1 The negotiations will be held at the date and address indicated in the **Data Sheet** with the Consultant's representative(s) who must have written power of attorney to negotiate and sign a Contract on behalf of the Consultant. 28.2 The Client shall prepare minutes of negotiations that are signed by the Client and the Consultant's authorized representative.
a. Availability of Key Experts	28.3 The invited Consultant shall confirm the availability of all Key Experts included in the Proposal as a pre-requisite to the negotiations, or, if applicable, a replacement in accordance with Clause 12 of the ITC. Failure to confirm the Key Experts' availability may result in the rejection of the Consultant's Proposal and the Client proceeding to negotiate the Contract with the next-ranked Consultant. 28.4 Notwithstanding the above, the substitution of Key Experts at the negotiations may be considered if due solely to circumstances outside the reasonable control of and not foreseeable by the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall offer a substitute Key Expert within the period of time specified in the letter of invitation to negotiate the Contract, who shall have equivalent or better qualifications and experience than the original candidate.
b. Technical negotiations	28.5 The negotiations include discussions of the Terms of Reference (TORs), the proposed methodology, the Client's inputs, the special conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
c. Financial negotiations	28.6 The negotiations include the clarification of the Consultant's tax liability in the Client's country and how it should be reflected in the Contract. 28.7 If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated.

	28.8 In the case of a Time-Based contract, unit rates negotiations shall not take place, except when the offered Key Experts and Non-Key Experts' remuneration rates are much higher than the typically charged rates by consultants in similar contracts. In such case, the Client may ask for clarifications and, if the fees are very high, ask to change the rates after consultation with the Bank. The format for (i) providing information on remuneration rates in the case of Quality Based Selection; and (ii) clarifying remuneration rates' structure under Clause 28.8 above, is provided in Appendix A to the Financial Form FIN-3: Financial Negotiations – Breakdown of Remuneration Rates.
29. Conclusion of Negotiations	29.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Client and the Consultant's authorized representative. 29.2 If the negotiations fail, the Client shall inform the Consultant in writing of all pending issues and disagreements and provide a final opportunity to the Consultant to respond. If disagreement persists, the Client shall terminate the negotiations informing the Consultant of the reasons for doing so. After having obtained the Bank's no objection, the Client will invite the next-ranked Consultant to negotiate a Contract. Once the Client commences negotiations with the next-ranked Consultant, the Client shall not reopen the earlier negotiations.
30. Award of Contract	30.1 After completing the negotiations the Client shall obtain the Bank's no objection to the negotiated draft Contract, if applicable; sign the Contract; publish the award information as per the instructions in the **Data Sheet**; and promptly notify the other shortlisted Consultants. 30.2 The Consultant is expected to commence the assignment on the date and at the location specified in the **Data Sheet**.

Instructions to Consultants

E. Data Sheet

[“Notes to Client” shown in brackets throughout the text are provided for guidance to prepare the Data Sheet; they should be deleted from the final RFP to be sent to the shortlisted Consultants]

A. General	
ITC Clause Reference	
1 (c)	*Law of the land (INDIA)*
2.1	**Name of the Client: Ministry of Urban development (MoUD),** Government of India under Capacity Building for Urban Development (CBUD) **Method of selection**: Quality and Cost based Selection (QCBS) **Applicable Guidelines***:* Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 available on www.worldbank.org/procure
2.2	**Financial Proposal to be submitted together with Technical Proposal**: Yes **The name of the assignment is**: Selection of Transaction Advisory Consulting Firms for Providing Technical Assistance to conduct surveys for preparation of Liveability Index of 116 cities of India.
2.3	**A pre-proposal conference will be held**: Yes *[If “Yes”, fill in the following:]* Date of pre-proposal conference:____________________________ Time: ____ Address: Nirman Bhawan, Maulana Azad Road, New Delhi 110011 Telephone: ____ Facsimile: ____ E-mail: ______________________ Contact person/conference coordinator:*[insert name and title]* ______________________________
2.4	**The Client will provide the following inputs, project data, reports, etc. to facilitate the preparation of the Proposals**: NA

4.1	*NA*
6.3.1	**A list of debarred firms and individuals is available at the Bank's external website***:* www.worldbank.org/debarr
B. Preparation of Proposals	
9.1	**This RFP has been issued in the English language.** **Proposals shall be submitted in English language** **All correspondence exchange shall be in English language.**
10.1	**The Proposal shall comprise the following**: **For FULL TECHNICAL PROPOSAL (FTP):** **1st Inner Envelope with the Technical Proposal:** (1) Power of Attorney to sign the Proposal (2) TECH-1 (3) TECH-2 (4) TECH-3 (5) TECH-4 (6) TECH-5 (7) TECH-6 AND **2d Inner Envelope with the Financial Proposal (if applicable):** (1) FIN-1 (2) FIN-2 (3) FIN-3 (4) FIN-4 (5) Statement of Undertaking (if required under Data Sheet 10.2 below)
10.2	**Statement of Undertaking is required** Yes
11.1	**Participation of Sub-consultants, Key Experts and Non-Key Experts in more than one Proposal is permissible** Yes

12.1	**Proposals must remain valid for** *90 days* calendar days after the proposal submission deadline (i.e., until: *[insert the date]).*
13.1	**Clarifications may be requested no later than** *15* **days prior to the submission deadline.** The address for requesting clarifications is: All requests for clarifications shall be made online through mail at E-mail (insert e-mail IDs).
14.1.1	**Shortlisted Consultants may associate with** **(a) non-shortlisted consultant(s):** No **Or** **(b) other shortlisted Consultants:** No
14.1.2	**Estimated input of Key Experts' time input : 22 person months**
14.1.3	*Not Applicable*
14.1.4	**NA**
15.2	The format of the Technical Proposal to be submitted is: FTP Submission of the Technical Proposal in a wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
16.1	*List of applicable Reimbursable expenses in local currency:* *None*
16.2	**A price adjustment provision applies to remuneration rates: No**
16.3	Amounts payable by the Client to the Consultant under the contract to be subject to local taxation: Yes The Client will -reimburse the Consultant for indirect local taxes (service tax) -Yes

	-reimburse the Consultant income tax paid in India on the remuneration for services provided by the non-resident staff of the consultant – No
16.4	**The Financial Proposal shall be stated in the following currencies:** Consultant may express the price for their Services in any fully convertible currency, singly or in combination of up to three foreign currencies. ……………………………………………………………… **The Financial Proposal should state local costs in the Client's country currency (local currency):** Yes
C. Submission, Opening and Evaluation	
17.1	**The Consultants *shall* submit their Proposals at the address provided below on or before the last date of submission as stated in clause 17.7 of the Instructions to Bidders:** **Room No.___** **___Floor** **Nirman Bhawan** **Maulana Azad Road** **New Delhi 110011**
17.4	**The Consultant must submit:** **Physical submission** (a) **Technical Proposal:** one (1) hard Copy of the original proposal
17.7 and 17.9	**The Proposals must be submitted no later than:** **Date:** ____21/April/2017 *[for example, 15 January 2011]* **Time:** 15:00 IST *[insert time in 24h format, for example, "16:00 local time"]* ___________________________________ *[If appropriate, add translation of the warning marking ["Do not open...."] in the national language to the outer sealed envelope]* **The Proposal submission address is: [insrt the web address]**
19.1	**An online option of the opening of the Technical Proposals is offered:** No

The opening shall take place at:
[Insert: "same as the Proposal submission address*" OR insert and fill in the following:*
Street Address: Maulana Azad Road
Floor, room number: Room No.____, ____Floor, Nirman Bhawan
City: New Delhi 110001
Country: India

Date: same as the submission deadline indicated in 17.7.
Time: *[insert time in 24h format, for example – "16:00 local time]*
[The time should be immediately after the time for the submission deadline stated in 17.7]

19.2 **In addition, the following information will be read aloud at the opening of the Technical Proposals NA**

21.1 (for FTP) Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	Description	Points
(i)	**Specific experience of the Consultant (as a firm) relevant to the Assignment:**	**10**
	Total points for criterion (i)	10
(ii)	**Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (TORs)**	**50**
(a)	*Technical approach and Methodology*	30
(b)	*Work Plan*	10
(c)	*Organisation and staffing*	10
	Total points for criterion (ii) –50 points *{Notes to Consultant: the Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts}*	**50**

(iii)	**Key Experts' qualifications and competence for the Assignment**	**40**

Position	**Total points**
Team leader	16
Urban Management Specialist/ Planning Expert	8
Market Research Specialist	8
Statistician	8
Total	40

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 40%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) *: 60%*

Total points for the three criteria*:* **100**

....

The minimum technical score (St) required to pass is*:75 (seventy five) points*

23.1	**An online option of the opening of the Financial Proposals is offered:** Yes
25.1	For the purpose of the evaluation, the Client will exclude: (a) all identifiable indirect taxes such as Service Tax or similar taxes levied on the Consultant's invoices If a Contract is awarded, at Contract negotiations, all such taxes will be discussed, finalized (using the itemized list as a guidance but not limiting to it) and added to the Contract amount as a separate line, also indicating which taxes shall be paid by the Consultant and which taxes are withheld and paid by the Client on behalf of the Consultant. **All applicable taxes shall be paid by the Consulting firm** **The Client shall reimburse GST to the consultant as per the applicable rates**
26.1	**The single currency for the conversion of all prices expressed in various currencies into a single one is**: Indian Rupees

	The official source of the selling (exchange) rate is: State Bank of India [SBI] B.C selling rate of Exchange **The date of the exchange rate is: the last date for submission of proposals**
27.1 (QCBS only)	**The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100.** **The formula for determining the financial scores (Sf) of all other Proposals is calculated as following:** Sf = 100 x Fm/ F, in which “Sf” is the financial score, “Fm” is the lowest price, and “F” the price of the proposal under consideration. *[or replace with another inversely proportional formula acceptable to the Bank]* **The weights given to the Technical (T) and Financial (P) Proposals are**: **T** = 0.80, and **P** = 0.20 Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.
	D. Negotiations and Award
28.1	**Expected date and address for contract negotiations: To be Intimated** **Address:** Room No.____, Floor No.________, Nirman Bhawan, New Delhi - 110011
30.1	**The publication of the contract award information following the completion of the contract negotiations and contract signing will be done as following: www. moud.gov.in** The publication will be done within 07 (seven) **days after the contract signing.**
30.2	**Expected date for the commencement of the Services: [insert date]**

Section 3. Technical Proposal – Standard Forms

{Notes to Consultant shown in brackets { } throughout Section 3 provide guidance to the Consultant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted.}

CHECKLIST OF REQUIRED FORMS

Required for FTP or STP (√)		FORM	DESCRIPTION	*Page Limit*
FTP	STP			
√	√	TECH-1	Technical Proposal Submission Form.	
"√ " If applicable		TECH-1 Attachment	If the Proposal is submitted by a joint venture, attach a letter of intent or a copy of an existing agreement.	
"√" If applicable		Power of Attorney	No pre-set format/form. In the case of a Joint Venture, several are required: a power of attorney for the authorized representative of each JV member, and a power of attorney for the representative of the lead member to represent all JV members	
√		TECH-2	Consultant's Organization and Experience.	
√		TECH-2A	A. Consultant's Organization	
√		TECH-2B	B. Consultant's Experience	
√		TECH-3	Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client.	
√		TECH-3A	A. On the Terms of Reference	
√		TECH-3B	B. On the Counterpart Staff and Facilities	
√	√	TECH-4	Description of the Approach, Methodology, and Work Plan for Performing the Assignment	
√	√	TECH-5	Work Schedule and Planning for Deliverables	
√	√	TECH-6	Team Composition, Key Experts Inputs, and attached Curriculum Vitae (CV)	

All pages of the original Technical and Financial Proposal shall be initialled by the same authorized representative of the Consultant who signs the Proposal.

FORM TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Technical Assistance to Ministry of Urban Development, Govt. of India in Carrying out surveys in 116 cities of India in order to assess a Liveability Index for each of them in accordance with your Request for Proposals dated *[Insert Date]* and our Proposal. *on the QCBS selection method stated in the RFP:* "We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed in a separate envelope"

{If the Consultant is a joint venture, insert the following*:* We are submitting our Proposal a joint venture with: {Insert a list with full name and the legal address of each member, and indicate the lead member}. We have attached a copy {insert: "of our letter of intent to form a joint venture" or, if a JV is already formed, "of the JV agreement"} signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

{OR

If the Consultant's Proposal includes Sub-consultants, insert the following: We are submitting our Proposal with the following firms as Sub-consultants: {Insert a list with full name and address of each Sub-consultant.}

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Data Sheet, Clause 12.1.

(c) We have no conflict of interest in accordance with ITC 3.

(d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.

(e) We, along with any of our sub-consultants, subcontractors, suppliers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(f) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.

(g) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

(h) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the date indicated in Clause 30.2 of the Data Sheet.

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
Name of Consultant (company's name or JV's name):
In the capacity of: ____

Address: ____
Contact information (phone and e-mail): ________________________________

{For a joint venture, either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM TECH-2
CONSULTANT'S ORGANIZATION AND EXPERIENCE

Form TECH-2: a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

A - Consultant's Organization

1. Provide here a brief description of the background and organization of your company, and – in case of a joint venture – of each member for this assignment.

2. Include organizational chart, a list of Board of Directors, and beneficial ownership

B - Consultant's Experience

1**. List only previous similar assignments successfully completed[2] in the last *10 (ten)* years.**

2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture partners. Assignments completed by the Consultant's individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Consultant should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by the Client.

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[2] The Claims of completion shall be self-certified. A copy of agreement along with or showing the scope of the work is required to be submitted. Substantially completed assignments shall be considered in case the Applicant has completed and submitted Draft Final Report. The client may seek clarifications, if required

Duration	**Assignment name/& brief description of main deliverables/outputs**	**Name of Client & Country of Assignment**	**Approx. Contract value (in US$ equivalent)/ Amount paid to your firm**	**Role on the Assignment**
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of...............": designed master plan for rationalization of ....; }	{e.g., Ministry of ......, country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on..............}	{e.g., municipality of........., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

FORM TECH-3
COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Form TECH-3: comments and suggestions on the Terms of Reference that could improve the quality/effectiveness of the assignment; and on requirements for counterpart staff and facilities, which are provided by the Client, including: administrative support, office space, local transportation, equipment, data, etc.

A - On the Terms of Reference

{Improvements to the Terms of Reference, if any}

B - On Counterpart Staff and Facilities

{Comments on counterpart staff and facilities to be provided by the Client. For example, administrative support, office space, local transportation, equipment, data, background reports, etc., if any}

FORM TECH-4
DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

Form TECH-4: a description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal (in FTP format):

a) Technical Approach and Methodology
b) Work Plan
c) Organization and Staffing}

a) ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TORs), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. **Please do not repeat/copy the TORs in here.**}

b) ***Work Plan.*** {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Organization and Staffing.*** {Please describe the structure and composition of your team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.}

FORM TECH-5

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	**Deliverables** [1] **(D-..)**	**Months**											
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**.....**	**n**	**TOTAL**
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Client}												
D-2	{e.g., Deliverable #2:...............}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client’s approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2 Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

FORM TECH-6

TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS’ INPUTS

N°	Name	Expert’s input (in person/month) per each Deliverable (listed in TECH-5)													Total time-input (in Months)		
		Position		D-1		D-2		D-3	....		D-...				Home	Field	Total
KEY EXPERTS																	
K-1	{e.g., Mr. Abbbb}	[Team Leader]	*[Home]*	[2 month]		[1.0]		[1.0]								▨	
			[Field]	[0.5 m]		[2.5]		[0]							▨		
K-2																▨	
															▨		
K-3																▨	
															▨		
																▨	
															▨		
n																▨	
															▨		
											Subtotal						
NON-KEY																	
N-1			[Home]													▨	
			[Field]												▨		
N-2																▨	
															▨		
																▨	
															▨		

n																▨	
															▨		
											Subtotal						
											Total				▨	▨	

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1.
2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.
3 “Home” means work in any place other than Client’s working place mentioned in the RfP.
4. ‘Field” means work carried out at a place mentioned in the RfP [insert name of ULB if the work is for the ULB or State if the work is for the State

■ Full time input
▨ Part time input

FORM TECH-6
(CONTINUED)

CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

____

____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact infor for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel…………/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

____

Language Skills (indicate only languages in which you can work): ______________

____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	**Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks**
{List all deliverables/tasks as in TECH- 5 in which the Expert will be involved)	

Experts contact information: (e-mail …………………., phone……………)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

{day/month/year}

Name of Expert Signature
Date

{day/month/year}

Name of authorized Signature
Date
Representative of the Consultant
(the same who signs the Proposal)

Section 4. Financial Proposal - Standard Forms

{*Notes to Consultant* shown in brackets { } provide guidance to the Consultant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2.

FIN-1	Financial Proposal Submission Form
FIN-2	Summary of Costs
FIN-3	Breakdown of Remuneration, including Appendix A “Financial Negotiations - Breakdown of Remuneration Rates” in the case of QBS method
FIN-4	Reimbursable expenses

FORM FIN-1
FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To:

[Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the consulting services for Providing Ministry of Urban Development, Govt. of India in conducting surveys in 116 cities of India to assess a Liveability Index for each of them Insert the name of the state/ULB in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of {Indicate the corresponding to the amount(s) currency(ies)} {Insert amount(s) in words and figures}, *[Insert "including" or "excluding"] of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet.* The estimated amount of local indirect taxes is {Insert currency} {Insert amount in words and figures} which shall be confirmed or adjusted, if needed, during negotiations. {Please note that all amounts shall be the same as in Form FIN-2}.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

Commissions and gratuities paid or to be paid by us to an agent or any third party relating to preparation or submission of this Proposal and Contract execution, paid if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity

{If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution."}

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: ______________________________
Name and Title of Signatory: ____
In the capacity of: ____
Address: ____
E-mail: __________________________

{For a joint venture, either all members shall sign or only the lead member/consultant, in which case the power of attorney to sign on behalf of all members shall be attached}

FORM FIN-2 SUMMARY OF COSTS

Item	**Cost**			
	{Consultant must state the proposed Costs in accordance with Clause **16.4 of the Data Sheet**; delete columns which are not used}			
	{Insert Foreign[3] Currency # 1}	*{Insert Foreign Currency # 2, if used}*	*{Insert Foreign Currency # 3, if used}*	*{Insert Local Currency, if used and/or required (16.4 Data Sheet}*
Total Cost of the Financial Proposal				
Including:				
(1) **Remuneration**				
(2) **Reimbursables**				
Total Cost of the Financial Proposal: {Should match the amount in Form FIN-1}				
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded				
(i) {insert type of tax. e.g.,				
Total Estimate for Indirect Local Tax:				

Footnote: Payments will be made in the currency- Indian Rupees

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[3] Indicate between brackets the name of the foreign currency. Maximum of three currencies; use as many columns as needed, and delete the others

FORM FIN-3 BREAKDOWN OF REMUNERATION

When used for Lump-Sum contract assignment, information to be provided in this Form shall only be used to demonstrate the basis for the calculation of the Contract's ceiling amount; to calculate applicable taxes at contract negotiations; and, if needed, to establish payments to the Consultant for possible additional services requested by the Client. This Form shall not be used as a basis for payments under Lump-Sum contracts

A. Remuneration ____

No.	**Name**	**Position (as in TECH-6)**	**Person-month Remuneration Rate**	**Time Input in Person/Month** (from TECH-6)	{*Currency # 1- as in FIN-2*}	{*Currency # 2- as in FIN-2*}	{*Currency# 3- as in FIN-2*}	{*Local Currency- as in FIN-2*}
	Key Experts							
K-1			[*Home*]					▨
			[*Field*]		▨	▨	▨	
K-2								▨
					▨	▨	▨	
					▨	▨	▨	
								▨
					▨	▨	▨	
					▨	▨	▨	
	Non-Key Experts							

N-1	____________	________	[*Home*]	________				
N-2			[*Field*]	________				
____	____________			________				
____				________				
____				________				
	Total Costs							

Section 5. Eligible Countries

In reference to ITC6.3.2, for the information of shortlisted Consultants, at the present time firms, goods and services from the following countries are excluded from this selection:

Under the ITC 6.3.2 (a): None

Under the ITC 6.3.2 (b): None

Section 6. Bank Policy – Corrupt and Fraudulent Practices

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[4];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[5];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[6];
- (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[7];

---

[4] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[5] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[6] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

[7] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[8], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[9] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[8] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[9] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

Section 7. Terms of Reference

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Urban Development has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards in Cities’ are attached at Annexure X;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in Cities’ across the various standards and develop a ‘City Liveability Index’ – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure XX), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		Population range
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million
5	Megapolis	Population ≥ 5 million

* *Based on the Classification given in the URDPFI guidelines, 2014*

v. Given the magnitude of data collection and field surveys required, the MoUD wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **‘Assignment’**) across all cities included in the study. This will cover all relevant data required by the MoUD for computing the 79 Liveability

Standards. The data generated from the assignment will be used by the MoUD for calculating the City Liveability Index of cities on an annual basis;

vi. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 Objective of the Assignment

i. Compile reliable and high quality data for all cities included in the study, as required by the MoUD for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 Description of Tasks

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoUD. Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

    a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

    b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

    c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure X). The study shall inter-alia include:

    a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;

    b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;

    c. Study of existing reports, studies, alternative data sources etc.;

iii. Prepare and submit to the MoUD, an Inception Report (separate for all cities included in the study), including inter-alia the following:

    a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;

   b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoUD as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoUD without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities;

ix. Submit Draft City Assessment Report to the MoUD (separate for each city), including inter-alia the following:
   a. Database of aggregate data in the format attached at Annexure X;
   b. All raw data and data sheets;
   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city;

xi. Submit Final City Assessment Report to the MoUD after including any recommendations of the MoUD and after suitably incorporating any valid feedback received from cities/states with the approval of the MoUD;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoUD and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoUD for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoUD or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoUD for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 Results to be achieved

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 Timelines and Deliverables for Year 1*

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoUD and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoUD;

Report	Time line	Documents	Deliverables and Contents
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format attached at Annexure X; b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoUD on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoUD.

***** Timelines for subsequent years will be as decided by MoUD

7.6 Team Composition and Qualification Requirement for key Experts

The assignment is to be undertaken by a full-time Team Leader supported by a Core team of experts and an Analytics Team. Actual data collection and field surveys will be done through city-level Field Teams.

i. **Core Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

ii. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for data analysis and verification.

iii. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis

The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.6.1 Core Team (CV to be evaluated)

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading national/international ranking assignments	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.7 TA management and counterpart staff

The assignment will be contracted by the MoUD for carrying out the assignment.

7.7.1 Items to be provided by the MoUD

a. The MoUD will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

7.7.2 Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Section 8. Conditions of Contract and Contract Forms

Attached separately

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ____________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and M/s The Economist Group Limited.

Dated: _______________________

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ……..……….. day of the month of *January,2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *or International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar,
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) “Foreign Currency” means any currency other than the currency of the Client’s country.

(l) “GCC” means these General Conditions of Contract.

(m) “Government” means the government of the Client’s country.

(n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.

(p) “Local Currency” means the currency of the Client’s country.

(q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.

(s) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract	11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.
12. Termination of Contract for Failure to Become Effective	12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
13. Commencement of Services	13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.
14. Expiration of Contract	14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.
15. Entire Agreement	15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
16. Modifications or Variations	16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
17. Force Majeure	
a. Definition	17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days’ written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days’ written notice in case of the event referred to in (e); and at least five (5) calendar days’ written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant's obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 49.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** ***Mr. G.Vijay Kumar*** ***Under Secretary to the Government of India,*** ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
12.1	**Termination of Contract for Failure to Become Effective:**

	The time period shall be One Month
13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be *"*reimbursed*"* by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**

39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.
41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining

	nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of

	the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more ‘Liveable’. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their ‘Liveability’ and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of ‘Liveability Standards in Cities’. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft ‘Liveability Standards in Cities’ as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an ‘Annual Assessment of Liveability in Cities’ across the various standards and develop a ‘City Liveability Index’ – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;
vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;
vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);
viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

   a. Database of aggregate data in the format as mutually agreed

   b. All raw data and data sheets;

   c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor’s Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor’s Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master’s Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master’s Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

Note: During Negotiation the above mentioned list of the cities is mutually agreed.

APPENDIX B - KEY EXPERTS

[Insert a table based on Form TECH-6 of the Consultant's Technical Proposal and finalized at the Contract's negotiations. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts.]

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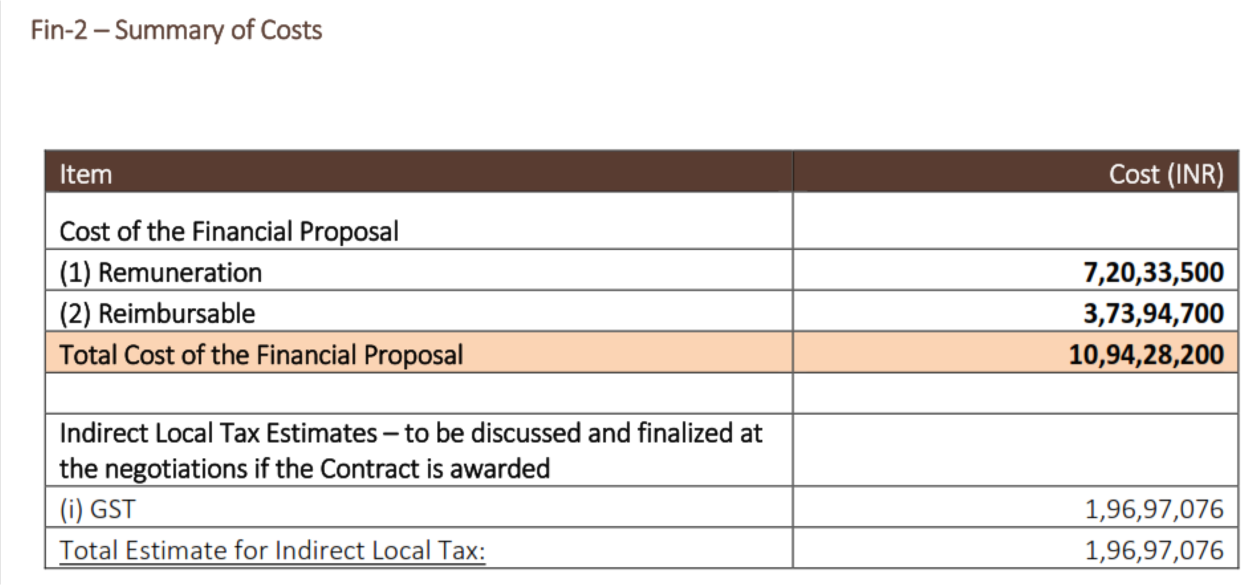
APPENDIX C – BREAKDOWN OF CONTRACT PRICE

[Insert the table with the unit rates to arrive at the breakdown of the lump-sum price. The table shall be based on [Form FIN-3 and FIN-4] of the Consultant's Proposal and reflect any changes agreed at the Contract negotiations, if any. The footnote shall list such changes made to [Form FIN-3 and FIN-4] at the negotiations or state that none has been made.]



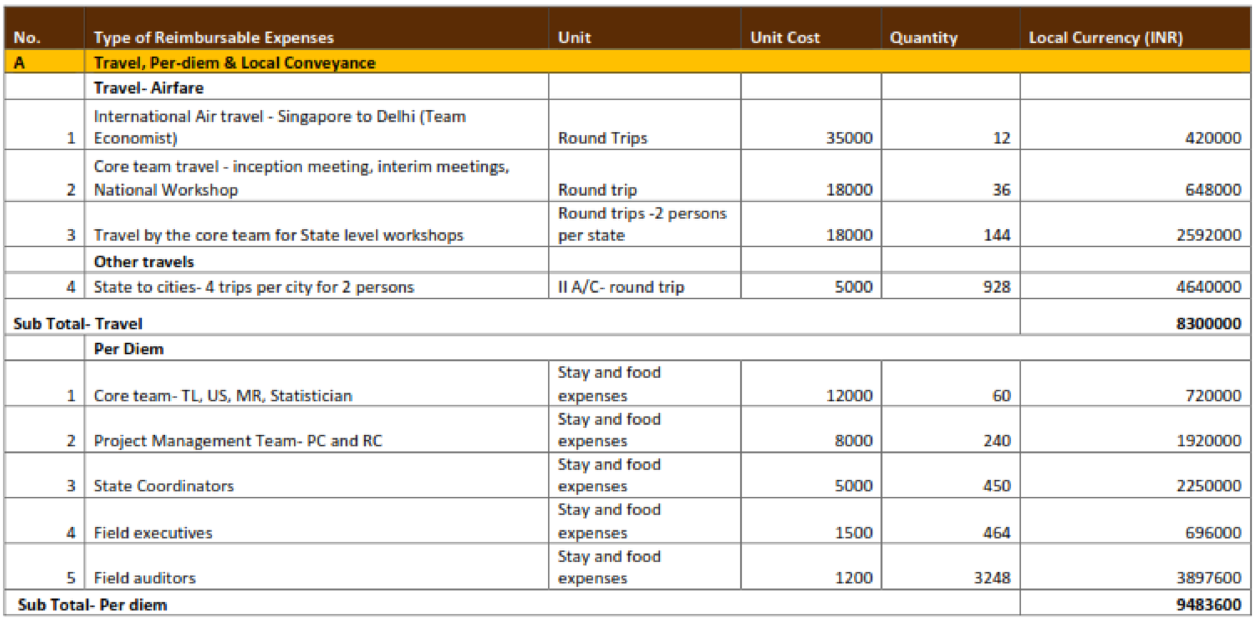
Fin-2 – Summary of Costs

Item	Cost (INR)
Cost of the Financial Proposal	
(1) Remuneration	**7,20,33,500**
(2) Reimbursable	**3,73,94,700**
Total Cost of the Financial Proposal	**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded	
(i) GST	1,96,97,076
Total Estimate for Indirect Local Tax:	1,96,97,076

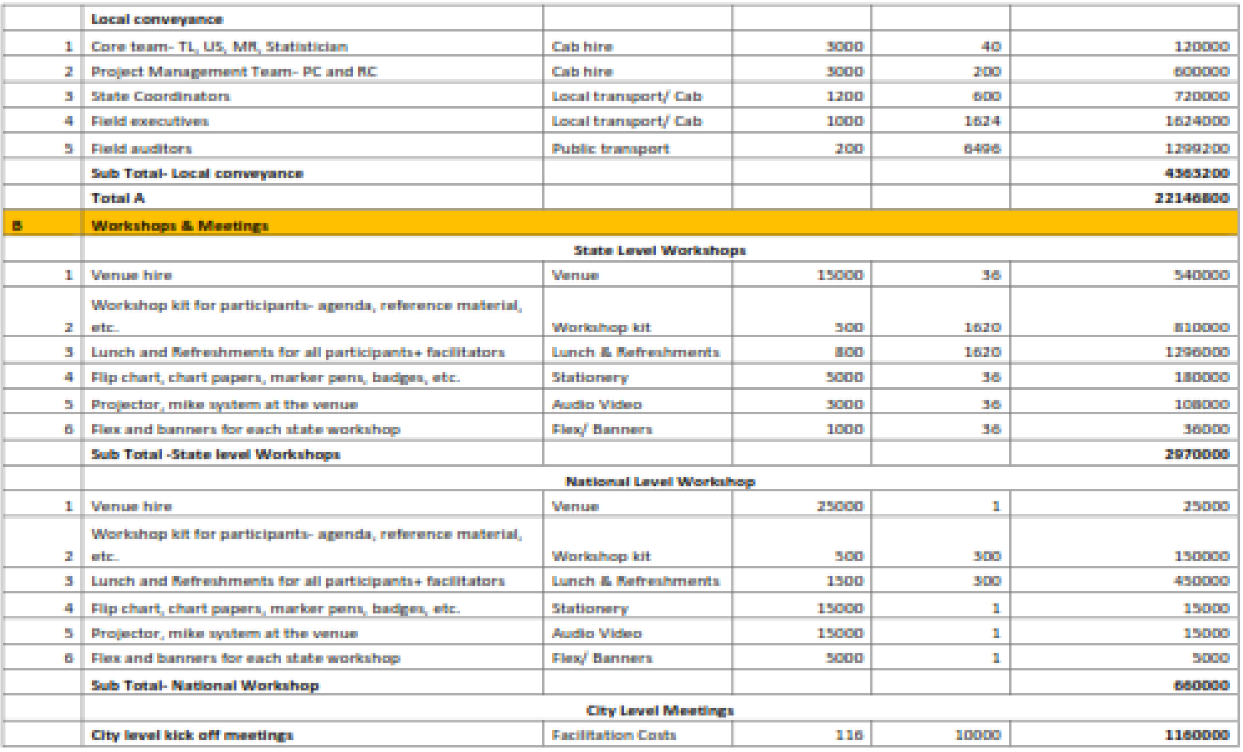
Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-15	Tripti Sharma	Project Coordinator	Home	682000	4	2728000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	550000	10	5500000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

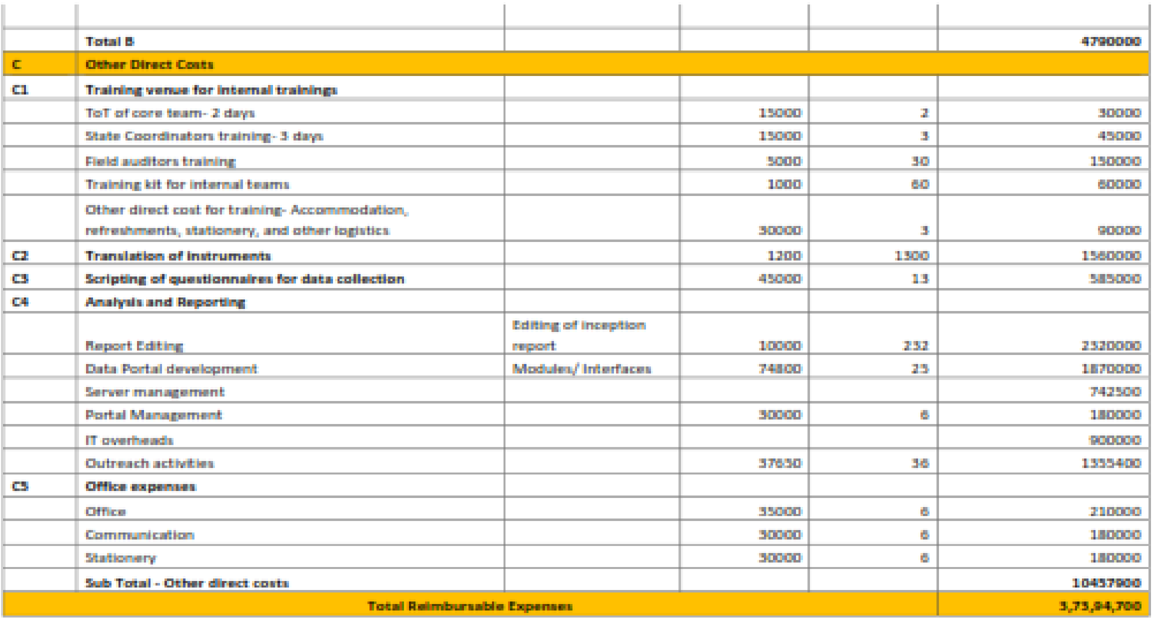
Fin-4 – Breakdown of Reimbursable Expenses



No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**



	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
	State Level Workshops				
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
	National Level Workshop				
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
	City Level Meetings				
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**



	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
Total Reimbursable Expenses					**3,73,94,700**

Model Form I
Breakdown of Agreed Fixed Rates in Consultant's Contract

We hereby confirm that we have agreed to pay to the Experts listed, who will be involved in performing the Services, the basic fees and away from the home office allowances (if applicable) indicated below:

(Expressed in [insert name of currency])*

Experts		1	2	3	4	5	6	7	8
Name	Position	Basic Remuneration rate per Working Month/Day/Year	Social Charges[1]	Overhead[1]	Subtotal	Profit[2]	Away from Home Office Allowance	Agreed Fixed Rate per Working Month/Day/Hour	Agreed Fixed Rate per Working Month/Day/Hour[1]
Home Office									
Work in the Client's Country									

1 Expressed as percentage of 1
2 Expressed as percentage of 4

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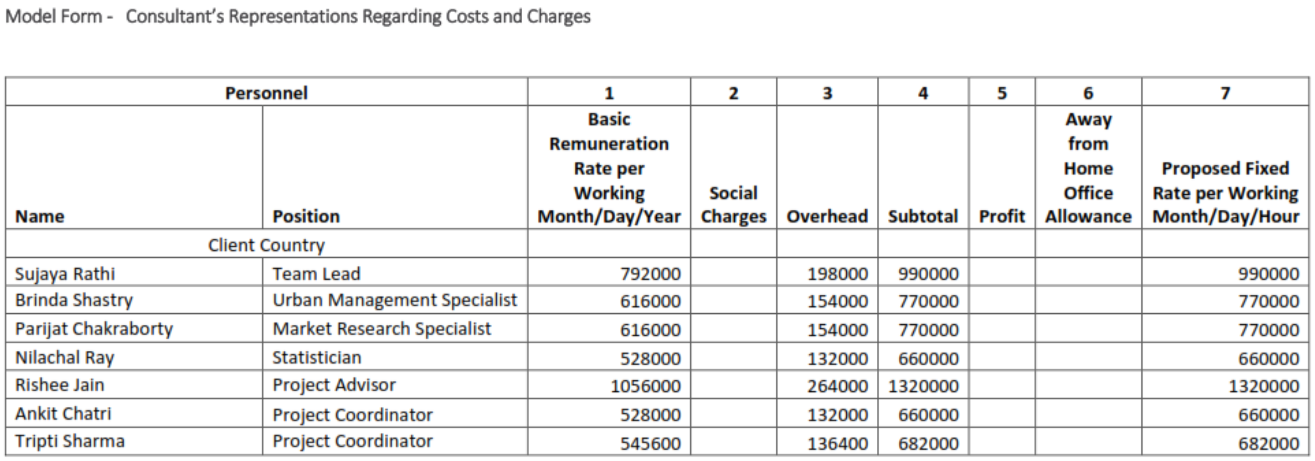
* If more than one currency, add a table

Signature

Date

Name and Title: ______________________



Model Form - Consultant's Representations Regarding Costs and Charges

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ______________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and The Economist Group Limited.

Dated: 13th February 2018

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ………………. day of the month of *February, 2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium with M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days’ written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days’ written notice in case of the event referred to in (e); and at least five (5) calendar days’ written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of** ***Republic of India***.
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention: Mr. G.Vijay Kumar** Under Secretary,Ministry of Housing and Urban Affairs **Facsimili:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** *Mr. G.Vijay Kumar* *Under Secretary,* ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
11.1	No additional provisions
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**

13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**
39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.

41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators, New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator, New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each

	appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi* (c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.
	2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996. 3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator. 4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of: (a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or (b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or

	(c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

   a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
   b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
   c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
   a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
   b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
   c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;

vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;

vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);

viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:

  a. Database of aggregate data in the format as mutually agreed

  b. All raw data and data sheets;

  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

……

No Objection to Combined Evaluation Report and Draft Negotiated Contract submitted by MoUD for India - P099979 - Capacity Building for Urban Development Project - IN-MOUD-27866-CS-QCBS - Shortlisting of Cons

---

STEP Admin <noreply@worldbankgroup.org> Thu, Feb 8, 2018 at 5:26 PM
Reply-To: noreply@worldbankgroup.org
To: "g.vijaykumar.moud@gmail.com" <g.vijaykumar.moud@gmail.com>
Cc: "pmmadan@worldbank.org" <pmmadan@worldbank.org>, "rnarayan@worldbank.org" <rnarayan@worldbank.org>, "vsarda@worldbank.org" <vsarda@worldbank.org>, "smohanty1@worldbank.org" <smohanty1@worldbank.org>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>

Dear G. Vijay Kumar;

India-P099979: Capacity Building for Urban Development Project , Ln./Cr # IDA-49970
No-Objection to Combined Evaluation Report and Draft Negotiated Contract for Selection of Consulting Services for Assessment of Liveability indeax for 116 cities in India – Quality And Cost-Based Selection – Reference No. IN-MOUD-27866-CS-QCBS

We have reviewed the combined technical and financial evaluation report and the draft negotiated contract for the above-mentioned consultancy service received on 2018/01/19. Subsequently, Bank had raised certain queries on the draft contract through email dated 23rd Jan. 2018 which were clarified through email dated 6th February, 2018. Based on the clarifications and information provided through email dated 6th Feb. 2018 and 7th Feb. 2018, the Bank has no objection to your signing the draft negotiated contract, **subject to Bank's INT teams clearance on The Economist Group**, as follows:

Contract Description	Name of Consultant/Firm	Country	Currency	Amount
Selection of Consulting Services for Assessment of Liveability indeax for 116 cities in India	ATENA INFONOMICS INDIA PRIVATE LIMTED	India	INR	109,428,200.00
	IPSOS RESEARCH PRIVATE LIMITED	India		
	THE ECONOMIST GROUP LIMITED	United Kingdom		

Please forward a copy of the signed contract to the Bank prior to requesting or making any payments under this contract.

In accordance with the requirements in the applicable Regulations please publish the contract award information within the two weeks. For instructions on the specific publishing requirements, you may refer to the Bank's Procurement Notices webpage.

Contract award notices will be automatically published in UNDB Online and the World Bank's external website

Best Regards,

Vasudha Thawakar

STEP System Users - Click here

Bank Users - Click here

Gmail **Vijay Kumar <g.vijaykumar.moud@gmail.com>**

FW: About The Economist Group

Rakesh Gujral <rgujral@ipeglobal.com> Thu, Feb 15, 2018 at 6:13 PM
To: "g.vijaykumar@nic.in" <g.vijaykumar@nic.in>, "pankaj.sinha88@nic.in" <pankaj.sinha88@nic.in>, Vijay Kumar <g.vijaykumar.moud@gmail.com>

Fyi pl.

With warm regards,

Rakesh Gujral

IPE GLOBAL
Expanding Horizons. Enriching Lives.

Financial Management Expert, World Bank Funded CBUD project,

Ministry of Housing and Urban Affairs

Nirman Bhawan, New Delhi.

Associate Director,IPE Global Limited,IPE Global House,B-84, Defence Colony,

Bhishm Pitamah Marg, New Delhi-110024

Mob: +91 9958002856

India Offices ~ New Delhi | Bhopal | Bhubaneshwar | Kolkata | Lucknow | Patna

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From: Parijat Chakraborty [mailto:Parijat.Chakraborty@ipsos.com]
Sent: 07 February 2018 17:14
To: dir-nulm@nic.in
Cc: Rakesh Gujral <rgujral@ipeglobal.com>
Subject: About The Economist Group

Dear sir,

Please refer to our discussions.

The Economist Intelligence Unit (EIU) is a business within The Economist Group. It is a highly reputed organization and working with many esteemed organizations in the world. More information about the organization can be accessed at www.eiu.com. The attached affidavit also confirms that they are not blacklisted anywhere.

We are not aware of organizations named Economic Consulting Group, UK or Economic Consultancy Associates, UK. These appear to be different organizations and not connected to our partner EIU.

Thanks and regards,

Parijat Chakraborty| *Executive Director - Ipsos Public Affairs and Loyalty*

Ipsos

801, 8th Floor, Vipul Square

B-Block, Sushant Lok, Part-1

Gurgaon – 122016, Haryana.

Tel.: + 91 0124 4692400
Direct : +91 0124 4692515
Mobile : +91 98104 96838
parijat.chakraborty@ipsos.com

www.ipsos.com

IT'S TIME TO
CHANGE THE GAME

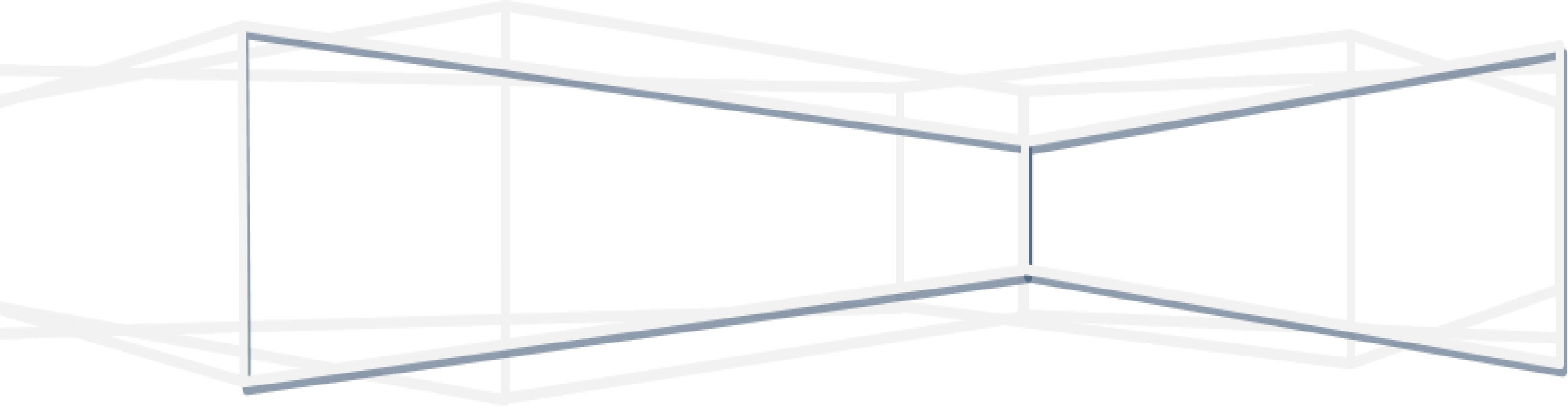
GAME CHANGERS

MoHUA- EIU Affidavit.docx
283K

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Technical Proposal



Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos Public Affairs

A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,

And

ATHENA INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited

#15, Arcot Street, T Nagar, Chennai 600017, Tamil Nadu, India

The Economist Intelligence Unit

The Economist Group Limited (Sub-Consultant)

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FORM TECH 1:

Technical Submission Proposal Form

TECH-1: TECHNICAL PROPOSAL SUBMISSION FORM

New Delhi, 26th December 2017

To:

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

We, the undersigned, offer to provide the consulting services for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Proposal.

We are submitting our Proposal a joint venture with: Ipsos Public Affairs with legal address at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India as lead member and Athena Infonomics India Private limited with legal address at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, India as Associate Member. We have attached a copy of our letter of intent to form a joint venture signed by every participating member, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture.

And

We are submitting our Proposal with the following firms as Sub-consultants: The Economist Group Limited having its registered office at 20 Cabot Square, London, E14 4QW, United Kingdom

We hereby declare that:

a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by the Client and/or may be sanctioned by the Bank.
b) Our Proposal shall be valid and remain binding upon us for 90 days (the period of time specified in the Data Sheet, Clause 12.1).
c) We have no conflict of interest in accordance with ITC 3.
d) We meet the eligibility requirements as stated in ITC 6, and we confirm our understanding of our obligation to abide by the Bank's policy in regard to corrupt and fraudulent practices as per ITC 5.
e) In competing for (and, if the award is made to us, in executing) the Contract, we undertake to observe the laws against fraud and corruption, including bribery, in force in the country of the Client.]
f) Except as stated in the Data Sheet, Clause 12.1, we undertake to negotiate a Contract on the basis of the proposed Key Experts. We accept that the substitution of Key Experts for reasons other than

those stated in ITC Clause 12 and ITC Clause 28.4 may lead to the termination of Contract negotiations.

g) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than 15th January (the date indicated in Clause 30.2 of the Data Sheet).

We understand that the Client is not bound to accept any Proposal that the Client receives.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

Letter of Intent to form a Joint Venture

Ipsos

ATHENA
INFONOMICS

20th December 2017

To,

Shri G. Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.

Dear Sir,

Sub: Letter of intent for submission of a proposal as joint venture for the opportunity titled "Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India"

We, Ipsos Research Private Ltd. having its registered office at 1701, 17th Floor, Lotus Corporate Park, Off Western Express Highway, Goregaon East, Mumbai and Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai, Tamil Nadu – 600 017, hereby declare the intention to jointly bid for the subject Project in accordance with the terms and conditions of the RFP Document with Ipsos Research Private Ltd. as the Lead Member.

We further confirm that each party shall be jointly and severally liable for the joint venture and its objective. This Letter of Intent (LOI) is executed and issued as of the date of this letter and sets forth the mutual intent and limited agreement of the undersigned.

Sincerely,

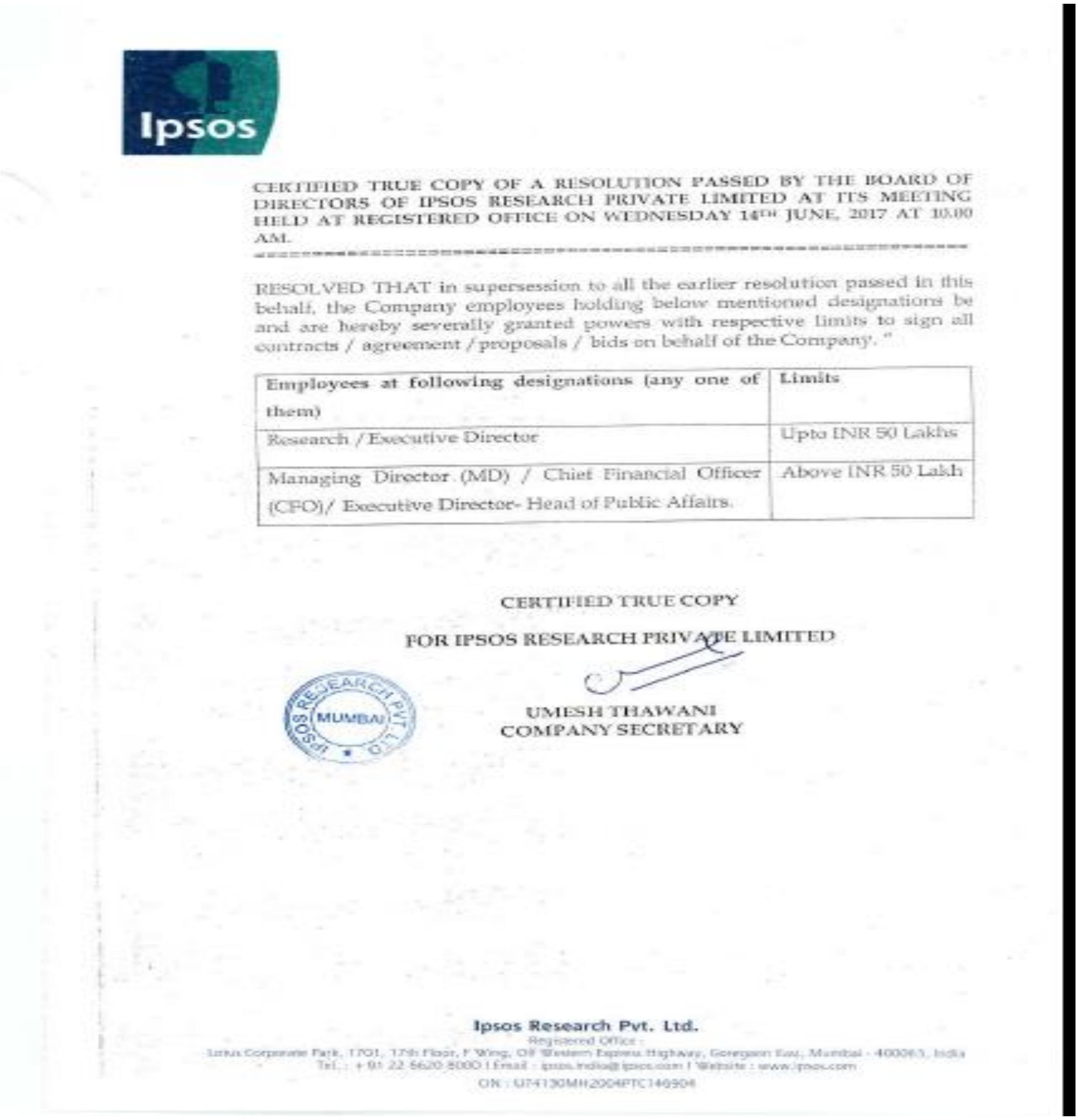
For Ipsos Research Private Limited	For Athena Infonomics India Private Limited
Parijat Chakraborty, Executive Director	Vijay Bhalaki, Director and Co- Founder
Ipsos Research Pvt. Ltd. 801, Vipul Square, Suchant Lok, B Block Gurgaon	Athena Infonomics India Private Limited, 15Arcot Street, Chennai -17, Email:vijay.b@athenainfonomics

Power of Attorney to sign the Proposal

Ipsos authorisation

Power of Attorney

The proposal has been signed by Executive Director – Head of Public Affairs authorized by Board Resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY 14TH JUNE, 2017 AT 10.00 AM.

RESOLVED THAT in supersession to all the earlier resolution passed in this behalf, the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreement / proposals / bids on behalf of the Company."

Employees at following designations (any one of them)	Limits
Research / Executive Director	Upto INR 50 Lakhs
Managing Director (MD) / Chief Financial Officer (CFO)/ Executive Director- Head of Public Affairs.	Above INR 50 Lakh

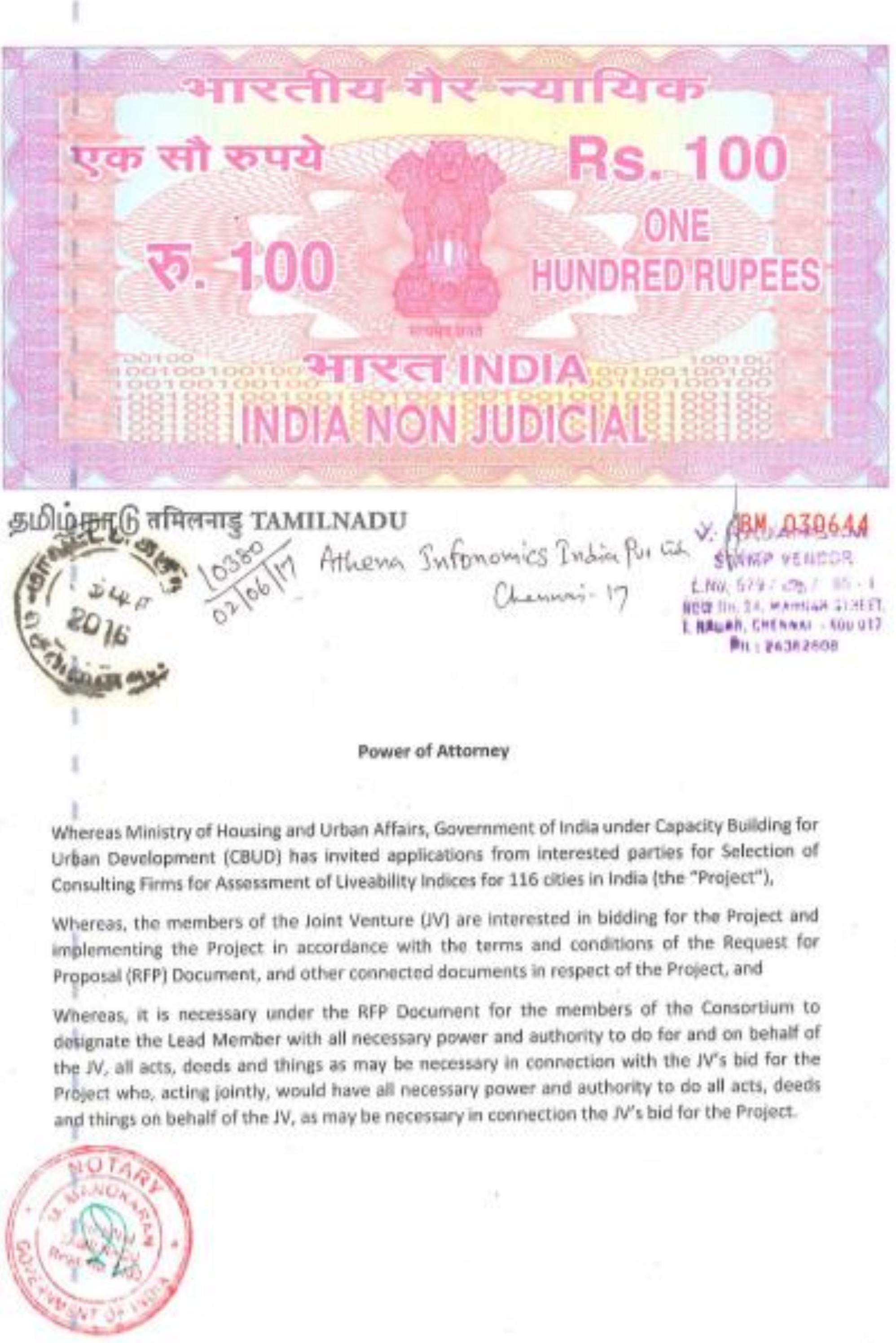
CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

UMESH THAWANI
COMPANY SECRETARY

Ipsos Research Pvt. Ltd.
Registered Office :
Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai - 400063, India
Tel.: + 91 22 6620 8000 | Email : ipsos.india@ipsos.com | Website : www.ipsos.com
CIN : U74130MH2004PTC146904

JV partner Athena Infonomics POA authorising IPSOS Public Affairs as Authorised Signatory – First Page



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INDIA NON JUDICIAL

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02/06/17

Athena Infonomics India Pvt Ltd
Chennai - 17

STAMP VENDOR
L.No. 579/ /
NEW No. 24, MAHIAH STREET,
T. NAGAR, CHENNAI - 600 017
PH : 26382808

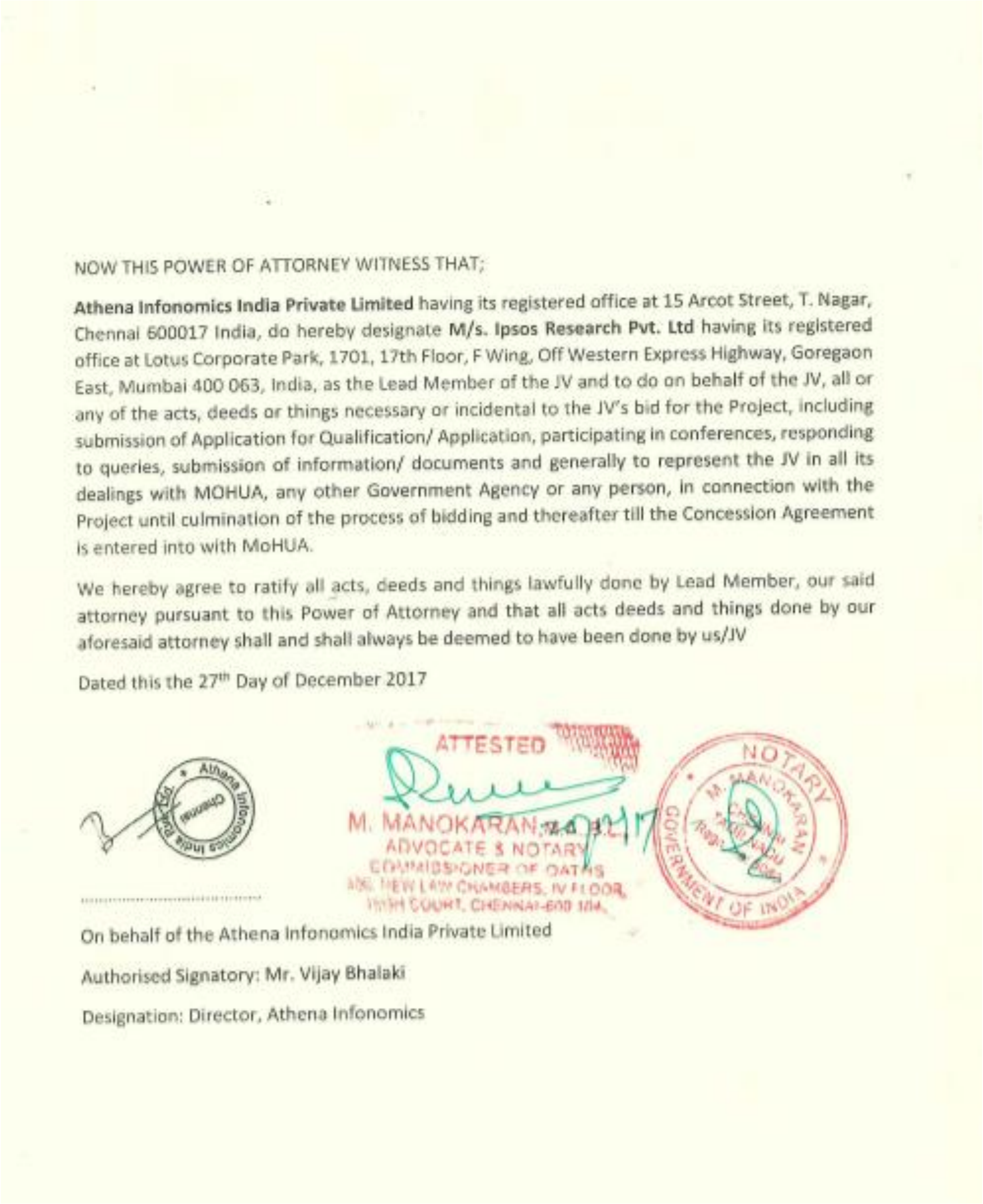
Power of Attorney

Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project"),

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project.

JV partner Athena Infonomics POA authorising Ipsos Public Affairs as Authorised Signatory – Last Page



NOW THIS POWER OF ATTORNEY WITNESS THAT;

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED
M. MANOKARAN, B.A., B.L.
ADVOCATE & NOTARY
COMMISSIONER OF OATHS
[illegible] NEW LAW CHAMBERS, IV FLOOR,
HIGH COURT, CHENNAI-600 104.

27/12/17

NOTARY M. MANOKARAN

....

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

FORM TECH 2:

Consultant’s Organisation and Experience

TECH-2: CONSULTANT'S ORGANIZATION AND EXPERIENCE

A - Consultant's Organisation

About the Joint Venture and Sub Consultant

Ipsos India's Public Affairs team, together with Athena Infonomics India Private Limited, and Sub Consultant The Economist Intelligence Unit Limited are pleased to submit their request for proposal for providing consulting services for Assessment of Liveability Indices for 116 cities in India by the Ministry of Housing and Urban Affairs. As a consortium, we possess a comprehensive understanding of national and global learnings from liveability studies. Collectively, we have carried out over 10,000+ studies in urban areas on a range of subjects, including: Infrastructure and Public Services (showcasing a blend of global and national perspectives on Urban Development and Governance), Data Analytics, Indices creation, Monitoring and Evaluation and undertaking large scale quantitative and qualitative surveys. The consortium possesses vast knowledge and experience of using a wide range of data collection and analysis, both primary and secondary data. Our data collection methods range from PAPI (Pen and Paper Interview), CATI (Computer Assisted Telephonic Interview), CAPI (Computer Assisted Personal Interview), rapid ethnographies, mobile based surveys, stakeholder consultations, third party audits of infrastructure, participatory assessment methods, and workshops:

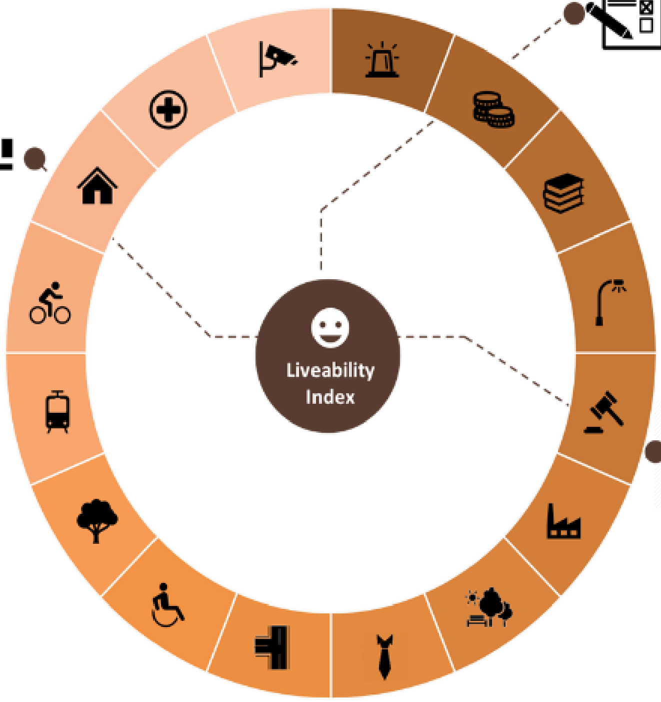
- Ipsos (Lead Member): Ipsos has a long-held reputation of carrying out surveys that capture citizen perceptions. It has a pan India presence (22 offices in strategic locations), accompanying infrastructure (2800+ tablets for digital data collection), human resource (3500 investigators familiar with language, geography, and experienced in data collection), and the technical and managerial capability (presence of a strong analytics team of 30+ staff, 300+ researchers) in India to deliver this assessment according to global standards. Their technical expertise includes research design, probability sampling procedures, survey instrument, design survey management, qualitative methodologies and using technological innovations to ensure timeliness, efficiency and quality of the data collected.

- Athena Infonomics (Associate Member): Athena Infonomics employs rigorous quantitative and qualitative assessments applying state of-the-art tools and methodologies from social science and statistics to answer urban governance challenges. Its portfolio of tools and methods include: qualitative comparative assessment, cost benefit and cost effectiveness analysis, experimental methods, participatory impact assessments, systems assessment tools, social impact measurement tools, spatial data analysis, Computer Assisted Personal Interviewing (CAPI), online and offline survey implementation among others.

- **The Economist Intelligence Unit (Sub Consultant):** The Economist Intelligence Unit possesses technical expertise in economic, political and social demographic forecasting, bespoke modelling and scenario analysis, country and city forecasting and location benchmarking.

The key strengths of our submission as partners are summarised in the table below.

Knowledge of Thematic area	Ipsos	AIIPL	EIU
Staff having experience of carrying out similar assignments and having performed tasks related to the assignment	🟨	🟨	🟨
Large scale projects for Central/ State governments/ departments, para-statals, ULBs and multilateral agencies	🟨	🟨	🟨
Experience in implementing urban studies in the areas of water, health, education, transportation etc.	🟨	🟨	🟨
Data Interoperability & Policy Convergence		🟨	🟨
Experience of Applicant in development of indices, preparation of national/international reports		🟨	🟨
Strong Market Research Infrastructure & Resource Network	🟨		
Digital data collection- use of tablets and mini laptops	🟨	🟨	
In house team of statisticians and analysis managers and executives	🟨	🟨	🟨
Quality Assurance processes	🟨	🟨	🟨
Global Outreach	🟨		🟨
Strategic Branding			🟨



Data generation

- *IPSOS* has vast experience undertaking large scale surveys (both quantitative and qualitative) across multiple sectors
- *IPSOS* also has expertise in advanced survey design, data collection and data management
- *Athena Infonomics* also specializes in large data collection including behavioural aspects such as satisfaction, perception attitudes etc.

Indicator development

- *EIU* has proprietary methodologies for benchmarking and indexing
- *EIU* also has strong expertise in qualitative and quantitative data, and weighting it together to conduct multi-dimensional comparisons
- *Athena Infonomics* specializes in developing indicators using a minimalistic data approach

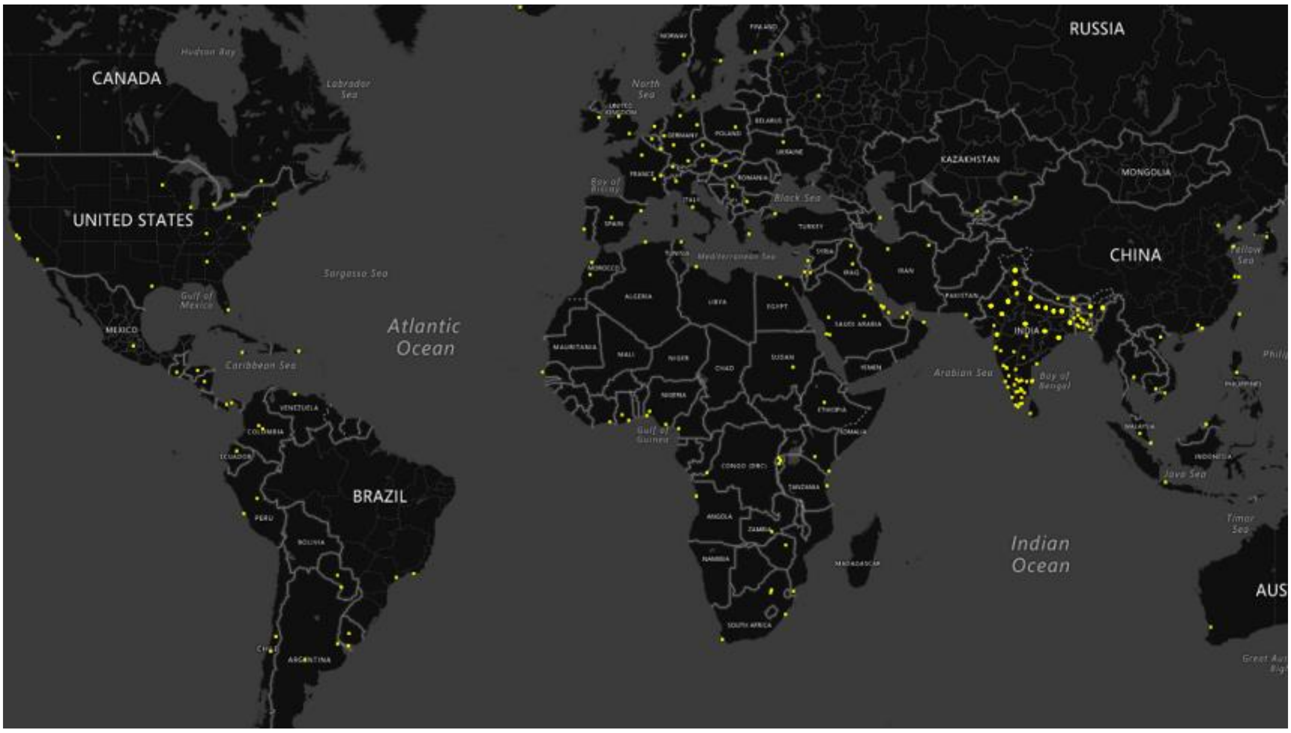
Data analysis and Management

- *Athena Infonomics* has the technical expertise in quantitative and qualitative data analysis, data management
- *Athena Infonomics* also bring in the capacity to deliver integrated services all through a project value chain, including data collection, information analysis, capacity building and evaluation
- *IPSOS* specialises in CAPI, CATI. Rapid ethnographies, mobile based surveys, etc.

Dissemination through Media

- EIU has developed dissemination platform called “The Hub” @ Economist
- Engage with international and national media

The global footprint of the consortium (Joint Venture and Sub Consultant) is presented below:


RUSSIA
CANADA
Hudson Bay
Labrador Sea
North Sea
UNITED STATES
KAZAKHSTAN
MONGOLIA
Black Sea
CHINA
Sargasso Sea
Gulf of Mexico
Atlantic Ocean
MEXICO
Caribbean Sea
INDIA
Arabian Sea
Bay of Bengal
BRAZIL
Indian Ocean
Java Sea
Timor Sea
AUS

Ipsos Research Private Limited – Lead Member

Ipsos is the third largest survey-based market research company in the world. Ipsos Public Affairs is a specialized unit (WSBL) of Ipsos and focuses exclusively on social and development research. Ipsos is also rated as the second most innovative market research company per the GRIT Report 2017.

Ipsos Public Affairs teams around the world conduct research on public policy issues and on the attitudes and behaviors of citizens and consumers. Ipsos Public Affairs in India is organized around the two major disciplines: Social and Developmental Research and Corporate Reputation. As part of their social research and evaluation specialization, they have undertaken more than 300+ research studies in India, including quantitative, qualitative, and participatory research over 17 + years of their operations in India. Generating new hypotheses and exploring landscapes with a relevant lens is key to any exploratory exercise and program's success. Thus, with its strong and experienced team, Ipsos Public Affairs India have delivered high quality outputs to its clients in various domains. These outputs not only validated the true situation on ground but helped client build and test various hypothesis which they were unaware of at the designing stage. Ipsos Public Affairs India's technical expertise in Baseline, Midline and End Line Studies, Participatory Rural Research, Mind Mapping, in–Depth Interviews, ethnographies, Exploratory and Formative Research, Communication Designing and Evaluation studies etc. have been use in different contexts to bring out actionable insights. Thematic areas of its experience include Public Health, Water, Sanitation & Hygiene (WASH), Education, Gender etc.

Ipsos Public Affairs India has extensive experience of working with the central and state ministries, government departments and national and international non-governmental organizations in the social and international development sector.

Ipsos Public Affairs India provides clients with information that helps them understand how they can build efficient and effective policies, programs, communications strategies, and marketing initiatives. In India, Ipsos Public Affairs has worked on a range of social policy issues that includes public health, WASH, education, gender, governance, micro finance, using quantitative survey methods, qualitative and participative approaches, and mixed methods. Ipsos is an ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISO 20252:2012[1]

We have invested significantly in digital data collection mode and have transitioned from pen and paper mode to CAPI. Over 90% of our data collection is CAPI (Computer Aided Telephonic Interviews). The

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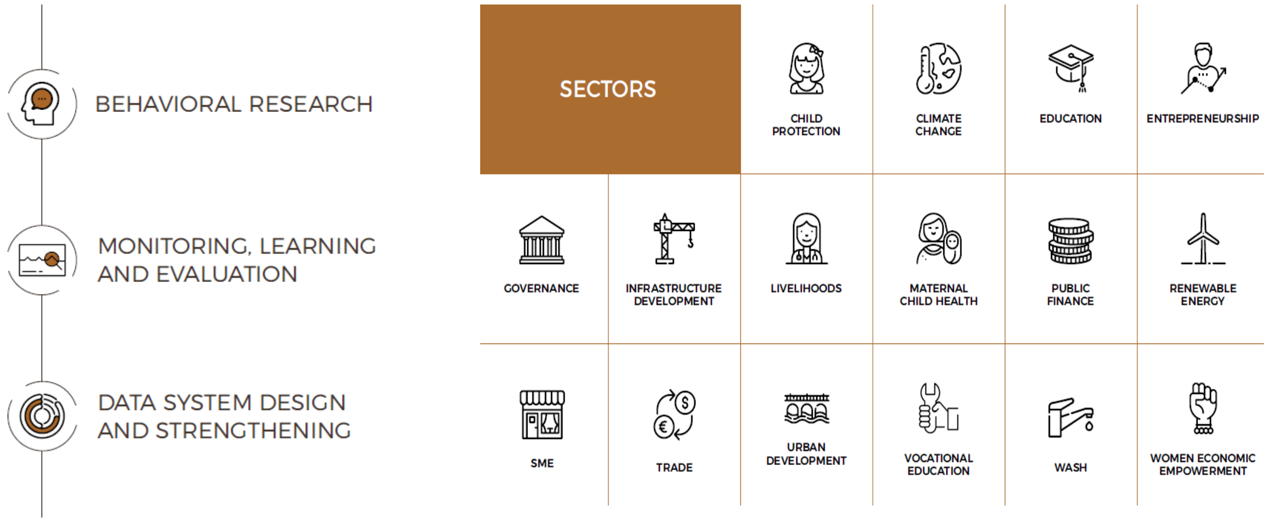
[1] Please refer Annexure 1.

GPS and voice recording facility supplemented with an independent Quality Assurance team which optimises the quality assurance checks on every survey.

Athena Infonomics India Private Limited – Associate Member

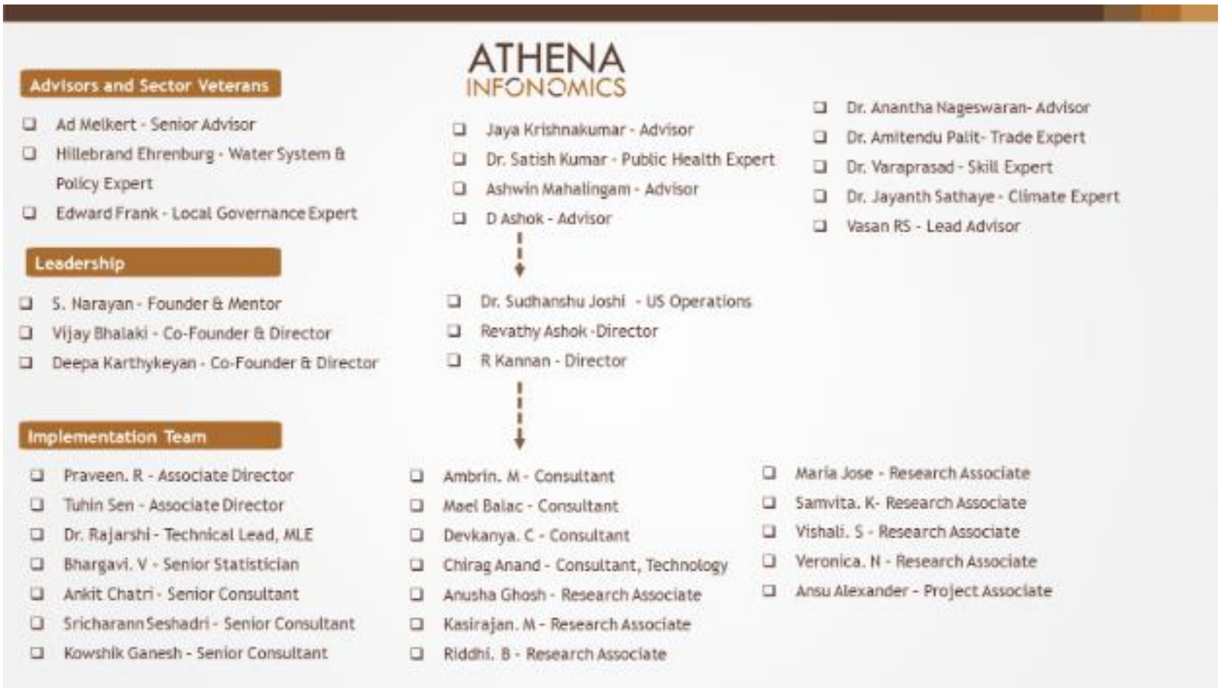
Athena Infonomics is a research and consultancy firm with a strong focus on bringing an analytical approach to solving development and inclusive growth issues. Athena lies at the intersection of the public and private sector, seeking to catalyse multi-stakeholder approaches for solving some of the most challenging problems of developing nations.

Athena distinguishes itself through an unflinching dedication to leveraging cutting-edge research methods and tools for modelling phenomenon and deriving solutions. Conceptual depth, analytical rigor and holistic multidisciplinary approaches characterize its solutions. Proactively engaging across the expansive and complex stakeholder's platforms of Public, Corporate and Community in delivering solutions for robust policies, strengthening institutions, enhancing market linkages, optimizing stakeholder capacity and fostering innovative partnerships


BEHAVIORAL RESEARCH
MONITORING, LEARNING AND EVALUATION
DATA SYSTEM DESIGN AND STRENGTHENING
SECTORS
CHILD PROTECTION
CLIMATE CHANGE
EDUCATION
ENTREPRENEURSHIP
GOVERNANCE
INFRASTRUCTURE DEVELOPMENT
LIVELIHOODS
MATERNAL CHILD HEALTH
PUBLIC FINANCE
RENEWABLE ENERGY
SME
TRADE
URBAN DEVELOPMENT
VOCATIONAL EDUCATION
WASH
WOMEN ECONOMIC EMPOWERMENT

Urban Experience: Athena's strength lies in its ability to use a combination of analytical tools and sustainable approaches to unlock patterns from data assets to drive improvements in urban design and sustainable delivery of services. Athena's expertise is in developing inter-disciplinary analytical tools and solution pathways for multi-dimensional challenges, across stakeholder groups, towards providing sustainable and implementable solutions. Its approach is designed to enable planners and administrators to quickly comprehend what needs to be done to advance urban and sustainable design and service quality for their citizens.

Athena's Organisational structure is represented Senior Advisors and Sector Veterans, followed by its Leadership and supported by a research and solution driven implementation team.



ATHENA
INFONOMICS

Advisors and Sector Veterans

☐ Ad Melkert - Senior Advisor
☐ Hillebrand Ehrenburg - Water System & Policy Expert
☐ Edward Frank - Local Governance Expert

☐ Jaya Krishnakumar - Advisor
☐ Dr. Satish Kumar - Public Health Expert
☐ Ashwin Mahalingam - Advisor
☐ D Ashok - Advisor

☐ Dr. Anantha Nageswaran- Advisor
☐ Dr. Amitendu Palit- Trade Expert
☐ Dr. Varaprasad - Skill Expert
☐ Dr. Jayanth Sathaye - Climate Expert
☐ Vasan RS - Lead Advisor

Leadership

☐ S. Narayan - Founder & Mentor
☐ Vijay Bhalaki - Co-Founder & Director
☐ Deepa Karthykeyan - Co-Founder & Director

☐ Dr. Sudhanshu Joshi - US Operations
☐ Revathy Ashok -Director
☐ R Kannan - Director

Implementation Team

☐ Praveen. R - Associate Director
☐ Tuhin Sen - Associate Director
☐ Dr. Rajarshi - Technical Lead, MLE
☐ Bhargavi. V - Senior Statistician
☐ Ankit Chatri - Senior Consultant
☐ Sricharann Seshadri - Senior Consultant
☐ Kowshik Ganesh - Senior Consultant

☐ Ambrin. M - Consultant
☐ Mael Balac - Consultant
☐ Devkanya. C - Consultant
☐ Chirag Anand - Consultant, Technology
☐ Anusha Ghosh - Research Associate
☐ Kasirajan. M - Research Associate
☐ Riddhi. B - Research Associate

☐ Maria Jose - Research Associate
☐ Samvita. K- Research Associate
☐ Vishali. S - Research Associate
☐ Veronica. N - Research Associate
☐ Ansu Alexander - Project Associate

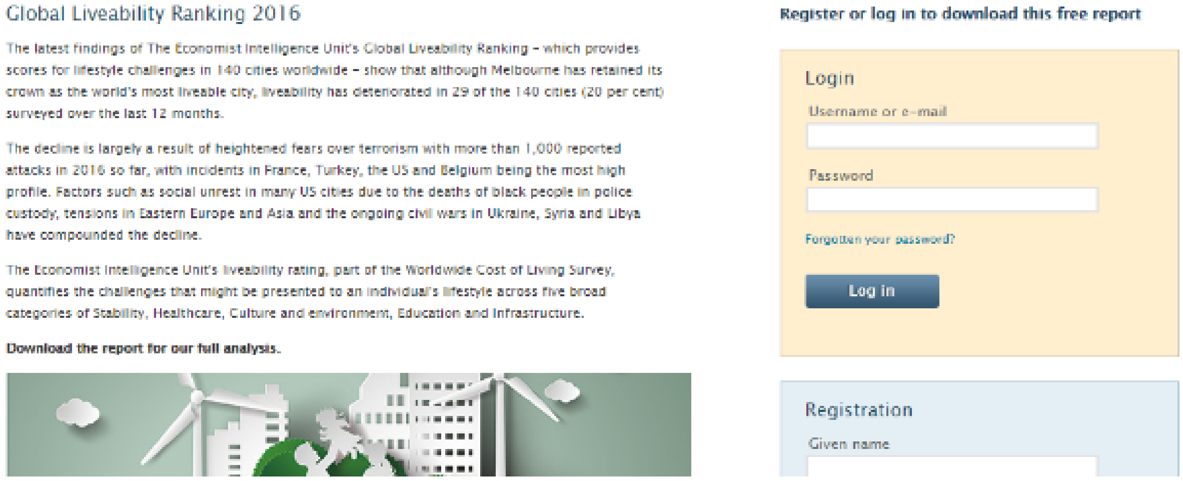
The Economist Group Limited – Sub Consultant

The Economist Group is the leading source of analysis on international business and world affairs. They deliver information through a range of formats, from newspapers and magazines to conferences and electronic services.

What ties Economist together is the objectivity of their opinion, the originality of their insight and their advocacy of economic and political freedom around the world.

The Economist Intelligence Unit (EIU) is the research and analysis division of The Economist Group and the world leader in global business intelligence. Its extensive international reach and unfettered independence make it the most trusted and valuable resource for international business throughout the world. To meet the changing needs of today's organisation, the Economist Intelligence Unit is uniquely able to deliver its analysis online or in print, via webcast or face-to-face, through subscription services or custom research. EIU has pioneered the design and development of the Worldwide Cost of Living Index and the Global Liveability Index. A snap shot of the EIU Global Liveability index is presented below:

EIU's Global Liveability Ranking



Global Liveability Ranking 2016

The latest findings of The Economist Intelligence Unit's Global Liveability Ranking – which provides scores for lifestyle challenges in 140 cities worldwide – show that although Melbourne has retained its crown as the world's most liveable city, liveability has deteriorated in 29 of the 140 cities (20 per cent) surveyed over the last 12 months.

The decline is largely a result of heightened fears over terrorism with more than 1,000 reported attacks in 2016 so far, with incidents in France, Turkey, the US and Belgium being the most high profile. Factors such as social unrest in many US cities due to the deaths of black people in police custody, tensions in Eastern Europe and Asia and the ongoing civil wars in Ukraine, Syria and Libya have compounded the decline.

The Economist Intelligence Unit's liveability rating, part of the Worldwide Cost of Living Survey, quantifies the challenges that might be presented to an individual's lifestyle across five broad categories of Stability, Healthcare, Culture and environment, Education and Infrastructure.

Download the report for our full analysis.

Register or log in to download this free report

EIU's research capabilities range from economics to gender, and from finance to energy and technology. They conduct research through interviews, regulatory analysis, quantitative modelling and forecasting, and display the results via interactive data visualisation tools.

B - Consultant's Experience

Duration	Assignment name/& brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent)/ Amount paid to your firm	Role on the Assignment
Ipsos Market Research				
February 2016 - December 2016 (Wave 1)	Assignment name: Implementation of the EIB Group survey of investment and investment finance (Wave 1) Brief description of main deliverables: The EIB Group survey on investment and investment finance is an EIB Group initiative with the purpose of collecting data on the corporate investment environment in the countries of the EU-28 by means of an annual representative and a scientifically sound survey with the senior management of non-financial corporates in the EU. Output: Ipsos has delivered the first wave of the 3-year longitudinal survey. As part of the contract, Ipsos delivered a mixed-mode data collection design in that 12 300 NFCs undergo a 15-minute telephone (CATI) interview on their general investment attitudes and behaviour, and if they plan to undertake investment activities in the coming year they are invited to participate in an online follow-up survey. If the company consents, they are emailed a link to a 10-minute discrete choice online survey where they are asked to	Name of Client: The European Investment Bank Country of Assignment: 28 European Union Countries	12.29,997USD / 12,29,997USD	Lead and Sole Member

	choose between eight pairs of hypothetical finance offers.			
March 2012 - December 2013	Assignment name: District Level Household and Facility Survey (DLHS)-IV in Tamil Nadu and Puducherry Brief description of main deliverables: Over 5,75,000 HHs were listed by a team of 300 mappers and listers and this list that formed the sampling frame. Following this we recruited a team of 450 field investigators with profile of post graduates and paramedic to conduct the main survey including the Clinical and Anthropometric measurements. We have covered 950 urban local bodies across all districts of Tamil Nadu. All data was collected using mini laptops and data uploaded during fieldwork. Output: Ipsos delivered this survey in 36 districts of Tamil Nadu and Puducherry. The survey covered a sample size of 49500 HHs across 1965 Primary Sampling Units (PSUs)- rural and urban (950). Covered a total of 1400+ health facilities- district hospital, taluk and non-taluk hospitals, CHC, PHCs, and SHCs were also surveyed to ascertain service delivery, infrastructure, documentation, and other aspects of reporting	Name of Client: Ministry of Health & Family Welfare (MoHFW) and International Institute for Population Sciences (IIPS) Country of Assignment: India	6,44,280 USD/ 6,44,280 USD	Lead and Sole Member
March 2009	Assignment name: Conducting Survey work for GATS (Global Adult Tobacco Survey) in Manipur and Nagaland	Name of Client: IIPS on behalf of Ministry of	40,769 USD/ 40,769 USD	Lead and Sole Member

- December 2009	Brief description of main deliverables: Summary of key tasks delivered by us included drawing village lay out maps, sampling, recruitment and training of field team, canvassing of schedules in 2 states using iPAQs, uploading data periodically and providing data for fact sheets. Output: Conducted a quantitative household survey done in state of Manipur and Nagaland. In each state 30 urban and 30 rural clusters were selected, A Post listing of all HHs that provided the sampling frame, total 3000 households were selected where interviews were completed. In each HHs adult members were surveyed. It was the first time, IIPS has introduced digital data collection and IPAQ were used for data collection	Health & Family Welfare Country of Assignment: India		
May 2014 - Mar 2015	Assignment name: Endline survey on quality of care, Patient Satisfaction Survey and utilisation of services in secondary hospitals of Tamil Nadu Brief description of main deliverables: Overall design of the endline surveys, developing of data collection tools, recruitment and training of qualified staff for data collection, data collection at hospital, analysis and submission of an analytical report Output: Conducted in all districts of Tamil Nadu, except Chennai. In each district of the state, 1 district head quarter hospital, 2 taluk Hospitals and 1 Non-Taluk hospital were covered, designed as a quantitative study that	Name of Client: Tamil Nadu Health Systems Project (TNHSP) Country of Assignment: India	30,923 USD/ 30,923 USD	Lead and Sole Member

	included structured interviews with the patients (in patients and out patients) at the facility as well as with the health functionaries, Interviewed a total of 4500 patients and community members.			
	Assignment name: Investment Region Assessment Brief description of main deliverables: Conducted an in-depth analysis of industries which should be a part of a 200 sq.km smart city, Assessed regional and location strengths and constraints and analyze the investment climate with respect to existing resources and industry sectors. Output: Industry index was prepared to arrive at the top industries for the investment region, From the analysis of key strengths of the investment region, existing and future high growth industries, discussions with domestic and multinational companies and benchmarking with global hubs following focus industry mix was suggested for the investment region.	Name of Client: Delhi Mumbai Industrial Corridor in collaboration with Halcrow Country of Assignment: India	3,09,230 USD/ 3,09,230 USD	Lead and Sole Member
December 2011 - November 2012	Assignment name: EU-wide survey on women's well-being and safety in Europe Brief description of main deliverables: Carried out the first EU-wide survey on women's well-being and safety in Europe - involving interviews with 42,000 women. The FRA survey filled the gap by interviewing 40,000	Name of Client: European Union Agency for Fundamental Rights (FRA)	26,39,230 USD/ 26,39,230 USD	Lead and Sole Member

	women across the 27 EU Member States. Output: The results of the project were presented in 2013, through a range of various products and channels, to inform FRA stakeholders and the general public about the outcomes of the full-scale survey in the EU27 and Croatia.	Country of Assignment: EU28 countries		
January 2014 August 2014	Assignment name: EU-MIDIS II Brief description of main deliverables: Collected comparable data in all 28 EU Member States to support the EU in protecting the fundamental rights of people with an immigrant or ethnic minority background, including Roma. It also aimed to populate core indicators for measuring progress in the implementation of the EU Framework for National Roma Integration Strategies as well as selected indicators on immigrant integration. The survey covered topics such as experiences of discrimination in different areas of life (labour market, education, housing, health and other services), criminal victimisation (including hate crime), social inclusion and societal participation Output: Ipsos coordinated and delivered this survey covering a sample 25515 interviews that were completed in 28 counties among target groups that	Name of Client: European Union Agency for Fundamental Rights Country of Assignment: EU 28 countries	32,12,459 USD/ 32,12,459 USD	Lead and Sole Member

	included Immigrants from North Africa and their descendants (North African), Immigrants from Asia and their descendants (Asian), Immigrants from South Asia and their descendants (South Asian), Immigrants from Turkey and their descendants (Turkish), Sub-Saharans and persons of African descent (Sub-Saharan African), Recent Immigrants, Roma, and Russian minorities.			
September 2009 - November 2009	Assignment name: Citizen satisfaction survey - municipal development - South West Serbia Brief description of main deliverables: Ipsos Strategic Marketing conducted F2F survey, on a representative sample of citizens of 8 municipalities in South West Serbia (N= 1770 in total). Specific tasks of Ipsos included conceptualisation of the analysis framework, tool development, recruitment and training of team, data collection, analysis and report submission. Output: The specific purpose of the project is to develop capacities of local stakeholders and local governments so that municipalities in South West Serbia, individually and jointly, plan and take strategic action to achieve the sustainable economic and social development of the region and to fulfil their obligations to citizens.	Name of Client: UNDP Country of Assignment: Serbia	11,630 USD/ 11,630 USD	Lead and Sole Member

April 2013 - June 2014	Assignment name: Implementation of an employer survey on skills needs in Europe Brief description of main deliverables: Surveyed on skills needs which will help to better understand the labour market and contribute towards the further development of vocational education and training policies across Europe. The Phase 1 of the study involved an extensive testing and piloting. Output: Using a random probability sampling technique which helped to access a representative sample of employers in local establishments across the whole economy.	Name of Client: CEDEFOP Country of Assignment: EU28	2,98,496 USD/ 2,98,496 USD	Lead and Sole Member
1/09/2015 1/05/2016	Assignment name: Urban Citizen Dialogue Brief description of main deliverables: Ipsos MORI carried out three face-to-face day-long public dialogue workshops which focused on possible future outcomes of six urban systems (energy, food, health, transport, waste and water) to understand citizen preferences. Output: All participants were then invited to a central reconvened summit where we brought together all six systems into integrated future scenarios. Experts in futures, urban integration or the specific systems actively participated in these events. Before and after the summit, we ran an online community including all	Name of Client: Innovate UK Country of Assignment: UK	13,26,89USD/ 13,26,89USD	Lead and Sole Member

	workshop participants, and 350 members of the public. The community activities covered system outcomes, integrated scenarios, technologies, and their future hopes for the UK's cities.			
June 2016 December 2016	Assignment name: Community Attitudes to Melbourne's Suburbs Brief description of main deliverables: Undertook a research project into Community Attitudes to Suburbs across Melbourne with the aim of furthering understanding of the pressures facing citizens and families within specific suburban areas. Output: Computer Assisted Telephone Interviewing (CATI) was used to administer the survey to n=1,000 Melburnians across 12 clusters of similar, and similarly located suburbs. A dual frame approach of Random Digit Dialling (RDD) landline and mobile phones was used (50% RDD; 50% mobile) Of the n=1,000 Melburnians who completed the survey, 68% were open to being re-contacted. Ipsos re-contacted 40 of these Melburnians (a mixture of young and older Victorians, parents and single people, those from high and low growth suburbs) to engage in bottom-up stories about what it was like to live in their suburb. These stories – populated throughout the report – often directly reference the	Name of Client: State Department of Environment, Land, Water and Planning Country of Assignment: Australia	77,084 USD/ 77,084 USD	Lead and Sole Member

	items of most importance identified through the quantitative research.			
Athena Infonomics India Private Limited				
September 2015 - October 2016	Assignment name: Market Potential Study: Mapping the Opportunity and Providing Recommendations in Facilitating Finance for Women Entrepreneurs in Bangladesh Brief description of main deliverables: Mapped the potential opportunity in facilitating finance to women SMEs in Bangladesh and estimate the current financing gap, developed comprehensive sectoral knowledge of the ecosystem, Identified the major challenges faced by women SME entrepreneurs in availing finance from financial institutions, identified key areas of focus, which could improve financing for women SME entrepreneurs Output: Extensive Literature Reviewed, Women Enterprise Survey carried out with 500 women SME entrepreneurs sampled from Bangladesh's seven administrative selections (and 12 cities)- Dhaka, Tangail, Gazipur, Rajshahi, Bogra, Rangpur, Chittagong, Comilla, Khulna, Jessore, Barisal and Sylhet., In-depth interviews were conducted with financial institutions and various stakeholders engaged in SME financing, Estimated the Finance Gap	Name of Client: International Financial Corporation, World Bank Country of Assignment: Bangladesh	45,525 USD/ 25,000 USD	Lead Member: Athena Infonomics Partner Member: NARI & Matrix Business Development

January 2015 -June 2015	Assignment name: Sustainability oriented financial services and products – Analysis of current loan products and government financing schemes for women entrepreneurs in the MSME sector Brief description of main deliverables: A systemic understanding of current lending patterns to women owned MS, get provider perspectives on the efficacy of support schemes and the issues in administration of loans to women entrepreneurs, Understand the issues faced by women who own MSMEs, in accessing credit and their awareness of support schemes Output: Extensive Literature Reviewed, Assessed Demand Side Constraints by surveying 110 women entrepreneurs across six key cities in the country - Delhi, Mumbai, Chennai, Bangalore, Ahmadabad and Hyderabad. The business survey focused on understanding the characteristics, growth potential, financial requirements and sources of finance and supply of credit for women led MSMEs., The evidence generated by the survey was used to draft policy and strategic recommendations to increase credit access for women entrepreneurs	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ Country of Assignment: India	27,600 USD/ 27,600 USD	Lead and Sole Member
September 2015 - January 2016	Assignment name: Preparation of Proposals for assisting Tirunelveli Municipal Corporation and Vellore Municipal Corporation to participate in the Smart Cities challenge	Name of Client: Tirunelveli City Municipal Corporation,	45,000 USD/ 22,500 USD	Lead Member: Shah Technical Consultants Associate Member: Athena Infonomics

	Brief description of main deliverables: As cities compete in the SCM, consulting support was envisaged to hand-hold cities in identification of innovative and viable smart solutions following a bottoms-up approach with citizens at the centre of the solutions. Output: Collected city level data on GDP, industry composition, ULB service delivery, infrastructure availability among others , Developed a people-driven participatory research framework that calls for active participation of Residents Welfare Associations, Tax Payers Associations, Senior Citizens, Chamber of Commerce and Industries, Slum Dwellers Associations and other groups,Developed research instruments and conducted citizen satisfaction survey for the identification of issues, needs and priorities in line with the smart cities vision. A three-layered engagement strategy (Capture-Investigate-Validate & Disseminate) was deployed to ensure that citizens are meaningfully engaged to provide inputs on the city's vision and goals. Over 3.8 lakh citizens with a focus on low-income groups were engaged as part of the smart cities planning process in Vellore alone. A combination of online google forms, direct interviews using a mobile app, WhatsApp and social media channels were deployed for the outreach activities.	Vellore Municipal Corporation and Ministry of Urban Development Country of Assignment: India		

February 2014 - Sept 2015	Assignment name: Consultancy Services to develop methodology for ranking urban local bodies (ULBs) based on their quality of service deliveries and conduct Quarterly Performance assessment of services delivered by 665 ULBs in Tamil Nadu Brief description of main deliverables: Develop and implement a comprehensive performance assessment framework to enable the Government to evaluate and rank 664 Municipalities, Municipal Corporations and Town Panchayats on a range of urban infrastructure and governance themes such as poverty levels, public health, sanitation, SWM, urban water supply etc Output: Designed a detailed data driven methodology to assess ULB performance, identified a comprehensive set of parameters - 110 quantitative and qualitative metrics (KPIs) covering the main functions (devolved to the ULBs in Tamil Nadu from the 12th Schedule of the Constitution) to design the assessment framework. The parameters considered are: Financial Management, Water Supply, Solid Waste Management, Sanitation, Public Health, Street Lights, Poverty Alleviation and Special Initiatives, designed a detailed survey tool and developed a comprehensive analytical framework to score the 665 ULBs both quantitatively and qualitatively, Developed an automated dashboard	Name of Client: Commissionerate of Municipal Administration, Government of Tamil Nadu Country of Assignment: India	76,675 USD/ 76,675 USD	Lead and Sole Member

	– tool that processes the data, calculates the score and visually represents the results			
April, 2015 December, 2015	Assignment name: Consumer Research in Sanitation in the State of Uttar Pradesh Brief description of main deliverables: Identify factors that influence sanitation behaviors (such as open defecation), and identify the most trusted and appropriate channels of communication. The study will inform the Government of Uttar Pradesh in designing its state sanitation marketing and communication strategy. Output: Developed a comprehensive sampling plan for qualitative (600 Focus Group Discussions and In-Depth Interview in 15 districts) and quantitative research (5400 quantitative interviews in 18 districts spread across the State) taking into account agro-climatic aspects, distance from state capital and backwardness of the districts, Designed field guides across 16 cohorts based on socio-economic classification, age, gender etc. ,Conducted training of the moderators and surveyors to implement the qualitative and quantitative research on domain knowledge, technical knowledge, research ethics using audio-visual aids and interactive tools including	Name of Client: World Bank Country of Assignment: India	1,02,965 USD/ 51,482 USD	Lead Member: Athena Infonomics India Private Limited Associate Member: Gorakhpur Environmental Action Group (GEAG)

	screening and evaluation of field staff, Data monitoring and analysis			
July 2013 - March 2015	Assignment name: Post Award Governance strategies for PPPs in India Brief description of main deliverables: Evaluate the factors impacting project performance 'post-award' of a PPP project and develop a framework to enhance sustainability. Output: Developed a 'Post-Award' Governance framework through in-depth research of 9 PPP projects in India across sectors of urban water supply, municipal solid waste management and urban transport, prepared of a National Report which was released by the Niti Aayog at a national conference that had representation from the Ministry of Urban Development, Department of Economic Affairs and British High Commission	Name of Client: British High Commission Country of Assignment: India	1,68,390 USD/ 1,68,390 USD	Lead and Sole Member
July 2016- 2016	Assignment name: Hiring Firm Strengthening Municipal and National Government Capacity to Deliver Pro-poor, Climate Sensitive Urban Development Brief description of main deliverables: Carried out investigation into current practices under four themes namely i) Policy and Legislation ii) Institutional Roles & Capacities (with special emphasis on data capture and utilization maturity) iii) Municipal Financing and iv) Community	Name of Client: UNDP Bangladesh Country of Assignment: Bangladesh	72,820 USD/ 72,820 USD	Lead and Sole Member

	Participation structures in Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps; Urban Planning and Development from the perspective of their impact on climate and the poor and identify key gaps Output: Prepared a National Report on "Strengthening Municipal & National Government Capacity to deliver pro-poor climate sensitive urban development that detailed key drivers of urban poverty in Bangladesh, solution pathways to address them and a potential set of indicators (spatial and non-spatial) that could be integrated into the overall monitoring, learning and evaluation module of the Programme			
Phase I: August 2013 - November 2013 Phase II: December 2013 - May 2014	Assignment name: Accelerating Women Entrepreneurship in Karnataka: A Roadmap to 2020 Brief description of main deliverables: Evaluated the entrepreneurial ecosystem and identify major challenges being faced by women entrepreneurs, to formulate a roadmap, outlining the various programs and policies required to facilitate women's entrepreneurship Output: Phase I: 200 face to face structured surveys with Women Business Enterprises in Bangalore ,50 qualitative interviews with male entrepreneurs, government agencies,	Name of Client: Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) Country of Assignment: India	55,000 USD/ 22000 USD	Lead Member: Athena Infonomics Associate Member: Phase I: WE Connect International and Quantum Leaps Phase II: e-MERG

	business associations, financial institutions and investors; Phase II: 250 structured interviews with women entrepreneurs across 9 cities in Karnataka ,25 qualitative interviews with Government, business associations, NGOs and other stakeholders, Multi-stakeholder conference in Hubli and Mysore. Constructed a Women Entrepreneurial Environment Index (WEEI) in bot Phase I and II			
April 2013 - July 2013	Assignment name: The National Customer Satisfaction Survey-Rwanda Brief description of main deliverables: Carried out a customer satisfaction survey with an aim to track the progress of national customer service from the previous survey that was carried out by OTF, to serve as a common basis for customer care improvement in Rwanda and develop a strategic policy and assess the initiatives to promote excellence. Output: Survey was carried out across three urban centers – Kigali, Huye and Musanze covering national of Rwanda, and EAC – Burundi, Kenya, Uganda and Tanzania, produced a robust data set and carried out statistical analysis of data collected through Chronbach's alpha	Name of Client: Rwanda Development Board Country of Assignment: Rwanda	90,000 USD/ 40,000 USD	Lead Member: RUMA CPA Associate Member: Athena Infonomics
August 2012 - April 2013	Assignment name: Tamil Nadu Skill Gap Assessment Brief description of main deliverables: Undertook a detailed district-level skill	Name of Client:	29,230 USD/ 29,230 USD	Lead and Sole Member

	gap analysis for the state of Tamil Nadu Output: On identification of the skills gaps and opportunities, recommendations were presented for each key stakeholder including government, industries, skill training institutes and NSDC to bridge the gap, Policy actions were proposed based on detailed analysis of current policies and the findings of the study.	National Skill Development Corporation Country of Assignment: India		
Economist Intelligence Unit (Sub Consultant)				
2009 - Current	Assignment name: EIU Global Liveability Ranking Brief description of main deliverables: The Economist Intelligence Unit's Global Liveability Ranking scores a range of qualitative and quantitative indicators to provide a robust and global benchmarking study of 140 cities globally. The product uses over 40 indicators in 30 subcategories across five broad lifestyle categories (stability, healthcare, culture, education and infrastructure) to create an overall liveability score. The product takes three forms: Global Liveability Ranking and overview, which is a short ranking report summarising key findings and supplying an overall ranking of 140 cities; the Global Liveability Survey, a full report with 140 city profiles broken down by sub-category (which can be sold separately); and lastly the Global Liveability Matrix, an interactive excel	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

	tool to compare all scores in all locations. Output: Data gathering (quantitative and qualitative indicators by country) & quality control Desktop research (vetting and triangulation of data; supplementary analysis of overall survey findings) ; Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) ; Benchmarking (design of an interactive benchmarking-index, scoring and weighting of indicators), Report writing and Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			
2009 - Current	Assignment name: EIU Worldwide Cost of Living Brief description of main deliverables: Worldwide Cost of Living is a biannual interactive tool which allows users to compare the cost of living between approximately 145 cities globally. As well as delivering simple city to city comparisons, the tool can be customised and recalculated according to user needs with a variety of add-on features.	Name of Client: Multiple (based on paid access to the database) Country of Assignment: Multiple	N/A/ N/A	Lead and Sole Member

	Output: Survey of price data (price data is vetted and weighted individually before again being weighted and compared across categories to form an index) ,Data gathering (quantitative and qualitative indicators by country) and Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy), Benchmarking (design of an interactive benchmarking-index; tracking of aggregate movement of prices against national or city-level inflation), Report writing and editing (ranking report summarising the findings of the survey)			
6/2014- 3/ 2015	Assignment name: Safe City Index Brief description of main deliverables: The Safe Cities Index 2015 is an Economist Intelligence Unit report, sponsored by NEC. The report is based on an index composed of more than 40 quantitative and qualitative indicators. These indicators are split across four thematic categories: digital security; health security; infrastructure safety; and personal safety. Every city in the Index is scored across these four categories. Each category, represented throughout the report by the icons shown in the key, comprises between three and eight sub-indicators. These indicators are divided between inputs, such as policy measures and levels of spending, and outputs, such as the frequency of	Name of Client: NEC Country of Assignment: North America, Latin America, Europe, Middle East & Africa, Asia-Pacific	N/A/ N/A	Lead and Sole Member

	vehicular accidents. The Index focuses on 50 cities selected by The Economist Intelligence Unit, based on factors such as regional representation and availability of data. Output: Data gathering (quantitative and qualitative indicators by city) and Data cleaning and dataset completion Data verification and validation Data analysis Benchmarking/Modelling Report writing and Data Visualization			
1/2014-6/2015	Assignment name: MENA Cities Brief description of main deliverables: Provided demographic and economic data (with a selection of 5-year forecasts) for 26 Middle East cities, using a combination of secondary and primary research. The EIU produced a workbook which included the following features: map navigation through clickable markers on a map of the region to call up data for relevant cities; population pyramids displaying population breakdowns by age group and gender; customisable rankings of cities by income and population for comparison purposes; access to all indicators included in the workbook. Output: Data gathering (quantitative and qualitative indicators by city)	Name of Client: A multinational conglomerate Country of Assignment: UAE, Egypt, Algeria, Jordan, Iraq, Lebanon, Morocco, Saudi Arabia, Qatar, Iraqi-Kurdistan, Turkey, Kuwait, Bahrain, Iran, Oman, Libya, Tunisia	2,30,769 USD/ 2,30,769 USD	Lead and Sole Member

	Data cleaning and dataset completion (developing custom estimation models, and/or conducting primary research, and in some cases applying statistical data imputation methods) Data verification and validation (developing documents that present the data to experts and practitioners to review and critique) Data analysis (analysis and sense check of datasets based on objective of the assignment, along with quality-assurance checks for comparability and accuracy) Data visualisation (design of dashboard with a range of functionality including adjustable weightings to allow for customisation, a list of country/city scores by category and/or indicator, ability to compare multiple geographies simultaneously)			

FORM TECH 3:

Comments and suggestions on the Terms of Reference, counterpart staff, and facilities to be provided by the client

TECH-3: COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE, COUNTERPART STAFF, AND FACILITIES TO BE PROVIDED BY THE CLIENT

A - On the Terms of Reference

Comments on the Terms of Reference

At the outset, we commend the efforts of the Ministry to embark on such a timely and relevant exercise and the detailed methodology document, which serves as a guidance note for the same. We are excited to be given an opportunity to participate in developing a framework for rolling out such an exercise. Based on our experience of developing a technical response to this bid, our observations are summarized below.

Our review of the methodology document confirms need for some form of physical assessment- sample survey or validation required for 24 of these indicators Phase 1 of our proposal. These 24 indicators vary from non-motorized transport, hotels and schools among others. The TOR does not clearly specify what a consultant must do if the data is not available for these indicators. Several of them (for example modal share of transport) are technical outputs that demand detailed studies and cannot be determined through a random physical audit

Given the timelines available, a critical assumption made is that the physical validation will be performed on only those data parameters submitted by the city government, through a random audit/physical inspection

Also our approach categorizes the data sub groups into a) Indicators where secondary data will be provided by city/ report 'as is' and no validation required b) Indicators where secondary data is available and will require validation through field visits/ sample survey/ citizen feedback c) indicators where secondary data is missing but can be collected d) indicators where secondary data is not available and will be excluded.

Our technical proposal and financial proposal is built on this categorisation We would be very keen to discuss and receive your feedback during proposal discussion stage to finetune this categorisation as well as discuss implication of this approach for both the timelines and costs.

B - On Counterpart Staff and Facilities

A summary of the key support areas where we look forward for support for MoHUA is outlined below:

- City officials are informed of the assignment vide a circular of the proposed assessment
- A state nodal officer will be appointed in every state to co-ordinate with the consultants to facilitate the implementation of the entire process
- A clear reporting structure is established for approval and sign off on all the key milestones and deliverables
- A clear process for reconciliation of differences between self-reported and audited data outputs to be identified and put in place early on.
- Facilitation of secondary datasets available across different flagship schemes within the ministry to ensure effective delivery of the 'pre-filled' data templates for each city

FORM TECH 4:
Description of Approach, Methodology, and Work Plan in responding to the Terms of Reference

TECH-4: DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

A. Technical Approach and Methodology

Liveability – Ranking and Beyond

Urban expansion in India is anticipated to grow at a pace unlike anything the country or the world has seen before, with much of the population likely to be concentrated in cities with a population of a 1 million plus. This trend brings with it several opportunities and challenges and clearly a trend of intensified competition among cities to attract talent and resources, with 'liveability' occupying centre stage in much of the new discourse.

Livability rankings are a common feature in several countries and is an opportunity to systematically quantify the challenges that may be presented to an individual's lifestyle and offers itself as an instrument for policy reform, resource mobilization, investment prioritization and management of services.

It is heartening to note that India, under the leadership of MoHUA, has embarked on measuring the 'liveability' of its cities and we are excited to draw from our collective experience to summarize our appreciation/understanding of what such an exercise can offer.

First, are a set of highlights of our approach to the data collection and the ranking exercise:

1. **Indicator development:** While the guidelines define a set of indicator areas, for the exercise to be objective and consistent, bespoke guiding questions for data collection that is aligned with the '**language of data**' used by city governments and aligned with global best-practices needs to be developed. This aim here is to minimise comparability issues – e.g. the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, (mapping what qualifies as access to digital education) Here the team seeks to leverage the experience of the Economist's step by step approach in developing such frameworks and the experience of IPSOS and Athena Infonomics in creating and scaling up similar large scale ranking exercises in India. (Refer Phase 1 of our detailed A&M for a detailed description of this approach)

2. **A pilot for city GDP:** The ability to measure a city's output and use that as a baseline to track its growth can be invaluable particularly in the context of the large capex investments that the identified smart cities are expected to attract. Given the opportunity to interact with a large number of cities, with varying data ecosystems, an attempt will be made to pilot test as part of the data collection exercise an approach to systematically map and calculate the city's GDP, which can be further refined in the subsequent rounds.

3. **Innovations in sampling and audit using spatial data:** A unique system of auditing indicators using publicly available open source spatial data sets will be deployed and a geo-spatial

sampling strategy to ensure that the citizen surveys are well diversified across the city will be deployed

4. **An online portal for real-time tracking of progress and outcomes:** Through the creation of an online portal right at the start of the assessment and real-time tracking of the progress of the liveability ranking exercise across phases (training workshops, data collection, validation and ranking) we hope to induce and leverage the competitive spirit that has driven the smart city process.

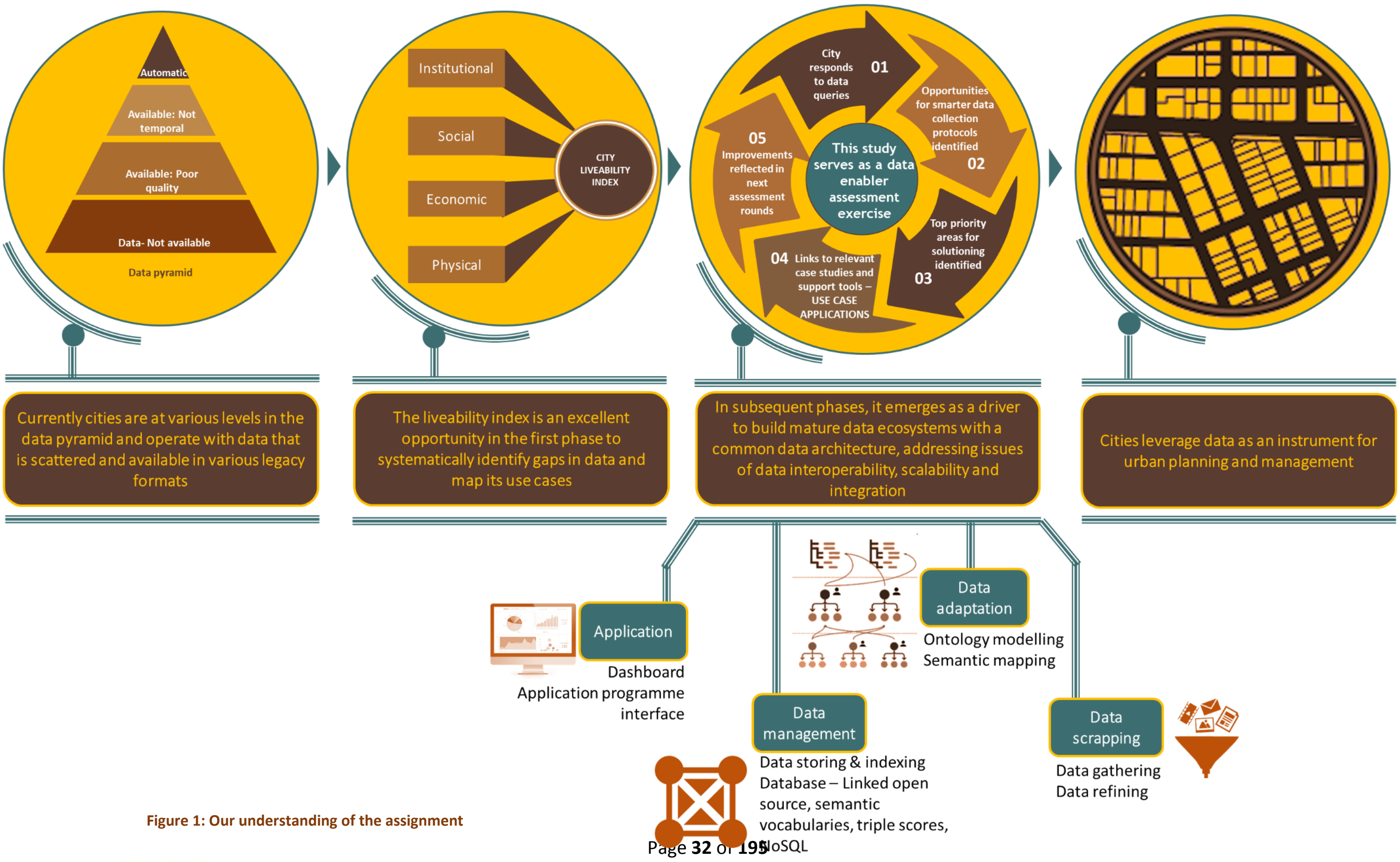
5. **Economist Hub- Effective national and global dissemination:** The Economist Intelligence Unit is a global leader in data intelligence and as a key intellectual partner to this JV will lead the development of a dedicated 'economist hub' with interactive workbooks and dashboards to present the findings of the liveability rankings.

While there are numerous positive spill overs to the liveability ranking, there are three key strands that we hope to get a dialogue initiated on. The team will submit at the end of the exercise a white paper on the potential the liveability ranking exercise has in moving the needle of various policy and programmatic goals of the nation, with a detailed analysis on the following:

- **Data availability, access and quality:** A framework to systematically evaluate the key gaps in data availability and quality will be developed and deployed and suggestions on smart data collection protocols developed to inform future data collection strategies and strengthen the data ecosystem. This approach It segregates "available data" from "quality data". In areas like water and sanitation, which carry with them a number of citizen sensitivities, there is a conflict of interest between data reporting and service delivery functions, which are usually vested in the same agency. By looking at data quality through a standardized process view (representativeness, third party validation etc.), it is possible to identify datasets which are more likely to be error prone than others

- **City-centric use cases- Interoperability and convergence with domestic policy and programme levers:** MoHUA under the smart city mission has already launched an initiative to set up integrated digital platforms which will provide the infrastructure backbone to host and run citizen and other e-government applications. The newly created datasets when generated can be linked to the platform and opportunities for use-cases by overcoming interoperability concerns may be explored. The ranking exercise (once the data maturity improved) may also serve as a planning tool or soft collateral for attracting investments and raising resources as illustrated in the figure below. Some of the key convergence and use-case applications between this exercise and the key goals set out by the MoHUA will be explored and documented

Our understanding of the assignment



Automatic
Available: Not temporal
Available: Poor quality
Data- Not available
Data pyramid

Institutional
Social
Economic
Physical
CITY LIVEABILITY INDEX

This study serves as a data enabler assessment exercise
01 City responds to data queries
02 Opportunities for smarter data collection protocols identified
03 Top priority areas for solutioning identified
04 Links to relevant case studies and support tools – USE CASE APPLICATIONS
05 Improvements reflected in next assessment rounds

Currently cities are at various levels in the data pyramid and operate with data that is scattered and available in various legacy formats

The liveability index is an excellent opportunity in the first phase to systematically identify gaps in data and map its use cases

In subsequent phases, it emerges as a driver to build mature data ecosystems with a common data architecture, addressing issues of data interoperability, scalability and integration

Cities leverage data as an instrument for urban planning and management

Application
Dashboard
Application programme interface

Data management
Data storing & indexing
Database – Linked open source, semantic vocabularies, triple scores, NoSQL

Data adaptation
Ontology modelling
Semantic mapping

Data scrapping
Data gathering
Data refining

Figure 1: Our understanding of the assignment

- Global use-cases- Alignment with global data reporting requirements: The newly generated data sets may also serve as an opportunity to systematically explore convergence between the data being generated by cities and global development standards like the SDGs and provides for an opportunity to explore what it means to achieve some of those goals at the local level and generate data at the level of local governments to better track progress on development goals.

Summary of our approach & methodology

Phase 1 Preparatory phase

Duration
W1-W5

Literature review of existing studies and data sources (Smart City Reports, AMRUT reports, Data.gov, etc.) to prepare baselines for each city

Data availability/gap assessment to assess a) Data points to be collected through primaries b) Metrics that would merit smart proxies

Indicator development

Finalization of stakeholder participation lists

Development of workshop structure and content

Finalisation of workshop dates for the state workshops

Development of data entry application /interface

Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation

Draft report templates- City Assessment

Preparation of research Instrument for primaries and physical validation

Data entry and quality control template

Data administration protocols and data collection monitoring framework

Summary of our approach & methodology

Phase 1 Preparatory phase (Continued…)

Duration
W1-W5

Framework to estimate city GDP

Formulation of media strategy

Approach note for data interoperability

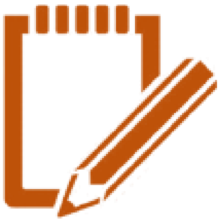
Media dissemination through photo journals, national portal to be an on-going exercise

Phase 2 State/City level engagement

Duration
W5-W8

Organisation of State-level Workshops

Launch and updation of nation-wide tracker



Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official

City level Reconnaissance meetings

Final list of indicators (with details on collection protocols), incorporating comments from the workshop; and Inception Report preparation

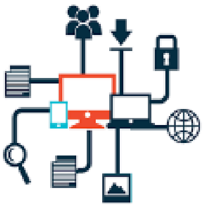
Media dissemination through photo journals, national portal to be an on-going exercise

Summary of our approach & methodology

Phase 3 Data collection

Duration
W8-W12

Finalisation of secondary data collection interface/application

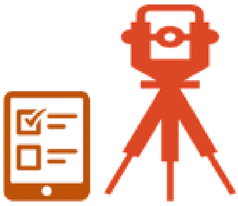


Secondary data collection

Setting up a region/state level help-desks for near-real-time troubleshooting)

Final data availability/gap assessment

Household/Citizen Surveys



Physical audit of secondary data provided by cities (all relevant indicators)

GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors

Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC

Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

Summary of our approach & methodology

Phase 4 Data collation and finalisation

Duration
W13-W14

Preparation of Draft data sets circulation with cities for validation

City level discussions for addressing queries and incorporating revisions, modifications etc.

Sign-off on final list of data points/ indicators

Media dissemination through photo journals, national portal to be an on-going exercise

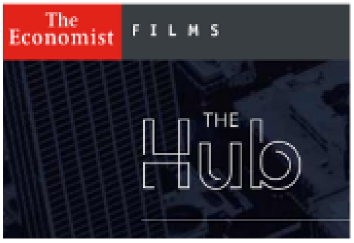
Phase 5 Report preparation and national workshop

Duration
W15-W20

Indices development and visualisation

Preparation of draft assessment report

Preparation of final assessment report



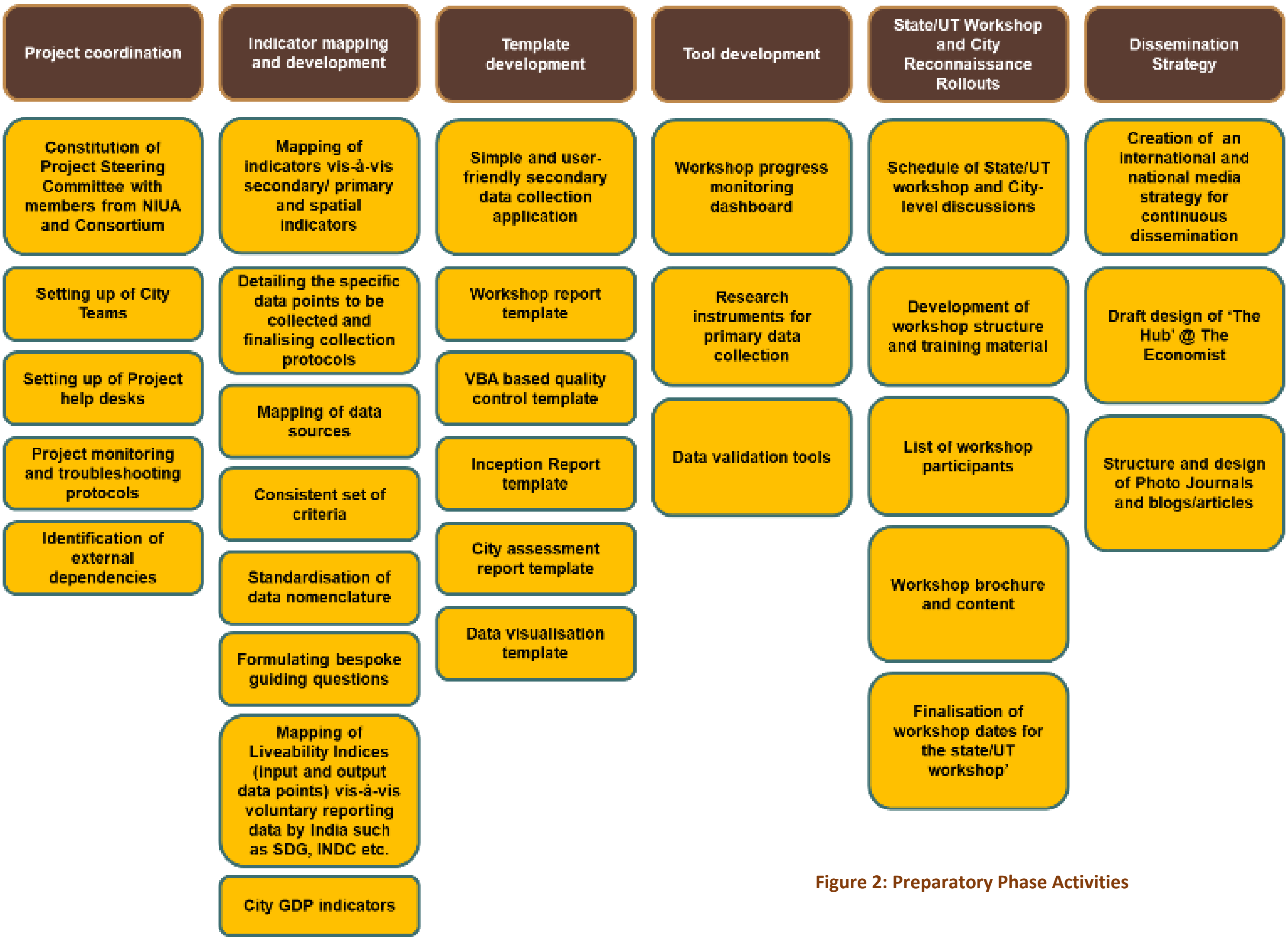
Launch of 'The Hub' @ The Economist

National-level Workshop

Media dissemination through photo journals, national portal to be an on-going exercise

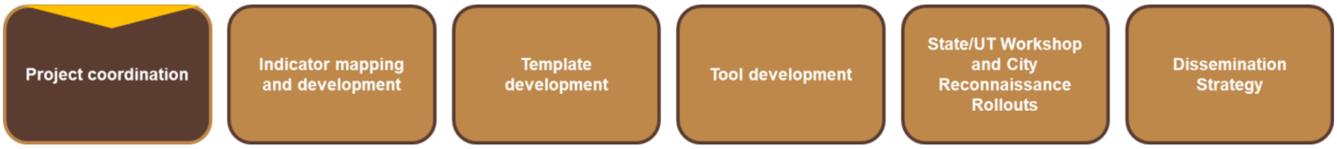
Phase 1: Preparatory phase: [Week 1 – W8]

The first four weeks are extremely crucial for this assignment as it would entail completion of preparatory steps for the short-term project milestones such as state level workshops and city reconnaissance discussions and gain momentum on the mid-term project milestones involving secondary and primary data collection including validation and report preparation. This phase will involve activities on the following areas:



Project coordination	Indicator mapping and development	Template development	Tool development	State/UT Workshop and City Reconnaissance Rollouts	Dissemination Strategy
Constitution of Project Steering Committee with members from NIUA and Consortium	Mapping of indicators vis-à-vis secondary/ primary and spatial indicators	Simple and user-friendly secondary data collection application	Workshop progress monitoring dashboard	Schedule of State/UT workshop and City-level discussions	Creation of an international and national media strategy for continuous dissemination
Setting up of City Teams	Detailing the specific data points to be collected and finalising collection protocols	Workshop report template	Research instruments for primary data collection	Development of workshop structure and training material	Draft design of 'The Hub' @ The Economist
Setting up of Project help desks	Mapping of data sources	VBA based quality control template	Data validation tools	List of workshop participants	Structure and design of Photo Journals and blogs/articles
Project monitoring and troubleshooting protocols	Consistent set of criteria	Inception Report template		Workshop brochure and content	
Identification of external dependencies	Standardisation of data nomenclature	City assessment report template		Finalisation of workshop dates for the state/UT workshop'	
	Formulating bespoke guiding questions	Data visualisation template			
	Mapping of Liveability Indices (input and output data points) vis-à-vis voluntary reporting data by India such as SDG, INDC etc.				
	City GDP indicators				

Figure 2: Preparatory Phase Activities


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

Given the short and intense nature of the assignment we propose to have a human resources structure in place to enable seamless effective and timely coordination. A four-tier project team is proposed comprising a Project Steering Committee (PSC), Key Experts (Full time Core Team) and Support Teams shortly after commencement of the assignment.

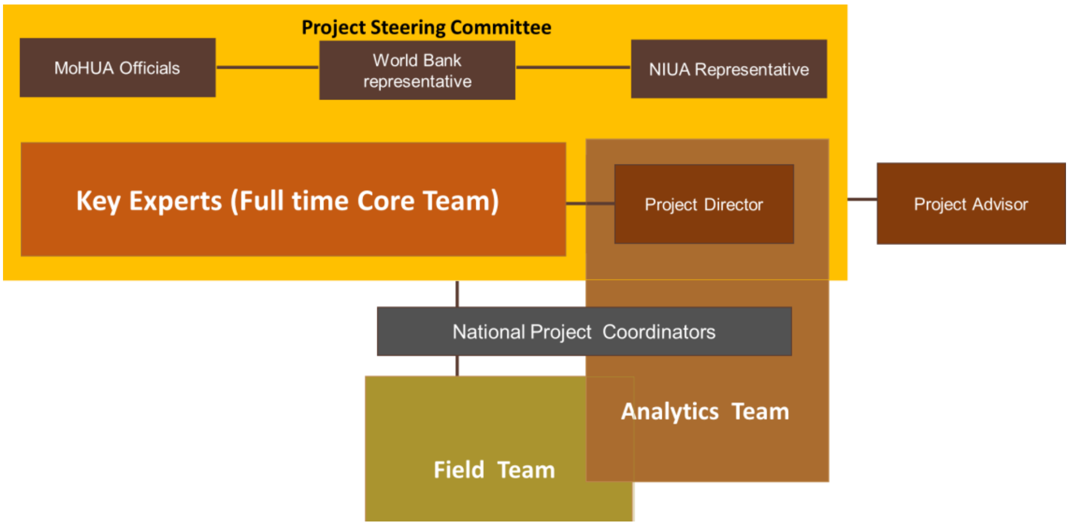
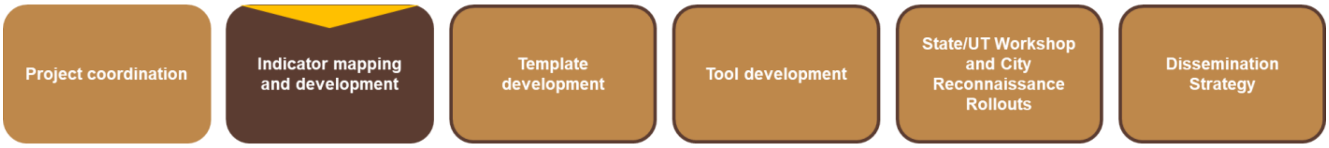

Project Steering Committee
MoHUA Officials
World Bank representative
NIUA Representative
Key Experts (Full time Core Team)
Project Director
Project Advisor
National Project Coordinators
Analytics Team
Field Team

Figure 3: Project Governance and Management Structure

The PSC will have representative from the MoHUA, NIUA, the World Bank and Key Experts. A Project Command Centre with video conferencing facilities would be set up to monitor the entire project including state workshops, secondary and primary data collection. The PSC will have access to dashboards for monitoring the progress of a) state level workshops b) secondary and primary data collection c) Queries and troubleshooting at state/UT-level Help Desks. The PSC will be the final point of approval on protocols for data collection, training content, project reporting, issue escalation and, troubleshooting for various aspects of the project such as support from state/UT/City Governments, data availability/gaps or lags etc.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

While most of the 79 indicators comprising the Liveability Indices can be computed based on secondary data available with the City Government, some of them require primary and/or spatial data inputs/validation. The 'Methodology for Collection and Computation of Liveability Standards in Cities' document has detailed the input data points required for computation of each indicator and has also specified the type (secondary/ primary/ spatial) of data points required. The figure below maps and categorises indicators based on different data collection interfaces.

CITY LIVEABILITY INDEX
79
Indicators

Category A

Secondary data collection

- 2.3 | Hotel occupancy

Category B

Secondary data collection + GIS validation

- 8.1 | Per capita availability of green spaces
- 5.1 | Number of streets, public places, junctions covered through surveillance systems
- 9.1 | Share of mixed land use area in overall city land use
- 9.2 | Net Density

Category C

Secondary data collection + Physical validation

- 2.3 | Hotel occupancy
- 3.4 | Percentage of schools with access to digital education
- 5.1| Number of streets, public places, junctions covered through surveillance systems
- 6.5 | Percentage of vendors registered and provided formal spaces
- 14.3 | Extent of municipal solid waste recovered through reuse
- 11.7 | Availability of Passenger Information System
- 11.8 | Extent of signal synchronization
- 11.9 | Availability of paid parking spaces
- 11.10 | Percentage coverage of footpaths – wider than 1.2 m
- 11.11 | Percentage of traffic intersections with pedestrian crossing facilities
- 11.12 | Extent to which universal accessibility is incorporated in public rights-of-way

Category D

Data unavailable but collected through HH level sample survey

- 7.2 | Percentage of slum areas covered through basic services
- 11.3 | Mode share of public transport
- 11.6 | Mode share of non-motorized transport
- 14.1 | Household level coverage of municipal solid waste collection

Category E

Data unavailable but collected through HH^{++} sample survey

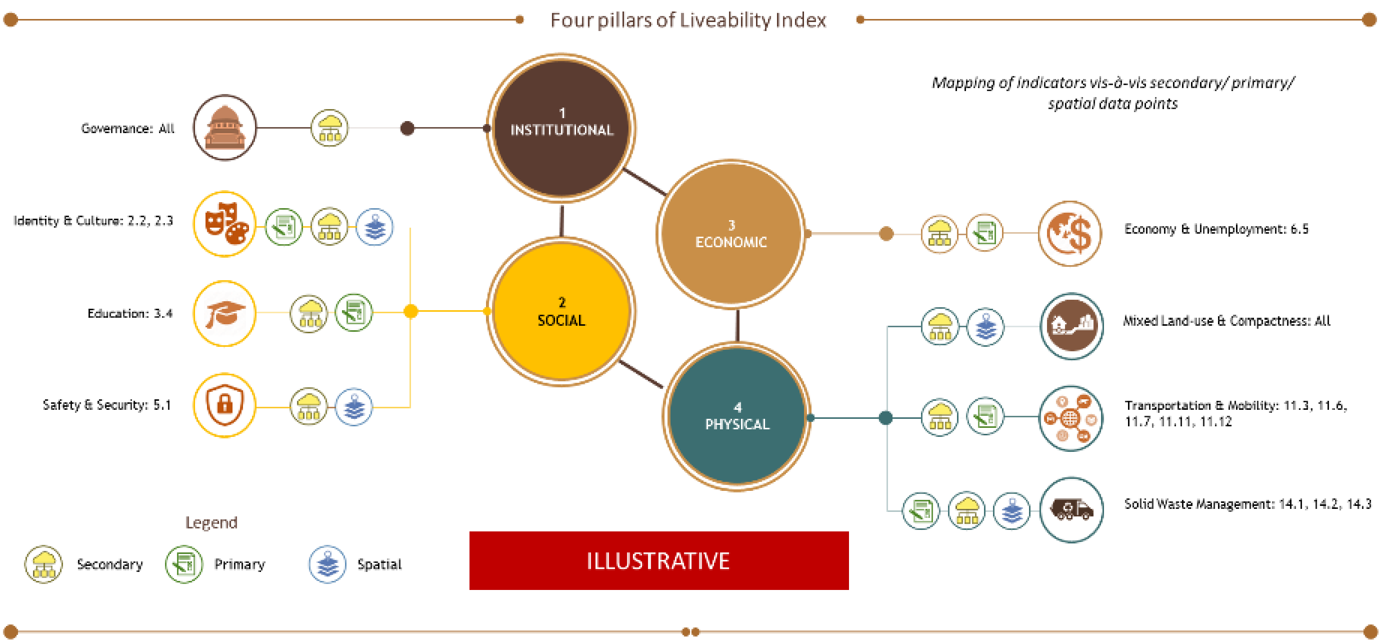
- 13.1 | Coverage of toilets

Category F

Data unavailable

- To be identified based on city responses

To be excluded from computation of index if data is absolutely no data could be obtained despite all measures to collect it.


Four pillars of Liveability Index
Mapping of indicators vis-à-vis secondary/ primary/ spatial data points
Governance: All
Identity & Culture: 2.2, 2.3
Education: 3.4
Safety & Security: 5.1
1 INSTITUTIONAL
2 SOCIAL
3 ECONOMIC
4 PHYSICAL
Economy & Unemployment: 6.5
Mixed Land-use & Compactness: All
Transportation & Mobility: 11.3, 11.6, 11.7, 11.11, 11.12
Solid Waste Management: 14.1, 14.2, 14.3
Legend
Secondary
Primary
Spatial
ILLUSTRATIVE

It will also involve building a consistent set of criteria for computation of the indicators – for instance method for estimation of city population (estimating city population based on 2011 Census or estimates provided by City Governments), approach for testing air/water quality etc. that could be used across cities. Our team will deploy a systematic approach to define clearly every indicators and collection protocols to ensure comparability (E.g., what could be construed as a Command Centre? Are there a minimum number of services that should be integrated under the Command Centre?) What is the standard definition of a 'smart meter?' etc. Here, the aim is to provide guidance for cities and analysts, with good tracking mechanisms.

Some of the indicators such as 'percentage of citizen services available online', 'percentage of services integrated through Command Centre,' etc. have been detailed for some of the ULB functions (e.g., property tax functions) and sub-services (e.g., city transport) but the rest needs to be further developed. Please refer figure below for an illustration of our overall approach

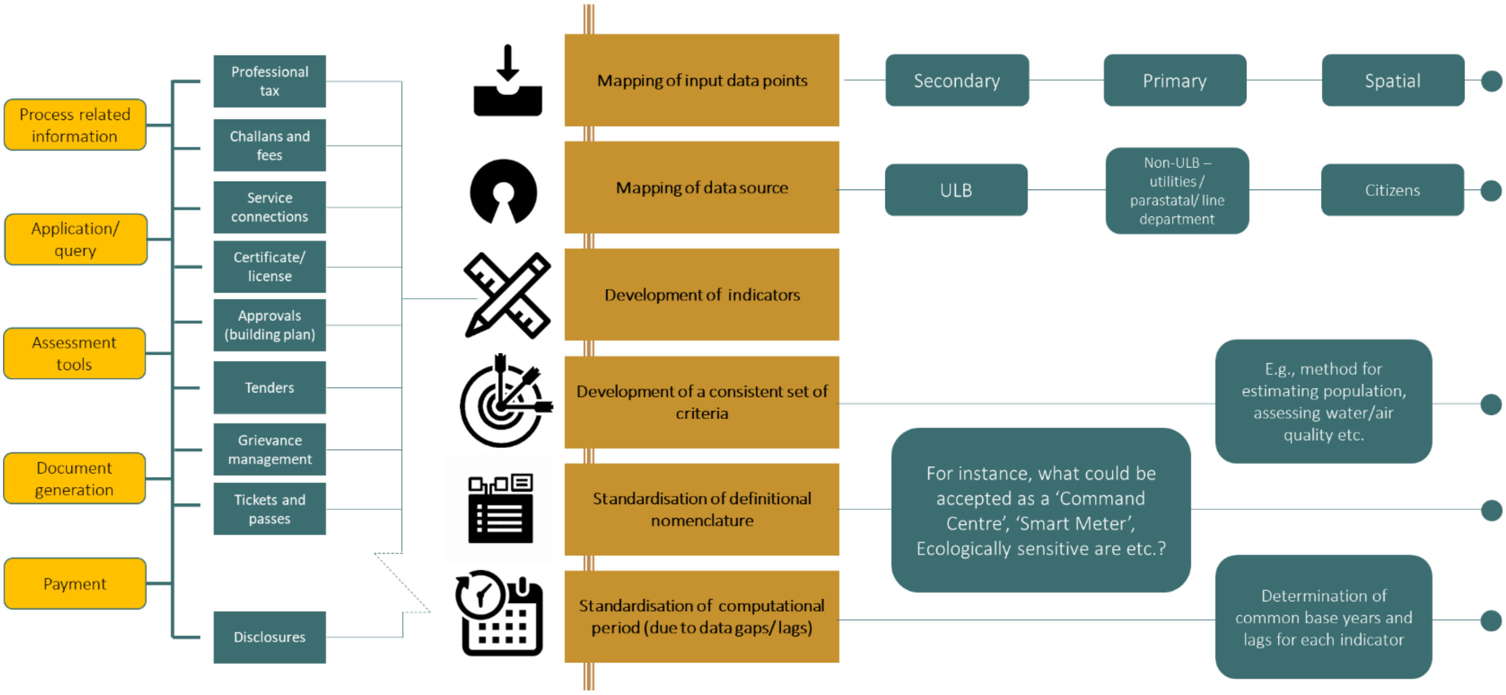
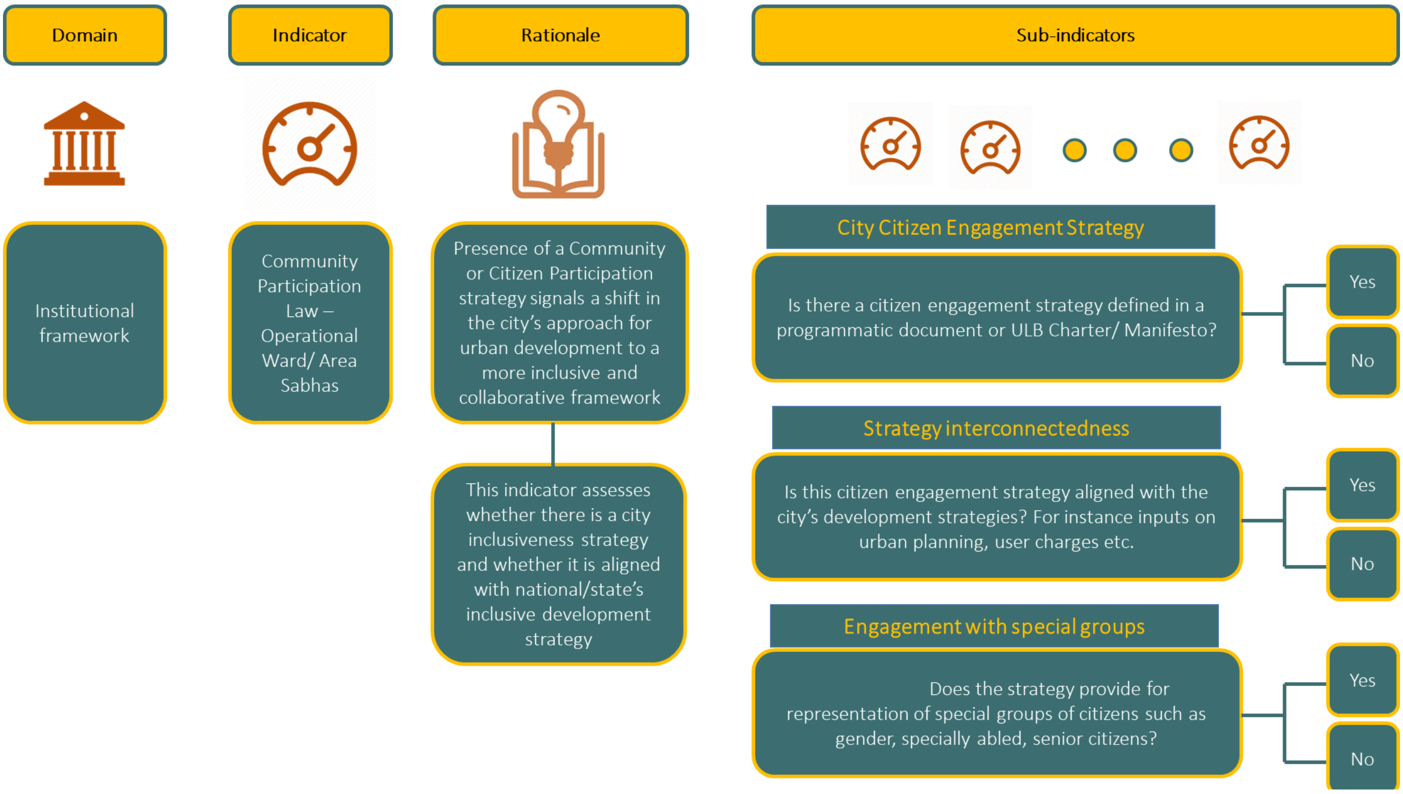

Process related information
Application/ query
Assessment tools
Document generation
Payment
Professional tax
Challans and fees
Service connections
Certificate/ license
Approvals (building plan)
Tenders
Grievance management
Tickets and passes
Disclosures
Mapping of input data points
Mapping of data source
Development of indicators
Development of a consistent set of criteria
Standardisation of definitional nomenclature
Standardisation of computational period (due to data gaps/ lags)
Secondary
Primary
Spatial
ULB
Non-ULB – utilities / parastatal/ line department
Citizens
E.g., method for estimating population, assessing water/air quality etc.
For instance, what could be accepted as a 'Command Centre', 'Smart Meter', Ecologically sensitive are etc.?
Determination of common base years and lags for each indicator

Figure 4: Indicator development approach

Our approach aims to minimise comparability issues – e.g., the definition of capital spending for indicator 1.7 under Category 1: Governance (such as what expenditure categories may fall into infrastructure and assets) or the definition of access to digital education under indicator 3.4 for Category 3: Education, which covers the type of digital infrastructure available as well as various ways to access digital learning networks.

A detailed guidance document capturing suggestive list of items/key words would be prepared based on secondary research as well as global best practices for key definitions and provided to Cities for reference. The draft detailed indicator list will subsequently be validated in Phase 2.

Scoring indicators requires a robust methodology. To add robustness and objectivity to the scoring, we propose developing bespoke guiding questions (in a manner consistent with local body nomenclature and jargon) for the indicator. This will greatly enhance the robustness of the framework. An example of our step by step approach is shown below, for an existing index namely percentage of population covered under Ward Committees/ Area Sabhas.



Institutional framework

Community Participation Law – Operational Ward/ Area Sabhas

Presence of a Community or Citizen Participation strategy signals a shift in the city's approach for urban development to a more inclusive and collaborative framework

This indicator assesses whether there is a city inclusiveness strategy and whether it is aligned with national/state's inclusive development strategy

City Citizen Engagement Strategy

Is there a citizen engagement strategy defined in a programmatic document or ULB Charter/ Manifesto?

Strategy interconnectedness

Is this citizen engagement strategy aligned with the city's development strategies? For instance inputs on urban planning, user charges etc.

Engagement with special groups

Does the strategy provide for representation of special groups of citizens such as gender, specially abled, senior citizens?

Figure 5: Approach for developing bespoke questions

Framework for Measuring City GDP

As part of this exercise, we are keen to explore the feasibility of estimating the economic output of the identified smart cities and explore if a baseline on the same can be created with publicly available data sets/information provided by cities. This is perhaps particularly credible given the kind of capex investments these cities are expected to attract. As part of this exercise we will develop and integrate the data requirements associated with the process of measuring the city's GDP in the overall data collection exercise and explore the quality of the data ecosystem to support such an exercise

EIU is currently carrying out a similar exercise in China.

Context

The prosperity and welfare of cities around depend on the capacity of cities to take advantage of opportunities for sustained employment growth and minimise the challenges of national and global economic integration and urban population growth. Therefore, the quality of economic development planning and city management is extremely important. Developing sound local economic development strategies at the city level is critical to both good city management and economic performance.

The purpose of the city economic rankings is to augur a health sense of competition between cities to attract investments and high-quality jobs. These rankings will also help smart city managers identify fast-growing economic opportunities in their cities and further propel their growth. As such, growth indicators, rather than those reflecting absolute size or wealth, will be chosen. However, to ensure that the ranked cities have a critical mass attractive to investors and new businesses, a minimum population cut-off point of will be determined and used. A nuanced methodology will be developed after a detailed review of the data ecosystem available. Ex: The metropolitan population will be a measured as the true urban population of a city; it includes the population only in the contiguously built city area.

Proposed Methodology

A comprehensive methodology for assessment of City level economic performance will be developed and tested for top twenty cities as part of the project. The methodology will be akin Economist Intelligence Unit's China Emerging city rankings is to identify where new business opportunities in urban China are likely to emerge because of rapid growth in population and incomes.

Growth over the next five-year period of 2018-2023 in infrastructure and property, economic output (GDP per head), consumption, job creation and population will form the core of the ranking framework. Consumer markets are included in the form of household incomes and spending. For population and GDP per head, five-year forecasts derived from the EIU's demographic and regional forecasting models will be used so that the index reflects expectations for the future.

We will supplement these indicators, wherever possible with historic city-level data that assess changes in infrastructure and property (fixed-asset investment and the urban built area), public finances (fiscal revenue) and the external environment (foreign direct investment and goods exports). Although these indicators are historic, the effects they bring to the real economy will be lagged and last for years. The CAGRs will be normalized and benchmarked to produce rankings across each indicator. The nine indicators are weighted equally in the overall index.

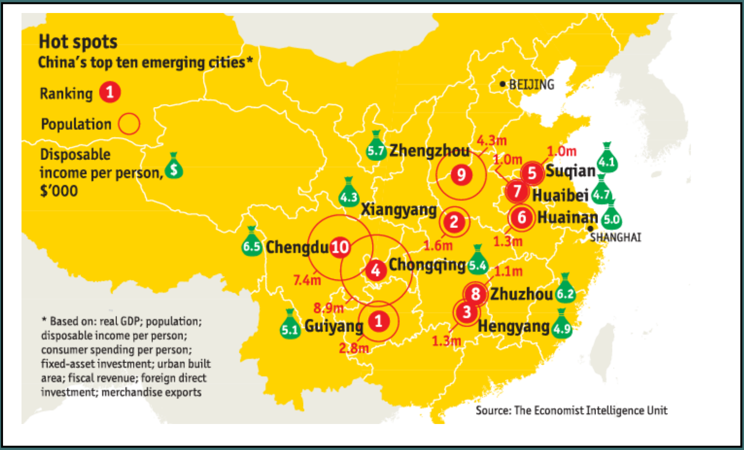
Disaggregation of data at the city level using a combination of official statistics and smart proxies will be attempted. Data parameters will be collected and studied at the city level. Inter alia, these include population, real estate market trends, tax receipts, infrastructure investments and demand, transportation, energy consumption, night-time light data (radiance and saturated light emissions) etc.,

Illustrations

These illustrations are largely drawn from the China Emerging City Rankings (2010-15) which has been developed in collaboration with the Chinese authorities to analyse and present a city level picture of economic resilience and performance. These Rankings are prepared and disseminated by EIU widely and are highly referenced by analysts and business leaders globally. Significant decisions on job-propelling investments are made with the help if unique and highly nuanced insights provided by this data.

China Emerging City Rankings 2015 - Illustrations

Overall ranking
Mongolia
China
Overall ranking
Guiyang 1
Xiangyang 2
Hengyang 3
Chongqing 4
Suqian 5
Huainan 6
Huaibei 7
Zhuzhou 8
Zhengzhou 9
Chengdu 10
11
12
13
14
15
16
17
18
19
Economic indicators
Guiyang


Ranking
Population
BEIJING
SHANGHAI
5.7 Zhengzhou 9 4.3m
5 Suqian 4.1 1.0m
7 Huaibei 4.7 1.0m
6 Huainan 5.0 1.3m
4.3 Xiangyang 2 1.6m
6.5 Chengdu 10 7.4m
4 Chongqing 5.4 8.9m
8 Zhuzhou 6.2 1.1m
3 Hengyang 4.9 1.3m
5.1 Guiyang 1 2.8m

Hot spots

China's top ten emerging cities*

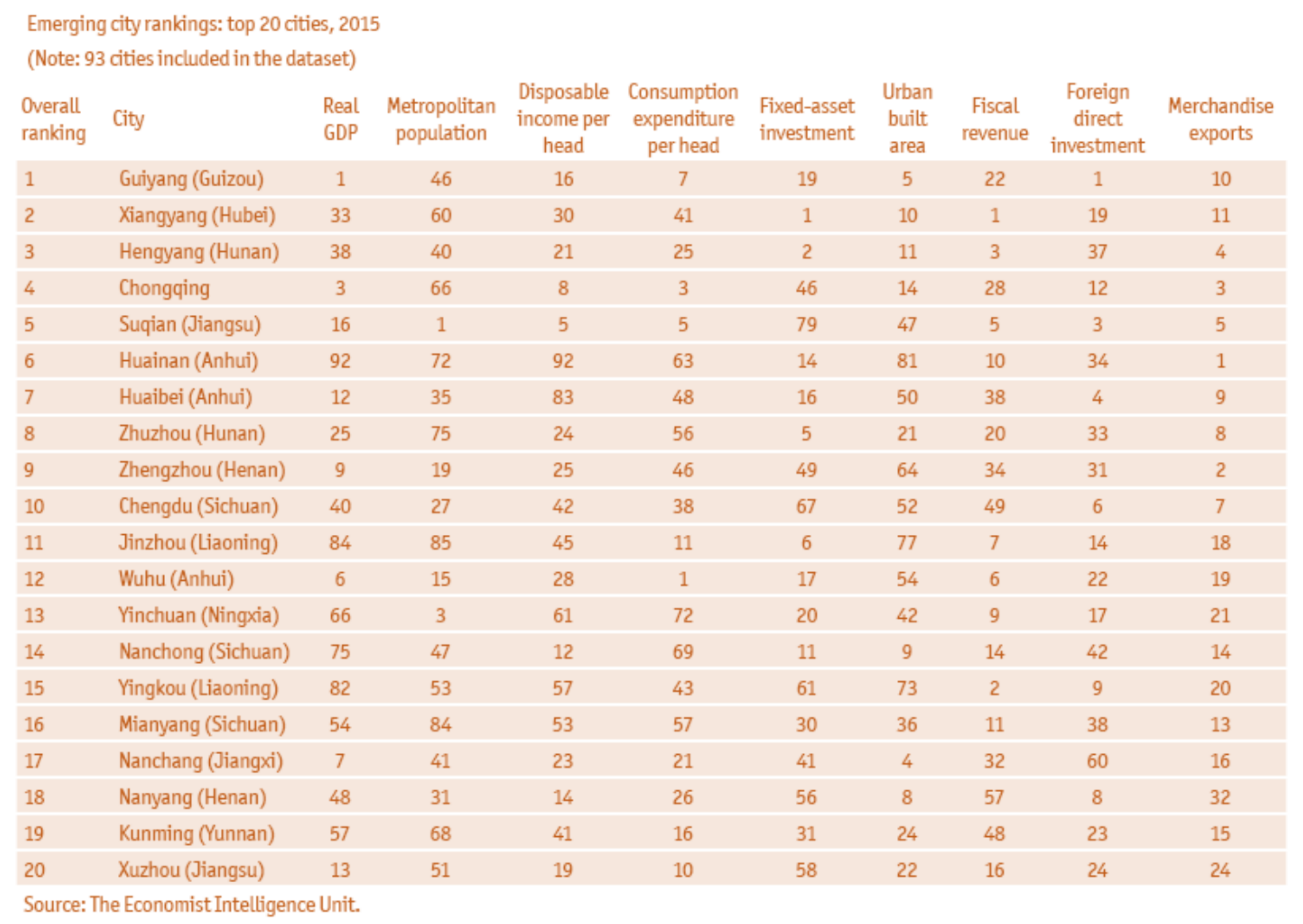
Ranking ①

Population

Disposable income per person, $'000

* Based on: real GDP; population; disposable income per person; consumer spending per person; fixed-asset investment; urban built area; fiscal revenue; foreign direct investment; merchandise exports

Source: The Economist Intelligence Unit

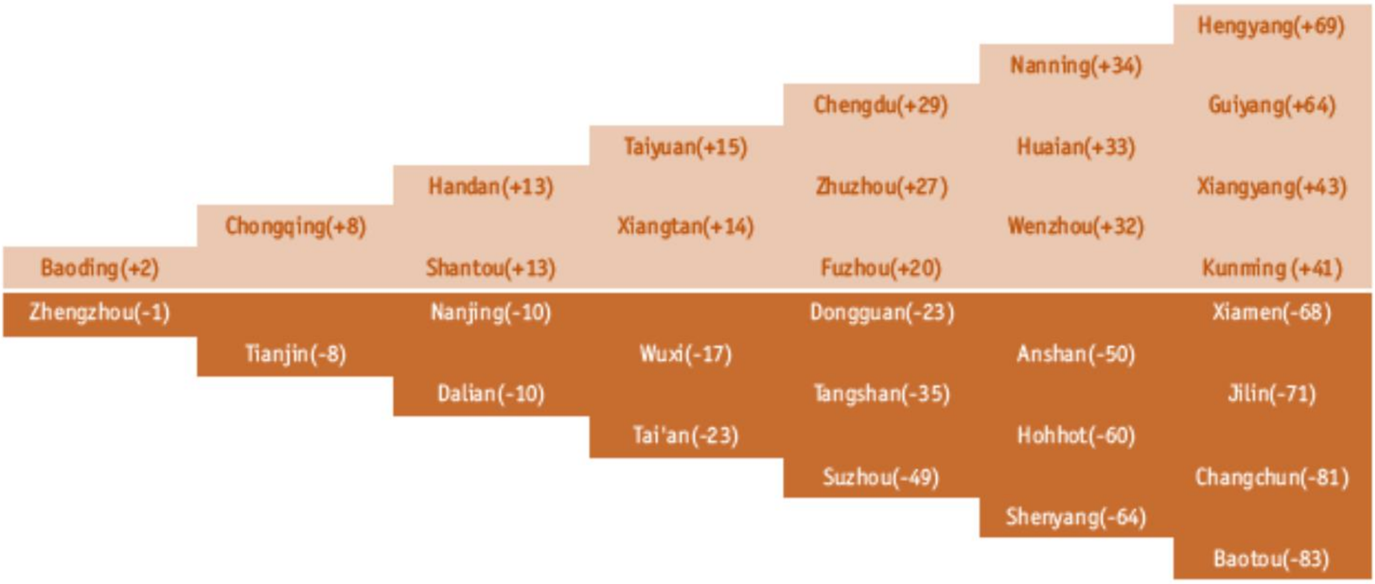


Emerging city rankings: top 20 cities, 2015
(Note: 93 cities included in the dataset)

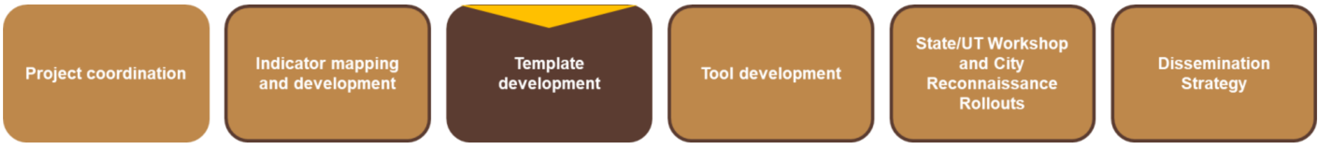
Overall ranking	City	Real GDP	Metropolitan population	Disposable income per head	Consumption expenditure per head	Fixed-asset investment	Urban built area	Fiscal revenue	Foreign direct investment	Merchandise exports
1	Guiyang (Guizou)	1	46	16	7	19	5	22	1	10
2	Xiangyang (Hubei)	33	60	30	41	1	10	1	19	11
3	Hengyang (Hunan)	38	40	21	25	2	11	3	37	4
4	Chongqing	3	66	8	3	46	14	28	12	3
5	Suqian (Jiangsu)	16	1	5	5	79	47	5	3	5
6	Huainan (Anhui)	92	72	92	63	14	81	10	34	1
7	Huaibei (Anhui)	12	35	83	48	16	50	38	4	9
8	Zhuzhou (Hunan)	25	75	24	56	5	21	20	33	8
9	Zhengzhou (Henan)	9	19	25	46	49	64	34	31	2
10	Chengdu (Sichuan)	40	27	42	38	67	52	49	6	7
11	Jinzhou (Liaoning)	84	85	45	11	6	77	7	14	18
12	Wuhu (Anhui)	6	15	28	1	17	54	6	22	19
13	Yinchuan (Ningxia)	66	3	61	72	20	42	9	17	21
14	Nanchong (Sichuan)	75	47	12	69	11	9	14	42	14
15	Yingkou (Liaoning)	82	53	57	43	61	73	2	9	20
16	Mianyang (Sichuan)	54	84	53	57	30	36	11	38	13
17	Nanchang (Jiangxi)	7	41	23	21	41	4	32	60	16
18	Nanyang (Henan)	48	31	14	26	56	8	57	8	32
19	Kunming (Yunnan)	57	68	41	16	31	24	48	23	15
20	Xuzhou (Jiangsu)	13	51	19	10	58	22	16	24	24

Source: The Economist Intelligence Unit.

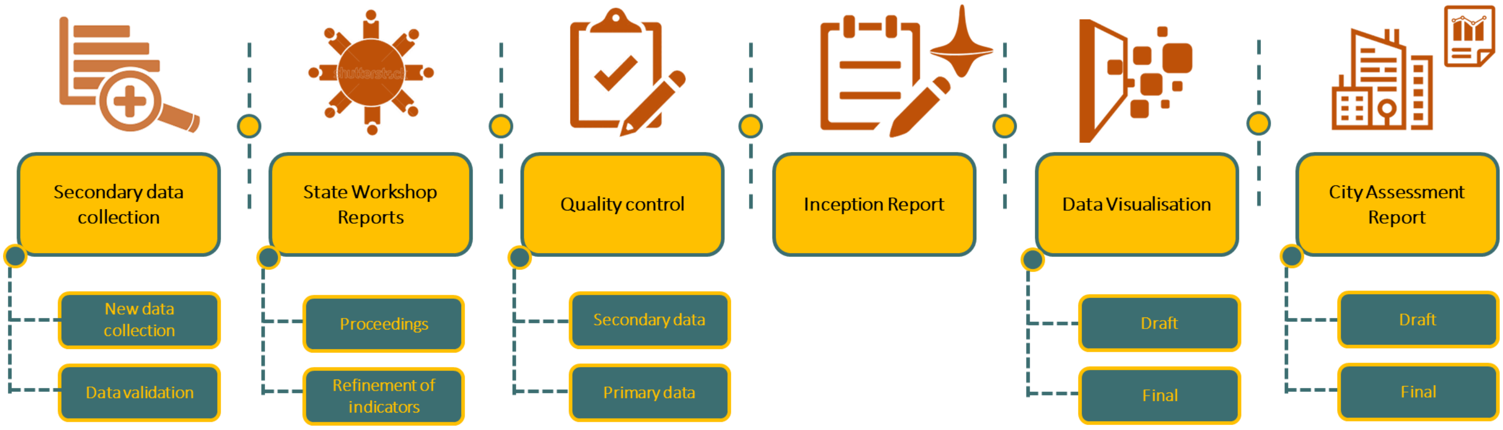
Winners and losers
(Shifts in emerging cities index ranking, 2010-15)



Source: The Economist Intelligence Unit.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

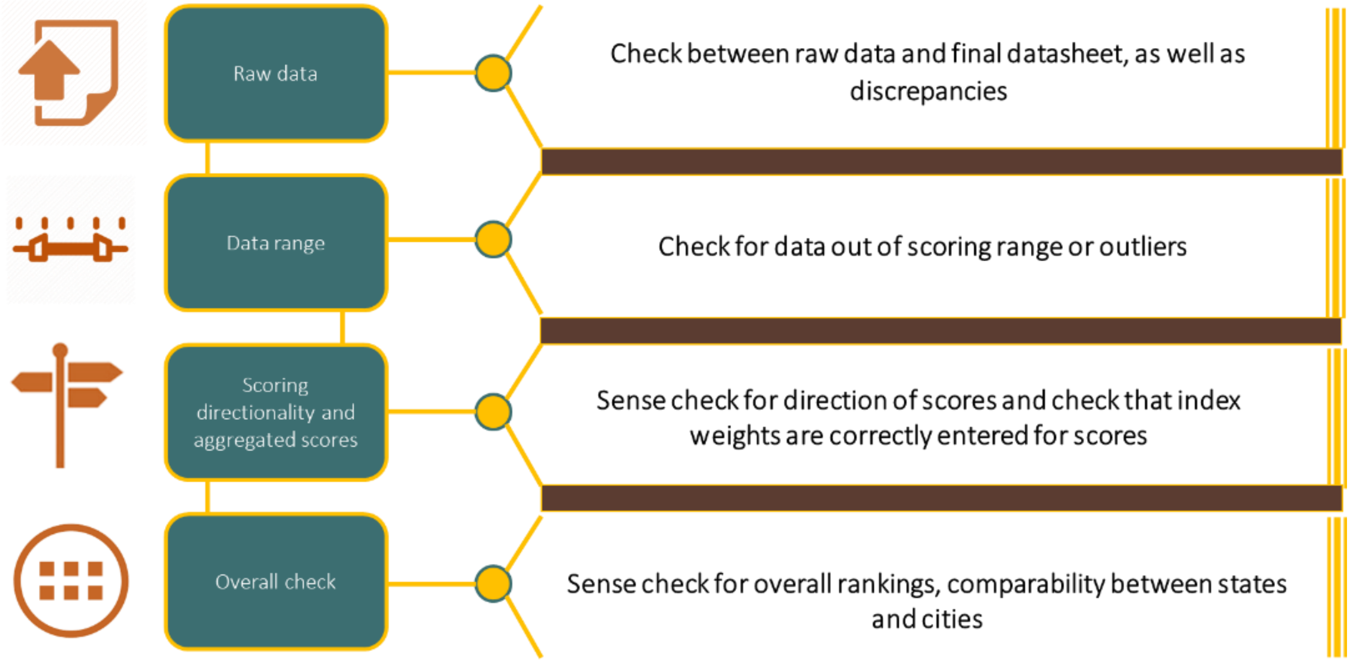
To ensure readiness for the subsequent phases, our team will develop templates ranging from secondary data collection to city assessment reports and collect inputs from the MoHUA early on. The following templates shall be prepared during the preparatory phase.


Secondary data collection
New data collection
Data validation
State Workshop Reports
Proceedings
Refinement of indicators
Quality control
Secondary data
Primary data
Inception Report
Data Visualisation
Draft
Final
City Assessment Report
Draft
Final

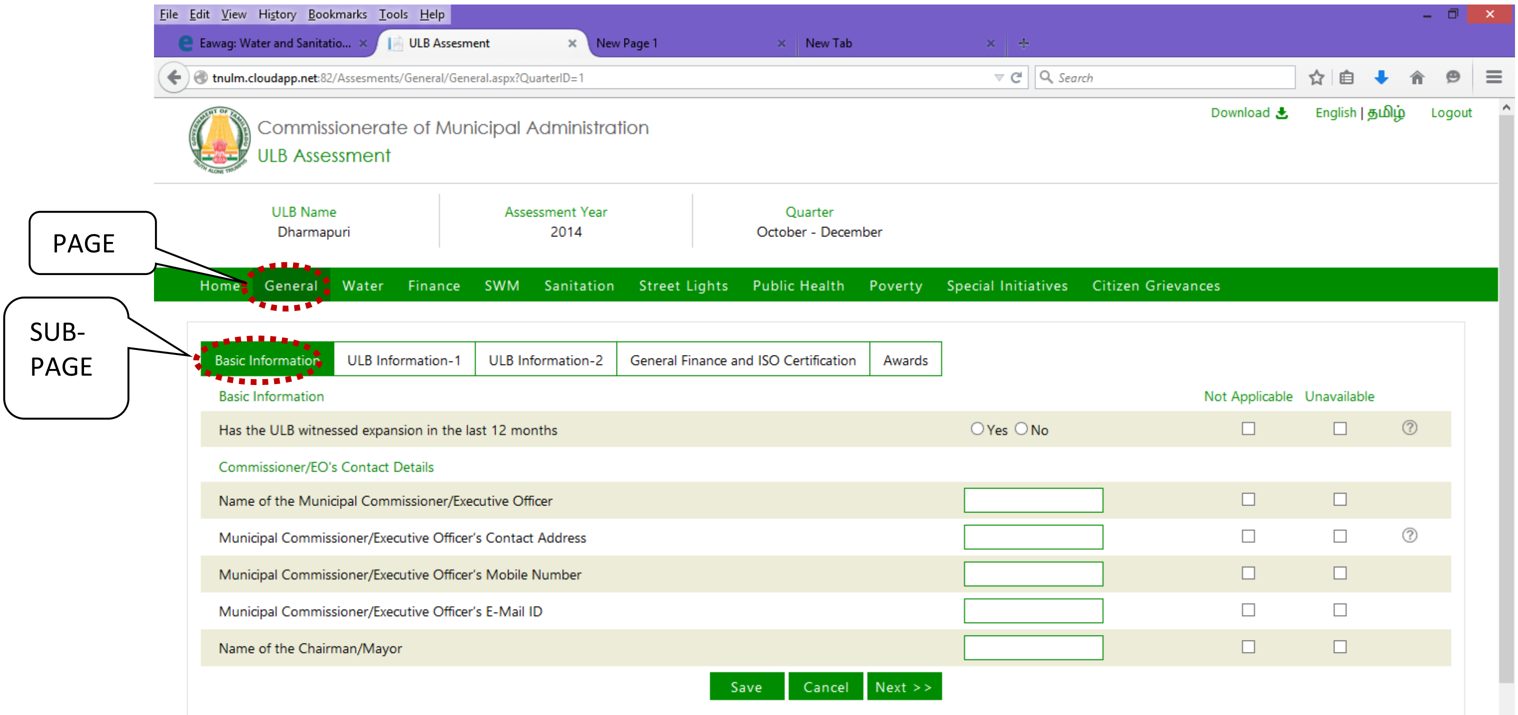
Customised secondary data template shall be prepared in advance for each city. The data template would comprise two categories of data fields, namely"

- New data fields
- Validation data fields

While the new data field will require cities to fill the data points afresh, the validation data field would comprise collation of real data from existing sources such as Census 2011, data.gov.in, *Swacch Bharat Mission* (Urban), Smart Cities Mission, *Swacch Sarvekshan*, HRIDAY, AMRUT and other programmes/schemes that could be either validated or revised by the cities. The data collection template will be an online tool e.g., *sharepoint* with in-built functions including drop-down menus for ease of access; this tool can be used without internet and cities could save draft versions and upload post finalisation. It is our standard practice to have a set of robust quality assurance procedures to be performed on every Excel index to minimise errors and oversight.


Raw data
Check between raw data and final datasheet, as well as discrepancies
Data range
Check for data out of scoring range or outliers
Scoring directionality and aggregated scores
Sense check for direction of scores and check that index weights are correctly entered for scores
Overall check
Sense check for overall rankings, comparability between states and cities

As stated earlier a simple and user-friendly online data entry portal will be developed on Sharepoint/VB and shared with the cities. Each city will be provided a customized login user name and password. Categories of data will be generated along the thematic heads identified under the Liveability programme guidelines and the user can easily navigate across pages and fill out those data points that are available at hand first. (an illustration of a sharepoint portal developed for Tamil Nadu is provided below)


File Edit View History Bookmarks Tools Help
Eawag: Water and Sanitatio...
ULB Assesment
New Page 1
New Tab
tnulm.cloudapp.net:82/Assesments/General/General.aspx?QuarterID=1
Search
Download
English | தமிழ்
Logout
Commissionerate of Municipal Administration
ULB Assessment
PAGE
SUB-PAGE
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next >>

ULB Name: Dharmapuri
Assessment Year: 2014
Quarter: October - December

Basic Information

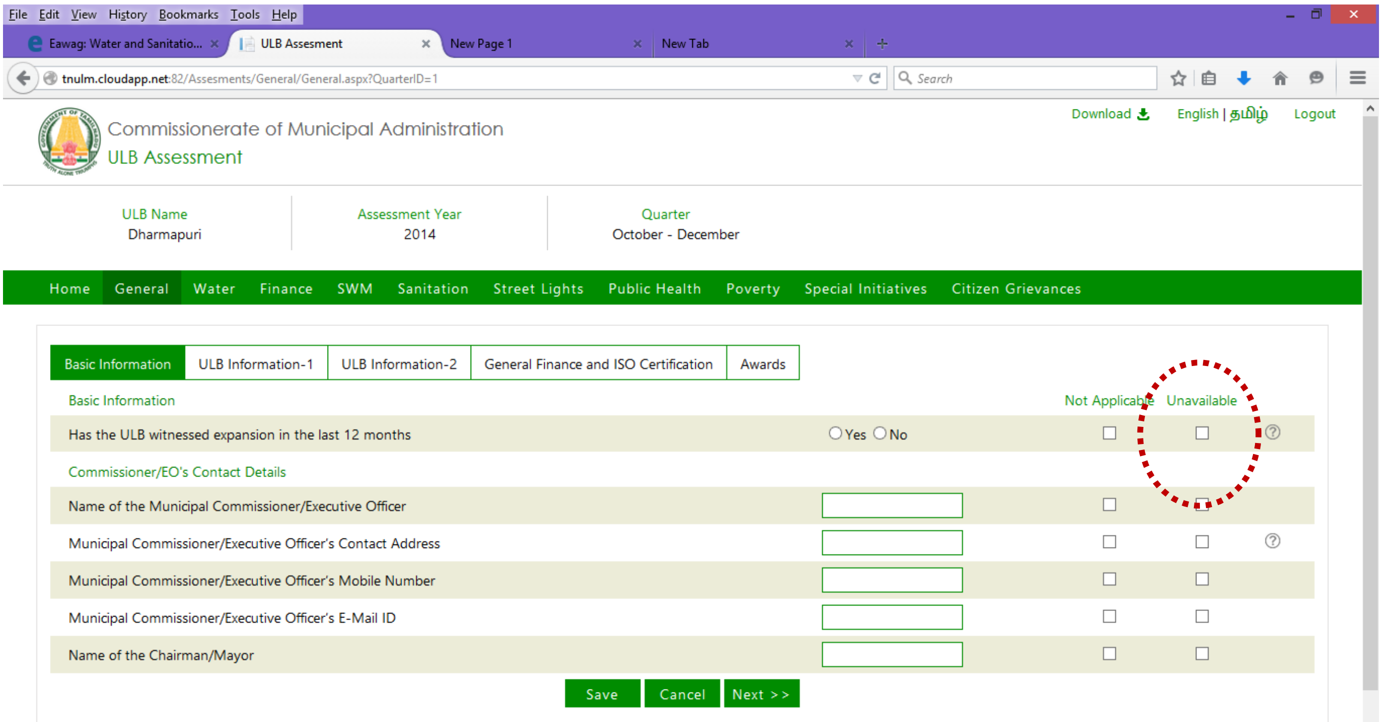
		Not Applicable	Unavailable
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐

Commissioner/EO's Contact Details

		Not Applicable	Unavailable
Name of the Municipal Commissioner/Executive Officer		☐	☐
Municipal Commissioner/Executive Officer's Contact Address		☐	☐
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐
Name of the Chairman/Mayor		☐	☐

The user will be given an option to save their work mid-way and resume at any time. For every data indicator, options such as 'not available' and 'not applicable' (for example: some cities may not have a centralized treatment plant and thus the data may not be applicable at all to that city) will be provided.

Once completed, the city will submit the data, no changes can be made to the data that is filled in once the data file is submitted.


File Edit View History Bookmarks Tools Help
Eawag: Water and Sanitatio...
ULB Assesment
New Page 1
New Tab
tnulm.cloudapp.net:82/Assesments/General/General.aspx?QuarterID=1
Search
Download
English | தமிழ்
Logout
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next >>

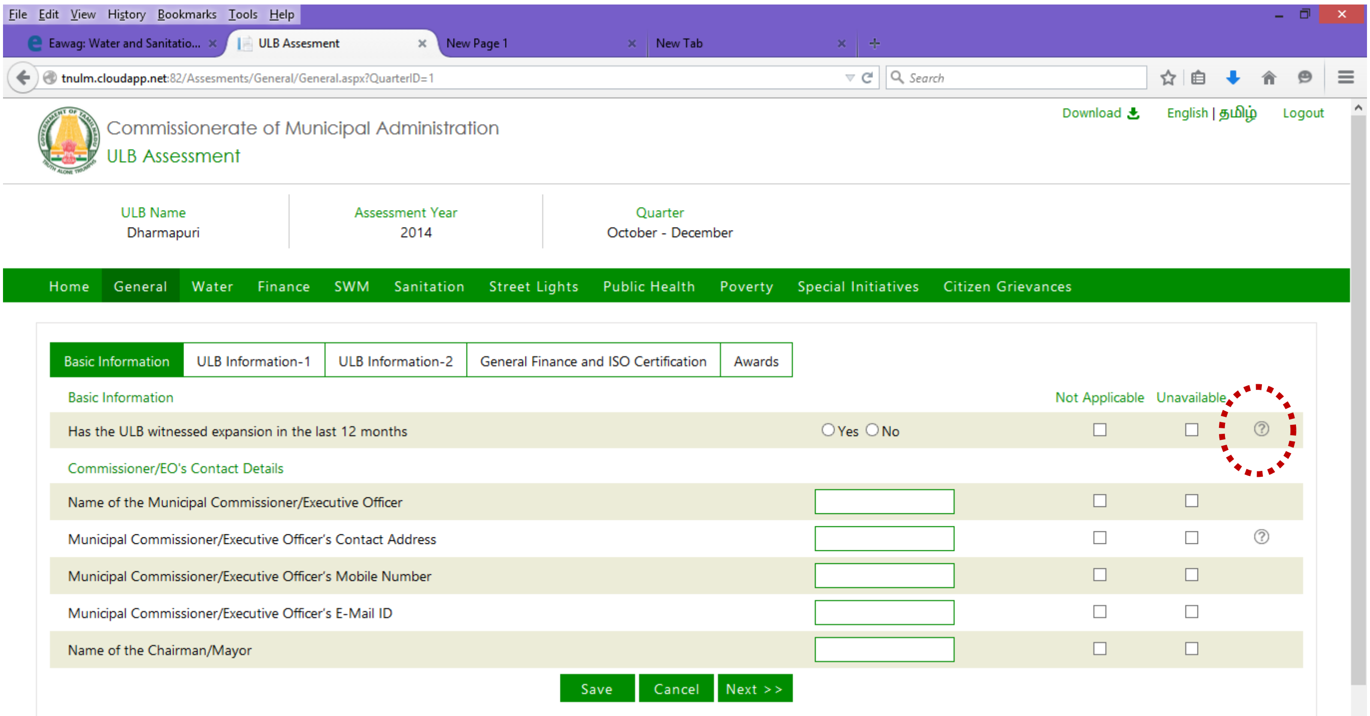
Commissionerate of Municipal Administration
ULB Assessment

ULB Name	Assessment Year	Quarter
Dharmapuri	2014	October - December

Basic Information

		Not Applicable	Unavailable	
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐	?
Commissioner/EO's Contact Details				
Name of the Municipal Commissioner/Executive Officer		☐	☐	
Municipal Commissioner/Executive Officer's Contact Address		☐	☐	?
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐	
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐	
Name of the Chairman/Mayor		☐	☐	

Also for every question, a help function will be embedded in the data entry tool to guide the city on the source of data. Efforts will be made to keep the data entry process to filling out raw data and the calculation of ratios and second tier analytics will be done at the back-end


File Edit View History Bookmarks Tools Help
Eawag: Water and Sanitatio...
ULB Assesment
New Page 1
New Tab
tnulm.cloudapp.net:82/Assesments/General/General.aspx?QuarterID=1
Search
Download
English | தமிழ்
Logout
Home
General
Water
Finance
SWM
Sanitation
Street Lights
Public Health
Poverty
Special Initiatives
Citizen Grievances
Basic Information
ULB Information-1
ULB Information-2
General Finance and ISO Certification
Awards
Save
Cancel
Next >>

Commissionerate of Municipal Administration
ULB Assessment

ULB Name	Assessment Year	Quarter
Dharmapuri	2014	October - December

Basic Information

		Not Applicable	Unavailable	
Has the ULB witnessed expansion in the last 12 months	○ Yes ○ No	☐	☐	?
Commissioner/EO's Contact Details				
Name of the Municipal Commissioner/Executive Officer		☐	☐	
Municipal Commissioner/Executive Officer's Contact Address		☐	☐	?
Municipal Commissioner/Executive Officer's Mobile Number		☐	☐	
Municipal Commissioner/Executive Officer's E-Mail ID		☐	☐	
Name of the Chairman/Mayor		☐	☐	

The cleaned and checked data will be fed into the model data analysis and visualisation template. Our consortium has the experience and expertise of building stunning data representation, interactive maps and digital story telling. For this assignment, we would develop a draft Excel model[2] which uses an interactive dashboard to visualise the data and benchmarking process; this can include:

- Interactive heat map
- Adjustable weightings to allow for customisation
- A list of city scores by category and/or indicator
- Custom scatterplots and correlation analysis
- Ability to compare multiple cities simultaneously
- Geography profile page with key data, along with strengths and weaknesses

The draft data visualisation template will be presented to the state and city officials during the state/UT-level engagements and shared with MoHUA for review and feedback. At the same time, the template will be revisited by our analysts as part of a quality-control procedure and to ensure city comparability. An example of the EIU's interactive workbooks and dashboards can be seen below

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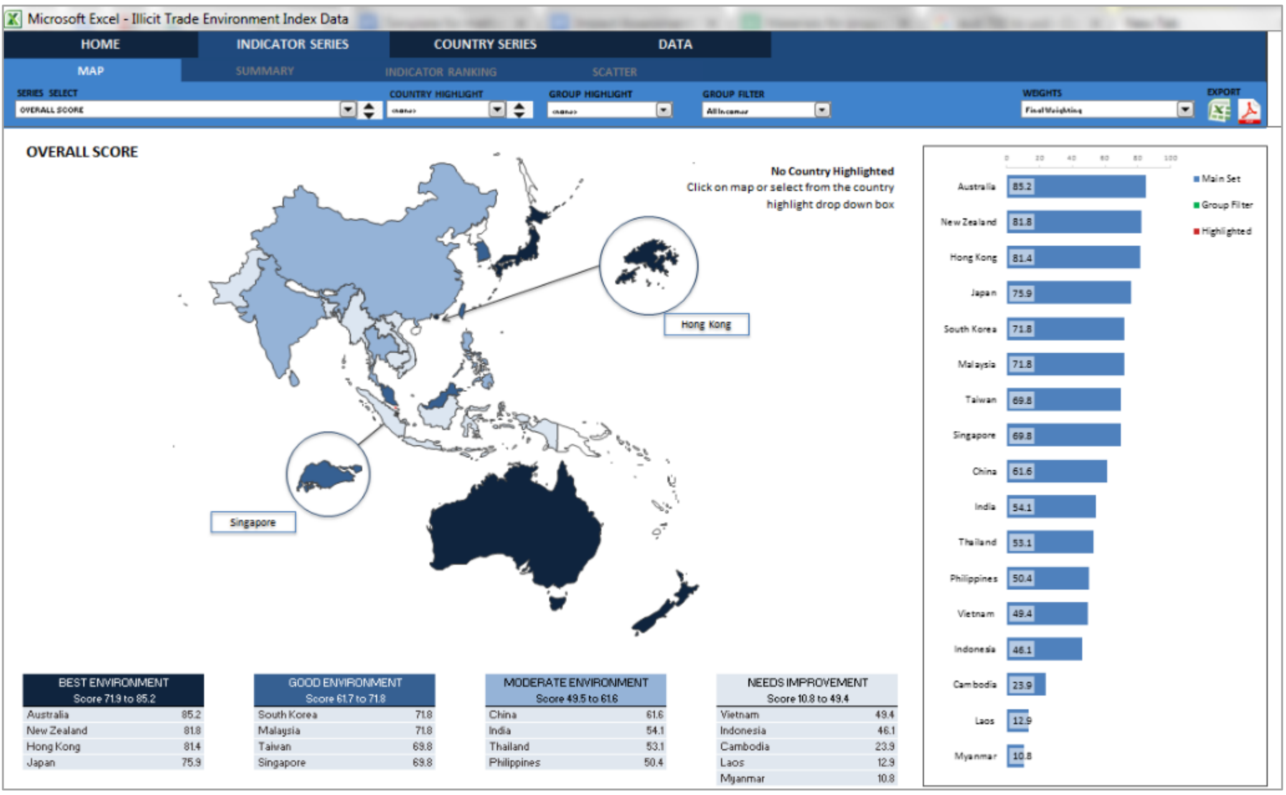
[2] Examples of the Excel index workbooks developed by the Economist Intelligence Unit can be found for the Safe Cities Index, for the Food Sustainability Index and for the Path to Zero thought leadership


Microsoft Excel - Illicit Trade Environment Index Data
HOME
INDICATOR SERIES
COUNTRY SERIES
DATA
MAP
SUMMARY
INDICATOR RANKING
SCATTER
SERIES SELECT
COUNTRY HIGHLIGHT
GROUP HIGHLIGHT
GROUP FILTER
WEIGHTS
EXPORT
Hong Kong
Singapore
0
20
40
60
80
100
Main Set
Group Filter
Highlighted
Australia 85.2
New Zealand 81.8
Hong Kong 81.4
Japan 75.9
South Korea 71.8
Malaysia 71.8
Taiwan 69.8
Singapore 69.8
China 61.6
India 54.1
Thailand 53.1
Philippines 50.4
Vietnam 49.4
Indonesia 46.1
Cambodia 23.9
Laos 12.9
Myanmar 10.8

SERIES SELECT: OVERALL SCORE
COUNTRY HIGHLIGHT: <none>
GROUP HIGHLIGHT: <none>
GROUP FILTER: All income
WEIGHTS: Final Weighting

OVERALL SCORE

No Country Highlighted
Click on map or select from the country highlight drop down box

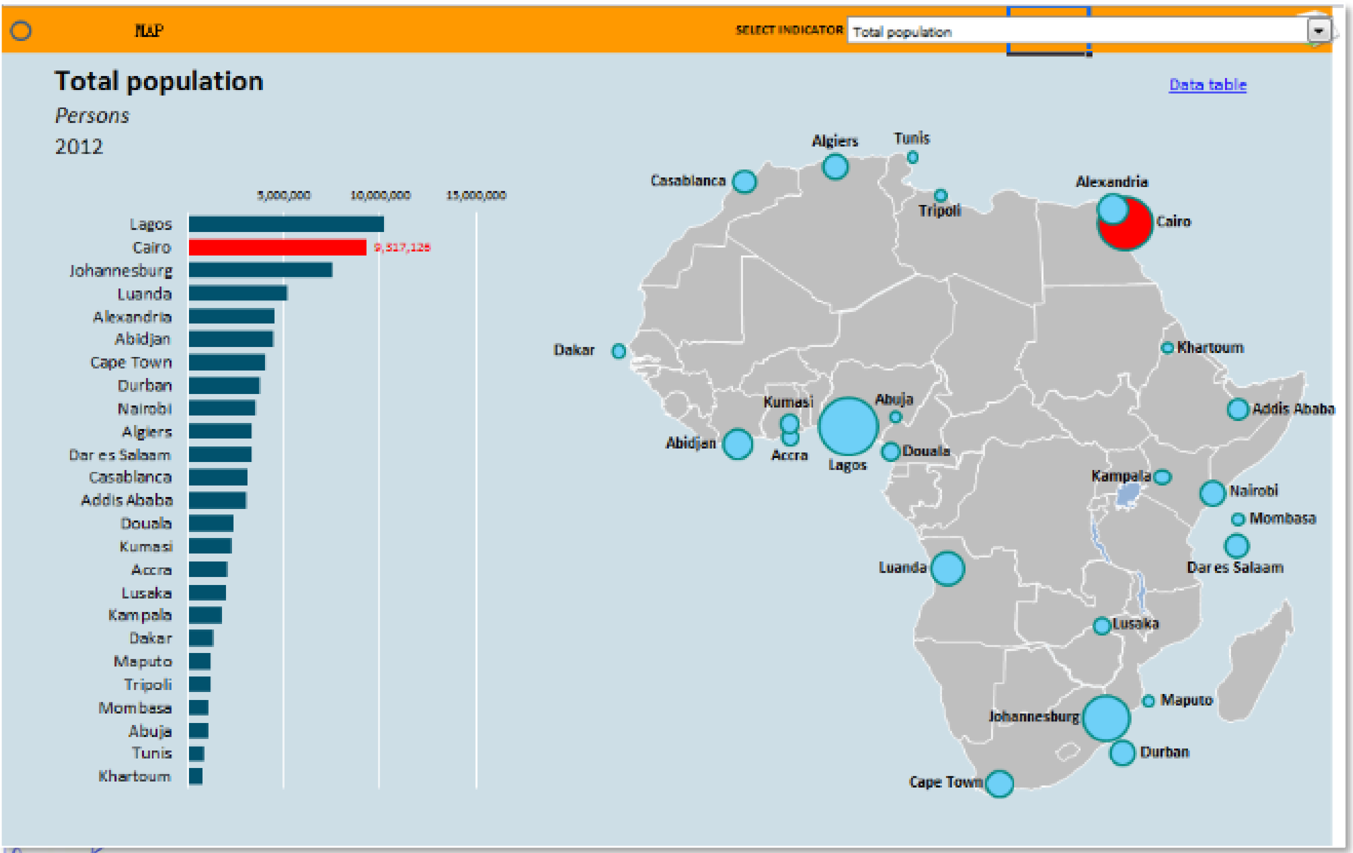
BEST ENVIRONMENT Score 71.9 to 85.2	
Australia	85.2
New Zealand	81.8
Hong Kong	81.4
Japan	75.9

GOOD ENVIRONMENT Score 61.7 to 71.8	
South Korea	71.8
Malaysia	71.8
Taiwan	69.8
Singapore	69.8

MODERATE ENVIRONMENT Score 49.5 to 61.6	
China	61.6
India	54.1
Thailand	53.1
Philippines	50.4

NEEDS IMPROVEMENT Score 10.8 to 49.4	
Vietnam	49.4
Indonesia	46.1
Cambodia	23.9
Laos	12.9
Myanmar	10.8

Illustration of EIU's Liveability Index visualisation


MAP
SELECT INDICATOR
Data table
5,000,000
10,000,000
15,000,000
Lagos
Cairo
9,317,128
Johannesburg
Luanda
Alexandria
Abidjan
Cape Town
Durban
Nairobi
Algiers
Dar es Salaam
Casablanca
Addis Ababa
Douala
Kumasi
Accra
Lusaka
Kampala
Dakar
Maputo
Tripoli
Mombasa
Abuja
Tunis
Khartoum
Algiers
Tunis
Casablanca
Tripoli
Alexandria
Cairo
Dakar
Khartoum
Kumasi
Abuja
Addis Ababa
Abidjan
Accra
Lagos
Douala
Kampala
Nairobi
Mombasa
Luanda
Dar es Salaam
Lusaka
Maputo
Johannesburg
Durban
Cape Town

SELECT INDICATOR: Total population

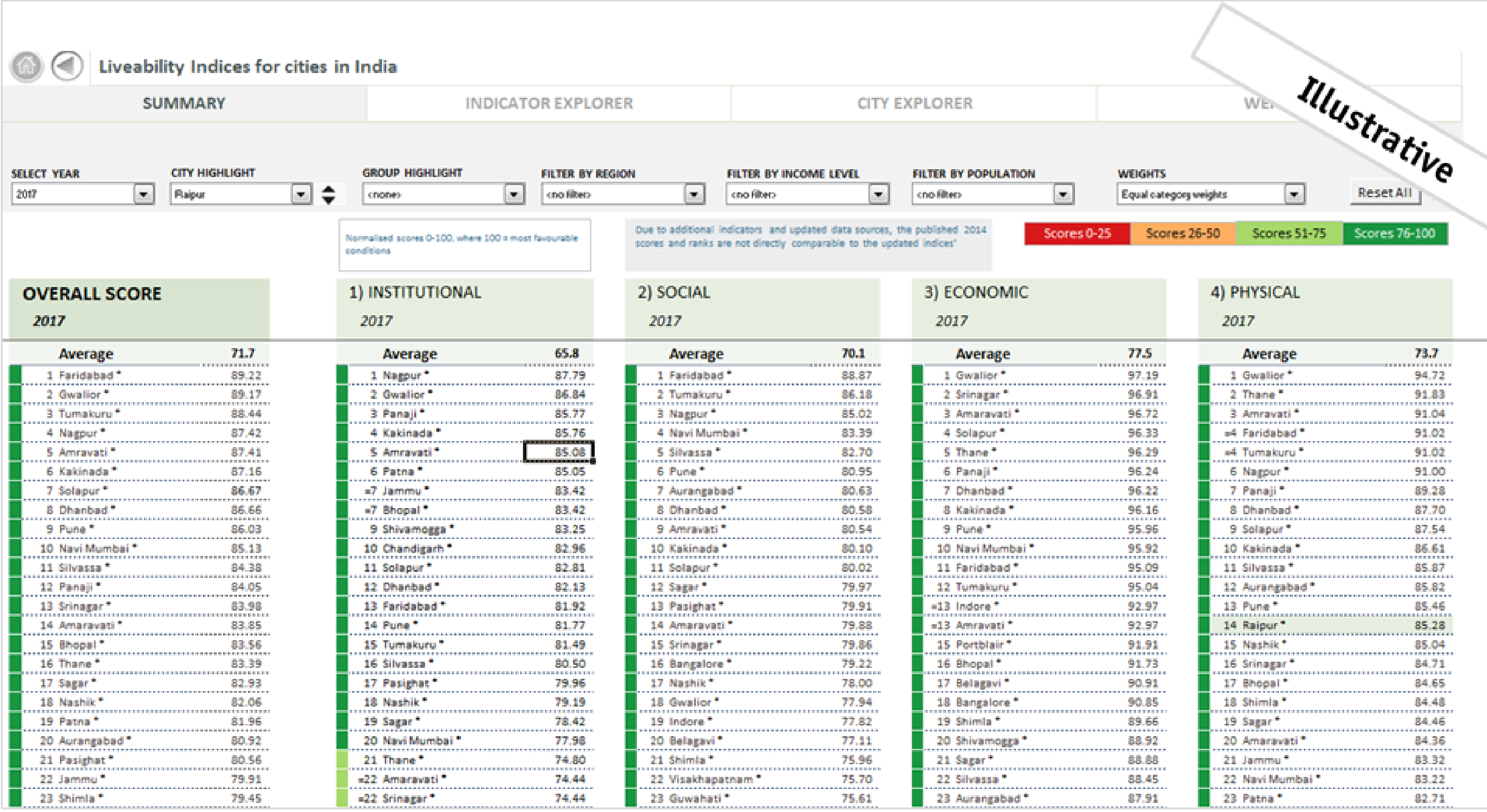
Total population

Persons

2012

Illustration of EIU's Liveability Index visualisation

Illustration of EIU's Liveability Index visualisation



Liveability Indices for cities in India

SELECT YEAR: 2017
CITY HIGHLIGHT: Raipur
GROUP HIGHLIGHT: <none>
FILTER BY REGION: <no filter>
FILTER BY INCOME LEVEL: <no filter>
FILTER BY POPULATION: <no filter>
WEIGHTS: Equal category weights

Normalised scores 0-100, where 100 = most favourable conditions

Due to additional indicators and updated data sources, the published 2014 scores and ranks are not directly comparable to the updated indices'

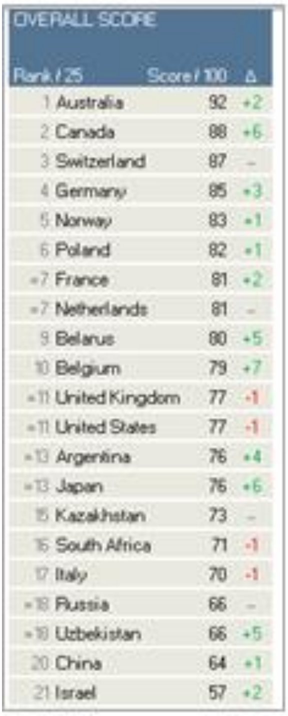
OVERALL SCORE 2017	
Average	71.7
1 Faridabad *	89.22
2 Gwalior *	89.17
3 Tumakuru *	88.44
4 Nagpur *	87.42
5 Amravati *	87.41
6 Kakinada *	87.16
7 Solapur *	86.67
8 Dhanbad *	86.66
9 Pune *	86.03
10 Navi Mumbai *	85.13
11 Silvassa *	84.38
12 Panaji *	84.05
13 Srinagar *	83.98
14 Amaravati *	83.85
15 Bhopal *	83.56
16 Thane *	83.39
17 Sagar *	82.93
18 Nashik *	82.06
19 Patna *	81.96
20 Aurangabad *	80.92
21 Pasighat *	80.56
22 Jammu *	79.91
23 Shimla *	79.45

1) INSTITUTIONAL 2017	
Average	65.8
1 Nagpur *	87.79
2 Gwalior *	86.84
3 Panaji *	85.77
4 Kakinada *	85.76
5 Amravati *	85.08
6 Patna *	85.05
=7 Jammu *	83.42
=7 Bhopal *	83.42
9 Shivamogga *	83.25
10 Chandigarh *	82.96
11 Solapur *	82.81
12 Dhanbad *	82.13
13 Faridabad *	81.92
14 Pune *	81.77
15 Tumakuru *	81.49
16 Silvassa *	80.50
17 Pasighat *	79.96
18 Nashik *	79.19
19 Sagar *	78.42
20 Navi Mumbai *	77.98
21 Thane *	74.80
=22 Amaravati *	74.44
=22 Srinagar *	74.44

2) SOCIAL 2017	
Average	70.1
1 Faridabad *	88.87
2 Tumakuru *	86.18
3 Nagpur *	85.02
4 Navi Mumbai *	83.39
5 Silvassa *	82.70
6 Pune *	80.95
7 Aurangabad *	80.63
8 Dhanbad *	80.58
9 Amravati *	80.54
10 Kakinada *	80.10
11 Solapur *	80.02
12 Sagar *	79.97
13 Pasighat *	79.91
14 Amaravati *	79.88
15 Srinagar *	79.86
16 Bangalore *	79.22
17 Nashik *	78.00
18 Gwalior *	77.94
19 Indore *	77.82
20 Belagavi *	77.11
21 Shimla *	75.96
22 Visakhapatnam *	75.70
23 Guwahati *	75.61

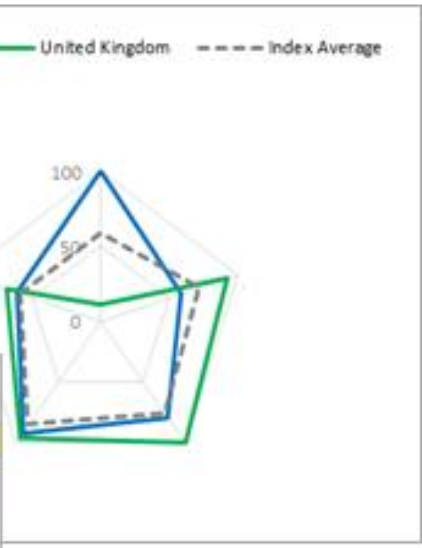
3) ECONOMIC 2017	
Average	77.5
1 Gwalior *	97.19
2 Srinagar *	96.91
3 Amaravati *	96.72
4 Solapur *	96.33
5 Thane *	96.29
6 Panaji *	96.24
7 Dhanbad *	96.22
8 Kakinada *	96.16
9 Pune *	95.96
10 Navi Mumbai *	95.92
11 Faridabad *	95.09
12 Tumakuru *	95.04
=13 Indore *	92.97
=13 Amravati *	92.97
15 Portblair *	91.91
16 Bhopal *	91.73
17 Belagavi *	90.91
18 Bangalore *	90.85
19 Shimla *	89.66
20 Shivamogga *	88.92
21 Sagar *	88.88
22 Silvassa *	88.45
23 Aurangabad *	87.91

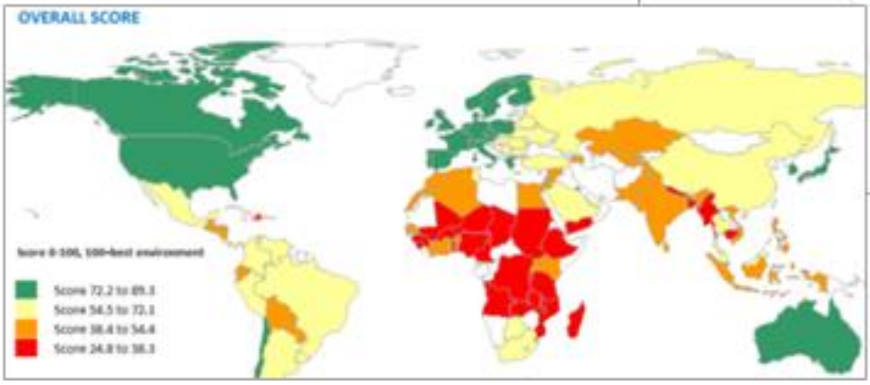
4) PHYSICAL 2017	
Average	73.7
1 Gwalior *	94.72
2 Thane *	91.83
3 Amravati *	91.04
=4 Faridabad *	91.02
=4 Tumakuru *	91.02
6 Nagpur *	91.00
7 Panaji *	89.28
8 Dhanbad *	87.70
9 Solapur *	87.54
10 Kakinada *	86.61
11 Silvassa *	85.87
12 Aurangabad *	85.82
13 Pune *	85.46
14 Raipur *	85.28
15 Nashik *	85.04
16 Srinagar *	84.71
17 Bhopal *	84.65
18 Shimla *	84.48
19 Sagar *	84.46
20 Amaravati *	84.36
21 Jammu *	83.32
22 Navi Mumbai *	83.22
23 Patna *	82.71



OVERALL SCORE

Rank / 25		Score / 100	Δ
1	Australia	92	+2
2	Canada	88	+6
3	Switzerland	87	–
4	Germany	85	+3
5	Norway	83	+1
6	Poland	82	+1
=7	France	81	+2
=7	Netherlands	81	–
9	Belarus	80	+5
10	Belgium	79	+7
=11	United Kingdom	77	-1
=11	United States	77	-1
=13	Argentina	76	+4
=13	Japan	76	+6
15	Kazakhstan	73	–
16	South Africa	71	-1
17	Italy	70	-1
=18	Russia	66	–
=18	Uzbekistan	66	+5
20	China	64	+1
21	Israel	57	+2

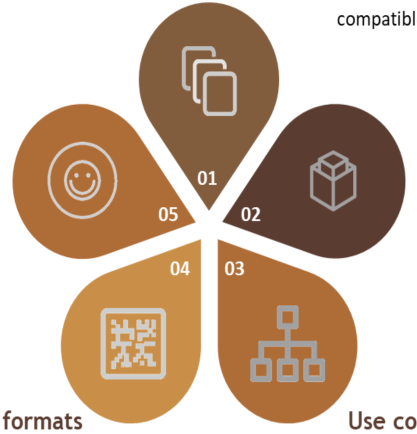



OVERALL SCORE
Score 0-100, 100=best environment
🟩 Score 72.2 to 89.3
🟨 Score 54.5 to 72.1
🟧 Score 38.4 to 54.4
🟥 Score 24.8 to 38.3

Data interoperability considerations

Global efforts are underway to integrate the increasing gamut of urban data for monitoring understanding, decision making, steering and control of urban landscape. However, the design of urban data is still on-going. with measures to standardise it can be seen even in India through game changing initiatives such as the Smart Cities Mission. We believe that the value of data multiplies when it is easily grasped by key stakeholders e.g., city administrators, citizens, etc. analysed and shared. The multiplicity of sources and formats poses a challenge to addressing queries raised by city stakeholders. These queries could be from city administrators or citizens, for instance, 'where is the greatest risk of mosquito-borne illness?' Or from citizens 'Which parts of the cities have the highest chances of receiving flash floods in the next few days?' The Smart Cities concept globally seeks to move towards this by addressing the issue of interoperability of urban data by defining an overarching framework of concepts and relationships that can be used to describe data from any sector and any source (BSI, 2016).

The liveability assessment exercise provides a platform to leverage the value of data by making it *interoperable*, open yet secure and *use case* applications. We see this assignment as opportunity to move the needle on data interoperability by developing a framework for urban data interoperability based on the principles of interoperability consolidated in the Cape Town Global Action Plan for Sustainable Development (2017). The key guiding principles are presented in figure below:



Use and re-use existing standards

- No new standards should be created in areas they already exist unless absolutely necessary.
- When new standards are created, they must be compatible with existing standards

Do not overlook metadata

- Metadata includes information on origin, authors/producers, date of production/version, etc.
- It is crucial for discoverability, accessibility and fostering trust and understanding of the context in which the data was produced.

Use common classifications wherever possible

- As more and more data is produced, we need to ensure that to the extent possible, the language used to define and classify that data is the same.

Publish data in machine-readable formats

- publishing data in machine readable formats is crucial to interoperability.
- It enables a computer to access, identify and filter data in an automated way.

Ensure that standards are user driven

- For data to be usable, it has to be driven by the needs of users themselves.
- The process of ensuring that data is usable can be complex and require trial and error, but is crucial to long-term success and impact.

Source: The frontiers of data interoperability for sustainable development, Development Initiatives, November 2017

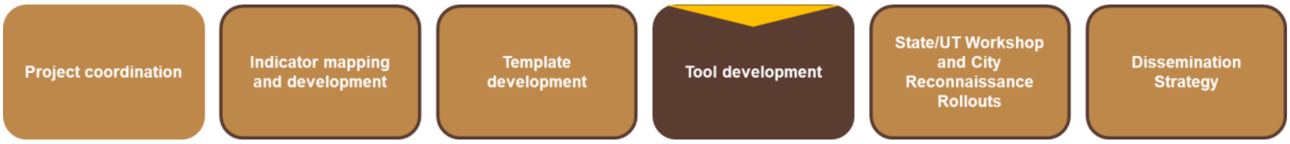
Our framework will also examine the political economy framework for urban data (Edwards et. Al., 2016) that calls for a shift the focus of data driven governance policies and practices from capacity and supply to incentivising service delivery, transparency and accountability. The recent initiative of the MoHUA to provide INR 10,000 crore for municipal reform ushers this spirit in governance of cities in India. The political economy framework calls for provisioning and usage of urban data should be about the solution to concrete problems in urban environments, not just about the pure quantities of urban data.

At the end, urban data is simply a means to do urban monitoring, steering and development more effectively, efficiently and reliably. We also propose to outline some of the use case applications based on the consultations with state/UTs and cities considering the data that will be generated from this assessment exercise. Some of the operation enhancing questions or use case applications could be the following:

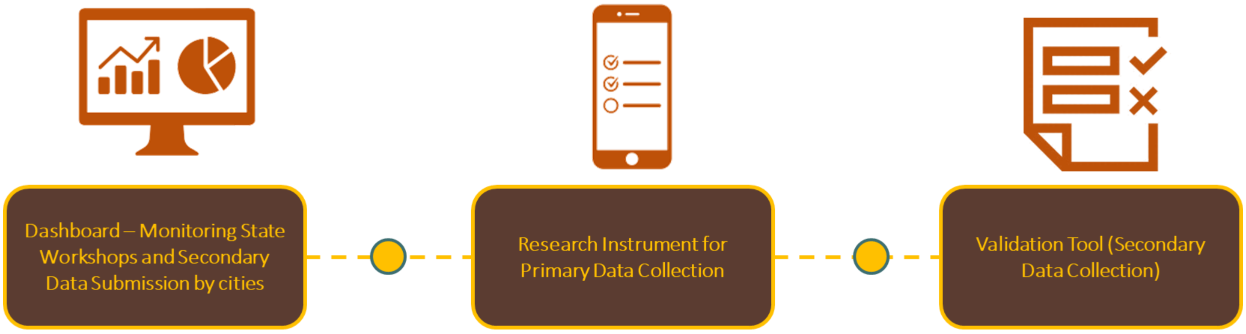
- When citizens apply for / obtain multiple services, which service do they typically apply for first?
- Is there a correlation between energy consumption and tenement structures?

ILLUSTRATIVE

- Where is there the greatest risk of mosquito borne illness?
- Is there a correlation between service delivery efficiencies in SWM and settlement type?

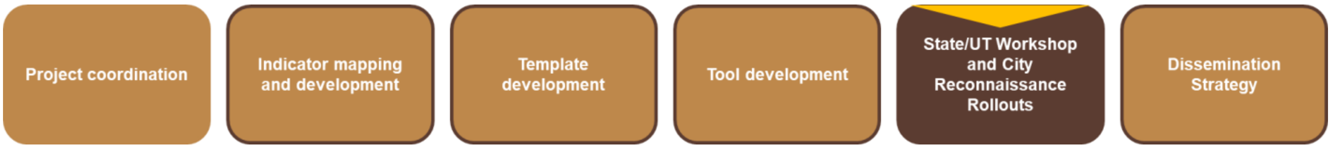

Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

Three tools would be developed to assist with tracking consultations with state government and cities, primary data collection and for validation of secondary data points


Dashboard – Monitoring State Workshops and Secondary Data Submission by cities
Research Instrument for Primary Data Collection
Validation Tool (Secondary Data Collection)

The first tool i.e., for tracking State/UT/City level consultations will monitor the progress of 36 State/UT level workshops and 116 City Reconnaissance Meetings and provide updates on agreed data points, nodal contact person, timelines, mode of secondary data provision (online tool e.g., *sharepoint* vs. manual) among other aspects. This tool will be in the form of a dashboard that will also monitor the progress made by cities on secondary data submission.

We will develop a set of research instrument for primary data collection for an identified set of indicators. The research instrument will be coded into a mobile application and finalised post field test. Additionally, we will also develop draft template for validation of secondary data pertaining to some indicators such as number of schools having facilities for using digital content etc.


Project coordination
Indicator mapping and development
Template development
Tool development
State/UT Workshop and City Reconnaissance Rollouts
Dissemination Strategy

We see the state/UT level engagements as a platform for not only disseminating the objectives and rationale for undertaking the liveability assessment of cities within each state/UT but also as an opportunity to finalise our approach for arriving at the input data points for each of the 79 indicators and associated modalities. As a run-up to the state/UT workshops and city reconnaissance missions, the following preparatory activities would be undertaken:

Identification of City level Stakeholders

City level stakeholder would be identified with respect to key stakeholder with respect to each indicator. The Methodology Report states the agency/department from which data could be obtained for each of the indicator. For instance, data on cost recovery, online services would be provided by the ULB, data on restoration of historic buildings are to be provided by ASI and State ASI apart from ULB. Similarly, data on projects on ecologically sensitive areas would be provided by the local development authority. Consideration would be given to identify key officials within an organisation as well.

Preparation and dispatch of city wise Secondary data collection sheets

An important step in this phase is to prepare city level data sheets covering the input data points for the 79 indicators to all the cities through the State nodal officer. The data sheets would be populated from existing data sources such as Census 2011, Swachh Sarvekshan, AMRUT, SCM, HRIDAY and other programmes/schemes. Advance dispatch of the sheets would provide cities some time to review and understand the required data points so that issues/clarifications could be made at the workshops.

Scheduling of State-level workshops and City Reconnaissance Missions

Timelines for State-level workshops and City level reconnaissance missions would be scheduled in consultations with the State nodal officer for each State. The dates for the workshop would be reflected on the State Workshop Progress Monitoring Dashboard as and when the dates for each workshop gets finalised. This dashboard would help MoHUA and States to track the progress of State workshops and city reconnaissance missions, respectively. This dashboard would later be utilized to monitor progress of secondary data submission by cities.

Preparation of draft workshop agenda and discussion content

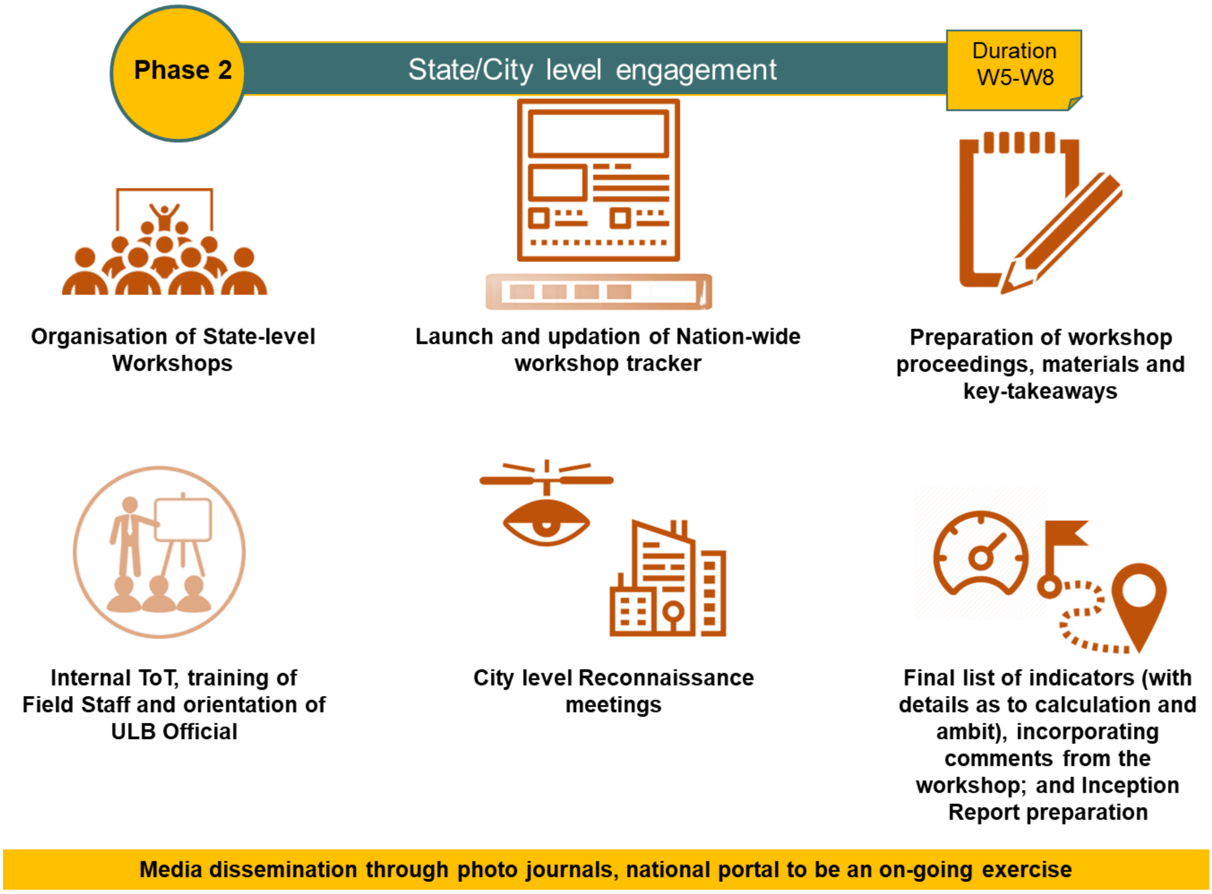
A draft workshop agenda would be prepared and finalised in consultation with the MoHUA and respective State Governments. The workshop would have structured discussions around the following thematic areas – Project Background and Methodology, Understanding the indicators (demystifying nomenclatures and data points), smart proxies, data collection template, standardization of reporting period, data lags, incentives for timely/early submissions, etc.

Project coordination | **Indicator mapping and development** | **Template development** | **Tool development** | **State/UT Workshop and City Reconnaissance Rollouts** | **Dissemination Strategy**

We will create a strategy for dissemination of the city liveability assessments at the international and national level. While a national workshop to share the city level rankings is planned towards the end of the study we plan to engage with international, national, state and local level on an on-going basis through a host of media dissemination activities such as photo journals, articles, blogs and a high decibel social media campaign. One key outreach event is the creation of a dissemination platform - 'The Hub' @ The Economist to connect and share progress with global audience. Our dissemination activities will conclude with the national level workshop to demonstrate use-case of evidence generated by this exercise for futuristic urban planning for Indian cities.

Phase 2: State/UT-level Engagements and City Reconnaissance Missions [Week 5- Week 8]

Phase two will commence with launch of state/UT level workshops. Overall a total of 36 workshops will be conducted over a period of two to three months. Our teams would coordinate with the state level nodal officers early on for tentative dates for scheduling workshops. The objective of the State level workshop will be to familiarize the state/UT government and city representatives about the overall concept of Liveability Index, assessment methodology, data requirements, data sources, data collection interface/application and validation methodology and associated processes and timelines for submission of complete data. Schedule for city level reconnaissance meetings will able to finalised during the state/UT workshops. The figure below summarises the key activities and milestones to be complete in this phase.



Phase 2 State/City level engagement

Duration
W5-W8

Organisation of State-level Workshops

Launch and updation of Nation-wide workshop tracker

Preparation of workshop proceedings, materials and key-takeaways

Internal ToT, training of Field Staff and orientation of ULB Official

City level Reconnaissance meetings

Final list of indicators (with details as to calculation and ambit), incorporating comments from the workshop; and Inception Report preparation

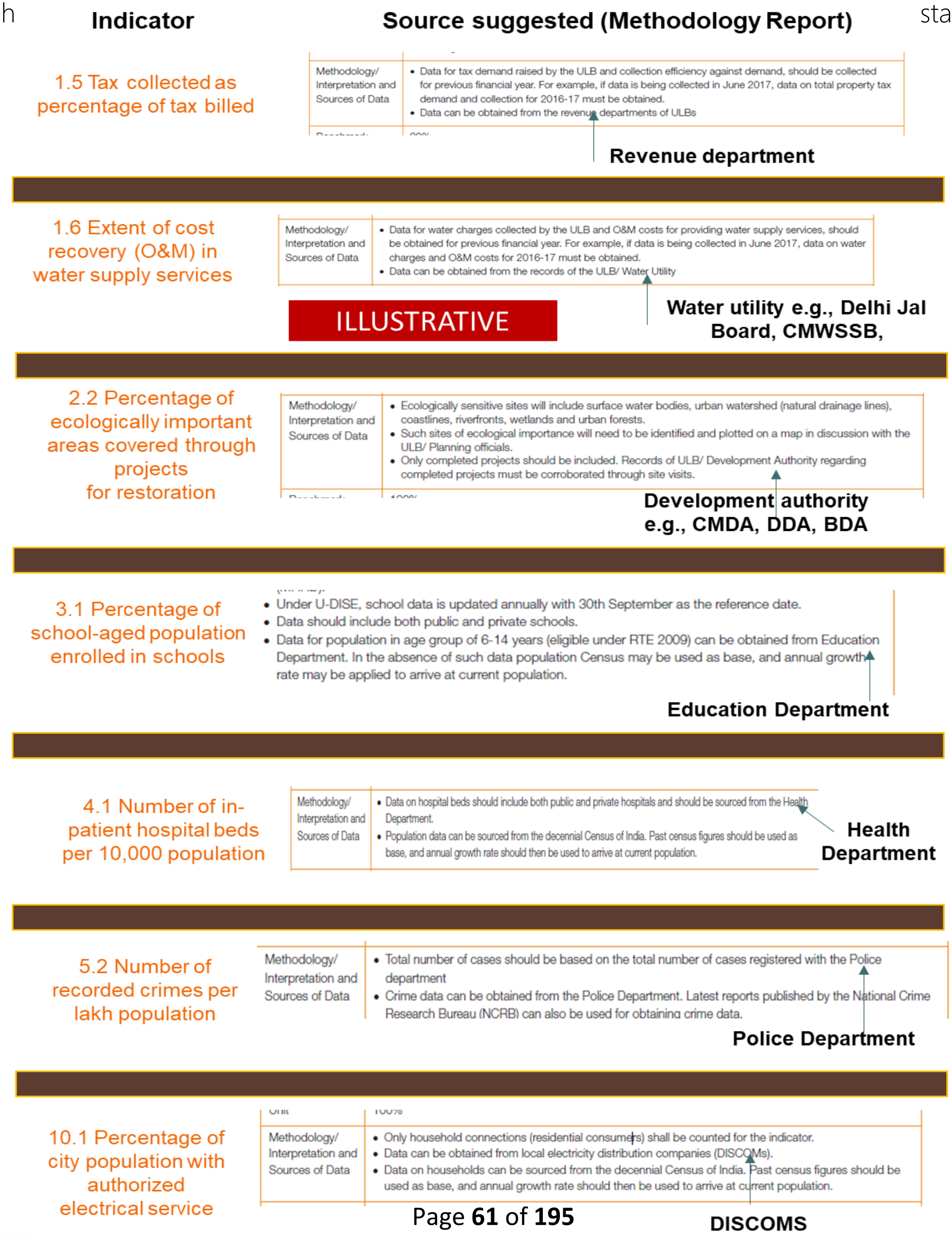
Media dissemination through photo journals, national portal to be an on-going exercise

It is expected that about 40-45 participants comprising city representatives, state nodal officer, representatives from relevant line department of the State government and other participants suggested by the State Government will attend the workshop. Key outcomes of the State level workshops will include the following:

- Timelines for city level reconnaissance meetings

- Identification of preferred mode of data collection interface
- Timelines for confirming availability/unavailability of required data
- Timeliness for submission of secondary data
- Timelines for review and agreement on data
- Protocols for escalation of issues relating to data nomenclature, submission delays etc.
- Incentive structure for timely submission of secondary data

An initial list of participants will be drawn based on the agency suggested for different data points in the 'Methodology Report. This list would be finalised in consultation with the nodal officers of each state.



Indicator **Source suggested (Methodology Report)**

1.5 Tax collected as percentage of tax billed

Methodology/ Interpretation and Sources of Data	• Data for tax demand raised by the ULB and collection efficiency against demand, should be collected for previous financial year. For example, if data is being collected in June 2017, data on total property tax demand and collection for 2016-17 must be obtained. • Data can be obtained from the revenue departments of ULBs

Revenue department

1.6 Extent of cost recovery (O&M) in water supply services

Methodology/ Interpretation and Sources of Data	• Data for water charges collected by the ULB and O&M costs for providing water supply services, should be obtained for previous financial year. For example, if data is being collected in June 2017, data on water charges and O&M costs for 2016-17 must be obtained. • Data can be obtained from the records of the ULB/ Water Utility

ILLUSTRATIVE

Water utility e.g., Delhi Jal Board, CMWSSB,

2.2 Percentage of ecologically important areas covered through projects for restoration

Methodology/ Interpretation and Sources of Data	• Ecologically sensitive sites will include surface water bodies, urban watershed (natural drainage lines), coastlines, riverfronts, wetlands and urban forests. • Such sites of ecological importance will need to be identified and plotted on a map in discussion with the ULB/ Planning officials. • Only completed projects should be included. Records of ULB/ Development Authority regarding completed projects must be corroborated through site visits.

Development authority e.g., CMDA, DDA, BDA

3.1 Percentage of school-aged population enrolled in schools

- Under U-DISE, school data is updated annually with 30th September as the reference date.
- Data should include both public and private schools.
- Data for population in age group of 6-14 years (eligible under RTE 2009) can be obtained from Education Department. In the absence of such data population Census may be used as base, and annual growth rate may be applied to arrive at current population.

Education Department

4.1 Number of in-patient hospital beds per 10,000 population

Methodology/ Interpretation and Sources of Data	• Data on hospital beds should include both public and private hospitals and should be sourced from the Health Department. • Population data can be sourced from the decennial Census of India. Past census figures should be used as base, and annual growth rate should then be used to arrive at current population.

Health Department

5.2 Number of recorded crimes per lakh population

Methodology/ Interpretation and Sources of Data	• Total number of cases should be based on the total number of cases registered with the Police department • Crime data can be obtained from the Police Department. Latest reports published by the National Crime Research Bureau (NCRB) can also be used for obtaining crime data.

Police Department

10.1 Percentage of city population with authorized electrical service

Methodology/ Interpretation and Sources of Data	• Only household connections (residential consumers) shall be counted for the indicator. • Data can be obtained from local electricity distribution companies (DISCOMs). • Data on households can be sourced from the decennial Census of India. Past census figures should be used as base, and annual growth rate should then be used to arrive at current population.

DISCOMS

Key ULB officials will participate in the state level workshops while the remaining officials may be encouraged to participate in city level reconnaissance discussions. An indicative programme structure is presented below:

Programme	Day 1	Day 2	Day 3	Day 4
Internal orientation to state/regional coordinators	√		ILLUSTRATIVE	
State/UT workshop		√		
City/ULB Reconnaissance discussions			√	

Post the State/UT workshops, our team will engage in city-level reconnaissance missions that would involve meeting relevant city-level stakeholders including utilities (DISCOMS, water supply, etc.) SPV for Smart Cities, different project heads, parastatals such as development authorities, district collector, concerned line departments such as health, education, police, tourism, among others. Special focus will be given to engage with key officials within ULBs such as revenue, accounts, solid waste management etc.

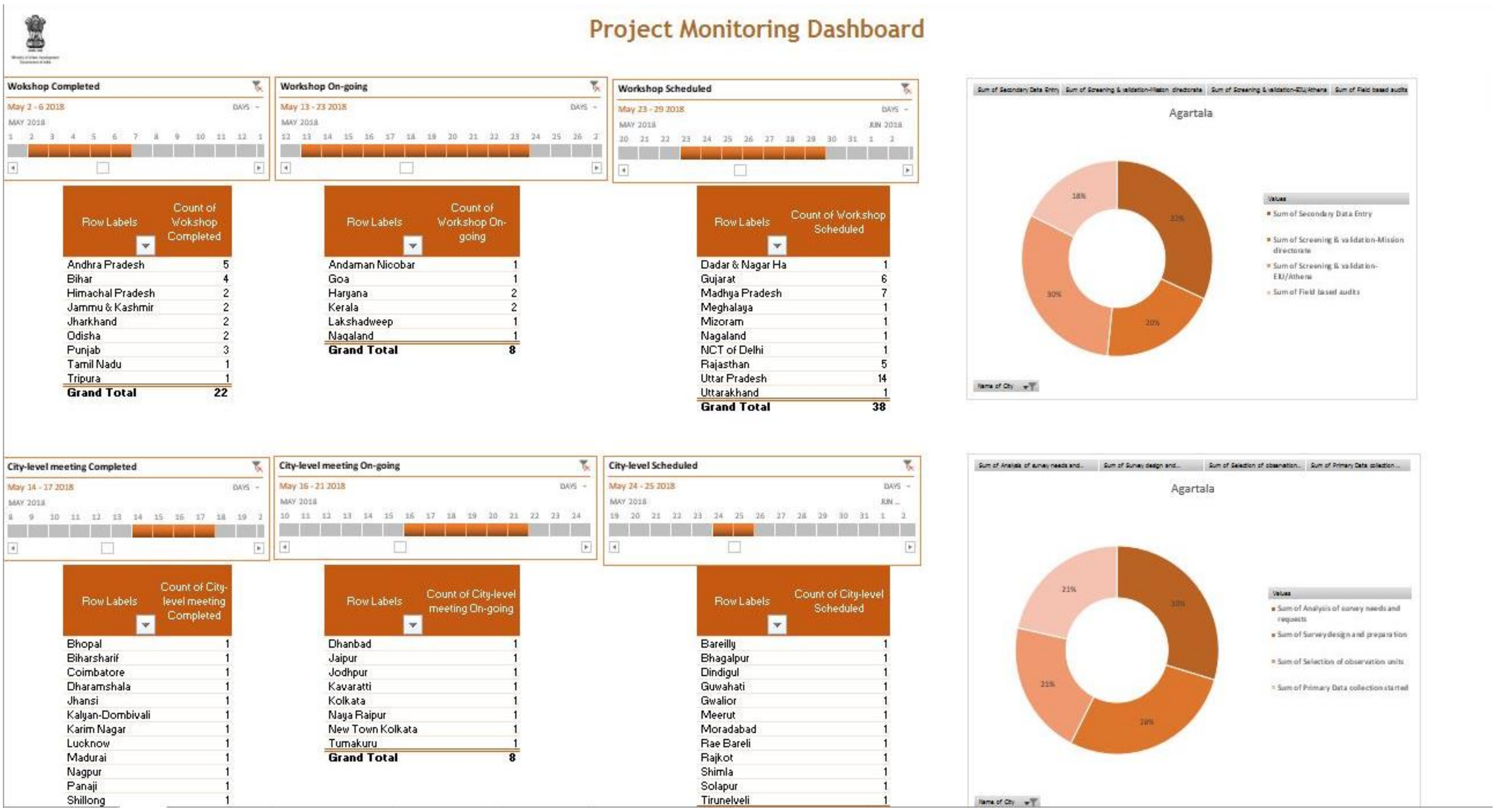
For effective coordination, smooth exchange of information flow and continuity, it is proposed that engagement with the cities will be undertaken through a nodal officer at the state/UT level. A critical milestone of this workshop will be designation of nodal officer for overall coordination by the respective state/UT government. The nodal officer will also serve as the State Data Ombudsman and troubleshoot issues relating to data.

Incentive structure for data submission

A key challenge envisaged in this study pertains to potential challenges related to timely submission of secondary data by the cities. We propose to formulate an innovative incentive structure in consultation with MoHUA and convey it at the state/UT workshops/city meetings to ensure their buy-in. Some of the ways in which cities could be incentivised could be 'appreciation of best performing cities on national portal and social media campaign,' with SMS alerts sent to all key city representatives, and exclusive coverage of best performing cities in photo journals etc.

Monitoring progress of state/UT workshops and City Reconnaissance Missions

The progress of the state/UT workshops and City Reconnaissance Missions will be monitored through a dashboard that will be updated near-real time. The dashboard will information on upcoming, on-going and completed workshops and reconnaissance missions. Associated documents such as workshop agenda, list of participants, discussion materials, workshop proceedings/minutes, photographs, etc. will be accessible through the dashboard.



Project Monitoring Dashboard

Wokshop Completed

May 2 - 6 2018

Row Labels	Count of Wokshop Completed
Andhra Pradesh	5
Bihar	4
Himachal Pradesh	2
Jammu & Kashmir	2
Jharkhand	2
Odisha	2
Punjab	3
Tamil Nadu	1
Tripura	1
Grand Total	**22**

Workshop On-going

May 13 - 23 2018

Row Labels	Count of Workshop On-going
Andaman Nicobar	1
Goa	1
Haryana	2
Kerala	2
Lakshadweep	1
Nagaland	1
Grand Total	**8**

Workshop Scheduled

May 23 - 29 2018

Row Labels	Count of Workshop Scheduled
Dadar & Nagar Ha	1
Gujarat	6
Madhya Pradesh	7
Meghalaya	1
Mizoram	1
Nagaland	1
NCT of Delhi	1
Rajasthan	5
Uttar Pradesh	14
Uttarakhand	1
Grand Total	**38**

City-level meeting Completed

May 14 - 17 2018

Row Labels	Count of City-level meeting Completed
Bhopal	1
Biharsharif	1
Coimbatore	1
Dharamshala	1
Jhansi	1
Kalyan-Dombivali	1
Karim Nagar	1
Lucknow	1
Madurai	1
Nagpur	1
Panaji	1
Shillong	1

City-level meeting On-going

May 16 - 21 2018

Row Labels	Count of City-level meeting On-going
Dhanbad	1
Jaipur	1
Jodhpur	1
Kavaratti	1
Kolkata	1
Naya Raipur	1
New Town Kolkata	1
Tumakuru	1
Grand Total	**8**

City-level Scheduled

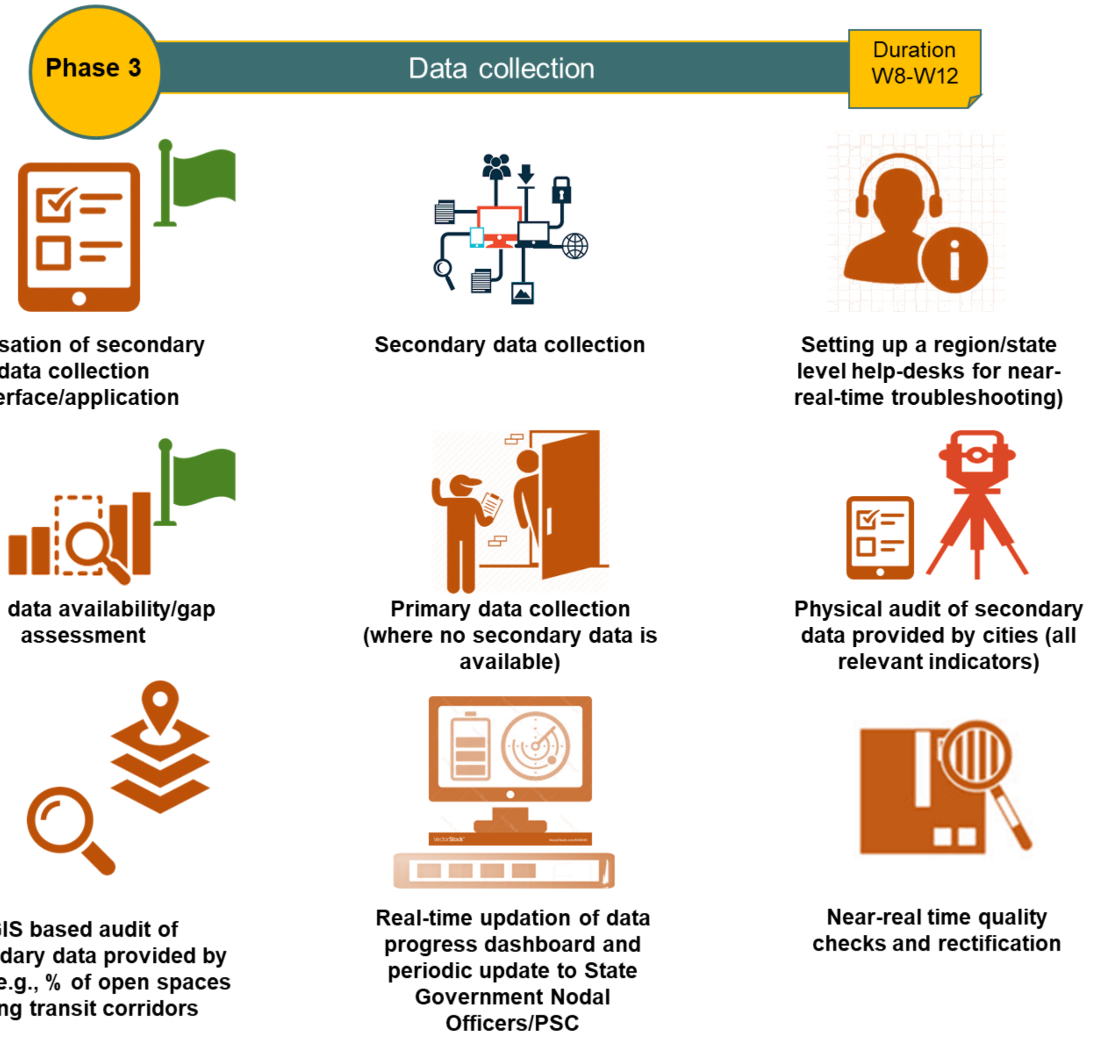
May 24 - 25 2018

Row Labels	Count of City-level Scheduled
Bareilly	1
Bhagalpur	1
Dindigul	1
Guwahati	1
Gwalior	1
Meerut	1
Moradabad	1
Rae Bareli	1
Rajkot	1
Shimla	1
Solapur	1
Tirunelveli	1

DAYS
MAY 2018
JUN 2018
Sum of Secondary Data Entry
Sum of Screening & validation-Mission directorate
Sum of Screening & validation-EIU/Athena
Sum of Field based audits
Agartala
32%
20%
30%
18%
Values
Sum of Secondary Data Entry
Sum of Screening & validation-Mission directorate
Sum of Screening & validation-EIU/Athena
Sum of Field based audits
Name of City
Sum of Analysis of survey needs and...
Sum of Survey design and...
Sum of Selection of observation...
Sum of Primary Data collection ...
Agartala
30%
28%
21%
21%
Values
Sum of Analysis of survey needs and requests
Sum of Survey design and preparation
Sum of Selection of observation units
Sum of Primary Data collection started
Name of City

Phase 3: Data collection [Week 9 – Week 12]

This phase will involve the following activities:



Phase 3 Data collection

Duration W8-W12

Finalisation of secondary data collection interface/application

Secondary data collection

Setting up a region/state level help-desks for near-real-time troubleshooting)

Final data availability/gap assessment

Primary data collection (where no secondary data is available)

Physical audit of secondary data provided by cities (all relevant indicators)

GIS based audit of secondary data provided by cities e.g., % of open spaces along transit corridors

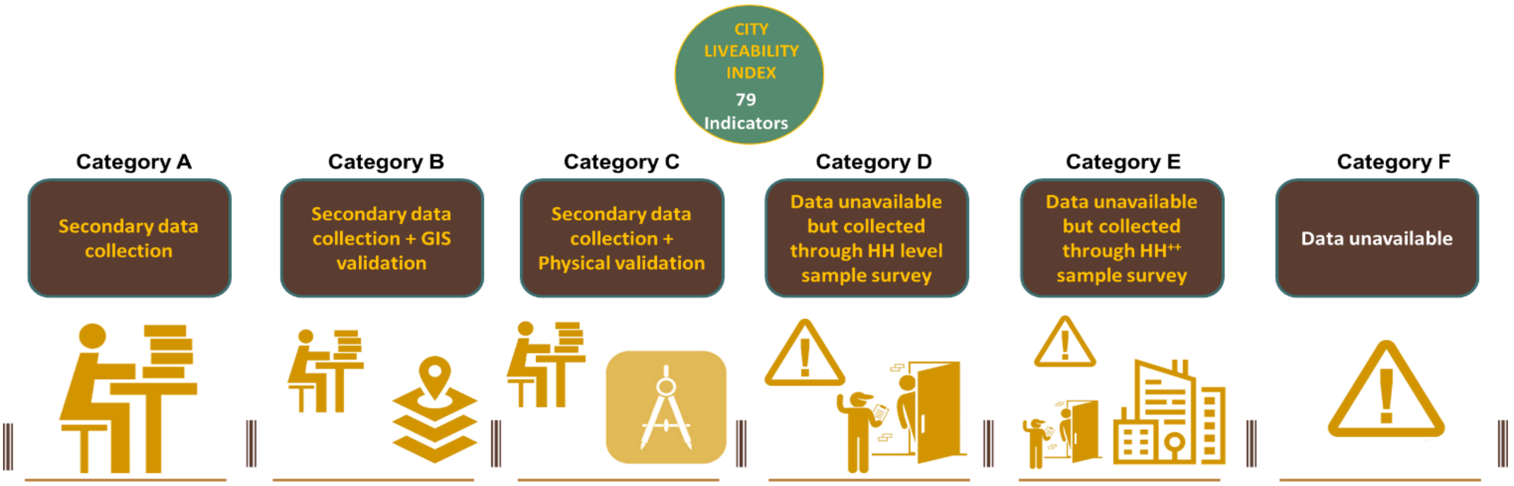
Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC

Near-real time quality checks and rectification

Media dissemination through photo journals, national portal to be an on-going exercise

We propose collection of secondary data as an on-going exercise as our teams will start collating city level data from the preparatory phase itself and prepare data sheets with pre-filled data covering the 79 indicators to the extent possible. However, formal data collection will commence from week 9 as indicated in the ToR.

As presented in the section on preparatory phase, the 79 indicators could have six categories of data collection interface.



CITY LIVEABILITY INDEX
79 Indicators

Category A
Secondary data collection

Category B
Secondary data collection + GIS validation

Category C
Secondary data collection + Physical validation

Category D
Data unavailable but collected through HH level sample survey

Category E
Data unavailable but collected through HH++ sample survey

Category F
Data unavailable

While it is expected that input data associated with all the 79 indicators will be provided by the cities, there could be some data gaps and concerns regarding period of availability, reporting units and formats, reliability etc. In this section we outline our preliminary approach for addressing the issues for various indicator category. For Category A (Secondary data collection), pre-filled templates will be prepared for each city wherever possible and shared for validation/filling new data.

State level helpdesks will be set up for each State/UT to assist the cities on any aspect relating to filling secondary data templates. This helpdesk would be manned by respective State level coordinators with technical back stopping facility by the support team.

Category B involves indicators that merit spatial validation. Some of the indicators under this category are:

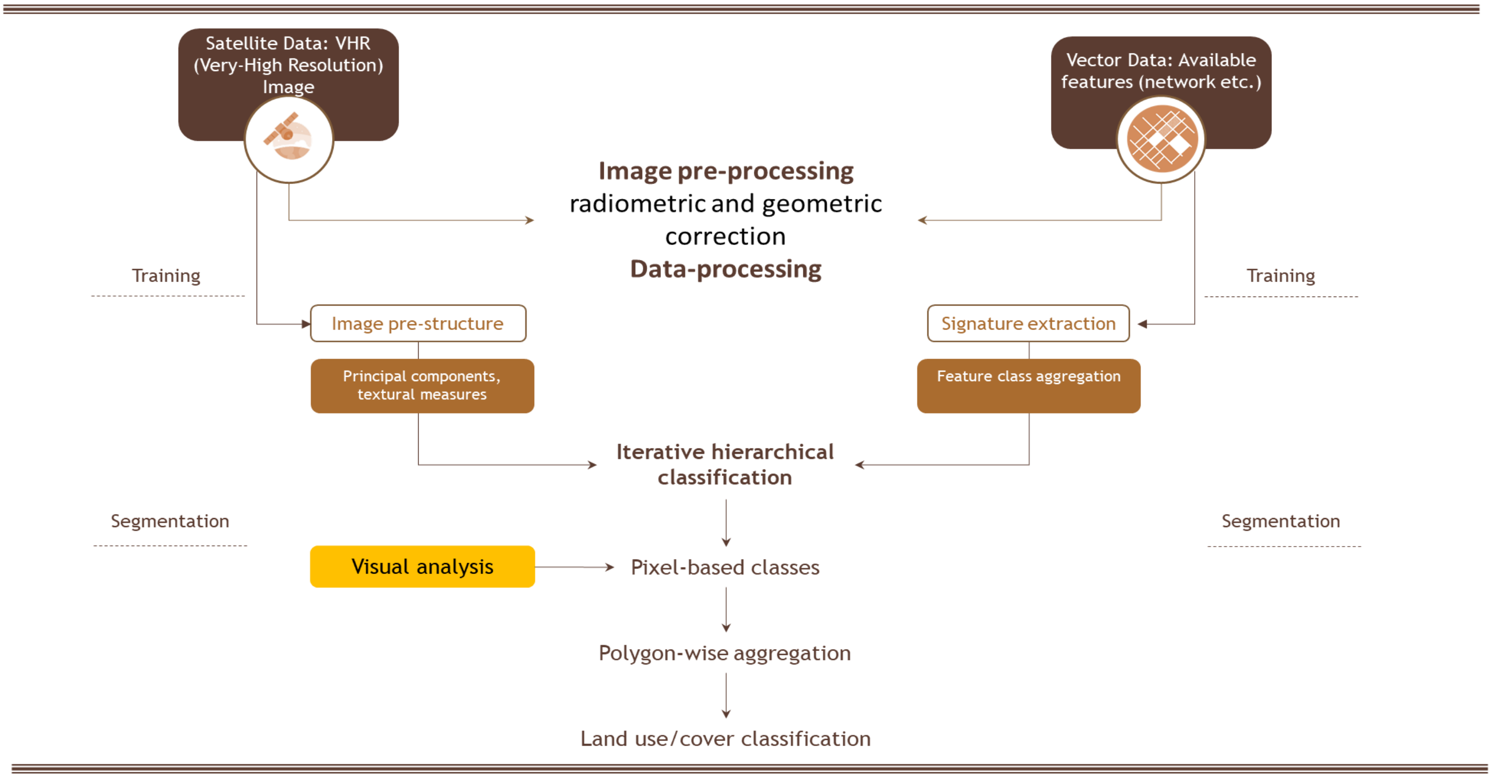
8.1 | Per capita availability of green spaces

5.1 | Number of streets, public places, junctions covered through surveillance systems

9.1 | Share of mixed land use area in overall city land use

9.2 | Net Density

For these indicators, we will be undertaking validation of the secondary data provided by cities through visual analysis using satellite and vector data. Figure below presents our approach:


Satellite Data: VHR (Very-High Resolution) Image
Vector Data: Available features (network etc.)
Image pre-processing
radiometric and geometric correction
Data-processing
Training
Training
Image pre-structure
Signature extraction
Principal components, textural measures
Feature class aggregation
Iterative hierarchical classification
Segmentation
Segmentation
Visual analysis
Pixel-based classes
Polygon-wise aggregation
Land use/cover classification

Indicators under Category C merit physical validation in the field to strengthen reliability of the indicators. Preliminary review of the indicators suggest that physical validation exercises would need to be carried out for 11 indicators. Figure below presents our sampling approach:

Indicator	Validation approach
2.3 | Hotel occupancy	Total 35 hotels; 5 star (5 hotels); 4 star (10 hotels), 3 star (10 hotels) less than 3 star (10 hotels) randomly in each city
3.4 | Percentage of schools with access to digital education	Randomly select 40 schools for validation in each city
5.1| Number of streets, public places, junctions covered through surveillance systems	Inspect 30 major public places and junctions in each city, randomly
6.5 | Percentage of vendors registered and provided formal spaces	Randomly select 30 street vendors in each city
11.7 | Availability of Passenger Information System	Select 30 interchange sites- bus depots/stations, metro or suburban rail stations and water transport terminals (e.g. ferry terminal), randomly
11.8 | Extent of signal synchronization	Randomly select 30 signalized intersections in each city
11.9 | Availability of paid parking spaces	Select 30 paid parking spaces, randomly in each city
11.10 | Percentage coverage of footpaths – wider than 1.2 m	Select 30 footpath sections across major roads, randomly in each city
11.11 | Percentage of traffic intersections with pedestrian crossing facilities	Select 30 intersections randomly in each city
11.12 | Extent to which universal accessibility is incorporated in public rights-of-way	Select 30 public right-of-way areas to represent areas such as Government buildings, sidewalks/ footpaths, subways/city
14.3 | Extent of municipal solid waste recovered through reuse	Random selection and visits of recovery/re-use sites in each city

Categories D and E call for collecting data from households and households plus institutional and commercial entities such as schools, public offices etc. Category D covers four indicators while Category E covers one indicator as presented below. We propose to undertake a survey of about 400 households in each of the 116 cities for both these categories. For Category C, 400 households will be spread across different socio-economic strata of respective cities and for Category D, 200 households will cover only low-income urban communities (notified slums) in each city.

Category D

Indicator	Validation approach
7.2 | Percentage of slum areas covered through basic services	Random sampling of 200 citizens across ten notified slums in each city
11.3 | Mode share of public transport	Random sampling of 400 citizens across different socio-economic strata in each city
11.6 | Mode share of non-motorized transport	Random sampling of 400 citizens across different socio-economic strata in each city
14.1 | Household level coverage of municipal solid waste collection	Random sampling of 400 citizens across different socio-economic strata in each city

Category E

13.1 | Coverage of toilets	Random sampling of 400 respondents It would cover households, schools, public institutions, commercial establishments, etc. per city

Indicators where data is not available will be excluded from computation from the liveability index in line with the suggested methodology

Methodology for sample determination

For arriving at the sample size for this study, we have treated the present research problem as a Case of Proportions, i.e., a problem involving the estimation of the proportion of respondents exhibiting a certain kind of behaviour (in our case, proportion of households who have access to safe drinking water). In a Case of Proportions, the sample size is determined as under:

Let the sample size be n. The various assumptions made in calculating n is as under:

p is the proportion of the households (our universe in the project area) having benefited from the various urban mission. This proportion p is called the population proportion. In the absence of any estimate of p, a figure of 50 per cent could be used for the anticipated population proportion.

π is the proportion of the sample having benefited from the urban missions. This proportion π is called the sample proportion. π is obviously a dichotomous variable (a dichotomous variable is one which has only two response choices, such as "Yes, benefited from the urban mission " and "No, did not benefit from the urban mission")

E is the allowable error, i.e., the allowable difference between p and π while drawing the sample. We have fixed this 5 percent say 0.05

Z is the number of standard errors associated with the confidence level. The confidence level is fixed at 95 per cent, i.e., the pre-assigned chance of finding the true population proportion p to be within the range of ($\pi \pm 1.96s$), where, s is the standard deviation of the sampling distribution.

At a confidence level of 95 percent, the value of Z is 1.96. The estimated sample size n is worked out based of the below formula.

$$n = \frac{\pi (1 - \pi)Z^2}{E^2}$$

$$n = \frac{0.5 (1 - 0.5)1.96^2}{0.05^2}$$

Thus, sample size n works out to 384. Considering the possibility of non-availability and non-consent of the beneficiaries, about 5 per cent additional sample is proposed. With this allowance, the sample size works out to 400 per city.

A total of about 400 respondents will be covered from each city. Given that there are 116 cities to be covered in 1st year, the total sample size works out to minimum 46,400 respondents. This is a minimum sample size needed if we want the observed proportions (π) to be within $\pm$5 percent of the unknown population proportion (p).

Approach for geospatial sampling:

We propose to select our survey respondents based on a geospatial sampling methodology after evaluating the spread of the city under multiple criteria. The table shown below is an illustration of our approach towards rating each of the wards in the city. It is to be noted that any ward is likely to receive the score based on the presence of the criterion mentioned in each of the question (for eg: Presence of park/playground in the ward = 4.5%, else = 0). The scores obtained against each of these questions will be summed to provide ward level total score. It is to be noted that "slums" have been given a special attention to ensure social inclusion in our geospatial sampling methodology.

Table 1: Sampling criteria

Questions	Answers	Score / Ward
List the wards having market area in your city?		4.5%
List the wards having tourist attraction places in your city?		5.0%
List the wards having schools in your city?		5.0%
List the wards having hospitals in your city?		5.0%
List the wards having parks / playgrounds in your city?		4.5%
List the wards having rivers, lakes and/or mountains in your city?		4.5%
List the wards having large commercial areas in your city?		4.5%
List the wards having proximity to industries in your city?		4.5%
List the wards having earthen roads in your city?		4.5%
List the wards having footpath in your city?		4.5%
List the wards having good road network connectivity in your city?		4.5%
List the wards having UGSS penetration in your city?		4.5%
List the wards having low incidence of crime in your city?		5.0%
List the wards having high population density in your city?		4.5%
Score (A)		65.0%

Questions	Answers	Score / Ward
List the wards having large slums in your city?		35.0%
Score (B)		35.0%

Based on the obtained total scores, wards will be shortlisted based on the following combination:

- Combo 1: Wards with larger slum population with higher livability characteristics
- Combo 2: Wards with fewer slum population with higher livability characteristics
- Combo 3: Wards with fewer slum population with lesser livability characteristics
- Combo 4: Wards with larger slum population with lesser livability characteristics

Within the shortlisted wards, about 33% of the primary survey (200 Surveys) will be conducted in wards having larger slum population. We would also ensure that the survey conducted within every ward will

be well spread within the ward boundary to ensure representativeness of the entire city and this will be constantly monitored by the field officer through a mobile application.

Score (A)	SCORE (B)	Sample
High	High	200 SURVEYS
Low	High	
Low	Low	400 SURVEYS
High	Low	

Sampling of Households

In each starting point 10 households(HH) will be covered for eliciting feedback about the various facilities available in the city. The first household shall be z^{th} number household from a starting point. The second household will be $(5+z)^{th}$ household. This process should be continued till the time we achieve the sample size (10 HHs) for that particular starting point. During selection of household serpentine Right Hand Rule will be followed.

Sampling of respondents

Adult members of the sampled household, who are aged 18 and above would be considered as eligible respondents for the survey. Where ever there are more than on eligible respondent in the household KISH grid will be used for unbiased selection of the eligible respondent. The usage of KISH grid will also ensure the fair representation of both the gender in the sample. For the Indicator 7.2, percentage of slum areas covered through basic services, we propose a sample of 200 per city across 10 slums (as per list available with slum rehabilitation board).

Kish Grid Selection - Illustration

Respondent No.	Gender	Age	Adult No.	Selected Respondent
1	M	57	1	
2	M	44	2	
3	M	35	3	
4	F	61	4	x
5	F	27	5	

The slums will be selected using a simple random sampling from the available list. We will overlay this selection to ascertain the geographical spread across wards / zones in the city. The same process as outlined above will be followed for selection of HHs and individuals in the selected HH.

Overall sample size

The total number of respondents to be covered as part of our primary data collection including physical audit across identified indicators is presented below:

Unit	Sample per city	No of cities	Total sample
HH survey/ Citizen (slum and non-slum)	600	116	69,600
Institutions- Hotels, Schools, Establishments	98	116	11,368
Physical validation through Observation	270	116	31,320
Total	968	116	1,12,288

Data collection team structure

Based on different categories of data to be collected/validated, three different teams will be working in tandem to collect the required data in time. First team comprises regional/state/UT coordinators who will be entrusted primarily with the responsibility of secondary data collection. Second team comprises field investigators and supervisors who will be involved in collection of primary data for indicators identified under Category D and Category E. The third team will include physical auditors who will be validate the reliability of secondary data provided by cities for indicators identified under Category C.

Team 1

Regional/State/UT Coordinators

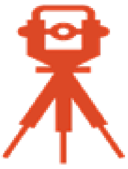
Responsible for secondary data collection, organising State/UT workshops and city reconnaissance meetings, follow-ups, help desk support, and local support to Team 2 and Team 3

Team 2

Field Investigators and Supervisors

Responsible for pilot testing, primary data collection for indicators identified under Category D and Category E

Team 3



Physical Auditors

Responsible for physical inspection and verification of secondary data provided for indicators identified under Category C

All these by a team will be supported pool of quality control, IT and analytical team. The state

All teams will be supported by a centralised quality control, IT and technical backstopping team

coordinators will serve as an additional layer of local support for guiding the field team on different aspects of primary data collection and physical validation.

Training of regional/state coordinators [secondary data collection]

We will conduct an internal brainstorming cum training session wherein the Regional/State Coordinators will participate and familiarise themselves with the assignment and modalities involved along with non-key staff/consultants. Subsequently, we will be conducting a three-day training programme for the Regional/State Coordinators and key city/ULB representative along the State/UT workshops. Training will cover secondary data collection interface/application, data formats including reporting period, reporting units, data collection process, escalation protocols, and ethical considerations among other modules. Subsequently, the Regional/State Coordinators with support from the PCC team will train field supervisors, investigators and physical auditors.

Research instrument development, pilot test and training [primary data collection]

The overall sampling strategy for categories indicated above will be finalised in consultation with MoHUA. Subsequently, the team will develop research instruments covering relevant indicators and target groups. Each of the research instrument will be pilot tested and finalised based on field level insights. Our consortium specialises in developing minimalistic instruments without losing coverage and rigour of data collection. To carry out the survey, the research instruments will be developed as mobile application such as ODK Collect or Kobo Tool Box that allows that cloud based storage of backend data and provides near analysis ready data.

We will explore using a computer-aided in-person interviewing (CAPI) methodology to collect data on Windows-based phones or tablets, which has numerous advantages over traditional pen-and-paper methods. The programmed instrument will have built-in logic that ensures the correct path through skip-patterns, doesn't allow interviewers to enter invalid responses to closed ended questions, and runs internal consistency checks.

Using CAPI enhances measurement quality, reduces error, and limits the need for editing and cleaning following data collection. For every interview, the exact GPS location is captured, which means that quality control departments can verify interviews are being performed at the correct locations. In addition, quotas are automatically tracked on the mobile device which reduces the need for manual tracking. We have invested significantly in enhancing our CAPI capacities both in terms of infrastructure and human capacity. Ipsos has a well-trained pool of interviewers that are familiar with quality processes for CAPI interviews and used to close scrutiny and rigor of monitoring. Our expert data team will program the survey, after which extensive quality checks will be carried out by the Ipsos team. We will then run sample cases through the survey to test for logic and skip patterns. Following the completion of programming in English, we will overlay the translated instruments and additional quality checks on

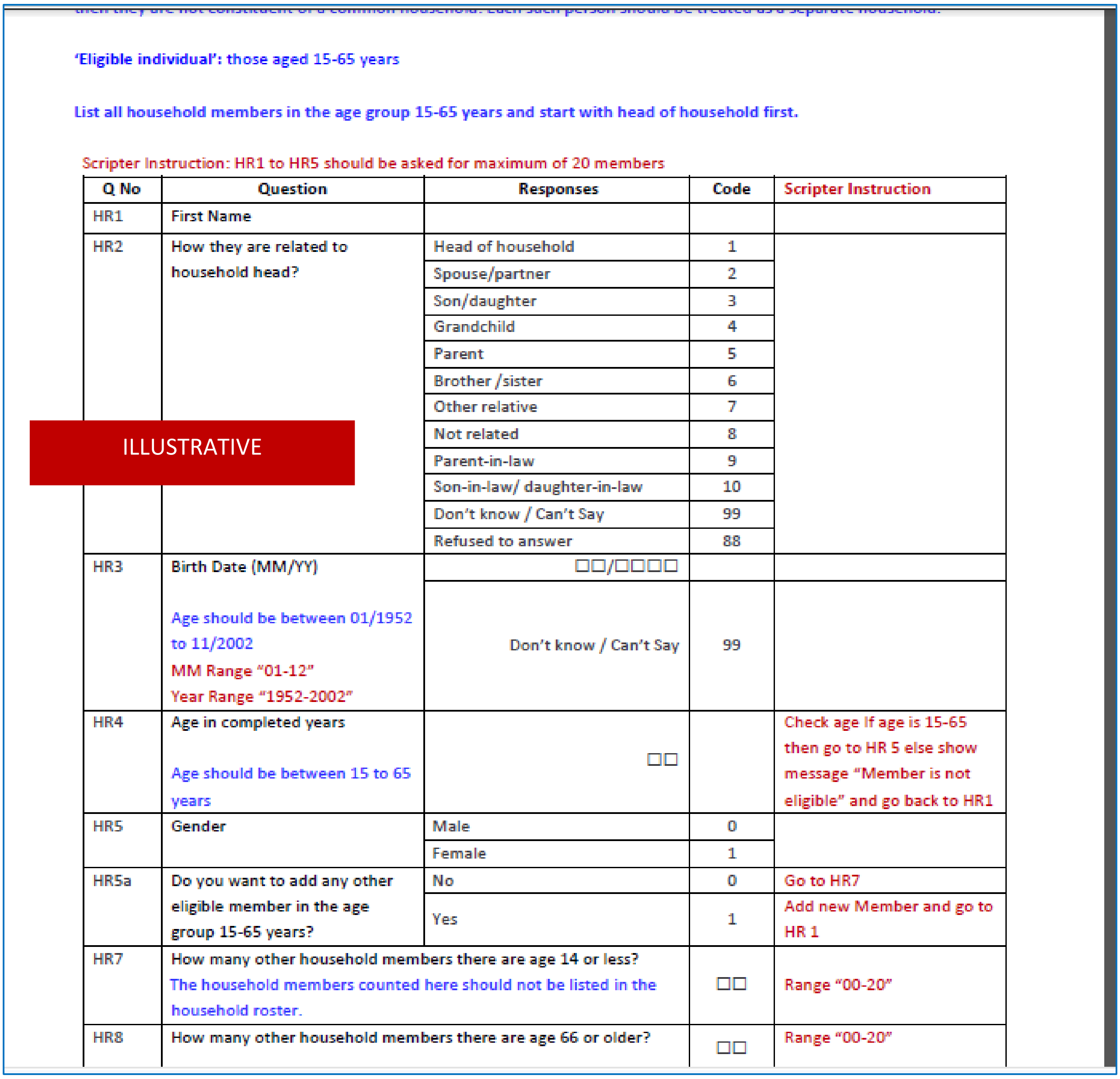
all translations will be done. The programmed instrument will be downloaded to the Phone/Tablet devices to be used by interviewers.

The research instruments will be **translated in all relevant regional languages** for all 116 cities. All translation will be checked by the researchers to ensure that the meaning of the questions has not

Our extensive experience conducting quantitative social research in a variety of fields has taught us that the questionnaire can be designed to maximise participation based on the following key principles:

Concise and well-structured survey design:	A short survey will get more responses than a long survey, and competing priorities can lead to very long questionnaires. It is important to focus on top priorities and understand key opinions while also being realistic both regarding length of survey but also respondent ability to report on certain items.
Questions are easy to answer:	Instruments that are difficult to complete lead to errors from the interviewer as well as the respondent. Although we provide extensive training to interviewers, complicated questions can be difficult to complete accurately. Additionally, we ensure that questions are drafted with as few clauses as possible, without double-negatives, and should include as comprehensive a range of answer options as possible.
Take into account the respondent's knowledge and sensitivities:	Sensitive questions, such financial questions or those about socially unacceptable behaviors (for instance open defecation), most often lead to inaccurate reporting and poor data because respondent over/under report or give the more socially acceptable answer.
Questions should allow respondents to not know:	Where respondents are forced to answer questions, they do not feel they know the answer to, they are likely to become frustrated and close the survey early. We therefore recommend that a "DK (Don't Know)/NA (Not Applicable)" option is always provided, particularly in sensitive environments.
Allow respondents to feel heard without burdening them unduly:	Limit open-ended questions to one to two and do not require respondents to fill them out. Additionally, a confusing screener or imprecise definitions of the target respondent can take a lot of time and lead to errors in data collection.

Additionally, we will ensure that questions used are tested and used as a standard. We will also have all survey instruments undergo a thorough review by sociologists and psychologists with expertise in instrument design, who will look to ensure the overall instrument and individual questions are structured in a way that is accessible to respondents (by, for instance, organizing the instrument logically and introducing new topics/question modules so that respondents are not confused about why they are being asked certain questions at a given point in the interview) and cognitively unambiguous (avoiding, for instance, questions where one question asks about multiple constructs).


ILLUSTRATIVE

then they are not constituent of a common household. Each such person should be treated as a separate household.

'Eligible individual': those aged 15-65 years

List all household members in the age group 15-65 years and start with head of household first.

Scripter Instruction: HR1 to HR5 should be asked for maximum of 20 members

Q No	Question	Responses	Code	Scripter Instruction
HR1	First Name			
HR2	How they are related to household head?	Head of household	1	
		Spouse/partner	2	
		Son/daughter	3	
		Grandchild	4	
		Parent	5	
		Brother /sister	6	
		Other relative	7	
		Not related	8	
		Parent-in-law	9	
		Son-in-law/ daughter-in-law	10	
		Don't know / Can't Say	99	
		Refused to answer	88	
HR3	Birth Date (MM/YY) Age should be between 01/1952 to 11/2002 MM Range "01-12" Year Range "1952-2002"	☐☐/☐☐☐☐		
		Don't know / Can't Say	99	
HR4	Age in completed years Age should be between 15 to 65 years	☐☐		Check age If age is 15-65 then go to HR 5 else show message "Member is not eligible" and go back to HR1
HR5	Gender	Male	0	
		Female	1	
HR5a	Do you want to add any other eligible member in the age group 15-65 years?	No	0	Go to HR7
		Yes	1	Add new Member and go to HR 1
HR7	How many other household members there are age 14 or less? The household members counted here should not be listed in the household roster.		☐☐	Range "00-20"
HR8	How many other household members there are age 66 or older?		☐☐	Range "00-20"

ILLUSTRATIVE

	and therefore influence household decisions	Separated	7	
		Cohabiting	5	
		Not Stated	6	
D6	What is your highest level of schooling completed?	None	1	
		Literate without formal schooling	2	
		Schooling up to 4 years	3	
		Schooling between 5–9 years	4	
		Secondary/Matric/Class-X (10th passed)	5	
		Hr Secondary/Sr Secondary/Pre-university/Class-XII (12th passed)	6	
		Non-technical/Technical diploma or certificate not equivalent to degree	7	
		Graduate / bachelor (General) B.A / B.SC / B.Com	8	
		Graduate / bachelor (Professional) B Tech / BBA / MBBS / LLB	9	
		Post graduate / masters (general) M.A / M.SC / M.Com	10	
		Post graduate / masters (professionals) M. Tech / MBA / MD / LLM / M Phil	11	
D7	How many years of schooling do you have in total? To be asked from all those who have some Number of COMPLETED YEARS, excluding pre-school. All education years including school and university		☐☐	Should be less than (Age D3 minus 3) and cross check with D6. Range 0-99
D8	Do you have any vocational/ professional certificates?	Yes	1	
		No	0	
D9	Are you currently enrolled in any courses to further your education? This can include part-time or full-time study	Yes	1	
		No	0	
D10	What was your main activity during the last 6 months? Main /primary activity to be recorded, as per what they identify their main activity to be Taking care of sick family member can be coded same as unpaid family worker	Cultivator	01	
		Agricultural wage labourer	02	
		Non-agricultural wage labourer	03	
		Self-employed: own account worker (excluding cultivators)	04	
		Self-employed: employer (excluding cultivators)	05	
		Unpaid family worker	06	
		Regular salaried/wage employee	07	
		Did not work but was seeking and/or available for work	08	
		Housewife	09	
		Attending educational institution	10	
		Working as Domestic Help	11	
		Beggar	12	
		Rentier, pensioner, other remittance recipients	13	
		Not able to work due to disability	14	
		Too old to work	15	
		Too young to work	16	
		Others(Specify______)	96	
D10A		Not in the sector	0	

changed while translating into regional languages. We propose to pre-test the questionnaire in two non-sampled areas in any two selected cities. The pre-testing of the questionnaires will be undertaken on the translated questionnaires. The pretesting will ensure the following aspects:

- Whether all the questions are comprehensible to the enumerator
- Whether the respondents have any difficulty in understanding the questions
- Whether the length of the questionnaire is optimum?
- Whether the questions ordered properly
- Whether any change is required in the questionnaire

Finally, it will help in fine tuning the questionnaire and to determine the flow of questions, to make life easy for the investigator as well as the respondent.

The final tool will be scripted and uploaded in all regional languages for the main survey. Ipsos internal platform i-field will be used for HH survey that brings in the advantage of GPS capture and audio recording as well as real time tracking of field work completion status

Approach to data collection:

Secondary data collection for cities will start immediately after culmination of State/UT workshop and subsequent training of key city/ULB representative through city level reconnaissance meetings. The launch date for cities will vary depending upon the workshop schedule and fixing of appointment for city level meetings in each State. In the mean-time we will update secondary data collection interface/application based on the inputs and suggestions provided by the State and city representative at the workshop. Progress of data collection will be monitored through an integrated dashboard (refer prototype presented in the section on preparatory phase activities). We propose to deploy a team of four field investigators, four physical auditors and one field supervisor per city to undertake primary data collection/audit exercise in each city. Overall 69 such teams will be deployed to complete primary data collection across 116 cities in 16 days' time. Our pool of enumerators is experienced in undertaking large surveys in the urban areas across different sectors and hand-held devices. We will be undertaking a three-day training programme at a regional level to familiarise our field team with project objectives, research instruments, sampling frame and survey ethics. We propose to involve the field team in pilot testing of the research instruments for field-based training and better understanding of the research instrument. Our experience in managing large-scale survey research assignments tells us that the successful organisation and management of an assignment such as this requires the following approach:

A national level presence: We will work through its own offices and teams in all states and Union Territories and will not outsource any part of the survey management or data collection task to any external supplier or vendor. This will ensure that data in each state is collected as per agreed protocols

and quality norms. All our offices are manned by local teams that have a panel of interviewers and supervisors from the state/ districts that are familiar with the geography and local dialects.

Zonal hubs: The core project management team based in Delhi will be supported by zonal hub managers who will be Ipsos permanent staff – field managers with experience of managing large scale projects. These hubs will help the core team in all phases of the research process. Their contributions are particularly important while team mobilisation, making the route plan, translation in local languages, and managing the fieldwork. They will also provide valuable support at time-intensive stages of the project, such as script checking, fieldwork monitoring, and data checking. These zonal coordinators will operate under the guidance Central Project Team.

Centralised Training of Trainers: We will conduct centralised TOT for Zonal and State Managers to plan and implement the fieldwork. The training will be for 4 days including field visits to ensure that field managers are familiar with the field situations, exposed to potential challenges, and have a thorough understanding of research subject. Emphasis will also be on imparting them facilitation and risk assessment skills required for managing the survey.

Multi-disciplinary expert teams, with resource at the right level to ensure value for money: The organisation and implementation requires expertise in sampling, scripting, and strong operations, but also proven skills in co-ordination, rigorous analysis of quantitative data, high quality reporting skills, as well as relevant experience in the states. Given the scale of this project, there are certain stages that are resource and time intensive, and we know that it is important to maximise the skills of resources to ensure value for money, with senior oversight. We propose a very strong core team together based on their multi-disciplinary skills. In addition, all offices will be supported through layers of reporting by the respective functions- operations, research, and IT for monitoring completion of the survey and reviewing completes.

Fieldwork monitoring procedures

This section details PCC Team monitoring responsibilities **prior to and during the survey implementation** to guarantee timely delivery of the project, while maintaining high quality. There will be several standard monitoring actions undertaken by the PCC-Team prior to and throughout the fieldwork:

- Providing state offices with **guidelines on managing fieldwork** and checking that these guidelines are correctly implemented;
- A dedicated fieldwork manager will be appointed in each state and will be responsible for receiving and reviewing the **weekly resource planning** of its state.
- Project executives from the PCC Team will also review **daily progress and sample reports** (and outcomes) and share their observations with the state teams, following up where necessary.

The quality control plan envisages quality check mechanisms at the at the data collection level as discussed below.

Table 2: Structure for Quality Checks in the Field

Level of staff	Functions in quality check
Field Investigators	Data Collection
Field Supervisors	100% scrutiny & accompaniments
Core and research support team	25% scrutiny, overall field monitoring and quality checks

1. Spot check and observation

In a spot check, the supervisor will attend an interview along with the investigator, to see if the investigator is comfortable with the flow of the questionnaire, is explaining the questions as they should be and is recording the responses correctly. The following forms a part of the spot checks and observation process to be adhered by the Supervisor:

- Observe some of the interviews, to ensure that the interviewers are conducting themselves well, asking the questions in the right manner, and interpreting the answers correctly
- Spot check some of the addresses selected for interviewing to be sure the interviewers interviewed the right household
- Review the questionnaire to be sure it is complete and is internally consistent
- Meet with each member of the team on a daily basis to discuss performance
- Help to solve any problems that interviewer might have with finding assigned households, understanding the concepts in the questionnaire or with difficult respondents.

2. Back checks

Field supervisors shall ensure that for all sampled areas wherein completion rate is found to be low or seems to be a problem, back checks shall be done by himself/supervisor of other team.

3. Inbuilt Quality Control

The manually filled in questionnaires have a risk of manual errors which would be eliminated completely at the software development process. The following checks would be inbuilt within the questionnaire design:

- Range Checks: To make sure that an entered number is within the right range. For example; a field indicating month cannot be more than 12.
- Consistency Checks: To make sure that the information entered is consistent and there are no errors. These checks are important for open ended questions.

- Validation Checks: To check that the data type entered is valid as per the design of the questionnaire. For example, age cannot be entered as an alphabetical value.
- Skip Checks: To make sure that the question is chosen logically correctly based on a previously answered question.

Ethical Considerations

Following three categories of ethical norms advocated by our consortium will be adhered to by all project staff:

Integrity

- The staff on payroll or contract always demonstrates honesty, integrity, and professionalism at all times.
- The team understands and appreciates that, while primary data represents attributes of real people, the actual person is not described in the reports.
- The staff is aware of applicable statutes, regulations, practices, and ethical standards governing data collection and reporting.
- The team reports information accurately and without bias.
- The team is accountable, and holds others accountable, for ethical use of data.

Data Quality

- The team promotes data quality by adhering to best practices and operating standards.
- The team provides all relevant data, definitions, and documentation to promote comprehensive understanding and accurate analysis when releasing information.

Security

- The team treats data systems as valuable organizational assets and hence data backup is a mandatory affair.
- The team safeguards sensitive data to guarantee privacy and confidentiality as our servers are accessible to limited staff only.

Within the ambit of the above ethical norms, the team for this assignment would ensure that no violations like collecting data not pertaining to this assignment, accessing areas within the institution premises for which approval has not been taken etc. are committed during the data procurement from various institutions.

The team would also ensure that any data which may have been classified as confidential is not disclosed intentionally or unintentionally. Any other issues that may emerge during the course of the assignment, will be informed to the client and as per the advice given, necessary safeguards would be undertaken by the consultants.

Real time access to status of fieldwork/ online monitoring: Efficient and fast communication is a pre-requisite for any survey these days to identify problems early on and introduce mid-course corrections. Ipsos globally and in India is transitioning away from PAPI to use of CAPI which helps addresses some of the inherent challenges of PAPI survey in terms of quality and reporting. CAPI will allow the core team to get daily updates across all centres. A dedicated project management team will monitor completes and review trends in data to review that the interviews are being conducted as planned and the quality of interviews is good. CAPI allows us to capture GPS coordinates that is useful in tracking spread of locations for the interviews and ascertain that the sampling protocols are followed, facility to record part of interviews, and capture photograph with consent of respondents provide additional levels of quality checks.

The research team will assess the minimum quality check requirements that can be drawn from CAPI and implement for the survey. We will also schedule regular hub conference calls at key stages of the project can help disseminate essential information, and that hub managers and junior members of the core coordination team are in daily written/telephone contact with field managers.

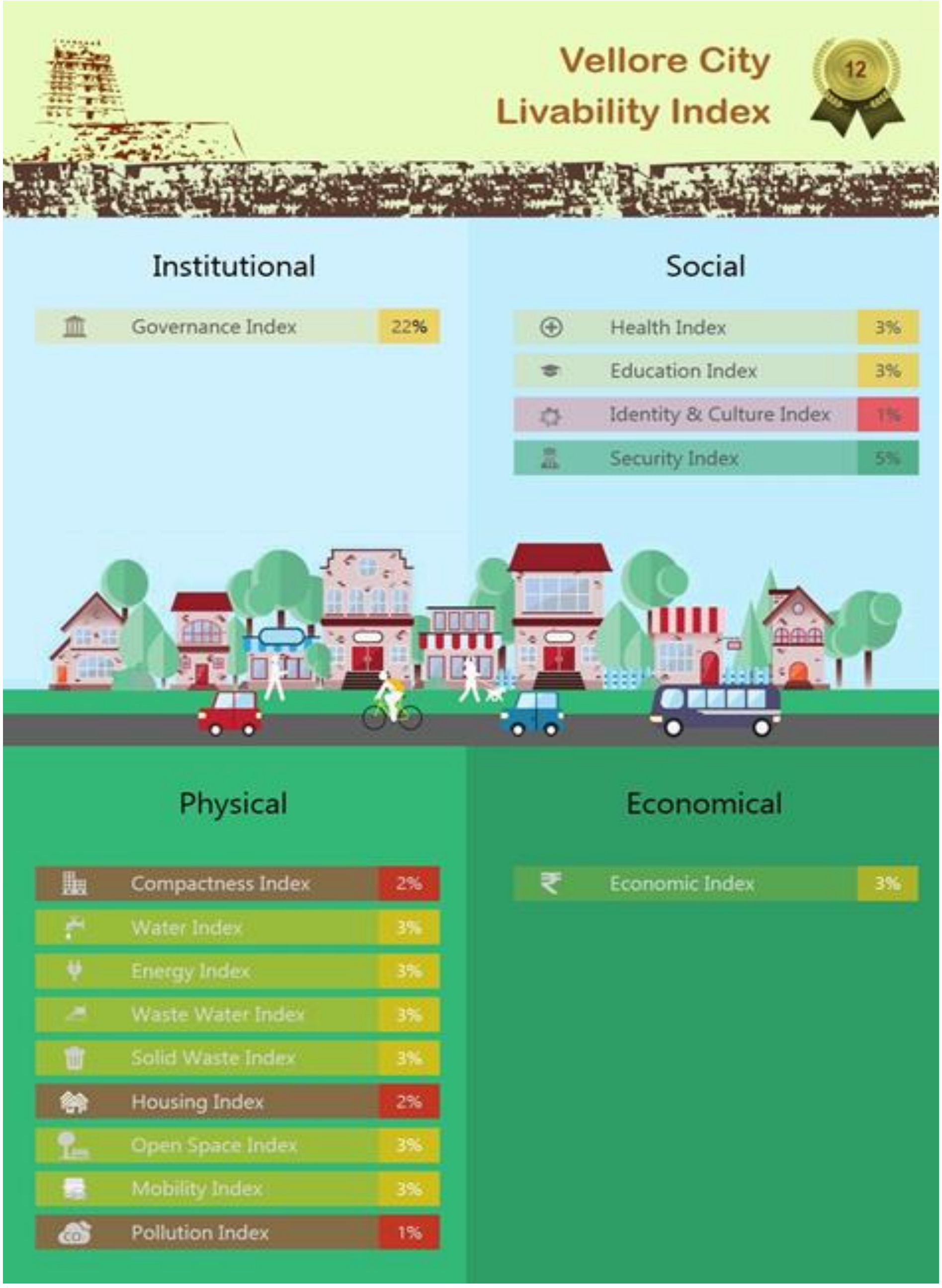
Phase 4: Data collation, sign-off and finalisation [Week13 – Week 14]

Once we receive secondary data, validated secondary data and primary data we will collate these into a single format and share them back with the cities post detailed scrutiny and review with proper citation. It is possible that there could be some variation in the secondary data provided by cities vis-à-vis data validated for some of the indicators identified under Category C. For instance, data from City A may report 80% of the schools to have facilities for using digital content but physical validation exercise could report 70%. Such variations are possible even after due consideration of aspects such as sampling only from sub-set of schools reported to have such facilities, random selection of schools etc. We will be developing protocols for addressing such issues during the preparatory phase itself and will work closely with the State Nodal Officer who will also serve as the data ombudsman to help reconcile such deviations.

Overall, each city will have a window of two weeks to review the final data sets and indices and revise/modify and sign-off on their datasets. Post sign-off, we will finalise the datasets (considering receipt of new data from cities during the two-week review window) and develop final indices for report preparation and visualisation.

Phase 5: City Assessment Reports, Media and dissemination [Week 15 – Week 20]

This phase involves preparation and submission of city wise final assessment reports and dissemination of the assessment through a national workshop. The structure and content of the report will be standardised across different city typologies and finalised in consultation with the MoHUA on an iterative basis. An illustrative report template is presented below for reference.


Vellore City
Livability Index
12
Institutional
Governance Index 22%
Social
Health Index 3%
Education Index 3%
Identity & Culture Index 1%
Security Index 5%
Physical
Compactness Index 2%
Water Index 3%
Energy Index 3%
Waste Water Index 3%
Solid Waste Index 3%
Housing Index 2%
Open Space Index 3%
Mobility Index 3%
Pollution Index 1%
Economical
Economic Index 3%

Data availability and quality assessment framework

Cities typically lack the ability and the institutional mechanisms to reliably collect data. Datasets which have internal decision-making linkages are usually better reported than datasets reported solely for compliance purposes. Hence, both criticality and reliability of datasets is not homogenous, but specific to each indicator, and possibly jurisdiction. In this context, we present a rubric to help assess quality and reliability of datasets below:

Table 3: Rubric for Data Quality Assessment

No.	Indicator	Notes
Data Quality and Reliability		Designed to provide an overview of the availability and quality of the dataset in discussion. Calculated as a combination of five sub parameters below
A	Availability	Measure of whether the dataset is available at all. A multiplicative factor (in case data on the indicator is not available, the data quality/availability is given a score of zero, without any further investigation into other sub areas)
B	Open access	Measure of the open availability of the dataset in question. Incorporates both user access (which user groups is the data made available to), nature of access (open access, or access upon request), and the format of availability (paper vs. machine readable formats)
C	Representativeness	In case the collected data is through a sample, this captures the representativeness of the same. A measure of robustness of the sampling and estimation methodology
D	Frequency	Measures the gap between the desired frequency of reporting for the dataset (based on global standards and best practices) with the available frequency. It is important to note that the frequency of datasets is a function of their mutability (e.g. topographic information can be decadal, but toilet usage behaviours warrant more frequent data)
E	Granularity	Measures disaggregation at two levels – by spatial characteristics and user characteristics
F	Reliability	Measure of mechanisms available to audit the data, and the results of such audits. A proxy to the level of confidence which users typically have for the dataset, third party validation etc.

Based on the insights from the data collection exercise pertaining to sectoral and city level data ecosystems, we will develop a data availability and quality assessment framework considering the above parameters.

We propose a multi-pronged platform for dissemination of the assessment of the liveability status of the cities. Apart from a national level workshop proposed by the MoHUA to share the findings from the study and set the stage for a futuristic vision wherein the information generated as part of this country wide exercise could inform urban planning, we propose to disseminate the findings to a larger global audience by leveraging our outreach capacities. Overall our media and dissemination channels include the following:

The Economist FILMS
THE Hub
National workshop
The Hub @ The Economist
Policy Briefs
Blogs/Articles

The National workshop could be structured as a panel discussion comprising international and national experts from academia, industries, public authorities, media, civil societies to discuss and debate the concept and measurement of urban liveability and its role in urban and infrastructure planning. City level liveability assessment could be presented on the sidelines of the workshop while the focus would be to help understand how people (and special groups thereof such as women, transgenders, children, specially-abled, senior citizens etc.) assess quality of life, wellbeing and citizen aspirations, and translate and scale them to inform how cities and regional centres can be better designed and managed.

Specific focus could be on defining conditions under which scientific models can encapsulate adaptive and heterogeneous social responses in a meaningful way.

Agenda of National Workshop

- *To drive new knowledge development into the interaction of assets, people and networks across critical aspects of the infrastructure system.*
- *To invite activity and creativity in knowledge development on infrastructure and infrastructure planning and management in the future*

We propose to keep the dissemination as an ongoing activity through a series of engaging and interactive content assets designed for marketing and dissemination such as infographics, photo journals covering State/UT workshops, city reconnaissance missions and data visualisation tools under the Ministry's name both before and after the National workshop.

It is proposed that the liveability assessment results could be housed on 'The Hub' – a prestigious online knowledge dissemination platform of the Economist Group that has global outreach. Our team would design the hub and finalise the design in consultation with MoHUA. The Liveability Index Hub would

host policy briefs, two interviews from senior officials/policy makers from the MoHUA, infographics and an interactive digital data map of India containing assessment results. Each of the 116 cities will contain the liveability index for that city, its ranking, as well as the rankings for the four underlying pillars of liveability for each city.

Quality Assurance

We provide high quality of services are committed to continuously improving what we do. Our integrated quality, compliance and information security management system, along with our quality assurance guidelines ensures all our projects are delivered to quality standards that we are committed to. Ipsos is ISO 20252 certified company for both research and field (Enclosed Certification) that requires that all processes are carried out in accordance with standards laid out in ISI 20252:2012. Athena and EIU serve reputed clients globally.

Our Quality Objectives

Our most important quality objectives are:

- To *provide assurance* to Ipsos's clients that we will deliver reliable and robust research findings by, among other measures, meeting the requirements of the international quality standard for market research, ISO 20252.
- To support the business in meeting its overall objectives, including client retention and new business development – by having effective policies, procedures and practices in place to ensure that we all work to the same quality standards.
- To minimise risk to the business by focussing on quality and continuous improvement.

We achieve these objectives by having in place a Quality Assurance System which is continually reviewed for effectiveness and improvement in a number of ways:

At every step of the project, we will ensure the compliance with the standard working procedures and quality assurance methods that have been designed for the success of the project. Online data input and collection platforms will be very powerful tools that will enable the PCC (Project Command Centre) Team to have tighter control over research process, accurate and up-to date information about state teams' performance and more efficient fieldwork monitoring and quality control. In addition to this, many standard procedures, such as training, supervision and back checking, will be put in place to ensure quality standards are adhered to (and exceeded where appropriate).

Throughout this proposal we discuss the measures we will take to ensure high quality deliverables which will meet the objectives of the study. They are summarised here in brief:

- Carefully resourced and structured Coordination Team with the relevant skills and experience to design and deliver international studies of this nature including regional social research experts;
- Internal field teams that are part of Ipsos State offices who are familiar with the geography, local dialect, nuances, and experienced in working to expected quality standard.
- Cascading training approach starting with ToT for core team, Centralised State Coordinators training and state level face to face trainings for validation and primary survey
- Direct observation of interviewer training and the early stages of fieldwork in each zone;
- Using Ipsos Dimensions/ Dooblo platform to closely monitor progress and quality indicators across all states allowing any issues to be identified early (daily updates from the field);
- Weekly conference calls with all local teams to discuss the current situation and with MoUHA to assess actual progress and make key decisions for the next steps;
- A detailed risk register updated on a weekly basis;
- At least 15% of back-checks in states;
- A dedicated Quality Director assigned to the project team.

Our approach to minimising problems

As outlined above, we are keen to properly set up this study to minimise problems and risks during execution. In addition, effective project management using an experienced PCC Team with the correct balance of technical expertise and project management expertise means that problems are avoided through clear instruction, regular and open communication, and careful monitoring and review during the project set-up and throughout project implementation. However, we know that even with the best teams in place the complexities of large-scale projects mean that problems do arise, and sometimes quick and effective intervention is needed. We are determined to be proactive and set up the process in a way it will enable us to detect any problem in an early phase and solve it before it escalates.

As a consortium responsible for implementing the project, we regard risk management as a key part of project management. We will put in place **a risk management process** because we know from experience that management of a survey such as this involves dealing with many logistical challenges, complexities and risks.

We are keen to discuss with you all potential risks in the inception meeting and to register all issues we might experience during the process. This will be a 'live' document, reviewed weekly throughout the project both internally and with you. As Project Co-ordinators, Ankit and Tripti, will retain overall responsibility for risk management, will work with the Technical Team and functional to find solutions if any aspect of the project is deemed at risk.

We would provide a full assessment of what we believe to be the most important risks to the successful completion of the project. This would constitute a starting point for further discussion with MoHUA. Below we have provided an initial assessment of what we believe to be the most important risks to the successful completion of the project.

Key risks and mitigation plan

Risk description	Probability	Impact	Mitigation Plan
Delays in finalizing the schedule for state workshops	Low	High	An intense preparatory phase has been outlined wherein co-ordination with the state mission directorates is expected to begin within the first week of the inception kick-off meeting at MoHUA. A detailed workshop schedule will be developed within the first week of project commencement and a discussion will be initiated early on to fix the dates and finalize and publish the workshop calendar.
Inconsistency in the way data is interpreted and entered by cities	High	High	There is a possibility that the city representatives might interpret the data entry requirement in a manner inconsistent with the required protocol. In addition, to an intensive training session, where cities will be apprised of the data requirements, data sources and entry protocols, the regional and state co-ordinators will be responsible for both auditing the way in which the presented data is being sourced and troubleshooting if there are discrepancies
Delays in data entry by the city	Medium	High	Given the very short timelines of the exercise, any delays in data entry by the city can have serious cascading effects on the overall timelines of the programme. In addition to close follow up that the consulting team will undertake with every city, we hope to co-ordinate closely with the state nodal officer (appointed in every state) to ensure that cities comply with the stated timelines
Challenges in reconciling physical audit data with secondary data	High	High	There is a possibility of discrepancy between the audited data outcomes and the self-reported data. To seamlessly resolve and respond to such instances, we hope to jointly set up a process in place in consultation with MoHUA representatives and the state missions right at the outset and inform cities of the same during the training workshop
Challenge securing	Medium	High	Ipsos' has local teams who has experience of working in the project cities so they are familiar with the process for

Risk description	Probability	Impact	Mitigation Plan
permissions for research			seeking consent for interviewing. As per our experience of seeking permission for interviews in different officials , a formal letter from client side will be issued to the local office. A senior team member will visit the offices with the letter for prior consent. assuring confidentiality and seek their inputs on timings, accessibility to respondents.
Poor administration of questionnaire by the data collection team	Medium	High	Qualified and experienced field investigators will be recruited. The training programme (face to face) will be intensive and focus on all aspects of the study, sensitisation for self on issues of gender, being aware of implicit biases, and tips on being aware and to counter this bias during data collection. Levels of monitoring in form of accompaniment by supervisors will also facilitate identifying interviewers demonstrating any bias and take corrective measures.
Fieldwork delays- Citizen Surveys and Physical Validation	Medium	Low	At the planning stage, Ipsos local team will review the list of selected clusters for the survey and their geographical spread. Number of teams will be recruited based on the geographical spread of sample locations. The field movement plan will be developed to ensure that a team covers contiguous clusters minimizing travel. The plan will also include off days and travel days with buffer days that allows timely completion.
Challenges in physical validation and primary data collection	Low	High	Quality Assurance plan developed at the onset of fieldwork preparation will detail out the measures and process at each stage of planning and fieldwork to ensure quality. Beginning with training, field plan, and field monitoring detailed parameters of quality and process to monitor the same will be detailed. Each team working will be accompanied by a supervisor and will be monitored daily. Additional layers of

Risk description	Probability	Impact	Mitigation Plan
			monitoring in form of state coordinators will be deployed who will manage all the cities of a particular state. More over the state coordinators will be in continuous coordination with zonal coordinators. Formats for monitoring will be developed that will focus on reviewing the interviews and interviewers' performance. Regular debriefs and feedback sessions will be led by field coordinator and state coordinators during fieldwork
Inconsistency in data collected	Medium	High	Field investigators when administering paper survey are prone to making mistakes in following the flow and may not check responses that seem inconsistent. To counter this, we propose using CAPI for administration. The scripting process will take care of the logic and consistency check and improve the quality of interviews.
Refusal of respondents to take part / high non-response rate	Low	High	All interviewers will be fully briefed on how to deal with refusal. They will be trained to reassure the respondent that the research is independent, that all information provided is confidential, and to emphasize the survey's short length and the importance of the topics it covers. Interviewer training will stress the importance of confidentiality, safety and ethical aspects of the survey. Reasons for refusal will be recorded so any potential issues can be identified early and resolved.
Issues related to data quality and storage	Low	High	The Ipsos Team adheres to the highest possible standards for market research set by European Society for Opinion and Market Research (ESOMAR) and has been awarded numerous certifications for quality in market research, ensuring data security, confidentiality, and participant safety. Ipsos data storage is audited annually as part of our ISO 27001 and 20252 accreditations.
Issues related to IT security	Low	Medium	We are proud of the reliability and security of the Ipsos data storage systems, at the forefront of best practice in information security. Ipsos has a comprehensive backup

Risk description	Probability	Impact	Mitigation Plan
	🟩	🟨	system to ensure that we can retrieve data files from that day or, if necessary, even months beforehand. This system consists of incremental, daily, weekly, and monthly full system backups. All emails, files, and internet content are swept regularly for viruses, and our servers have protection software.

B. Work Plan

Our approach to this assignment seeks to fully leverage the first 5 weeks of the project as a phase of intensive preparation where all the key templates, tools and formats for secondary and primary data collection will be developed and submitted for inputs and approval to MoHUA. This will allow us time to deliberate on the data collection instruments as well as the interface design and ensure that we pilot test the prototypes to ensure that the entire data entry process is hassle free for the city. Efforts will also be made to mine and integrate the secondary data sets collected through different programmes (Smart City Mission, AMRUT, HRIDAY etc.) and already available with the ministry to create 'pre-filled' instruments (with the source indicated) that may be validated by the cities.

Developing the indicators (defining specific data points to be collected) and ensuring that there are bespoke data collection protocols and sources will be lead by the team by drawing on international benchmarks and national standards.

This phase will also see us commence engagements with state mission directorates to ensure that the scheduling of workshops is in line with the stated timelines. A draft structure for every workshop, with the list of participants required/desired, will be circulated within a week of the inception kick off with MoHUA to give the state mission directorates enough time to plan and mobilize resources. The training material with supporting reading material will be circulated at least 1 week before the training commences to provide participants with enough preparation time. State level discussions will also serve as a channel to do a first level reconnaissance on data availability and map the current sources and the need for proxies. Draft frameworks for documenting the workshop proceedings and the city level assessment reports will also be developed during this phase, along with an internal training workshop for the core staff.

Another unique value proposition that this team brings to the table is an effective global and national media and dissemination strategy and real-time tracking system to closely monitor the progress of the assignment. The blueprint for the media strategy and the tracking system will also be developed and submitted for inputs with the MoHUA in the preparatory phase.

Phase 1: Deliverables

This phase will culminate with the following deliverables at end of 5 weeks from project commencement:

1) Indicator development
2) Data collection instruments (primary and secondary)
3) Data entry portal (secondary)- Beta version
4) Blueprint for media strategy and project progress tracking
5) Workshop structure, content and participant list
6) Draft templates for workshop proceedings and city reports
7) Training of core staff (Key Consultants, Regional Co-ordinators and State Co-ordinators)
8) Framework for city GDP measurement

Phase 2, which is expected to last 3 weeks, will commence with the launch of the 'Liveability Tracker' and will see the roll out of the state workshops and city reconnaissance visit, led by a team of 20 trained

professionals. The training of the field staff (field supervisors and enumerators) will also be conducted during this phase. The key outcomes/deliverables envisaged under this phase include:

Phase 2: Deliverables

1. State workshop and city-reconnaissance reports
2. Finalization of data entry interface and collection protocols based on feedback from cities
3. Updation of the Liveability Tracker
4. Dissemination of the workshop interactions and outcomes through social media

Much of the actual data collection is expected to be undertaken in phase 3, which will be for a period of 4 weeks, and will be backed by a team of market research professionals and analysts who will perform real time QC checks on the quality of data that is generated and aggregated at the back-end. The core consulting staff alongside the network of state and regional coordinators will work closely with the cities and the field staff to trouble shoot on questions/clarifications through a network of help-desks and work towards encouraging cities to complete data collection over a period of 10 days. This phase will also see the commencement of the primary surveys and physical validation, which will be closely supervised with strong QC checks. Unique geo-spatial sampling methods will be deployed to ensure that we capture citizen feedback in the context of different geo-spatial incident conditions and 600 citizens (with 33% of the sample concentrated in slums) will be interviewed in every city. Open data that is spatial will also be leveraged to validate certain data sets in combination with physical audits of a random set of units. The key deliverables in this phase include:

Phase 3: Deliverables

1. Sampling plan for citizen surveys
2. Raw data sets

Each city will be given an opportunity to review the final data sets in detail and sign off on the same in phase 4. Reconciliation between self-reported and audited data if any will commence in this phase and the index will be developed and the cities will be ranked based on the formula. The draft and final city assessment reports will also be prepared in this phase over an 8-week period and submitted for approval to MoHUA.

Phase 4: Deliverables

1. Ranking List
2. Draft and final city assessment reports
3. Updated online tracker/portal
4. Social media dissemination

Phase 5, which is likely to last 4 weeks, will involve creating a dedicated economist portal with the findings of the study to be disseminated to a global audience and will culminate with a national workshop where the experience and the findings of the exercise are shared with all the cities and other key stakeholders. Special focus on the use-case applications of this process and alignment with national and global programs and specific opportunities to strengthen data interoperability and quality will be discussed.

Phase 5: Deliverables

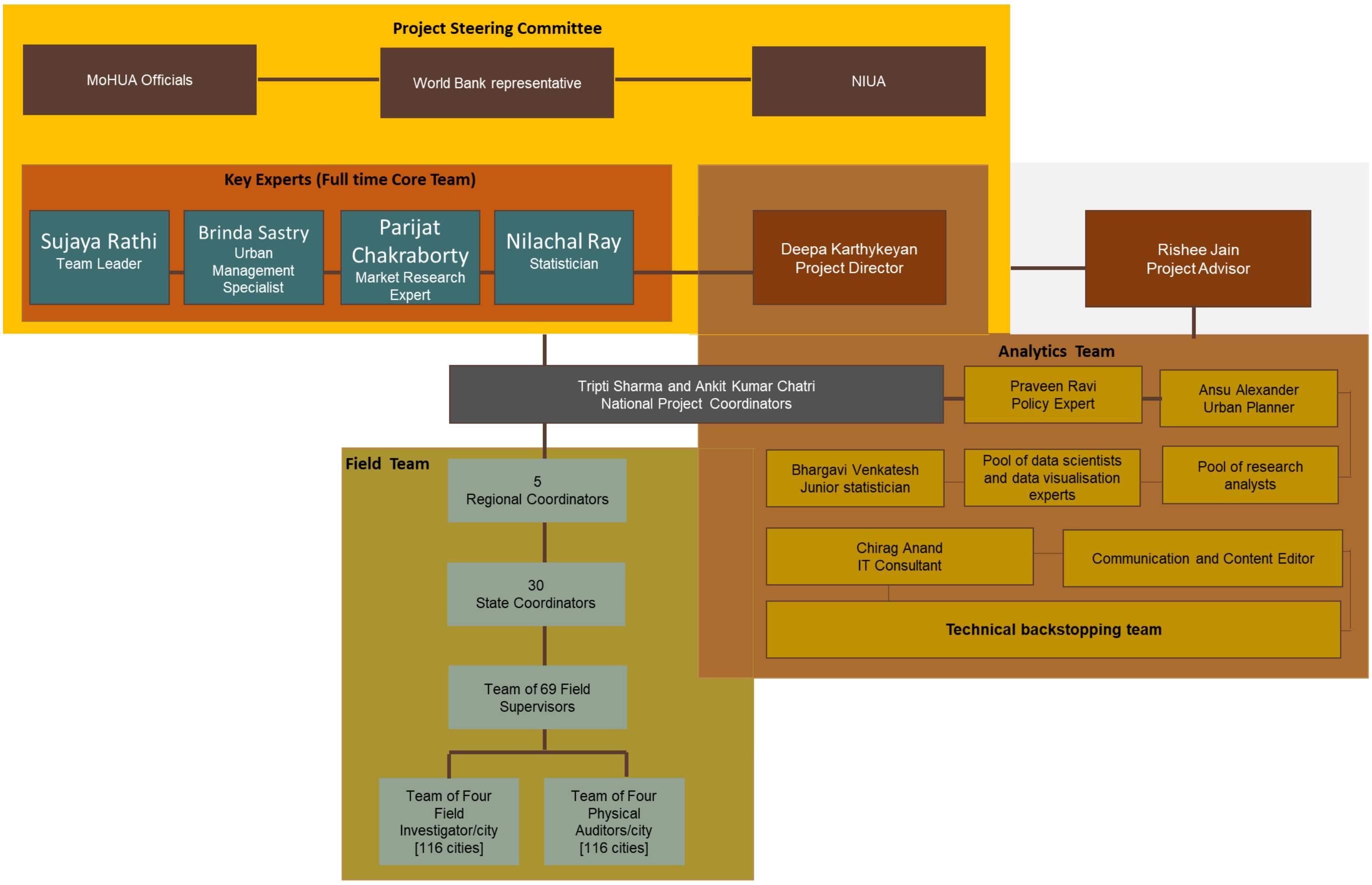
1. Economist Hub Portal
2. National workshop
3. White paper on use-case applications, interoperability and levers

C. Organization and Staffing

We propose a four-tier project planning, governance and execution team for timely completion of the overall project and sub-tasks thereof. For continuous updation and monitoring of the overall project progress we propose to constitute a Project Steering Committee with representatives from the MoHUA, NIUA, World Bank, Full-time Core/Key Experts and Project Director to conceptualise, plan, guide and troubleshoot during the 20-week period. The Core/Key Experts, Project Director, National Project Coordinators, and Senior members from the Support/Analytical Team will constitute the Project Command Centre Team. We have structured the Project Command Centre (PCC) Team to ensure that the appropriate level of skills, experience and resource is available to carry out the tasks involved in a timely and cost-effective manner. The PCC will coordinate and manage all activities for the Assessment of Liveability Indices and provide a central point of contact for both MoHUA and the Technical Team, State Specific teams. The PCC will ensure compliance of with the working procedures and quality assurance measures that have been designed for the success of this project.

Two national level project coordinators along with five regional coordinators and 30 state/UT level coordinators will manage information exchange across the core team, field team and support/analytics team. A 15 to 18 member support team comprising senior economists, policy expert, statisticians, data scientists, visualisation experts, senior analysts, urban planner, IT expert and content editor will provide research, analytical and technical support to the core and field teams. Figure below presents our organisation and staff of key and non-key experts on this assignment. The Core Team, Project Director, Project Coordinators, and regional and functional teams illustrated in our team structure will be responsible for the overall design and delivery of the central tasks as well as monitoring quality on each. They are supported by an experienced senior director of the consortium

The core team will be supported by 5 regional coordinators all senior permanent staff of Ipsos who will coordinate all activities for the project for the states in their region. The Regional Coordinators will support the State Facilitators in scheduling and conduct of state level workshops, support facilitation of city level kick-off meetings, oversee the translation of the questionnaire and other materials into the relevant languages, provide feedback on the pilot and oversee all data collection activities. The Regional Coordinators will attend a project briefing in Phase 1 before delivering the training to their team members. They will contribute to the interim and technical reports and be responsible for reviewing and approving the datasets for the states and cities in their region. At the State level, the State Coordinators/Facilitators will be responsible and the POC for State Mission Director's office and allied departments. They will be supported by city specific teams for carrying out the tasks outlined such as scheduling and conduct of state level workshops (supported by Regional Coordinator) and PCC team, city reconnaissance studies, coordinating and facilitating submission of secondary data, training the city teams for primary validation, and HH surveys.


Project Steering Committee
MoHUA Officials
World Bank representative
NIUA
Key Experts (Full time Core Team)
Sujaya Rathi
Team Leader
Brinda Sastry
Urban Management Specialist
Parijat Chakraborty
Market Research Expert
Nilachal Ray
Statistician
Deepa Karthykeyan
Project Director
Rishee Jain
Project Advisor
Analytics Team
Tripti Sharma and Ankit Kumar Chatri
National Project Coordinators
Praveen Ravi
Policy Expert
Ansu Alexander
Urban Planner
Field Team
5
Regional Coordinators
Bhargavi Venkatesh
Junior statistician
Pool of data scientists and data visualisation experts
Pool of research analysts
Chirag Anand
IT Consultant
Communication and Content Editor
30
State Coordinators
Technical backstopping team
Team of 69 Field Supervisors
Team of Four Field Investigator/city [116 cities]
Team of Four Physical Auditors/city [116 cities]

Planning and Conceptualisation team comprising Project Director, Project Advisor and National Project Coordinators

Project Coordination team comprising Team Leader, National Project Coordinators and Regional Coordinators

Data Collection team comprising State Coordinators, Field Supervisors, Field Investigators and Physical Auditors

Support team comprising Senior Economist, Data analytics, visualisation, quality control, IT and technical backstopping staff

FORM TECH 5:
Work Schedule and Planning for Deliverables

TECH-5: WORK SCHEDULE AND PLANNING FOR DELIVERABLES

Our five phased workplan spread over 20 weeks is presented below:

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 1: Preparatory Phase	■	■	■	■	■															
1	Literature review of existing studies and data sources (Smart Cities Report, AMRUT reports, Data.gov, etc.) to prepare baseline for each city	■	■																		
2	Data availability/gap assessment	■	■																		
3	Preliminary review and detailing the specific data points to be collected and finalising collection protocols		■	■																	
4	Development of Stakeholder Participation Structure			■																	
5	Development of Workshop Participation Structure			■																	
6	Finalisation of workshop dates for the state workshops'			■	■																
7	Development of data entry application /interface		■	■	■																
8	Prototypes for a) Nation-wide workshop tracker b) City-level data updation dashboard c) Data visualisation			■	■	■	■	■													
9	Draft report templates						■	■													
10	Preparation of Research Instrument for primaries and physical validation							■	■	■											
11	Data entry and quality control template				■	■	■	■													
12	Data administration protocols and data collection monitoring framework						■	■													
13	Framework for estimate city GDP	■	■	■	■	■	■														
14	Formulation of media strategy			■	■	■	■														
15	Approach note for data interoperability			■	■	■	■	■	■	■	■	■	■	■	■						

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2: Conducting State/UT Workshops and City Reconnaissance Missions																				
16	Organisation of State-level Workshops					■	■	■													
17	Launch and updation of Nation-wide workshop tracker					■	■	■													
18	Preparation of workshop proceedings, materials and key-takeaways					■	■	■													
19	Inception Report						■	■	D1												
20	Internal ToT, training of Field Staff and orientation of ULB Official						■	■	■												
21	City level Reconnaissance meetings						■	■	■												
22	Final data availability/gap assessment							■	■												
23	Final list of indicators								■												
	Phase 3: Data collection					■	■	■	■	■	■	■	■								
24	Finalisation of secondary data collection interface/application					■	■	■	■												
25	Secondary data collection									■	■	■									
26	Setting up a region/state level help-desks for near-real-time troubleshooting)								■	■											
27	Primary data collection (where no secondary data is available)										■	■									
28	Physical audit of secondary data provided by cities (all relevant indicators)										■	■									
29	GIS based audit of secondary data provided by cities										■	■									
30	Real-time updation of data progress dashboard and periodic update to State Government Nodal Officers/PSC								■	■	■	■									
31	Near-real time quality checks and rectification										■	■									
32	Draft assessment report												D2								

Sl. No.	Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
	Phase 2: Conducting State/UT Workshops and City Reconnaissance Missions																				
	Phase 4: Data collation, Sign-off and Finalisation													■	■						
33	Preparation of Draft data sets (Indices wherever complete data is available) and circulation back to cities for validation											■	■								
34	City level discussions for addressing queries and incorporating revisions, modifications etc.													■	■						
35	Sign-off on final list of data points/ indicators													■	■						
	Phase 5: Report Preparation, National Workshop										■	■	■	■	■	■	■	■	■	■	■
36	Indices development and visualisation										■	■	■	■	■	■	■				
37	Submission of final assessment report															■	■	■	■	■	D3
38	Organising National-level Workshop															■	■	■	■	■	■
39	Submisison of digital database and raw database																			■	■
40	Framework for City GDP Estimation					■	■	■	■	■	■	■				■	■	■	■	■	■
41	Framework for interoperability					■	■	■	■	■	■	■				■	■	■	■	■	■

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

FORM TECH 6:
Team Composition, Assignment, and Key Experts' Inputs

TECH-6: TEAM COMPOSITION, ASSIGNMENT, AND KEY EXPERTS' INPUTS

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
KEY EXPERTS												
K-1	Sujaya Rathi	[Team Leader]	[Home]	2	[Home]	1	[Home]	2		5		5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-2	Brinda Sastry	[Urban Management Specialist/ Planning Expert]	[Home]	2	[Home]	1	[Home]	1.5		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
K-3	Parijat Chakrabarty	[Market Research Specialist]	[Home]	0.5	[Home]	1	[Home]	0.5		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
K-4	Nilanchal Ray	[Statistician]	[Home]	1	[Home]	0.5	[Home]	2		3.5		3.5
			[Field]	0	[Field]	0	[Field]	0			0	0
			Subtotal (D-1)	5.5	Subtotal (D-2)	3.5	Subtotal (D-3)	6		15		15
NON-KEY EXPERTS												
N-1	Rishee Jain	[Non-Key Expert -1]	[Home]	0.2	[Home]	0	[Home]	0.3		0.5		0.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-2	Deepa Karthykeyan	[Non-Key Expert -2]	[Home]	0.5	[Home]	0.5	[Home]	0.5		1.5		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-3	Tripti Sharma		[Home]	1.5	[Home]	0.5	[Home]	2		4		4.5
			[Field]	0	[Field]	0	[Field]	0				

N°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
N-4	Ankit Kumar Chatri		[Home]	2	[Home]	0.5	[Home]	2		4.5		4.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-5	Praveen Ravi		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-6	Dr. Rajarshi Singh		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-7	Ambrin M		[Home]	0.5	[Home]	0.5	[Home]	1		2		2
			[Field]	0	[Field]	0	[Field]	0			0	0
N-9	Bhargavi V		[Home]	0.5	[Home]	0	[Home]	0.5		1		1
			[Field]	0	[Field]	0	[Field]	0			0	0
N-10	Kowshik Ganesh		[Home]	0.75	[Home]	0	[Home]	0.75		1.25		1.5
			[Field]	0	[Field]	0	[Field]	0			0	0
N-13	Ansu Alexander		[Home]	0.5	[Home]	0.25	[Home]	0.5		1.25		1.25
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Anusha Ghosh		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Samvita Kalyan		[Home]	2	[Home]	1	[Home]	1		4		4
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Leo Abruzzesse	Home	[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5

N°	Name	Expert’s input (in person/month) per each Deliverable (listed in TECH-5)								Total time-input (in Months)		
		Position	D-1 2		D-2 1		D-3 2			Home	Field	Total
N-14	Roxana Slavcheva		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Stefano Scuratti		[Home]	1.5	[Home]	0	[Home]	1		2.5		2.5
			[Field]	0.25	[Field]	0	[Field]	0.25			0.5	0.5
N-14	Regional Coordinators: (5 Nos)		[Home]	2.5	[Home]	5	[Home]	2.5		10		10
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	State Coordinators (30 Nos)		[Home]	7.5	[Home]	15	[Home]	7.5		30		30
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Executives (116 Nos)		[Home]	0	[Home]	290	[Home]	0		290		290
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Physical Auditors (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Enumerators (232 Nos)		[Home]	0	[Home]	348	[Home]	0		348		348
			[Field]	0	[Field]	0	[Field]	0			0	0
N-14	Field Supervisors (116 Nos)		[Home]	0	[Home]	232	[Home]	0		232		232
			[Field]	0	[Field]	0	[Field]	0			0	0
							Total			1306.5	1.5	1308

1 For Key Experts, the input should be indicated individually for the same positions as required under the Data Sheet ITC21.1. 2 Months are counted from the start of the assignment/mobilization. One (1) month equals twenty-two (22) working (billable) days. One working (billable) day shall be not less than eight (8) working (billable) hours.

Section 3 – Technical Proposal – Standard Forms

3 "Home" means work in the office in the expert's country of residence. "Field" work means work carried out in the Client's country or any other country outside the expert's country of residence.

CURRICULUM VITAE (CV)

CV of Team Leader

Position Title and No.	Team leader
Name of Expert:	Sujaya Rathi
Date of Birth:	15th September 1969
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Masters in Community and Regional Planning, Iowa State University, USA, 1998
- Masters in Economics, Jadavpur University, India, 1994

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
November 1, 2017 – current	Self/ Independent Consultant	India	Urban transport, urban sanitation, urban planning, decision support, capacity building Project involved: Faecal Sludge Management (FSM)Toolbox Rapid Assessment and Market Priming, Athena Infonomics, Client: Bill and Melinda Gates Foundation, November 1, 2017 – January 31 2018

June 2010 to October 2017	Center for Study of Science Technology and Policy (CSTEP)/ Principal Research Scientist Ref: Vivek Vaidyanathan, vivek.v@cstep.in	India	Led and formed the urban planning team. Responsible for all urban domain projects related to planning, transport, sanitation, development of decision support systems, modelling, infrastructure assessment, evaluation studies, urban development projects such as evaluation of smart city plans, policy analysis Project involved: • Intersectionality-Informed Framework for Implementation of Effective Gender Mainstreaming in WSH: Andhra Pradesh (Bill and Melinda Gates Foundation (BMGF), along with partners Administrative Staff College of India (ASCI), and Centre for Research and Advocacy (CFAR), July 2017 – October 2017) • Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche (Client: International Finance Corporation)- May 2017 – October 2017 • Implementation plan for electrification of public transportation in Kolkata and Bangalore city – Shakti Foundation, 2016-2017 • Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog, 2015 • CSTEP (2015) Electric Vehicles: Technology, Policies and Benefits, 2015-16 – Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore • Need for Government support for public transport – BMTC, 2015 • Review of urban transport in India, 2014 – Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore • Development of Decision Making Platform for Integrated Sanitation Investment Planning – Bill

			and Melinda Gates Foundation, 2013 – August 2017 (Phase 1 and 2) • Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change, IDRC Opportunity Fund, 2015 Other Projects: • Have been involved with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. • Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative • Faculty for Sensitization Module on Urban Transport, IUT, Bangalore, 2013 • Coordinator for India- Fecal Sludge Management Toolbox – validation, dissemination and training. • Worked with Planning Commission, Government of India to develop a systems dynamics model for identifying future development trajectories for India. This chapter titled, "Scenarios: Shaping India's Future" has just been published by the Planning Commission • Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP • Pedestrian Guidelines for Karnataka (Client: Directorate of Urban Land Transport, Govt. of Karnataka)
2006 to 2010	Wilbur Smith Associates, Bangalore, India/	India	Projects Involved: • Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area, 2009-10

	Transportation Project Manager; Contact information for references: available upon request		• Mobility Indicators for Bangalore, India-2008 (Client: Directorate of Urban Land Transport, Govt. of Karnataka) • Guwahati Comprehensive Mobility Plan, 2008-09 • Capacity Building for Sustainable Urban Transport Planning- India, 2008 - Client-DFID-World Bank, Ministry of Urban Development, Government of India • Jaipur Comprehensive Mobility Plan, Jaipur, India-2009 (Client: Jaipur Development Authority) • Chennai Comprehensive Traffic and Transportation Study, Chennai, India-2008 (Client: Chennai Metropolitan Development Authority) • Traffic and Transportation policies and strategies for urban areas in India, 2007(Client: Ministry of Urban Development, Government of India) • Techno-Economic Feasibility for Light Rail Transit, Kolkata, India -2009 -2010(Client: Kolkata Mass Rapid Transit Pvt. Ltd) • Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 (Client: Urban Mass Transit Corporation) • Bagmane Tech Park-Traffic Impact Study, Bangalore, India-2007-2008 (Client: Bagmane Developers)
2003 to 2006	The Transpo Group, Kirkland, WA, USA/ Transportation Project Manager; Contact information for references: available upon request	USA	Projects Involved • Northwest Landing Developments, DuPont (Washington, USA)-2003-2006(Client: Quadrant Corporation, WA, USA) • City of Bonney Lake (Washington, USA) Land-Use-Transportation Plan-2005(Client: City of Bonney Lake, WA, USA) • Interstate-405 Congestion Relief Project (Washington, USA)-2005(Client: Washington Dept. of Transportation, WA, USA)

			• State Route 539 Corridor Study (Washington, USA)-2004-2005(Client: Washington Dept. of Transportation, WA, USA) • PSRC Air Cargo Study (Washington, USA)-2004-2005(Client: Puget Sound Regional Council, WA, USA) University of Washington, West Campus Garage Expansion Environmental Impact Statement (Washington, USA)-2005(Client: University of Washington, WA, USA) • Traffic Calming Study for California Department of Transportation (CalTrans)-2004(Client: California Dept. of Transportation, WA, USA) • City of Bellingham Parking Study (Washington, USA)-2004 (Client: City of Bellingham, WA, USA) • Feasibility Analysis for Wal-Mart (Oregon, USA)-2004(Client: PACLAND, USA) • City of Lynden (Washington, USA) Transportation Plan-2003 (Client: City of Lynden, WA, USA)
2000 to 2003	Howard R Green, Des Moines, Iowa/ Transportation Planner; Contact information for references: available upon request	USA	Projects Involved: • Ankeny Comprehensive Plan, City of Ankeny (Iowa, USA)-2002-2003(Client: City of Ankeny, IA, USA) • 2002 Land-use and Transportation Analysis and Planning, City of Johnston (Iowa, USA) 2002-2003(Client: City of Johnston, IA, USA) • Outer Drive Project, Sioux City (Iowa, USA)-2002(Client: City of Sioux City, IA, USA) • Russell Street Access Management Study, Sioux Falls (South Dakota, USA)-2002(Client: South Dakota Dept. of Transportation, WA, USA) • Traffic Impact study for Century Trace/Century Woods and Windsor Park Development, Johnston, (Iowa, USA)-2002(Client: City of Johnston, IA, USA) • N. 19th Ave Corridor Study, City of Newton (Iowa, USA)-2001-2002(Client: City of Newton, IA, USA)

			• Traffic Impact Study and Regional Land-use Transportation Model Evaluation, West Des Moines (Iowa, USA)-2000-2003(Client: City of West Des Moines, IA, USA) • Transportation Engineering Assistance Program (TEAP), Iowa Department of Transportation2000-2003(Client: Iowa Dept. of Transportation, WA, USA) • West Side Visioning Study (Land Use Update) West Des Moines (Iowa, USA) -20002003(Client: City of West Des Moines, IA, USA)
1996 to 1999	Center for Transportation Research and Education, Iowa/ Research Analyst; Contact information for references: available upon request	USA	Project Involved: • "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. 1997-2000 (Client: Iowa Department of Transportation, IA, USA)
1996-1998	Iowa State University, USA/ Graduate Research Assistant; Contact information for references: available upon request	USA	• Involved in "Multimodal Investment Analysis Methodology" research project for the Iowa Department of Transportation. • Collected data and conducted research on traffic patterns and mode choice behaviors based on several factors. • Developed intercity passenger and freight transportation models based on the research. • Involved in computer applications for development of the conceptual strategy for integrating these models with Geographic Information Systems (GIS).
1994-1996	CII, Kolkata, India/ Executive Officer ; Contact information for	India	• Representative of industry for addressing and analyzing problems related to transport, infrastructure, and economic affairs. Made recommendations on policies and issues to

	references: Indrani Kar, indrani.kar@cii.in		government agencies, on behalf of regional industry. • Responsible for making recommendations to the State Budget to the Finance Ministry. • Conducted seminars and conferences for awareness of contemporary policies and issues, technology transfer between India and United States, Britain, Belgium etc.

Membership in Professional Associations and Publications:

- Member, American Institute of Certified Planners, USA
- Member, American Planning Association, USA
- Individual Member, National Faecal Sludge and Septage Management (NFSSM) Alliance, India
- Member of the Technology and Gender Task Forces of the NFSSM Alliance
- Life Member, Institute of Urban Transport, India
- Alumni, Strategic Non-Profit Management Course-India, Harvard Business School

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Lead the state level and national workshops • Lead the design and implementation plan in conducting Reconnaissance Study of all cities • Survey Design and Indicator Finalization • Analysis Review	Project Name: Reconceptualising Smart Cities: A Reference Framework for India Client: NITI Aayog Year: 2015 Position Held: Project Lead Activities Performed: — Project lead involved in the development and dissemination of a reference framework based on the sustainability principles — Application of the reference framework for analysis of the smart city proposal for Indian cities

• Database Wireframe Design • Review and submission of reports • Client Engagement and Governance Stakeholder Liasoning	— Published a report titled "Reconceptualising Smart Cities: A Reference Framework for India, NITI Aayog,"
	Project Name: Understanding the dynamic changes in India's peri-urban regions and building capacity and resilience in the context of urbanisation and climate change Client: IDRC Opportunity Fund Year: 2015 Position Held: Project Lead Activities Performed: — Contributor to the research on governance, specifically focusing on land and water — Guided and reviewed participatory scenario development and primary surveys.
	Project Name: Engagement with the Planning Commission (for the 12th Plan) to develop a systems analysis of the important forces and their inter-linkages that may direct different future development scenarios for India. Client: Planning Commission Year: 2013 Position Held: Principal Research Scientist Activities Performed: — Participatory consultation, — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Developing analytical systems approach — scenario development and documentation — Reviewed and submitted reports

	Project Name: Saving Cities, Building Towns-Spatial Reorganization of urban regions India, a research project of CSTEP Client: IDRC Think Tank Initiative Year: 2010- 2013 Position Held: Principal Research Scientist Activities Performed: — Principal Investigator for the project, developed methodology, conducted data collection, reporting — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Capacity Building for Sustainable Urban Transport Planning- India Client: DFID-World Bank, Ministry of Urban Development, Government of India Year: 2008 Position Held: Activities Performed: — Gap Analysis of the urban transport planning scenario for the cities of Kolkata, Guwahati, Pune and Bangalore — Development of Alternative Analysis Toolkit and Training Material — Have been involved in capacity building for transportation professional all over India where I imparted training to over 100 officials as part of the "Training the Trainers" program for the Ministry of Urban Development.
	Project Name: Independent contributor for the Urban Transport Planning Module, as part of UMTC mandate from UNDP and IUT development of -Subject Modules in the field of urban

	transportation, towards the Ministry of Urban Development's sustainable urban transport planning initiative scenarios for India. Client: UMTC, GiZ for Ministry of Urban Development Year: 2012 Position Held: Principal Research Scientist Activities Performed: — Independently developed the module — Lead the project and managed the implementation team — Lead the state level and national workshops — Analysis Review — Client Engagement and Governance Stakeholder Liasoning — Reviewed and submitted reports
	Project Name: Mobility Indicators for Bangalore, India Client: Directorate of Urban Land Transport, Govt. of Karnataka Year: 2008 Position Held: Project Lead and Project Manager Activities Performed: — Development of indicators that can be measured regularly — Development of the methodology and templates to be replicated — Year-long dissemination with different stakeholders including the government and the citizens
	Project Name: Traffic and Transportation policies and strategies for urban areas in India Client: Ministry of Urban Development, Government of India Year: 2007 Position Held: Transport Project Manager Activities Performed: — Stakeholder engagement and project management — Data analysis

	— contribution to final recommendations and report.
	Project Name: Review of Urban Transport in India Client: Institute of Urban Transport (IUT), India and Center for Study of Science Technology and Policy, Bangalore. Year: 2014 Position Held: Project Lead Activities Performed: — Project lead involved in the development of urban transport review conceptual and working model which focuses on travel demand, energy consumption and emissions from various categories of cities in India.
	Project Name: Electric Vehicles: Technology, Policies and Benefits, Client Global Green Growth Institute (GGGI) and Center for Study of Science Technology and Policy, Bangalore Year: 2015-16 Position Held: Team Leader Activities Performed: — Involved in the preparation of report to highlight the need for looking at green growth strategies for public transport and identification of policy gaps associated with the adoption of battery electric buses at National, State and City levels
	Project Name: Market Assessment for Adoption of electric vehicles in India, in collaboration with Deloittee and Touche Client: International Finance Corporation Year: May 2017 – October 2017 Position Held: Team Leader Activities Performed: — Stakeholder engagements with the cities of Bhubaneshwar, Bangalore, Chennai and Thane — Coordination with the team — Review of policies, guidelines for EVs in India

	— Study of schemes and policies used globally for promoting EV adoption — Identification of gaps in existing EV schemes/ policies in India — Recommending supply and demand - side incentives to promote investments in EV manufacturing and related infrastructure
	Project Name: Need for Government support for public transport – BMTC Client: BMTC Year: 2015 Position Held: Principal Research Scientist, Project Lead Activities Performed: — Involved in the preparation of report to highlight the need for funding bus system in Bangalore city and recommended the need for alternative funding mechanisms for sustainable public transport in Bangalore
	Project Name: Comprehensive Traffic and Transportation Study for Bangalore Metropolitan Area Client: BMTC Year: 2009-10 Position Held: Transport Project Manager Activities Performed: — Development of the integrated land use and transport strategy for the area — Co-ordination with Consultant doing Structure Plan for the area –working in tandem to ensure consistency with structure plan and the transport plan scenarios — Formulated long term Metropolitan Regional Transportation Strategies for BMR-203
	Project Name: Guwahati Comprehensive Mobility Plan Client: Transport Project Manager and Lead Year: 2008-09

	Position Held: Activities Performed: — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Jaipur Comprehensive Mobility Plan Client: Jaipur Development Authority Year: 2009 Position Held: Transport Project Manager Activities Performed: Data analysis, reviewing modeling outputs and options for mobility — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Chennai Comprehensive Traffic and Transportation Study Client: Chennai Metropolitan Development Authority Year: 2008 Position Held: Transport Project Manager Activities Performed: Land use and transport integration, developing transport strategies — Project management and stake holder engagement — Development of strategic mobility plan — Development of Indicators and benchmarks — Plan recommendations — Report writing and presentation at the citizens/public forum
	Project Name: Techno-Economic Feasibility for Light Rail Transit, Kolkata

	Client: Kolkata Mass Rapid Transit Pvt. Ltd Year: 2009 -2010 Position Held: Transport Project Manager, Project Lead Activities Performed: Methodology design, conducting primary surveys in Kolkata, review transport modeling, suggest technology options, client engagement
	Project Name: Parking Demand Assessment Studies for Development of Multilevel Parking Facilities in Greater Mumbai area, Mumbai, India-2008 Client: Urban Mass Transit Corporation Year: 2008 Position Held: Transport Project Manager, Lead Analyst Activities Performed: Methodology design, reviewed primary data collection methods and survey plan, analysis, recommendations and final documentation

Publications/Articles:

- Singh, Shubhra & Mohan, Riya & Rathi, Sujaya & Raju, Nandimandalam. (2017). Technology options for faecal sludge management in developing countries: Benefits and revenue from reuse. Environmental Technology & Innovation. 7. 10.1016/j.eti.2017.02.004.
- Electronic Waste Management in India: Issues and Recommendations, Shramana Dey, Sonali Anusree Patro, Shubhra Singh and Sujaya Rathi, Annual Technical Volume, Environmental Engineering Division Board, Session-2015-16, The Institute of Engineers, India, 2016
- Sujaya Rathi, Author on the Chapter on India in Pojani, D. Stead (Eds.), The Urban Transport Crisis in Emerging Economies, 1st ed. 2017, XV. This edited volume discuses urban transport issues, policies, and initiatives in twelve of the world's major emerging economies – Brazil, China, Colombia, India, Indonesia, Iran, Mexico, Nigeria, Russia, South Africa, Turkey, and Vietnam - countries with large populations that have recently experienced large changes in urban structure, motorization and all the associated social, economic, and environmental impacts

- Development of the systems model and its interpretation and development of the scenarios for the Planning Commission Report – " Scenarios: Shaping India's Future" http://planningcommission.nic.in/reports/genrep/scenarios_v10712.pdf
- Ashish Verma, H.S. Sudhira, Sujaya Rathi, Robin King and Nibedita Dash, "Sustainable urbanization using high speed rail (HSR) in Karnataka, India" Research in Transportation Economics, 2013, Vol. 38 ,pp. 67-77
- Robin A. King, Sujaya Rathi and H.S. Sudhira, "An approach to regional planning in India," International Journal System of Systems Engineering, 2012, Vol. 3, pp. 117-128.
- Abhik K Das, Sujaya Rathi, "An Empirical Geometric Model for City Expansion", published in the Proceedings of the First International Conference on Intelligent Infrastructure, Computer Society of India, December 2012
- Anantha Lakshmi P, Sujaya Rathi and Abhik Kumar Das. 2015. A Dynamic Model for a Scenario based Analysis of Modal Split of Road based Passenger Mobility, 3rd Conference of Transportation Research Group.
- Anantha Lakshmi P, Sujaya Rathi.2013.Strategies to reduce energy consumption from commuting by employees, Elsevier, Procedia- Social & Behavioral Sciences, Volume 104, Pages 952-961. Available at http://www.sciencedirect.com/science/article/pii/S1877042813045813
- Anantha Lakshmi P, Sujaya Rathi. 2015. Article on 'Intelligent systems for smart and sustainable transport' published in Sustainability next. Available at http://sustainabilitynext.in/cstep/intelligent-systems-for-smart-and-sustainable-transport/
- Sujaya Rathi, Anantha Lakshmi P.2014. Article on 'Building towns to save our cities' published in India Together. Available at http://indiatogether.org/towns-government
- Sujaya Rathi, Anantha Lakshmi P.2013. Article on 'The way out of the mess on road' published in The Hindu. Available at http://www.thehindu.com/opinion/open-page/the-way-out-of-themess-on-road/article4614715.ece
- Holistic approach for Smart Cities mission: Need for a reference framework, Business Standard, July 5, 2015. http://cstep.in/pressroom/newspaper-articles/218
- Think beyond building toilets, Sustainability Next, January 2015, Sujaya Rathi. http://sustainabilitynext.in/toilet-special/think-beyond-building-toilets/ ☐ Republished version: Beyond toilets: Improving the sanitation value chain, Ideas for India, July 20, 2015. http://www.ideasforindia.in/article.aspx?article_id=1480
- Can Bangalore's planners solve its commuter woes?- http://indiatogether.org/need-for-mobilityplan-for-bangalore-economy
- Planning for a climate-resilient city- http://indiatogether.org/urban-planning-and-climateresilience-environment
- Building towns to save our cities, Sujaya Rathi and Anantha Lakshmi, India Together, October 24, 2013

- Are Slums a problem or a solution? The Hindu, 14th July 2013 (http://www.thehindu.com/todays-paper/tp-features/tp-openpage/are-slums-a-problem-orsolution/article4913512.ece) The way out of the mess on road, The Hindu, 14th April 2013
- The Derelict mile, The World Streets Forum (http://worldstreets.wordpress.com/2012/12/13/letter-from-bangalore-the-derelict-mile/)
- Target Sustainability, Become Smart, Sujaya Rathi and Shrimoyee Bhattacharya, Infrastructure Today, March 2015.
- Smart-City Challenge: Building on pillars of good governance, Shrimoyee Bhattacharya and Sujaya Rathi, Economic Times, May 12, 2015.
- What can Bengaluru gain from Smart Cities Mission? Sujaya Rathi and Shrimoyee Bhattacharya, Deccan Herald, August 26, 2016

Expert's contact information: (e-mail: sujaya.rathi@gmail.com , phone: 9900087161)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Sujaya Rathi	Sujaya Rathi	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Urban Management Specialist

Position Title and No.	Brinda Sastry
Name of Expert:	Urban Management Specialist
Date of Birth:	11-JAN-1965
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelors in Architecture programs at the RV College of Architecture, Bengaluru, 1981
- Master of Urban Management and Design, University of Oregon, Eugene, Oregon, USA, 1993
- Diploma in Architecture - equivalent to a degree and recognized by the Royal Institute of British Architects (RIBA) - Center for Environmental Planning and Technology, School of Architecture, Ahmedabad, India, 1988

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
2000 To: PRESENT	VARIOUS GOVERNMENT, PRIVATE AND NGO ORGANISATIONS Positions / ADVISOR, COMMUNITY DEVELOPMENT EXPERT, PROJECT COORDINATOR Contact Information: ROBIN KING, Director of Knowledge Capture and Collaboration, WRI, Washington DC, USA	India	• Institutional arrangements that shape urban settlements within the framework of inclusivity, equity, disaster resilience, and sustainability. • Technical assistance to citizen groups on various urban planning matters, and conducts independent research in the areas of participatory planning, livability, spatial planning, urban governance, and urban design policy implementation

	EMAIL: RKING@WRI.ORG PHONE: +1 (202) 729-7816		
2004 To: PRESENT	RV COLLEGE OF ARCHITECTURE, BENGALURU / ADJUNCT FACULTY	India	• Teaching courses in architecture • Urban management and planning research
2014 To: PRESENT	HABITAT FORUM (INHAF) / PROJECT COORDINATOR Contact Information: KIRTEE SHAH, PRESIDENT, INHAF (HABITAT FORUM) EMAIL: kirtee@ksadps.com , kirtee0107@gmail.com PHONE: +91-99250 10706	India	• Prepared a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy
Nov. 2012 To: Feb. 2013	INDIAN INSTITUTE FOR HUMAN SETTLEMENTS, BENGALURU / VISITING FACULTY Contact Information: Available upon request	India	• Teaching • Urban management and planning research
From: 2012, 2013, 2014, 2016	EPFL LUASSANE, SWITZERLAND, SUMMER SCHOOL IN BENGALURU / EXTERNAL FACULTY	India	• Teaching • Urban management and planning research
2004 To: 2010	GROUPE SCE / EGIS INDIA PVT LTD., BENGALURU/ SENIOR PLANNING CONSULTANT, COMMUNITY DEVELOPMENT	India	• Reviewed and provided technical input on the data analysis and Master Plan Projects

	EXPERT, PLANNING ADVISOR		
2000 To: 2004	DEPARTMENT OF INFORMATION TECHNOLOGY AND BIOTECHNOLOGY, GOVERNMENT OF KARNATAKA/ PLANNING CONSULTANT / PROJECT COORDINATOR	India	• Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
1996 To: 2000	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON, USA / CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net	USA	• Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. Organised and conducted public meetings, workshops and neighborhood walks. Prepared questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000. • Developing design standards and guidelines for residential zones in the city of Portland
1993 To: 1996	CITY OF PORTLAND, BUREAU OF PLANNING, PORTLAND, OREGON,	USA	• Prepared a community plan for 18 neighborhoods in East Portland: Worked with a team to develop alternative zoning concepts and a summary document for

	USA / ASSOCIATE CITY PLANNER Contact Information: JIM CLAYPOOL, Retired City Planner, Bureau of Planning and Sustainability, City of Portland, Oregon, USA EMAIL: jac770@comcast.net		the plan area. Organised public workshops, and worked with the Citizen Advisory Committee to solicit input from neighborhoods and businesses and develop the plan. The plan was abandoned due to lack of funds • Prepared a transportation plan for the Broadway-Weidler: Provided technical assistance on zoning, development regulations (bye-laws) and design guidelines issues to develop a transportation plan for the corridor. • Westside Light Rail Project: Developed a station area plan (micro-level plan) for the Goose Hollow District in Portland city and coordinate with all concerned agencies. Prepared a background report, an urban design plan, and special design guidelines for the Goose Hollow District. This involved preparing a historic conservation strategy for the District. Developed a land use plan and zoning recommendations for the light rail station area. Served as an advisor to the design review team for new projects in this area. Prepared legal documents for adoption of the plan. The Portland City Council officially adopted the Goose Hollow District Plan in February 1996. • Livable City Project: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering for discussing light rail station area planning, and organized public workshops.
August 1993 To: December 1993	CITY OF PORTLAND, OFFICE OF TRANSPORTATION, REGIONAL RAIL PROGRAMME,	USA	• Assisting on urban and city related projects

	PORTLAND, OREGON, USA/INTERN Contact Information: Available upon request		
June 1993 To: August 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA/ ADJUNCT INSTRUCTOR Contact Information: Available upon request	USA	• Assisting on urban and city related projects
1990 To: 1993	DEPARTMENT OF ARCHITECTURE, UNIVERSITY OF OREGON, USA / GRADUATE TEACHING FELLOW, RESEARCH ASSISTANT Contact Information: Available upon request	USA	• Assisting on urban and city related projects
1988 To: 1990	BOPAIAH AND ASSOCIATES, ARCHITECTS AND PLANNERS, BENGALURU /PROJECT ARCHITECT Contact Information: Available upon request	India	• Working on urban and city related projects
1988 To: 1988	CEPT, SCHOOL OF ARCHITECTURE, AHMEDABAD / RESEARCH ASSISTANT Contact Information: Available upon request	India	• Assisting on urban and city related projects
1986 To: 1987	JAIN ASSOCIATES, ARCHITECTS AND URBAN DESIGNERS,	India	• Working on urban and city related projects

	AHMEDABAD /JUNIOR ARCHITECT		
1986 To: 1986	WACHTL AND ASSOCIES, ARCHITECTS, ZURICH, SWITZERLAND/INTERN	Switzerland	• Assisting on urban and city related projects

Membership in Professional Associations and Publications:

- COUNCIL OF ARCHITECTURE, INDIA
- CEPT FAAA
- UNIVERSITY OF OREGON ALUMNI ASSOCIATION

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Gujarati
- Kannada
- Tamil

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Urban indicators assessment and finalization • Ground-level urban data collection, analysis • Benchmarking (Ranking) and comparative analysis • Organising urban citizen level engagements	Name of Assignment or Project: Revisioning JnNURM Year: 2014 Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: Conducted a secondary literature, **urban data collection and analysis of 65 JnNURM cities** under the JnNURM, the money spent, projects completed and citizens' review of the mission. **Used this to prepare an approach paper, an information brochure to advocate for a need for re-visioning, and several grant proposals to be submitted to the TATA Trust, Ford Foundation and other funding agencies.** This Project outlines the goals and criteria for **assessment that aim for principles of good governance - accountability and transparency**
	Name of Assignment or Project: Draft report on data assessment for 65 JNNURM cities (work in progress) Year: Ongoing Location: NA Client: Habitat Forum (INHAF) Positions held: PROJECT COORDINATOR Activities performed: • Assess role of ULBs in JNNURM and impact of the Mission on performance of ULBs; • Highlight the role of the public or lack of it in the process of implementing JNNURM; - • Assess if intended outcomes were achieved; • Assess ULB performance with respect to reforms achievement, funds utilization, and project implementation; • Identify, from the analysis of data, criteria for city selection and key questions that need to be investigated through on-ground consultations and interactions with participating ULBs; and • identify factors for recommending a revised framework for a re-visioned strategy for urban development

	• Review of data from JNNURM, HUPA, MoUD, and other official websites for UIG as well as UIDSSMT towns. Data concerning Additional Central Assistance (ACA) funds released; funds utilized; project completion rates including BSUP housing completion status with occupancy rates; reforms performance; credit ratings of ULBs; and best practices and awards are considered for this review. Most data accessed is 2013-14 data, except in some instances data for 2010-11 is used. • Employed gathering data through empirical work, including public consultations, surveys, and interviews with ULBs, among other tasks.
	Name of Assignment or Project: Green Logistics Project – Gandhi Bazaar Market Street, An inclusive re-design. Year: 2017-18 (on-going) Location: Bengaluru Client: GIZ and the Government of Karnataka (DULT and BBMP) Positions held: Team Leader, Urban Designer and Planner Activities performed: Preparation of a spatial plan for the re-design of the traditional Gandhi Bazaar Street market in Bengaluru. Conducting spatial planning analysis of sectors such as traffic and transport, Heritage, solid waste management, social amenities; preparing a participatory plan; developing alternative design scenarios; and conducting participatory events with all stakeholders (Government and citizens groups) to prepare a design for the market. Key project indicators include gender sensitivity, hygiene, safety and inclusiveness.
	Name of Assignment or Project: Saving cities, building towns - A case of spatial reorganisation Year: 2014 Location: Bengaluru Client: Center for Study of Science, Technology and Policy (CSTEP), Bengaluru Main project features: Review of small town growth and development dynamics Positions held: PLANNING CONSULTANT Activities performed: • Reviewed the report: Saving cities, building towns - A case of spatial re-organisation, prepared by CSTEP and provided technical and methodological advice in written form for changes and improvements.

	• Assessed the indicators and framework assigned for urban data collection
	Name of Assignment or Project: An assessment of the role of NGOs in CSR Activities Year: 2017-18 (on-going) Location: Bengaluru Client: Habitat Forum (INHAF) Positions held: Project Coordinator, Principal Researcher Activities performed: Preparing a framework for data collection on 20 private sectors and 20 Public sector enterprises participating in CSR activities, to assess the role of NGOs. Developing criteria for assessment and making recommendations for policy advocacy.
	Project name: Preparation of development controls for the Indiranagar Metro Station area Location: 2013 Client: EMBARQ (WRI), Bengaluru Position: SENIOR URBAN DESIGN AND PLANNING CONSULTANT Activities performed: • Co-authored with other team members the draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru • Prepared a city-wide assessment of station area typologies. Developed a work plan and conducted ground surveys of the Metro station area to prepare a land use, ground-level urban data collection & analysis and urban design plan, with development control proposals using a hybrid of form based codes and land use regulations. Also, prepared methodologies to be applicable to other station areas for plan preparation and plan implementation.
	Name of Assignment or Project: Revision of the Structure Plan for the Bangalore Metropolitan Region Year: 2008-10 Location: Bengaluru Client: Bangalore Metropolitan Region Development Authority (BMRDA) Positions held: SENIOR URBAN PLANNING CONSULTANT Activities performed:

	• Reviewed and analyzed land use planning policies and land management instruments, planned the implementation and consultative / participatory approach; conducted existing situation analysis, used trend analysis and population projections for development analysis, SWOT analysis, and preparing development scenarios and visions; prepared sector specific vision and policy guidelines, provided. • Lead extensive urban data collection for assessment of the existing conditions of the Bengaluru Metroplitan region and the proposals for future planning of the region. • Also involved in the land use analysis, spatial transportation proposals, the economic strategy of cluster and nodes, and the preparation of the zonal regulation • Link: http://www.bmrda.kar.nic.in/rsp_report.pdf
	Name of Assignment or Project: Hollywood and Sandy Area Plan Year: 1998-2000 Location: Portland, Oregon, USA Client: City of Portland Positions held: CITY PLANNER Activities performed: • Worked with a team to develop a land use plan, policies and zoning recommendations for the Hollywood district light rail station area and the Sandy Main Street area. Prepared an urban design plan and design guidelines. This included assessing historic assets and preparing historic preservation guidelines. • Organised and conducted public meetings, workshops and neighbourhood walks. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Also presented the plan before official bodies. The Portland City Council officially adopted the plan in March 2000.
	Name of Assignment or Project: Creston Kenilworth Neighborhood Plan Year: 1996-98 Location: Portland, Oregon, USA

	Client: Bureau of Housing and Community Development, City of Portland Positions held: CITY PLANNER Activities performed: • Worked independently to develop an urban design plan, policies, and implementing actions and legal findings for this low-income neighborhood. • Collected ground level urban data through preparation questionnaires, brochures, posters, and workshop announcements, and interacted extensively with the public to document their ideas. • Organised and conducted public meetings, workshops and made presentations before official bodies. The Portland City Council officially adopted the plan in June 1998
	Name of Assignment or Project: Preparation of DPRs under the JnNURM for Heritage Conservation, Urban Renewal, Basic Services for the Urban Poor and Mobility Plan Year : 2008-09 Location: PANAJI, GOA Client: CCP, PANAJI Positions held: PUBLIC PARTICIPATION CONSULTANT Activities performed: Prepared a public participation strategy and timeline, identified primary and secondary stakeholders (over 35 target groups), held meetings with the Mayor and Councillors, conducted ward level outreach, surveys, and meetings with target groups to document issues, conducted 6 open houses at city level, compiled the process into a report that was officially submitted to the City Corporation of Panaji.
	Name of Assignment or Project: Livable City Project Year: 1993-94 Location: Portland, Oregon, USA Client: City of Portland Positions held: ASSOCIATE CITY PLANNER Activities performed: Worked with a team to developing designs for new development in inner cities and principles for growth management that would serve as indicators of livability. Prepared graphic displays for the Regional Rail Summit, a regional gathering

	for discussing light rail station area planning, and organized public workshops.
	Name of Assignment or Project: Master Plan (Revision II) – 2021 A.D. for Mangalore Year: 2007-12 Location: Bengaluru Client: CITIZEN FORUM FOR MANGALORE" S DEVELOPMENT Activities performed: Prepared a report assessing the Plan and suggesting revisions by identifying the gaps in information and analysis. Prepared a participatory process work plan for the citizens group.
	Name of Assignment or Project: Draft Master Plan for the Hampi World Heritage Site Year: 2007-10 Location: Bengaluru Client: ASI and UNESCO Positions held: PLANNING CONSULTANT (to INDE, Bengaluru) Activities performed: Reviewd the Hampi Master Plan and provided technical inputs for revision in the form of a report. Prepared a work plan for conducting a public participation process.
	Name of Assignment or Project: Review of the working paper: Transit-Oriented Development Policy Mapping: comparing TOD implementation in three cities - Portland (Oregon), Mexico City and New Delhi Year : 2016 Location: NA Client: World Resources Institute (WRI), Washington DC, USA Positions held: PLANNING CONSULTANT Activities performed: Assessed the breadth and depth of information related to TOD policy and provided written technical and policy related notes identifying a) gaps in method and information, and b) areas for improvement for the working paper
	Name of Assignment or Project: Metropolitan Spatial Data Infrastructure Project Year: 2004

	Location: Bengaluru Client: Bangalore Development Authority Positions held: SENIOR URBAN PLANNING AND DESIGN CONSULTANT Activities performed: As consultant, reviewing and preparing a Vision Document, Planning Districts Report and a planning Handbook for the Revised Master Plan. Prepared brochure explaining the Master Plan and assisted in preparation for the public participation process. Participated in an advisory role in team discussions on zoning regulations, and land use planning issues.
	Name of Assignment or Project: Bangalore Information Technology Corridor Project Year: 2000-04 Location: Bengaluru Client: NA Positions held: PROJECT COORDINATOR - Consultant Activities performed: Coordinated with other consultants in preparation of the Structure Plan and reviewed their works. Dealt with official correspondence, prepare presentations on the project and drafts for the Cabinet note. Participated in discussions on and assisted in preparing the amendments to the proposed the IT Corridor Authority Bill.
	Name of Assignment or Project: Proposed Recommendations for the Karaikal Master Plan Year: 2007 Location: Karaikal, Puducherry Client: Architecture and Design (A&D), Paris, and Development Alternatives, New Delhi, India Positions held: URBAN PLANNING CONSULTANT Activities performed: Prepared a review of the Master plan document and recommended strategies for revisions

<ins>Training and certificates attained:</ins>

- City of Portland, Bureau of Planning, Portland, Oregon, USA (1993-2000) : Professional development training conducted by the American Planning Association - Portland Chapter, and Oregon Department of Transportation, USA. Involved sessions on transit-oriented planning, community development, public involvement strategies and growth management principles.

<ins>Publications:</ins>

Sastry, B., and Rajagopal, C. 'Stakeholder participation process for preparing Detailed Project Reports (DPRs) under JnNURM, Panaji, Goa,' in Urban Initiatives - Peer Experience and Reflective Learning (PEARL) under JnNURM. New Delhi: National Institute of Urban Affairs. Vol. 4. pp. 92-97. 2011.

N, Asha., and Sastry, B. 'A Study of urban villages - A case of Bangalore', in Proceedings of IUDI National Urban Design Thesis Seminar, Bengaluru. 2010.

Sastry, B. 'Barmer' and 'Bikaner', in Oliver, Paul (ed) Encyclopedia of Vernacular Architecture of the World. Oxford: Basil Blackwell Ltd. Vol. 2.II. pp. 7-8. 1997.

Brown, G.Z., Meacham, M.A., Miller, P.A., McDonald, M., Kline, J.A., and Sastry, B., in Technical Report Number CONF - 9208196-1 of InterSymp '92, Baden-Baden, Germany. 1992.

Selected Official Reports:

Towards a walkable and sustainable Bangalore- Development Control Regulations for Indiranagar Metro Station, September 2013, draft document prepared for the Department of Land and Urban Transport, Government of Karnakata (DULT) and EMBARQ India, Bengaluru (co-authored with other team members)

Bangalore Metropolitan Region Revised Structure Plan 2031, Draft document for the Bangalore Metropolitan Region Development Authority, Bengaluru, 2009 (co-authored with other team members)

Report on Stakeholder Participation Process for the Detailed Project Reports under the JNNURM, Corporation of the City of Panaji, September 2008 prepared for Groupe SCE India Pvt. Ltd.

Revised Master Plan 2015, Bangalore, Volume 1, Draft document for the Bangalore Development Authority, Bengaluru, March 2006 (co-authored with other team members)

Master Plan 2015, Planning Districts Report, Volume 5, Draft document prepared for the Bangalore Development Authority. March 2006 (co-authored with other team members)

Hollywood and Sandy Plan, City of Portland, Bureau of Planning, Portland, Oregon, April 2000 (co-authored with other team members)

East Portland Community Plan Project Summary Report, City of Portland, Bureau of Planning, Portland, Oregon, August 25, 1997 (co-authored with other team members)

Adopted Creston Kenilworth Neighborhood Plan, City of Portland, Bureau of Planning, Portland, Oregon, June 1998

Goose Hollow District Design Guidelines, City of Portland, Bureau of Planning, Portland, Oregon, Adopted by the Portland City Council, February 21, 1996 Goose Hollow Station Community Plan for the Westside Light Rail Station Community Planning Project, City Council Adopted Ordinance No. 169699, City of Portland, Bureau of Planning, Portland, Oregon, January 10, 1996 (co-authored with other team members)

Expert's contact information: (e-mail: brinsastry@gmail.com, phone: +91 9844252552)

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Brinda Sastry	Brinda. Sastry.	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Market Research Specialist

Position Title and No.	Market Research Specialist
Name of Expert:	Parijat Chakraborty
Date of Birth:	02 August 1972
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- Bachelor of Engineering - from Indian Institute of Engineering Science and Technology, Shibpur (Erstwhile Bengal Engineering College, Calcutta University) - Mining Engineering (1989-1993).
- Executive MBA ISB Hyderabad

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Jan 2017 to present	IPSOS India /Executive Director and Head of Public Affairs research Contact: Ipsos, 801, 8th Floor, Vipul Square B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana.	India	• As an Executive Director and Head of Public Affairs research at IPSOS India, Parijat Chakraborty leads the division and ensure the clients receive the best quality service aligned with rich heritage of Ipsos Public Affairs globally. He and his team work closely with several organizations and entities in developmental, commercial and Government sectors

July 2007 to Jan 2017	TNS India/ Executive Director Contact: TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001	India	• As an Executive Director at TNS India, Parijat Chakraborty was primarily responsible for entire business of the divisions, in India (second largest and fastest growing team). His key responsibilities includes Business development as per target, P&L of the division, Presenting research findings to top/senior management of client organisations, Assisting researchers in conceptualizing complicated studies and cull out actionable findings from the data, Ensuring quality of deliveries within given time-frame, Client as well as employee satisfaction and motivation, Ensuring Knowledge Management and refresh/update in a high employee-turn-over environment and Setting up and maintaining processes for all key initiatives.
April 2001 to June 2007	International Data Corporation, Gurgaon /Associate Vice President Contact: Cyber House, B 35, Sector 32, Gurugram, Haryana 122001	India	• Associate Vice President in International Data Corporation, Gurgaon. IDC is the leading research and consultancy organisation with the mission to provide strategic and tactical guidance to builders, providers and users of information and communication technology in order to help them make appropriate business decisions. Parijat developed the End-user research division there and made it contribute to 40% of the company revenue eventually. He also re-established Telecom research as a major pillar of success for the company
May 1998 to April 2001	NFO MBL India Limited (NFO World group), New Delhi /Associate Project Manager Contact: Company got acquired by TNS.	India	• Served as Associate Project Manager in NFO MBL India Limited (NFO World group), New Delhi. In NFO MBL, Parijat was heading one of the Research teams. He managed reputed accounts (independently or jointly) for Dabur, RCI, Hero Honda, Nestle etc. He also Initiated Industrial Market Research in the company.

	TNS India Pvt Ltd, Plot 44, Sector 44, 3rd Floor, Gurugram, Haryana 122001		
March 1995 to January 1998	B2B / Industrial Market Research division /Research Executive in ORG-MARG India. Company got acquired by Nielsen India Private Limited, 7th Floor, 404-405, ILAB Info Technology Centre, Udyog Vihar Phase 3, Gurgaon, Haryana, 122016	India	• Worked as Research Executive in B2B / Industrial Market Research division. He had complete project management responsibility for all projects under this division. He headed Industrial Market Research team in Delhi and was driving a team of four researchers and more than 10 Operations executives.

Membership in Professional Associations and Publications:

Nil

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Technical inputs on research design, sampling, analysis and generation of fact sheet	Project name: Comprehensive National Nutrition Survey (CNNS) Year: 2016-2017 (study in progress in some states) Location: UP, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh and West Bengal Client: UNICEF

• Management support with mobilization and organization for market research • Schedule Finalization and training	Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling, analysis and generation of fact sheet.
	Project name: FPwatch Family Planning Outlet Survey, 2016 Year: 2016 Location: Bihar & Uttar Pradesh Client: PSI, Washington Position: Project Advisor Activities performed: Management support and technical inputs at various stages i.e. research design, sampling and analysis including determination of market size by various family planning methods and generating products penetration estimates.
	Project name: Road user satisfaction survey for Himachal Pradesh Year:2016 Location: Himachal Pradesh Client: HPRIDC / World Bank Funded Project. Position: Project coordinator Activities performed: Finalization of schedules, training, inputs for sampling of speed survey and creation of road users' satisfaction indices using factor analysis.
	Project name: The Nodal Agency (NA) for the Nationwide Concurrent Evaluation study of the flagship programme of MGNREGA Year:2015 Location: All India Client: Ministry of Rural Development Position: Project Advisor Activities performed: Provided technical inputs to ministry on research design, sampling, analysis and report writing. Participated in various stakeholders' workshops and dissemination of study findings.
	Project name: Rating of cities on sanitation parameters Year:2015 Location: Maharashtra, Rajasthan, Gujarat

	Client: Ministry of Urban Development Position: Project Advisor Activities performed: Participated in core expert training, contributed in data collection strategy, conducted pilot in Biwadi town, provided logistics support particularly for the identification of NABL accredited labs for the testing of water sample, designed template with algorithms for the calculation of scores, presented scores at the Ministry level stakeholders' workshop.
	Project name: Assessment of Routine Immunization Coverage and Maternal and Child Health Services in 75 districts of Uttar Pradesh Year:2015 Location: Uttar Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling and immunization coverage estimates.
	Project name: National Integrated Biological Behavioural Surveillance Year: 2015 Location: J&K, Himachal Pradesh, Punjab, Chandigarh, Haryana Client: National Aids Control Organization Position: Project Advisor Activities performed: Participation in regional workshops, training, mobilization logistics support particularly for biological component, inputs for sampling HRG and migrant domains.
	Project name: Assessment of Implementation of Reservation Provision for Children from Weaker Section and Disadvantaged Group in Unaided Private Schools under RTE Act Year:2015 Location: Madhya Pradesh Client: UNICEF Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.

	Project name: Data collection for component Clinical Anthropometric and Biochemical (CAB) test under Annual health survey Year:2014 Location: All India Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Provided logistics support and critical inputs at various stages of implementation and generation of anthropometric and bio-chemical related estimates.
	Project name: Assessment of SMO Performance under CSMP and Overall Impact of CSM Programme Year:2013 Location: All India Client: Technical Support Group to NACO Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Annual health survey Year:2011–2013 Location: Bihar & Jharkhand Client: Ministry of health and family welfare / ORGI Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and generation of fact sheet
	Project name: Evaluation of link worker scheme Year:2012 Location: All India Client: National AIDS Control Organization (NACO) Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Comprehensive socio-economic assessment of project catchment area of Moradabad - Bareilly expressway road Year:2012 Location: Uttar Pradesh Client: IL&FS

	Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.
	Project name: Socio-Economic & Health Assessment around Zeawar and Kayad mines Year: 2012 Location: Rajasthan Client: Hindustan Zinc Limited Position: Project Advisor Activities performed: Technical inputs on research design, sampling, analysis and report writing.

Training and certificates attained:

- Certified Lead Auditor for ISO 9001:2000 Quality Management System
- Distinction on "Six Sigma" (Green Belt level)
- Training on high-end statistical application for Marketing and Research applications
- Several other MDP programs organized by the employers

Expert's contact information: parijat.chakraborty@ipsos.com, Ph: 9810496838

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Parijat Chakraborty		26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

CV of Statistician

Position Title and No.	Statistician
Name of Expert:	Nilachal Ray
Date of Birth:	06 Oct, 1955
Country of Citizenship/Residence	India

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

- M.A. in Economics, Madras University, 1987,
- Graduate Diploma in Operational Research, Operational Research Society of India, 1984
- M.Sc. in Statistics, Calcutta University, 1977
- B.Sc.(Hons.) in Statistics, Calcutta University, 1975

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
Aug 2016 – Present	Self / Independent	India	• Survey designing, collection, large-scale data processing, compilation, tabulation, dissemination and statistical and economic analysis, report writing, editing, multiple copy preparation and publishing including teaching and training of several types of data, viz. trade, socio-economic, industrial, agriculture, health, etc. • Wide experience in collection, compilation, validation, tabulation, analysis and dissemination of large-scale survey data at national level.

			- use of personal computer based software packages for statistical computing, data collection, compilation, presentation, analysis and dissemination.
17 Jun 2016 - 03 July, 2016	Food and Agriculture Organization (FAO) of the United Nations / International Consultant, Strategic Planning in Agricultural Statistics; Contact information for references: Mukesh Kumar Srivastava Senior Statistician Economic, Social and Policy Assistance Group (ESP) FAO Regional Office for Asia and the Pacific 39 Maliwan Mansion, Phra Athit Road, Bangkok 10200, Thailand E-mail: mukesh.srivastava@fao.org Mob: +66818275767	Bhutan	- Undertaken field visits to selected farms to enable an appreciation of the agricultural system in Bhutan and document findings. - Assisted with preparations for a technical workshop on Renewable Natural Resources (RNR) census and survey planning. - Participated in the technical workshop and provide a summary report of key points discussed. - Participated in broad level discussions to prepare a detailed work program on the way forward. - Prepared a document on a strategy for the RNR census and surveys, including scope and coverage as well as a detailed survey calendar and data collection strategy. - Undertaken detailed discussions with relevant officers to obtain information needed to prepare this strategy document. - Provided an end of assignment report.
30 Nov 2015 - 04 Jan, 2016	Eastern Africa Statistical Training Centre (EASTC) / Teaching and Consultancy; Contact information for references: Dr. FAE Mkumbo Rector, EASTC PO Box 35103	Tanzania	- Very successfully done a teaching and relevant consultancy assignment for 5 weeks for 2 courses “Trade Statistics” for 3 weeks and “Industrial Statistics” for 2 weeks for 3 Master in Statistics Batches – one 1st year and two 2nd year.

	Dar es Salaam Tanzania E-mail:faemkumbo@yahoo.com		
14 Nov 2011 - 31 Oct, 2015	**National Sample Survey Office (FOD) / Deputy Director General;**Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked as Deputy Director General in the higher pay-scale of Additional Director General at National Sample Survey Office (Field Operations Division), Zonal Office (ZO), Eastern Zone, Kolkata of Ministry of Statistics & Programme Implementation, Government of India from 14.11.2011 to 31.10.2015 and retired from the service on 31.10.2015. This ZO was responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO). Worked as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of industries (ASI) on annual basis in Industrial sector, Area Enumeration Survey with Area Aggregation Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price

			Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as work of all on-going statistical activities in the respective states besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) as and when required basis. I was responsible to monitor the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
01 Mar 2011 - 11 Nov, 2011	National Sample Survey Office (FOD) / Deputy Director General; Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	• Worked as Deputy Director General at National Sample Survey Office, Field Operations Division. Regional Office (RO), Ranchi, Jharkhand of Ministry of Statistics & Programme Implementation, Government of India. • This RO employs 102 personnel spread over the whole state of Jharkhand in 4 Sub-Regional Offices (SRO's) at Ranchi, Dumka, Hazaribagh & Jamshedpur. Worked as the Techno-administrative Regional Head of the Office to look after all technical and administrative matters of the Regional Office to conduct field work in data collection and validation of various statistical surveys like NSS Socio-economic Surveys as Round on annual basis in Socio-economic Sector, Annual Survey of industries (ASI) on annual basis in Industrial

			sector, Area Enumeration Survey and Crop-cutting Experiments on annual basis in Agricultural sector. Besides I was responsible for field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and also on many other schemes as and when required basis. I was also functioning as State Statistical Adviser for the state of Jharkhand to look after effectively coordinate all on-going statistical activities in the state besides to guide and provide consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP). I opened a new SRO at Dhanbad on 25.10.2011 and another new SRO at Daltonganj opened in 2012 due to my proper initiative.
01 Jul 2009 - 14 Feb, 2011	All India Institute of Hygiene & Public Health (AIIH&PH) / Director-Professor and Head of the Department of Statistics Contact information for references: Director AIIH&PH 110, CR Avenue Kolkata-700073	India	• Worked as Head of the Department of Statistics to look after all day to day technical and administrative matters employing 40+ personnel to run the Institute in general and Department smoothly. As Director-Professor and Head of the Department of Statistics my primary responsibility was to ensure that the Statistics Department functioned efficiently and was fully geared up to take up the responsibilities of teaching, research, projects and other activities assigned

			to it. I was very effectively engaged in monitoring and evaluation of various Health Programmes through the on-line analytical studies of HMIS data on regular and continuous basis. Since the Department had several vacancies in the ISS and the SSS, all the existing faculty members were required to share added responsibilities to ensure that the primary activities of the Department do not suffer. Worked as techno-administrative head of the department as a Faculty Member. Rendered lot of techno-administrative help, guidance and consultation to the Institute administration on various techno-administrative issues with the direct involvement on those issues. The job was mainly of academic and research nature besides conduct of various Scientific Projects and Studies and Technical Courses with lot of administrative work to run the institute in smooth manner.
01 Feb 2007 - 30 Sep, 2009	**Directorate General of Commercial Intelligence & Statistics (DGCI&S)/Ministry of Commerce & Industry/Govt. of India** **Director General** Contact information for references: Director General DGCI&S,1, Council House Street, Kolkata-700001	India	• Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.

04 Nov 2006 - 31 Jan, 2007	Data Processing Division(DPD)/National Sample Survey Organisation (NSSO) / Deputy Director General; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys.
05 Jun 2000 - 04 Nov, 2006	Central Statistical Organisation/ Director;Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of CSO, MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI.
09 Apr 1999 - 05 Jun, 2000	Central Statistical Organisation/ Joint Director;Contact information for references: DDG CSO (IS Wing) 1, Council House Street Kolkata-700001	India	• Worked in Industrial Statistics Wing of MOSPI, GOI and oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI). Functioned as techno-administrative head of the Department employing 205+ personnel.
17 Oct 1997 - 08 Apr, 1999	National Sample Survey Organisation (SDRD) / Joint Director;Contact information for references:	India	• Worked in Survey Design & Research Division (SDRD) NSSO, MOSPI, GOI and oversaw conduct of various large-scale Socio-economic Surveys

	Additional DG NSSO(SDRD) 164, GLT Road Kolkata-700108		including 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
16 Aug 1996 - 16 Oct, 1997	**Data Processing Centre (DPC)/ National Sample Survey Organisation (DPD) / Deputy Director** Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of unit / center employing 150+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
01 Oct 1993 - 15 Aug, 1996	**Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director;** Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	• Functioned as techno-administrative head of the office employing 75+ personnel, to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
08 Aug 1986 - 30 Sep, 1993	**Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) /Deputy Director;** Contact information for references: Additional DG NSSO(DPD)	India	• Functioned as techno-administrative head of units / sections employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.

	164, GLT Road Kolkata-700108		
01 Apr 1984 - 07 Aug, 1986	Data Processing Centre (DPC)/National Sample Survey Organisation (DPD) / Deputy Director; Contact information for references: Additional DG NSSO(DPD) 164, GLT Road Kolkata-700108	India	- Worked in National Sample Survey Organisation (Data Processing Division) of MOSPI, GOI. Functioned as head of units/sections employing 80+ personnel to look after all techno-administrative issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI.
15 Sep 1982 - 31 Mar, 1984	National Sample Survey Organisation/ Regional Assistant Director; Contact information for references: Additional Director General NSSO (FOD), MOSPI R.K.Puram New Delhi-110066	India	- Worked for Gwalior (MP) Regional office of National Sample Survey Organisation (Field Operations Division) of MOSPI, GOI. Functioned as techno-administrative head of the Regional Office employing 95+ personnel.
15 Sep 1980 – 14 Sep, 1982	Central Statistical Organisation / Indian Statistical Service Probationer; Contact information for references: Director General CSO, MOSPI SP Bhawan,Parliament Street New Delhi-110001	India	- Underwent for 2 years' Probation-cum-Training on Administration, Economics, Statistics, Law, etc.

Membership in Professional Associations and Publications:

- Ex-Member of Standing Committee on Industrial Statistics (SCIS).
- Ex-Member of few technical sub-groups on Industrial Statistics.
- Ex-Member of technical sub-group on 5th Economic Census.
- Ex-Member of technical sub-group on revision of Wholesale Price Index Number.

- Ex-Member of the Board of Directors in Export Inspection Council of India (EICI), Delhi.
- Ex-Member of the Board of Directors in National Centre for Trade Information, Delhi.
- Ex-Member of Computer Society of India.
- Member of Operational Research Society of India, India.
- Member of Indian Association of Research in National Income and Wealth, India.
- Ex-President of Indian Statistical Service Association (Eastern Chapter), Kolkata for consecutive 3 terms.
- Life Member of Administrative Staff College of India (ASCI), Hyderabad, India.
- Life Member of Presidency College Alumni Association, Kolkata, India.
- Life Member of Australian National University (ANU) Alumni Association, Canberra, Australia

Language Skills (indicate only languages in which you can work):

- English
- Hindi
- Bengali

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks:
• Statistically designing and managing sample surveys • Large Data Sets Management and Analysis • Data Sets checking and correcting for errors and inconsistencies	Project Name: NSS Socio-economic Sample Surveys including Urban Price Index Client: National Sample Survey Organization (NSSO) / Central Statistical Organization (CSO/ MOSPI Year: 2011 to 2015& 1982 -1999 Position Held: Deputy Director General (2011 to 2015) Various Capacities (1982 to 1999) Activities Performed: — 1982 to 1984:Worked as Regional Assistant Director from 15.09.1982 to 31.03.1984 for Gwalior (MP) Regional office of National Sample Survey Organization (Field Operations Division) of MOSPI, GOI for both Urban and Rural Sectors. Functioned as techno-administrative head of the Regional Office employing 95+ personnel — 1984 to 1986:Worked as Deputy Director at Data Processing Centre (DPC), Delhi of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI from 01.04.1984 to 07.08.1986. Functioned as head of units / sections employing 80+ personnel to look after all techno-administrative issues for

	large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1986 to 1993: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of units / sections employing 150+ personnel from 08.08.1986 to 30.09.1993 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors — 1993 to 1996: Worked as Deputy Director at Data Processing Centre (DPC), Giridih (Jharkhand) of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of the office employing 75+ personnel from 01.10.1993 to 15.08.1996 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1996 to 1997: Worked as Deputy Director at Data Processing Centre (DPC), Kolkata of National Sample Survey Organization (Data Processing Division) of MOSPI, GOI. Functioned as techno-administrative head of unit / center employing 150+ personnel from 16.08.1996 to 16.10.1997 to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors. — 1997 to 1999: Worked as Joint Director from 17.10.1997 to 08.04.1999 at National Sample Survey Organization (Survey Design & Research Division) of MOSPI, GOI and oversaw conduct of 1st Time Use Survey in India during 1997. In addition, continuing to function as techno-administrative head of Data Processing Centre, Kolkata employing 150+ personnel to look after all issues for large scale data processing of Socio-Economic Surveys in India conducted by NSSO, MOSPI, GOI for both Urban and Rural Sectors.

	— **2006 to 2007:** Worked as Deputy Director General from 04.11.2006 to 31.01.2007 at National Sample Survey Organization (Data Processing Division) HQ, Kolkata of MOSPI, GOI and oversaw formulation, planning, designing the data processing, tabulation and report writing for NSS large-scale socio-economic sample surveys conducted annually. **Functioned as techno-administrative head of the Department employing 700+ personnel to look after various projects / Plan Schemes, etc. besides regular job on NSS Surveys for both Urban and Rural Sectors.** — **2011 to 2015:**Responsible on monitoring and looking after the techno-administrative aspects of 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and acted as the Techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to **conduct field work in data collection and validation of various statistical surveys.** — Worked very successfully for more than 33 years in National Statistical Office of Government of India in the fields of expertise, mainly as the Techno- Administrative HEAD of the organization
	Project Name: Annual Survey of industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Held: Deputy Director General (2011 to 2015) Various Capacities (1999 to 2006) Activities Performed: — **1999 to 2000:** Worked as Joint Director from 09.04.1999 to 05.06.2000 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.**Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 205+ personnel.**

	— .2000 to 2006: Worked as Director from 05.06.2000 to 04.11.2006 at Central Statistical Organization (Industrial Statistics Wing) of MOSPI, GOI.Oversaw formulation, planning, designing, conduct and data processing, tabulation and report writing for only regular Industrial Survey conducted in India in the name of Annual Survey of Industries (ASI) for both Urban and Rural Sectors. Functioned as techno-administrative head of the Department employing 199+ personnel to look after various projects / Plan Schemes, etc. besides regular job on ASI. — 2011 to 2015:Conducted the Annual Survey of industries (ASI) on annual basis in Industrial sector for both Urban and Rural Sector from 2011 -2014 spreads across 8 Regional Offices spread over the 4 states like West Bengal (3 ROs), Bihar (2 ROs), Jharkhand (1 RO) and Orissa (2 RO) and techno-administrative Zonal Head of the Office to look after all technical and administrative matters of the Zonal Office to conduct field work in data collection and validation of various statistical surveys
	Project Name: Field work in data collection and validation on Consumer Price Index (Urban), Rural Price Collection (RPC), International Comparison of Price (ICP) and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP) Client: National Sample Survey Organization Year: 2011 to 2015 Position Held: Deputy Director General Activities Performed: — Responsible field work in data collection and validation on Consumer Price Index (Urban) on annual basis in Urban Price Sector, Rural Price Collection (RPC) on annual basis in Rural Price Sector, International Comparison of Price (ICP) on annual basis in International Price Sector and on many other schemes as work of all on-going statistical activities in the respective states.

	— **Guided and provided consultancy on India Statistical Strengthening Project (ISSP) & State Statistical Strengthening Project (SSSP)** as and when required basis. — Monitored the functioning of all the 4 State Statistical Advisers for the 4 states where the Regional Heads are responsible to look after effectively the coordination.
	Project Name: **Generated and released Foreign Trade Statistics with indices (Foreign Trade Index) in India** on monthly basis and various other ancillary trade statistics including internal trade on annual basis. Client: **Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India**, Kolkata Year: 01.02.2007 to 30.06.2009 Position Held: Director General Activities Performed: — Worked as Director General at Directorate General of Commercial Intelligence & Statistics (DGCI&S), Department of Commerce, Ministry of Commerce & Industry, Govt. of India, Kolkata from 01.02.2007 to 30.06.2009 for both Urban and Rural Sectors. **Worked as Head of the Department to look after all day to day technical and administrative matters employing 470+ personnel to generate and release Foreign Trade Statistics with indices in India on monthly basis and various other ancillary trade statistics including internal trade on annual basis.**
	Project Name: Engagement on formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Client: by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India Year: 2017 Position Held: Independent Expert Activities Performed:

	— Formulation, designing, field work, tabulation, analysis, monitoring and evaluation of various large-scale Statistical Surveys / projects in different fields in the state of West Bengal conducted by Bureau of Applied Economics & Statistics (BAE&S), West Bengal, India.

Publications/Articles:

- (1) Workers Engagement in Factory Sector in India (Staff Papers, CSO (IS Wing), MOSPI, GOI – October 1999);
- The Pattern of Concentration of Major Industries (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 1999);
- Economics of Environment Management – Can Indian Economy afford to shut down Dirty Industries? (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2000);
- Sources, Impact and Control of Industrial Pollution (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- Economics of Environment Management (Staff Papers, CSO (IS Wing), MOSPI, GOI– October 2000);
- Growth in Factory Sector- Mathematics & reality (Staff Papers, CSO (IS Wing), MOSPI, GOI – March 2001);
- Pollution Load in Small, Medium and Large-Scale Industries (Compendium on Environment Statistics, CSO (Social Statistics Division), MOSPI, GOI- July 2001);
- Industrial Scenario in West Bengal (Quarterly Bulletin, Ministry of Industry & Commerce, Govt. of West Bengal – March 2002);
- Women Participation in Organized Factory Sector (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Unorganized vis-à-vis Organized Manufacturing Sector in India (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Understanding Social Choice Through PI Factor of Indian Dirty Industries (Official Statistics Seminar Series, Volume I, November 2004, CSO, MOSPI, New Delhi, India);
- Indian Farmers: Challenges Ahead – Presented in the National Seminar organized by NSSO, MOSPI, GOI on 17.10.2005 in Kolkata;
- Evolving Trends in Indian Manufacturing: A Case Study for West Bengal (Quarterly Bulletin, Directorate of Industries, Govt. of West Bengal – September 2005);
- Index of Industrial Production: Its problems (Quarterly Bulletin, Min. of Industry & Commerce, Govt. of West Bengal – March 2006);
- Global Economic Imbalances (Vaanijya– October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);

- **Purchasing Power Parity – The Economy and Policy (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);**
- **Export Diversification of China – A Sectoral Study (Vaanijya – October 2008 Issue – A Technical Journal of DGCI&S, Ministry of Commerce & Industry, Govt. of India, Kolkata);**
- Determinants of Infant Mortality in India: Income vis-à-vis Other Socio-Demographic Factors – Presented and Published in the 25th Annual Conference of Indian Society for Medical Statistics (ISMS) on 11-13 November 2010 at New Delhi;
- **ASI Frame: How Dynamic It Should Be? – Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 17 October 2011.**
- Manufacturing Sector in India: Performance Differentials - Published & presented in the National Seminar on Industrial Statistics held at CSO (IS Wing), Kolkata on 4 October 2012.

Training/Workshops Attended and Software Skills:

- **Attended Regional Roundtable on the World Programme for the Censuses of Agriculture 2020 (WCA 2020) of the FAO of the UN held in Bangkok, Thailand** during 19-23 September 2016.
- **Attended a specialized training course on "Survey Data Analysis" at Australian National University (ANU), Canberra, Australia** during the period from 10.06.1997 to 04.07.1997.
- Attended various relevant training courses in India.
- **Attended an International Workshop on Classification conducted by UNESCAP, Bangkok and UNSD, New York at New Delhi** during 14-16 October 2003.
- **Organised very successfully the 1st Meeting of the Heads of the Statistical Organisations of the SAARC Member Countries in Kolkata** during 26-27th May, 2005.
- **Attended an International Conference On Towards BIMSTEC- Japan Comprehensive Economic Cooperation: Vision and Tasks Ahead** on 16-17 December 2005 in Kolkata.
- Attended and delivered lectures in SAARCSTAT Workshop on Classification at New Delhi in 2006.
- **Attended an International Workshop on International Merchandise Trade Statistics conducted by UNESCAP, Bangkok and UNSD, New York at Bangkok, Thailand** during 09-12 September2008.
- **Worked as Resource Person in various Training Courses conducted by UNSIAP in India.**
- Attended Advanced Management Development Course of 6-weeks duration at Indian Institute of Management (IIM), Lucknow from 08.11.2010 to 17.12.2010 in which I visited various Institutes /International Organisations at Amsterdam (Netherlands), Luxemburg, Paris (France), Brussels (Belgium), London (UK) & Southampton (UK).
- Software Skills: **Experienced in Computerized Large- Scale Data Processing since 1984** by using dBase software like ORACLE, Developer, FOXPRO and MS – OFFICE, STATA, SPSS, SAS, LIMDEP, E-Views, M-fit, NVivo, ATLAS.ti etc.

Expert's contact information: (e-mail:nray111@yahoo.co.in, phone: +917980135371 / +918961515397 (WA))

Certification: I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Nilachal Ray	Nilachal Ray	26/12/2017
Name of the Expert	Signature	Date (day/month/year)

Parijat Chakraborty		26/12/2017
Name of Authorized Representative of the Consultant (the same who signs the Proposal)	Signature	Date (day/month/year)

Non-Key Experts (Support Team including Analytics Team)

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
1	Rishee Jain – Project Advisor	PhD, Civil engineering, Columbia University	10 years	Palo Alto city, Washington DC, Thane Municpal Corporation etc	His expertise is in data-driven benchmarking and interoperability
2	Tripti Sharma – Project Coordinator	MA in Social Science from Tata Institute of Social Sciences (TISS)	21 years	Ministry of Health & Family Welfare, Dept. of Panchayat Raj & Rural Development, and Ministry of Social Justice and Empowerment, Bilateral, Multilateral, International NGOs, Corporate/ Foundations that include World Bank, UNDP, UNICEF, Path International, Michael & Susan Development Foundation, Save the Children, Micronutrient Initiative, Clinton Health Access Initiative (CHAI), Coffey International, NASSCOMM Foundation, CARE India, Oxfam India, and several government departments in India.	Her key expertise includes designing and implementing research studies (qualitative, quantitative, and participatory), monitoring & evaluation, and stakeholder engagement for programme design and implementation. She is an MLE expert. She has core expertise in formulating result framework for client by mapping the outcome indicator.
3	Deepa Karthykeyan – Project Director	M.A. Economics University of Madras (Loyola	7 years	World Bank, Govt. of Tamil Nadu, British High	Policy Research and Analysis, Documentation

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		College) and National University of Singapore		Commission, ADB, BMGF, Save the Children, UNDP, GIZ NSDC, CII	Review, Project Management, Client Engagement, Governance Liasoning, Presentation
4	Ankit Chatri – National Project Coordinator	M. Phil (Planning & Development), IIT Bombay, Mumbai; M.A. (Economics), University of Hyderabad, Hyderabad; B. Com. (Hons.), Banaras Hindu University, Varanasi	7 years	World Bank, GIZ, 3ie, UNDP, Arghyam Foundation, WSUP, TNIDB, INCAP – AP, British High Commission	Project management and data analysis Design the survey tool, QC templates and Training the investigators on data collection Undertake QC on the collected data Project Report writing
5	Praveen Ravi – Policy Head	PGDM (Economics and Finance) from IIM Lucknow; BSc (Hons) Mathematics, Chennai Mathematical Institute.	10 years	UNOPS Cities Alliance, BMGF, Tamil Nadu Govt., 5th State Finance Commission, British High Commission, Trade Mark East Africa, GIZ, Wadhwani Foundation, NSE	Data Indicator Finalisation, Quantitative & Qualitative Analysis, Principal Component Analysis, Factor Analysis, Data toolkit creation and meta data formulation
6	Dr. Rajarshi Singh – Data Expert	PhD in Computational Mechanics from Carnegie Mellon University, Pittsburgh (USA)	5 years	PACT, Goal Ireland, Ministry of External Affairs, Pratham Educational Foundation, UNICEF	Survey program design, data collection instrument testing, data cleansing and consolidation
7	Bhargavi Venkatesan – Statistician	M.S. (Statistics), Rutgers University, USA;	18 years	BMGF, Save the Children, UNWOMEN, PACT Nepal (A World Bank Initiative),	Data superset finalization, Data modelling and testing,

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		Graduate degree in Cost & Works Accounting ICWAI (Institute of Cost and Work Accountants of India); B.Sc. (Mathematics) University of Madras		Rutgers University, Dell Foundation, Developmental Disabilities Planning Institute, New Jersey Institute of Technology (NJIT)	Intervention impact, survey one-group pre-test/post-test design Proficiency in Analysis Tools: SAS, SPSS, R and Microsoft Excel.
8	Mael Thomas Balac – Data Scientist	Magistère International Development – Centre for Studies and Research on International Development (CERDI), School of Economics - University of Auvergne, France (2012-2015)	2 years	Trade Mark East Africa, FHI 360, World Bank, Department of Planning, Government of Andhra Pradesh, Regional Council of Auvergne	Economic Modeling and Analysis, Policy Research and Assessment
9	Devkanya Chakravarty – Data Scientist	MSc Economics, DSE	2 years	Central Banks of Bhutan and the Maldives, World Bank, ADB	Economic Modeling and Analysis, Policy Research and Assessment
10	Ambrin M – Data Scientist	Master's degree in International Economics at Institut de Hautes Études Internationales et du Développement, Geneva		UNEP, TMEA, Private Sector Foundations	Text Analysis, SAS, Sentiment Analysis, SPSS, Big Data Analysis, R
11	Kowshik Ganesh – Data Visualization Expert 1	Masters in Electrical Engineering,	7 years	World Bank, Arghyam Foundation, ADB,	Automation & Dashboard Creation,

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		(Specialization in Applied Deterministic Operations Research), Arizona State University; Bachelors in Electrical Engineering, Anna University		Save the Children & BASF, Government of Tamil Nadu, BMGF, RTI International	Data visualisation, GIS tool mapping & MIS Blueprint
12	Chirag Anand –IT Infrastructure and Systems Expert	B. Tech Computer Science, Jaypee University of Information Technology	7 years	National Institute of Public Finance and Policy, Task force on Financial Data Management Center Ministry of Finance, Government of India, Indira Gandhi Institute of Development Research	Dynamic API-based data generation and storage, Data processing, cloud computing, open source project management tools, RDBMS
13	Kasirajan Mahalingam – Data Visualisation 3 (Analysis Assistance and GIS)	Bachelor's degree in Urban Planning from the School of Planning and Architecture (MHRD, Govt. of India), Vijayawada. Master's degree in Geo-Information Science and Earth Observation from Faculty of ITC, University of	2 years	BMGF, Floating City Apps Foundation, Waterstudio.NL., Auroville Foundation / Urban Networks	GIS Mapping and Analysis, Spatial Assessment, MIS Dashboard, Planning outline, Policy Research Assistance

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
		Twente, The Netherlands			
14	Ansu Alexander – Urban Planner	M.Sc Habitat Policy and Practice (presently Urban Policy and Governance), TISS Mumbai; Bachelor of Planning, School of Planning and Architecture, Vijayawada	1.5 years	Municipal Corporation of Greater Mumbai (MCGM), Mumbai Transformation Support Unit (MTSU), IDRC Canada, GIZ	Urban planning,GIS Mapping and Analysis, Infrastructure assessment, city indicator, field reporting and documentation
15	Maria Jose – Research Associate	M.A. Economics at Madras School of Economics; B.A. Economics at St. Stephen's College, Delhi	3 years	Tamil Nadu Industrial Guidance and Export Promotion Bureau, FHI 360 and World Resources Institute	Data Cleansing and Consolidation, Data Research and Analysis
16	Anusha Ghosh – Policy Research Associate	B.A. Economics at Miranda House, University of Delhi; Master's degree in Economic Policy at University College, London	2 years	BMGF, World Bank, PACT Nepal	Data Cleansing, Questionnaire Design, Stakeholder Engagement, Policy Research and Analysis
17	Samvita Kalyan Kumar – Research Associate	B. Tech + M. Tech) in Civil Engineering, IIT Madras.	2 years	IIT Madras, FHI 360, BMGF	DSS Development, Policy Research and Analysis, Urban Area Assessment
18	Aditi Gupta – Research Associate	B.A. Economics University of Delhi; Masters in Economics, NUS Singapore	6 months	Lee Kuan Yew School of Public Policy	Economic Modelling, Policy Research and Analysis, Report Writing and Documentation

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
19	Leo Abruzzese	BA in Liberal Arts, St Joseph's University	19 years	World Bank, the IMF, the UN, the Inter-American Development Bank, the Gates Foundation, the Clinton Foundation, the International Organisation for Migration, the Office of Mexico's President, the Nuclear Threat Initiative, the Nike Foundation, and the Internet Corporation	economic and financial benchmarking, gender equality, poverty alleviation, access to finance, nuclear security, global peace, food security and environmental protection
20	Roxana Slavcheva	MSc in Urban Economic Development (distinction), University College London	3 years	LSE Cities, Global Commission on the Economy and Climate's New Climate Economy	World Cost of Living and Liveability surveys and Market Indicators and Forecasts Plus. Roxana's expertise includes index-building, qualitative and quantitative research, policy analysis, and strategies for consumer market entry and growth.
21	Stefano Scuratti	MSc in International Political Economy, London School of Economics	5 years	Accenture, Grameen Bank, the Italian Ministry of Foreign Affairs and the United Nations	multi-country benchmarking projects and the design of risk-assessment frameworks.

Field Team

S. No	Name - Position	Educational Qualification	Years of Experience	Clients Served	Key Skills
Zonal Coordinator					
1	Kunwar Asif Aftab - Zonal Coordinator-North	MA (pursuing), BA-Sociology	23 years	Save the Children, IPLM, NACO, NARI, ORGI, MoHFW, Public Affairs Committee, Ministry of Rural Development, IIPS	Managing consultancy research and intervention studies in the areas of Water and Sanitation, R&R (Resettlement & Rehabilitation), Health and Family Welfare, Sexual health & behavior, Education, Rural Development, Nutrition, MCH & ICDS for State, National & International Agencies. In addition to research was also involved with various divisions such as, Operations, end to end PMT, Quality assurance and B&P.
2	Arna Seal - Zonal Coordinator-East	PhD- Sociology	25 years	UNICEF, Oxfam, Save the Children, PWC, Techno India, Sanlaap	Analytical expertise in consulting for social components of infrastructure and development sector projects, social impact related assessment of organizational capacities, leading quality management of

					large & small education projects, gender and behaviour change communication analytics, capacity building and education leadership development.
3	Kshetrimayum Gopal Singh - Zonal Coordinator-North-East	PhD-Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
4	Pramod Bhatt - Zonal Coordinator-West	Masters in Planning with Specialization in Regional Planning from School of Planning and Architecture (SPA)	15 years	HCL Foundation and Johns Hopkins University, Himachal Pradesh Road & other Infrastructure Development Corporation Ltd., UNICEF, PSI Washington, BMGF, NACO, Ministry of Panchayati Raj, MoHFW, World Bank, Asian Development Bank, ECOSMART - IL&FS, Centre for Good Governance	Integrated Development Plan, Impact Assessment, Programme Evaluation, Baseline/Midline/Endline studies, Social Assessment/audits, CSR Evaluations including stakeholder analysis / need assessment, intervention design, etc.
5	K. Ravi Shankar - Zonal Coordinator-South	MSW, MBA	16 years	UNICEF, UNDP, United Nations foundation, World Bank, USAID,	Handling end to end customized research, including the study of client

				Ministry of health and family welfare, Directorate of Census operations, Ministry of Agriculture and farmer welfare, Ministry of Panchayati raj, Ministry of women and child development, Ministry of youth affairs and sports, Ministry of Textiles, Akshaya Patra Foundation, Public Affairs Foundation (PAF), APAC	needs, background research, proposal writing and presentation, instrument design, planning and monitoring of fieldwork, analysis of research data, report writing and regular client servicing during the project cycle.
6	Panchangam Chidambara Kasinath - Zonal Coordinator-South(Andhra Pradesh Telangana)	M. Phil, MA (Sociology)	26 years	UNAIDS, HLFPPT, CSSRL	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
S. No	Name – State Responsible	Educational Qualification	Years of Experience	Clients Served	Key Skills
State Field Team					
1	Bala Iyer - Andaman Nicobar	PG diploma in Marketing and Sales Management	18 years	P&G, Monsanto, DuPont,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated

					CAPI Data Collection
2	Sivakrishna Augusthi – Andhra Pradesh	B.Com	15 years	Lirneasia, Piramal Swasthya Management Research Institution, Ministry of agriculture	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
3	Surajit Podder – Arunachal Pradesh	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
4	Dhananjay Das - Assam	B.Com	25 years	AHS	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
5	Anoop Prakash - Bihar	B.A.	25 years	AHS	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection

6	Jaspreet Singh – Chandigarh	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
7	Sanjay Katekhaye - Chattisgarh	M.com	19 years	IBBA, BBC, NACP II	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
9	Praful Sali – Daman and Diu	MA in Social Work	25 years	NACO, HLFPPT, AVERT Society, International and Local NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
10	Sadanand Ambre - Goa	B.Com	16 years	Unilever	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, CAPI Data Collection
11	Bharat Negi - Haryana	BA	15 years	NCBS, Google,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target

					groups, integrated CAPI Data Collection
12	Jaspreet Singh - Himachal Pradesh	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
13	Jaspreet Singh – Jammu and Kashmir	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
14	Atanu Bhaduri - Jharkhand	B.Com	13 years	UNICEF, AHS	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
15	Laxman Dash - Karnataka	BA	14 years	Bi-Lateral, Multi-lateral, National NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
16	Pradeep Babu - Kerala	M.sc Applied psychology	10 years	IPLM, APAC, RHS, Vodafone	Qualitative survey- Conducting FGD, depth interviews, with a wide range of target groups, Data

					collection using CAPI
17	Pradeep Babu - Lakshwadeep	M.sc Applied psychology	10 years	IPLM, APAC, RHS, Vodafone	Qualitative survey- Conducting FGD, depth interviews, with a wide range of target groups, Data collection using CAPI
18	Praful Sal - Maharashtra	MA in Social Work	25 years	NACO, HLFPPT, AVERT Society, International and Local NGOs	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
19	Surajit Podder - Manipur	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
20	Surajit Podder - Meghalaya	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
21	Kshetrimayum Gopal Singh - Mizoram	Ph.D. in Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large

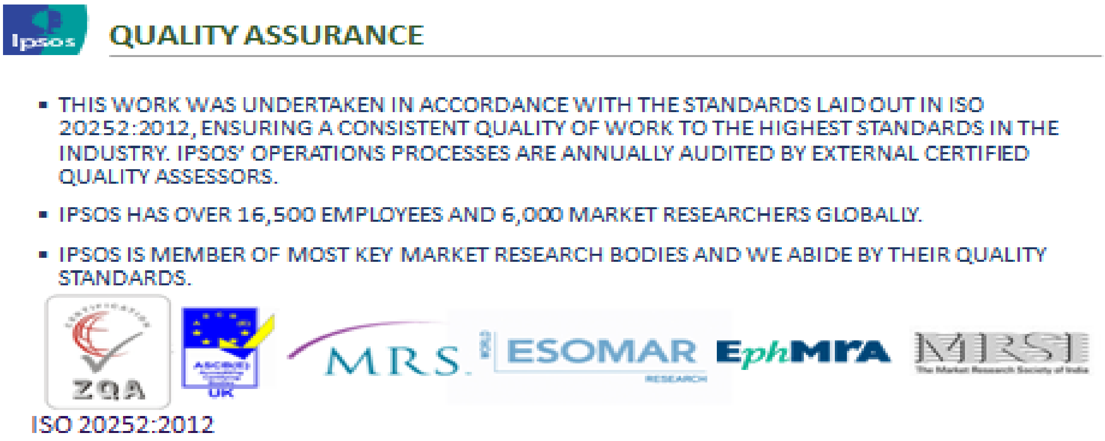
					Scale Survey Management, large scale method mix surveys, CAPI Data collection
22	Kshetrimayum Gopal Singh - Nagaland	Ph.D. in Economics	22 years	State Govts.	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
23	Dilip Mishra - NCT of Delhi	MBA	18 years	OCHS, Ministry of Agriculture & Farmers' Welfare, Monsanto	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
24	Balaram Senapati - Odisha	BA	8 years	MNREGA, BBC	Large scale survey management, fieldwork monitoring and deployment, Stakeholder management, Data Collection
25	R. Saravana - Puducherry	MBA	22 years	Private Clients	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated

					CAPI Data Collection
26	Jaspreet Singh - Punjab	BBA	13 years	IPLM Secretariat, TIPPS, Boost, Mercedes, Audi	Field Operations Monitoring, Fieldwork coordination, Large Scale Survey Management, large scale method mix surveys, CAPI Data collection
27	Surajit Podder – Sikkim	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
28	Bala Iyer – Tamil Nadu	PG diploma in Marketing and Sales Management	18 years	P&G, Monsanto, DuPont,	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
29	Chapalamadugu.Chinnamma - Telangana	B. Com	13 years	Satyam Foundation, CARE India,	fieldwork monitoring, data collection, qualitative surveys
30	Atanu Bhaduri - Tripura	B. Com	13 years	UNICEF, AHS	Large scale survey management, fieldwork monitoring and deployment,

					Stakeholder management, Data Collection
31	Bharat Negi - Uttarakhand	BA	15 years	NCBS, Google, Census study	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection
32	Surajit Podder – West Bengal	B.Sc	22 years	UNICEF, WB Govt.	Large scale survey management, fieldwork monitoring and deployment, large scale method mix surveys with a wide range of target groups, integrated CAPI Data Collection

Annexures

Annexure 1: Quality assurance certification



QUALITY ASSURANCE

- THIS WORK WAS UNDERTAKEN IN ACCORDANCE WITH THE STANDARDS LAID OUT IN ISO 20252:2012, ENSURING A CONSISTENT QUALITY OF WORK TO THE HIGHEST STANDARDS IN THE INDUSTRY. IPSOS' OPERATIONS PROCESSES ARE ANNUALLY AUDITED BY EXTERNAL CERTIFIED QUALITY ASSESSORS.
- IPSOS HAS OVER 16,500 EMPLOYEES AND 6,000 MARKET RESEARCHERS GLOBALLY.
- IPSOS IS MEMBER OF MOST KEY MARKET RESEARCH BODIES AND WE ABIDE BY THEIR QUALITY STANDARDS.

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MRSI
The Market Research Society of India

TENDER REF. NO.: K14012/101 (11)/2017-SCM-III (V)

सत्यमेव जयते

Ministry of Housing and Urban Affairs
Government of India

Assessment of Liveability Indices for 116 Cities in India

Financial Proposal

Parijat Chakraborty - IPSOS

Meghna Aggarwal (Deloitte)

Umang.

15/01

15/01/2018

Submitted by:

Joint Venture Between

Ipsos Research Private Limited (Lead),

Ipsos Public Affairs
A Specialist Unit of Ipsos Research Pvt. Ltd
801, 8th Floor, Vipul Square,
B-Block, Sushant Lok, Part-1,
Gurgaon – 122016, Haryana,

And

ATHENA INFONOMICS
Data Science for Development

Athena Infonomics India Private Limited
#15, Arcot Street, T Nagar, Chennai 600017, Tamil Nadu. India

The Economist Intelligence Unit

The Economist Group Limited
(Sub-Consultant)

15/01

15/1/2018

Umang

Meghna Aggarwal

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15/1/2018

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Meghna Aggarwal

FIN 1:
Financial Proposal Submission Form

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Meghna Aggarwal

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Fin-1: Financial Proposal Submission Form

{New Delhi, 26th December 2017}

To:
G.Vijay Kumar,
Under Secretary,
Ministry of Housing and Urban Affairs (MoHUA)
202-C, Nirman Bhawan,
Maulana Azad Road,
New Delhi.
Telephone: 011-23063217
E-mail: g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com

Dear Sir:

Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India in accordance with your Request for Proposals dated 27th November 2017 and our Technical Proposal.

Our attached Financial Proposal is for **INR 10,94,28,200 (INR Ten Crores Ninety-Four Lakhs Twenty-Eight Thousand and Two Hundred Only)**, excluding of all indirect local taxes in accordance with Clause 25.1 in the Data Sheet. The estimated amount of local indirect taxes is INR 1,96,97,076 (INR One Crore Ninety-Six Lakhs Ninety-Seven Thousand & Seventy-Six Only) which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Clause 12.1 of the Data Sheet.

No commissions or gratuities have been or are to be paid by us to agents or any third party relating to this Proposal and Contract execution
We understand you are not bound to accept any Proposal you receive.

We remain,
Yours sincerely,

Authorized Signature {In full and initials}: Parijat Chakraborty
Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs
Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist
In the capacity of: Authorised signatory for the consortia
Address: 801, 8th Floor, Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon – 122016, Haryana,
Contact information (phone and e-mail): 91-24-4692400; Parijat.chakraborty@ipsos.com

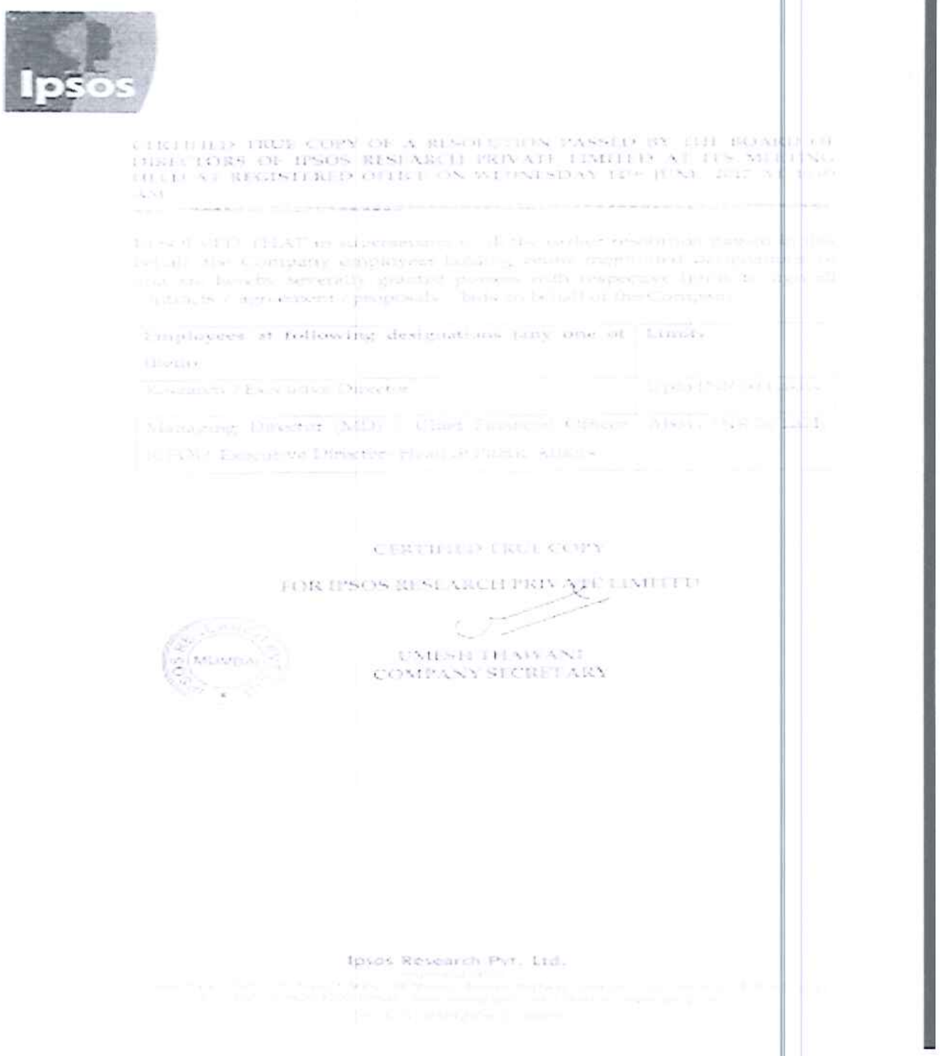
15/01

Umang - Meghna Aggarwal

Ipsos Authorisation

Power of Attorney

The proposal has been signed by Executive Director – head of public affairs authorized by board resolution shown below



CERTIFIED TRUE COPY OF A RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF IPSOS RESEARCH PRIVATE LIMITED AT ITS MEETING HELD AT REGISTERED OFFICE ON WEDNESDAY [illegible] JUNE, 2017 AT [illegible] AM

RESOLVED THAT in supersession of all the earlier resolution passed in this behalf, the Company employees holding below mentioned designations be and are hereby severally granted powers with respective limits to sign all contracts / agreements / proposals / bids on behalf of the Company.

Employees at following designations (any one of them)	Limits
Country / Executive Director	Upto INR [illegible]
Managing Director (MD) / Chief Financial Officer (CFO) / Executive Director- Head of Public Affairs	Above INR [illegible]

CERTIFIED TRUE COPY

FOR IPSOS RESEARCH PRIVATE LIMITED

UMESH THAWANI
COMPANY SECRETARY

MUMBAI

Ipsos Research Pvt. Ltd.

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Meghna Aggarwal

Consortia's Partners - Authorisation- Athena Infonomics India Pvt. Ltd.

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

ONE HUNDRED RUPEES

रु. 100

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

BM 030644

Athena Infonomics India Pvt Ltd
Chennai 17

2016

Power of Attorney

Whereas Ministry of Housing and Urban Affairs, Government of India under Capacity Building for Urban Development (CBUD) has invited applications from interested parties for Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India (the "Project").

Whereas, the members of the Joint Venture (JV) are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP) Document, and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the JV, all acts, deeds and things as may be necessary in connection with the JV's bid for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the JV, as may be necessary in connection the JV's bid for the Project

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Meghna Aggarwal

NOW THIS POWER OF ATTORNEY WITNESS THAT:

Athena Infonomics India Private Limited having its registered office at 15 Arcot Street, T. Nagar, Chennai 600017 India, do hereby designate **M/s. Ipsos Research Pvt. Ltd** having its registered office at Lotus Corporate Park, 1701, 17th Floor, F Wing, Off Western Express Highway, Goregaon East, Mumbai 400 063, India, as the Lead Member of the JV and to do on behalf of the JV, all or any of the acts, deeds or things necessary or incidental to the JV's bid for the Project, including submission of Application for Qualification/ Application, participating in conferences, responding to queries, submission of information/ documents and generally to represent the JV in all its dealings with MOHUA, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with MoHUA

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/JV

Dated this the 27th Day of December 2017

ATTESTED

ADVOCATE & NOTARY

On behalf of the Athena Infonomics India Private Limited

Authorised Signatory: Mr. Vijay Bhalaki

Designation: Director, Athena Infonomics

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Meghna Aggarwal

FORM FIN 2:

Summary of Costs

Shakti Umang Meghna Aggarwal Vasu

Fin-2 – Summary of Costs

Item		Cost (INR)
Cost of the Financial Proposal		
(1) Remuneration		**7,20,33,500**
(2) Reimbursable		**3,73,94,700**
Total Cost of the Financial Proposal		**10,94,28,200**
Indirect Local Tax Estimates – to be discussed and finalized at the negotiations if the Contract is awarded		
(i) GST		1,96,97,076
Total Estimate for Indirect Local Tax:		1,96,97,076

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13/01/2018

Meghna Aggarwal
(Deloitte)

FORM FIN 3:
Breakdown of Remuneration

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Meghna Aggarwal

Fin-3 – Breakdown of Remuneration

No.	Name	Position (as in Tech-6)	Home / Field	Person-month Remuneration Rate	Time Input in Person/Month (from TECH-6)	Local Currency- as in FIN-2 (INR)
	Key Experts					
K-1	Sujaya Rathi	Team Lead	Home	990000	5	4950000
K-2	Brinda Shastry	Urban Management Specialist	Home	770000	4.5	3465000
K-3	Parijat Chakraborty	Market Research Specialist	Home	770000	2	1540000
K-4	Nilachal Ray	Statistician	Home	660000	3.5	2310000
	Non-key Experts					
N-1	Rishee Jain	Project Advisor	Home	1320000	0.5	660000
N-2	Deepa Karthykeyan	Project Director	Home	935000	1.5	1402500
N-3	Ankit Chatri	National Coordinator	Home	660000	4.5	2970000
N-4	Praveen Ravi	Policy Research Expert	Home	770000	1	770000
N-5	Rajarshi Singh	Data Expert	Home	770000	1	770000
N-6	Ambrin	Data Scientist	Home	484000	2	968000
N-7	Bhargavi Venkatesan	Junior Statistician	Home	550000	1	550000
N-8	Kowshik Ganesh	Data Visualization Expert	Home	660000	1.25	825000
N-9	Ansu	Urban Planner	Home	440000	1.25	550000
N-10	Anusha Ghosh	Research & Support	Home	330000	4	1320000
N-11	Samvita Kumar	Research & Support	Home	330000	4	1320000
N-12	Leo Abruzzesse	Senior Economist	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-13	Roxana Slavcheva	Senior Analyst - 1	Home	1100000	2.5	2750000
			Field	1122000	0.5	561000
N-14	Stefano Scuratti	Senior Analyst - 2	Home	1100000	2.5	2750000

Meghna Aggarwal

			Field	1122000	0.5	561000
N-15	Tripti Sharma	Project Coordinator	Home	682000	4	2728000
N-16	Regional Coordinators - 5 Nos	Regional Consultants	Home	550000	10	5500000
N-17	State Coordinators - 30 Nos	State Coordinators	Home	154000	30	4620000
Data Collection						
N-18	Field Executives - 116 Nos	Field Executives	Home	33000	290	9570000
N-19	Physical Auditors - 232 Nos	Physical Auditors	Home	22000	348	7656000
N-20	Enumerators - 232 Nos	Enumerators	Home	11000	348	3828000
N-21	Field Supervisors - 116 Nos	Field Supervisors	Home	16500	232	3828000
Total Costs						**7,20,33,500**

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Sample Form

Consultant: Ipsos Research Pvt. Ltd. In Joint Venture with Athena Infonomics India Pvt. Ltd, and The Economist Intelligence Unit as the Sub-consultant
Country: India

Assignment: Selection of Consulting Firms for Assessment of Liveability Indices for 116 cities in India
Date: 27th December 2017

Consultant's Representations Regarding Costs and Charges

We hereby confirm that:
(a) the basic fees indicated in the attached table are taken from the firm's payroll records and reflect the current rates of the Experts listed which have not been raised other than within the normal annual pay increase policy as applied to all the Consultant's Experts;
(c) the away- from- home office allowances indicated below are those that the Consultant has agreed to pay for this assignment to the Experts listed;
(d) the factors listed in the attached table for social charges and overhead are based on the firm's average cost experiences for the latest three years as represented by the firm's financial statements; and
(e) said factors for overhead and social charges do not include any bonuses or other means of profit-sharing.

Ipsos Research Pvt. Ltd.
[Name of Consultant]

Signature of Authorized Representative Date

Name: Parijat Chakraborty

Title: Executive Director and Head of Public Affairs

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Meghna Aggarwal

Model Form - Consultant's Representations Regarding Costs and Charges

Personnel		1	2	3	4	5	6	7
Name	Position	Basic Remuneration Rate per Working Month/Day/Year	Social Charges	Overhead	Subtotal	Profit	Away from Home Office Allowance	Proposed Fixed Rate per Working Month/Day/Hour
Client Country								
Sujaya Rathi	Team Lead	792000		198000	990000			990000
Brinda Shastry	Urban Management Specialist	616000		154000	770000			770000
Parijat Chakraborty	Market Research Specialist	616000		154000	770000			770000
Nilachal Ray	Statistician	528000		132000	660000			660000
Rishee Jain	Project Advisor	1056000		264000	1320000			1320000
Ankit Chatri	Project Coordinator	528000		132000	660000			660000
Tripti Sharma	Project Coordinator	545600		136400	682000			682000

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FORM FIN 4:
Breakdown of Reimbursable Expenses

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Fin-4 – Breakdown of Reimbursable Expenses

No.	Type of Reimbursable Expenses	Unit	Unit Cost	Quantity	Local Currency (INR)
A	**Travel, Per-diem & Local Conveyance**				
	Travel- Airfare				
1	International Air travel - Singapore to Delhi (Team Economist)	Round Trips	35000	12	420000
2	Core team travel - inception meeting, interim meetings, National Workshop	Round trip	18000	36	648000
3	Travel by the core team for State level workshops	Round trips -2 persons per state	18000	144	2592000
	Other travels				
4	State to cities- 4 trips per city for 2 persons	II A/C- round trip	5000	928	4640000
Sub Total- Travel					**8300000**
	Per Diem				
1	Core team- TL, US, MR, Statistician	Stay and food expenses	12000	60	720000
2	Project Management Team- PC and RC	Stay and food expenses	8000	240	1920000
3	State Coordinators	Stay and food expenses	5000	450	2250000
4	Field executives	Stay and food expenses	1500	464	696000
5	Field auditors	Stay and food expenses	1200	3248	3897600
Sub Total- Per diem					**9483600**

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	Local conveyance				
1	Core team- TL, US, MR, Statistician	Cab hire	3000	40	120000
2	Project Management Team- PC and RC	Cab hire	3000	200	600000
3	State Coordinators	Local transport/ Cab	1200	600	720000
4	Field executives	Local transport/ Cab	1000	1624	1624000
5	Field auditors	Public transport	200	6496	1299200
	Sub Total- Local conveyance				**4363200**
	Total A				**22146800**
B	**Workshops & Meetings**				
	State Level Workshops				
1	Venue hire	Venue	15000	36	540000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	1620	810000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	800	1620	1296000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	5000	36	180000
5	Projector, mike system at the venue	Audio Video	3000	36	108000
6	Flex and banners for each state workshop	Flex/ Banners	1000	36	36000
	Sub Total -State level Workshops				**2970000**
	National Level Workshop				
1	Venue hire	Venue	25000	1	25000
2	Workshop kit for participants- agenda, reference material, etc.	Workshop kit	500	300	150000
3	Lunch and Refreshments for all participants+ facilitators	Lunch & Refreshments	1500	300	450000
4	Flip chart, chart papers, marker pens, badges, etc.	Stationery	15000	1	15000
5	Projector, mike system at the venue	Audio Video	15000	1	15000
6	Flex and banners for each state workshop	Flex/ Banners	5000	1	5000
	Sub Total- National Workshop				**660000**
	City Level Meetings				
	City level kick off meetings	Facilitation Costs	116	10000	**1160000**

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Meghna Aggarwal

	Total B				**4790000**
C	**Other Direct Costs**				
C1	**Training venue for internal trainings**				
	ToT of core team- 2 days		15000	2	30000
	State Coordinators training- 3 days		15000	3	45000
	Field auditors training		5000	30	150000
	Training kit for internal teams		1000	60	60000
	Other direct cost for training- Accommodation, refreshments, stationery, and other logistics		30000	3	90000
C2	**Translation of instruments**		1200	1300	1560000
C3	**Scripting of questionnaires for data collection**		45000	13	585000
C4	**Analysis and Reporting**				
	Report Editing	Editing of inception report	10000	232	2320000
	Data Portal development	Modules/ Interfaces	74800	25	1870000
	Server management				742500
	Portal Management		30000	6	180000
	IT overheads				900000
	Outreach activities		37650	36	1355400
C5	**Office expenses**				
	Office		35000	6	210000
	Communication		30000	6	180000
	Stationery		30000	6	180000
	Sub Total - Other direct costs				**10457900**
	Total Reimbursable Expenses				**3,73,94,700**

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Meghna Aggarwal

STATEMENT OF UNDERTAKING

We confirm to observe, in competing for and executing a contract, the Client country's (India) laws against fraud and corruption (including bribery).

Authorized Signature {in full and initials}: Parijat Chakraborty

Name and Title of Signatory: Parijat Chakraborty, Executive Director and Head of Public Affairs

Name of Consultant (company's name or JV's name): Ipsos Research Pvt. Ltd. In consortium with Athena Infonomics Pvt. Ltd, and The Economist

In the capacity of: Authorised signatory for the consortia

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Meghna Aggarwal

CONTRACT FOR CONSULTANT'S SERVICES

Project Name: Capacity Building for Urban Development

***Credit*- No-4997-IN**

Title -Selection of Consulting Services for: Assessment of Liveability Indices for 116 cities in India.

Contract No. ______________________________

Between

Ministry of Housing and Urban Affairs, Government of India

And

M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited and The Economist Group Limited.

Dated: 13th February 2018

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I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the "Contract") is made the ……………….. day of the month of *February, 2018*, between, on the one hand, *Ministry of Housing and Urban Affairs* (hereinafter called the "Client") and, on the other hand, M/s IPSOS Research Private Limited (Lead) in consortium with M/s Athena Infonomics India Private Limited. and The Economist Group Limited. (hereinafter called the "Consultant").

WHEREAS

(a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

(c) the Client has received a credit from the *International Development Association (IDA)]:* toward the cost of the Services and intends to apply a portion of the proceeds of credit to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the loan agreement, including prohibitions of withdrawal from the credit account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the [loan agreement or have any claim to the credit proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (including Attachment 1 "Bank Policy – Corrupt and Fraudulent Practices);
   (b) The Special Conditions of Contract;
   (c) Appendices:

   Appendix A: Terms of Reference

Appendix B: Key Experts
Appendix C: Breakdown of Contract Price

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
(b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
Ministry of Housing and Urban Affairs

Mr. G.Vijay Kumar
Under Secretary to the Government of India, Ministry of Housing and Urban Affairs

and

For and on behalf of
M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited.

Mr. Parijat Chakraborty,
Executive Director and Head of Public Affairs and Loyalty
M/s IPSOS Research Private Limited (Lead),

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Guidelines" means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

(b) "Applicable Law" means the laws and any other instruments having the force of law in the Client's country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.

(c) "Bank" means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(d) "Borrower" means the Government, Government agency or other entity that signs the financing agreement with the Bank.

(e) "Client" means the implementing agency that signs the Contract for the Services with the Selected Consultant.

(f) "Consultant" means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.

(g) "Contract" means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).

(h) "Day" means a working day unless indicated otherwise.

(i) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.

(j) "Experts" means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

(k) "Foreign Currency" means any currency other than the currency of the Client's country.

(l) "GCC" means these General Conditions of Contract.

(m) "Government" means the government of the Client's country.

(n) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.

(o) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant's proposal.

(p) "Local Currency" means the currency of the Client's country.

(q) "Non-Key Expert(s)" means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.

(r) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.

(s) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.

(t) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.

(u) "Sub-consultants" means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

(v) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

3. Law Governing Contract

3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

4. Language

4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

5. Headings

5.1. The headings shall not limit, alter or affect the meaning of this Contract.

6. Communications

6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.

6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.

7. Location

7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.

8. Authority of Member in Charge

8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.

9. Authorized Representatives

9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC.**

10. Corrupt and Fraudulent Practices

10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.

a. Commissions and Fees

10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

11. Effectiveness of Contract

11.1. This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the **SCC** have been met.

12. Termination of Contract for Failure to Become Effective

12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the **SCC**, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

13. Commencement of Services

13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC**.

14. Expiration of Contract

14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC**.

15. Entire Agreement

15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

16. Modifications or Variations

16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.

17. Force Majeure

a. Definition

17.1. For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

(b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

(a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

(d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

(f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days’ written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

(a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.

(c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.

(d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant’s notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GCC 22, (iii) the Consultant’s obligation to permit

inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

(a) payment for Services satisfactorily performed prior to the effective date of termination; and

(b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client’s legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

b. Law Applicable to Services

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

21. Conflict of Interests

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

a. Consultant Not to Benefit from Commissions, Discounts, etc.

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the **SCC**.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the **SCC**, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the **SCC,** and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

25. Accounting, Inspection and Auditing

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

26. Reporting Obligations

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

27. Proprietary Rights of the Client in Reports and Records

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

28. Equipment, Vehicles and Materials

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts

29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B.**

30. Replacement of Key Experts

30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants

31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert of Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the **SCC**, the Client shall use its best efforts to:

(a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.

(b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.

(c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.

(c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.

(d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.

(e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.

(f) Provide to the Consultant any such other assistance as may be specified in the **SCC**.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be

responsible for any damage to the project site or any property thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client’s country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A)** at the times and in the manner specified in said **Appendix A.**

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant’s advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client’s liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the **SCC.** The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of Services

pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 *Advance payment:* Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 *The Lump-Sum Installment Payments.* The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 *The Final Payment* .The final payment under this Clause shall be made only after the final report l have been submitted by the Consultant and approved as satisfactory by the Client. The

Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the **SCC**.

With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2 , interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the **SCC.**

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the **SCC**.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

"**Fraud and Corruption**

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

  (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[1];

  (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation[2];

  (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party[3];

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[1] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the selection process or contract execution. In this context "public official" includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

[2] For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

[3] For the purpose of this sub-paragraph, "parties" refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

(iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party[4];

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare mis procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures[5], including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated[6] sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

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[4] For the purpose of this sub-paragraph, "party" refers to a participant in the selection process or contract execution.

[5] A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

[6] A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant's proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	**The Contract shall be construed in accordance with the law of *Republic of India*.**
4.1	**The language is: English**
6.1 and 6.2	**The addresses are:** **Client : Ministry of Housing and Urban Affairs (MoHUA)** Address: 202-C Nirman Bhawan, Maulana Azad Road, New Delhi. **Attention: Mr. G.Vijay Kumar** Under Secretary,Ministry of Housing and Urban Affairs **Facsimili:** Telephone: 011-23063217 **(E-mail):** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **Consultant : M/s IPSOS Research Private Limited(Lead),** Address: 801,8th Floor,Vipul Square, B-Block, Sushant Lok, Part-1, Gurgaon-122003, Haryana, India **Attention: Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty **Facsimile** :+91 9810496838, 0124 4692400, Fax 0124 4692401 **E-mail :** parijat.chakraborty@ipsos.com
8.1	M/s IPSOS Research Private Limited (Lead) in consortium M/s Athena Infonomics India Private Limited. and The Economist Group Limited. **The Lead Member on behalf of the consortium is** M/s IPSOS Research Pvt. Ltd.
9.1	**The Authorized Representatives are:** **For the Client:** *Mr. G.Vijay Kumar* *Under Secretary,* ***Ministry of Housing and Urban Affairs*** g.vijaykumar@nic.in and g.vijaykumar.moud@gmail.com **For the Consultant:** **Mr. Parijat Chakraborty**, Executive Director and Head of Public Affairs and Loyalty Email- parijat.chakraborty@ipsos.com
11.1	No additional provisions
12.1	**Termination of Contract for Failure to Become Effective:** **The time period shall be One Month**

13.1	**Commencement of Services:** **The number of days shall be 10 days** Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	**Expiration of Contract:** **The time period shall be 20 Weeks**
21 b.	**The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3** Yes

23.1	No additional provisions
24.1	**The insurance coverage against the risks shall be as follows:** **(a) Professional liability shall be equivalent to the total amount of the Contract;** (b) employer's liability and workers' compensation insurance in respect of the experts in accordance with the relevant provisions of the applicable law in the Client's country, as well as, with respect to such Experts, any such life, health, accident, travel or other insurance as may be appropriate; and (c) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
27.1	**All data collected shall be property of the Ministry (client) and Consultant will not use this data without written permission from the Ministry (Client).**
27.2	**The Consultant shall not use any documents and software for purposes unrelated to this Contract without the prior written approval of the Client**.
32.1 **(a) through (e)**	**As defined in clause 7.8 of the Term of Reference**
38.1	**The Contract price is:** INR 10,94,28,200/- *[INR Ten Crores Ninety Four Lakhs Twenty Eight Thousand and Two Hundred only]* ***exclusive*** **of local indirect taxes.** **Any indirect local taxes chargeable in respect of this Contract for the Services provided by the Consultant shall be "reimbursed" by the Client to the Consultant.** **The amount of such taxes is INR 1,96,97,076 (GST @ 18%)on the basis of the estimates provided by the Consultant in Form FIN-2 of the Consultant's Financial Proposal.**
39.1 and 39.2	**Client shall reimburse the Consultant, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant**.

41.2	**The payment schedule:** **For the Local Currency INR 10,94,28,200 exclusive of indirect taxes.** Payment of remuneration will be as follows: ➢ 1st payment: Inception Report: Twenty Percent (20%) will be paid on acceptance/approval of the inception report. ➢ Draft City Assessment Report: Fifty Percent (50%) will be paid on acceptance approval of Draft Final Report. ➢ Final City Assessment Report: Thirty percent (30%) will be paid on acceptance/approval of Final Report. Note: The Consulting firm will submit the invoice in the name of Project Director (CBUD), Ministry of housing and Urban Affairs, Nirman Bhawan, Maulana Azad Road, New Delhi-110011.
41.2.4	**The accounts are:** for local currency: Beneficiary Name-IPSOS Research Private Limited. Bank Name-HSBC Account No.-030-777080-001 IFSC Code-HSBC0400002
42.1	**The interest rate is**: **Equivalent to Inflation at the relevant time.** **Foreign currency: LIBOR+2%**
45.1	**Disputes shall be settled by arbitration in accordance with the following provisions:** 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to *Council of Arbitrators*, *New Delhi* for a list of not fewer than five (5) nominees and, on receipt of such list, the Parties shall alternately strike names therefrom, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, *Council of Arbitrator*, *New Delhi* shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each

appoint one (1) arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two (2) arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by *Secretary, Council of Arbitration, New Delhi*

(c) If, in a dispute subject to paragraph (b) above, one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the *Secretary, Indian Council of Arbitration, New Delhi* to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.

Note: All disputes between domestic consultant the proceeding shall be in accordance with Indian Arbitration Act, 1996.

2. Rules of Procedure. Except as otherwise stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. For any dispute between a domestic consultant, the proceedings shall be in accordance with Indian Arbitration Act, 1996.

3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his/her function, a substitute shall be appointed in the same manner as the original arbitrator.

4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country *[If the Consultant consists of more than one entity, add:* or of the home country of any of their members or Parties*]* or of the Government's country. For the purposes of this Clause, "home country" means any of:

(a) the country of incorporation of the Consultant *[If the Consultant consists of more than one entity, add:* or of any of their members or Parties*]*; or

(b) the country in which the Consultant's [or any of their members' or Parties'] principal place of business is located; or

	(c) the country of nationality of a majority of the Consultant's [or of any members' or Parties'] shareholders; or (d) the country of nationality of the Sub-consultants concerned, where the dispute involves a subcontract.
	5. Miscellaneous. In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in a neutral venue or mutually agreed venue. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

IV. Appendices

APPENDIX A– TERMS OF REFERENCE

7.1 Background

i. The Government of India along with State and Local Governments is implementing several flagship Urban Missions for improving various aspects of urban development in Indian cities. An underlying goal of these initiatives is to make Indian cities more 'Liveable'. This will mean not only providing good quality core infrastructure and services, but also developing cities with ample opportunities for work, entertainment and cultural activities, improved social infrastructure and economic opportunity;

ii. In order to do this through a structured approach it is important to create a common minimum framework, which cities can use to assess their 'Liveability' and measure their progress over time. In this context, the Ministry of Housing and Urban Affairs has developed a set of 'Liveability Standards in Cities'. These will act as a guiding framework for cities to chart their pathway towards liveability and result in a systematic improvement in the quality of life of citizens in Indian cities. The draft 'Liveability Standards in Cities' as at http://smartcities.gov.in/upload/uploadfiles/files/LiveabilityStandards.pdf ;

iii. A total of 79 different Liveability Standards are proposed across 15 different categories. The Ministry proposes to conduct an 'Annual Assessment of Liveability in Cities' across the various standards and develop a 'City Liveability Index' – an annual index of the liveability standards in Indian cities. This is an ambitious national project requiring yearly compilation of a large number of datasets across the various Liveability Standards;

iv. A total of 116 cities will be covered in Year 1 (list of cities for Year 1 is provided at Annexure A), and the coverage of cities may be extended in subsequent years. The following classification of cities will be used for the purpose of the study

Classification*		**Population range**
1	Small Towns	Less than 50,000 population
2	Medium Towns	Population ≥ 50,000 < 5 lakh
3	Large Towns	Population ≥ 5 lakh < 1 million
4	Metropolitan Cities	Population ≥ 1 million < 5 million

5	Megapolis	Population ≥ 5 million

** Based on the Classification given in the URDPFI guidelines, 2014*

V. Given the magnitude of data collection and field surveys required, the MoHUA wishes to engage the services of a reputed national/international agency/institution for **Conducting a study and field survey of Liveability Standards** (the **'Assignment'**) across all cities included in the study. This will cover all relevant data required by the MoHUA for computing the 79 Liveability Standards. The data generated from the assignment will be used by the MoHUA for calculating the City Liveability Index of cities on an annual basis;

VI. The contract will be valid for activities in Year 1 (as defined in Clause 7.5) only.

7.2 *Objective of the Assignment*

i. Compile reliable and high quality data for all cities included in the study, as required by the MoHUA for the computation of Liveability Indexes and as prescribed in the 'Liveability Standards in Cities' document;

ii. Develop a robust electronic database of datasets that can be used to assess the progress of cities on an annual basis.

7.3 *Description of Tasks*

The Tasks to be performed and key activities under the assignment will include:

Initiation Activities

i. Conduct State-level workshops (1-day each) on behalf of MoHUA Cost for such workshops must be included in the proposal. The workshops shall achieve the following:

  a. Familiarise States and City governments regarding the overall programme, process that will be followed for data collection, and likely timelines;

  b. Provide State and City governments with a detailed list of data points needed, likely areas of support and information on how the cities should prepare for the surveys;

  c. Help in preparing a preliminary time-line for city meetings and field visits based on preferences indicated by states and cities;

ii. Conduct a Reconnaissance Study of all cities included in the project (as per Annexure A). The study shall inter-alia include:

  a. City-level kick-off meetings with key officials from City governments, Smart City SPVs, various departments and utilities, DISCOMs etc. for assessing data availability and sources, preferred timelines, key nodal officers etc.;
  b. Study of city demography, socio-economic stratification and geography that has a bearing on sample size and distribution;
  c. Study of existing reports, studies, alternative data sources etc.

iii. Prepare and submit to the MoHUA, an Inception Report (separate for all cities included in the study), including inter-alia the following:
  a. Detailed Plan of Action including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.;
  b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments;
  c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;

iv. Convey the finalized schedule and Plan of Action to cities allowing them to mobilise support for the activities. A Minimum of 15 days of preparation period must be given to cities before data collection and surveys;

Data Collection and Field Surveys

v. Mobilize Field Teams (with adequate and qualified manpower as indicated in Clause 7.6) for obtaining data required for all 79 Standards;
vi. Conduct field surveys for a statistically relevant sample as per nationally/internationally accepted standards for sampling size and distribution. The method for determining sample size and distribution should be as proposed in the bid during RfP stage and finalized in consultation with the MoHUA as part of the Inception Report;
vii. Maintain and submit all raw data and data collection forms to MoHUA without any editing and/or masking (including particulars such as names of respondents, exact address and contact details, date and time of survey, and GPS coordinates in case of samples taken for pollution etc.);
viii. Conduct analysis of the raw data through the Analytics Team ((with adequate and qualified manpower as indicated in Clause 7.6) and prepare aggregate data sets for all 79 standards for each of the cities adopting the methodology as prescribed in http://smartcities.gov.in/upload/uploadfiles/files/MethodologicalReportFinal.pdf

ix. Submit Draft City Assessment Report to the MoHUA (separate for each city), including inter-alia the following:
  a. Database of aggregate data in the format as mutually agreed
  b. All raw data and data sheets;
  c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other relevant documentation;

x. Submit Draft City Assessment Report to respective city and state governments for inviting comments and suggestions (if any). A period of 15 days shall be given to cities to submit their responses, after which the data will be deemed to be accepted by the city,

xi. Submit Final City Assessment Report to the MoHUA after including any recommendations of the MoHUA and after suitably incorporating any valid feedback received from cities/states with the approval of the MoHUA;

xii. Develop and maintain a digital database of all data sets collected every year for each city. The format should be finalized in consultation with the MoHUA and enable examination of raw data as well as aggregated numbers on a year-on-year basis;

Other support activities

xiii. Provide all necessary support to the NIUA or other reputed third-party agency(ies) appointed by the MoHUA for undertaking verification of the data submitted by the Consultant;

xiv. Provide any technical support as required by the MoHUA or its assigned team during the development of scoring sheets and city indexes for the various Standards;

xv. Conduct a National workshop (1-day) on behalf of MoHUA for disseminating the findings of the Ministry. Costs for the workshop must be included in the proposal.

7.4 *Results to be achieved*

The Assignment will result in the creation of a robust database (updated annually) of critical datasets across 79 different Liveability parameters in Indian Cities. This will form the basis for the Ministry to compute an annual City Liveability Index of cities. This can also act as a repository of critical data for encouraging research on cities in India.

7.5 *Timelines and Deliverables for Year 1**

Report	Time line	Documents	Deliverables and Contents
Inception Report	8 weeks from start date as per contract	Hard copies, and Electronic version	Separate for each city, including: a. Detailed Plan of Action, Minutes of state level workshops, , city meetings including likely sources of data, proposed field surveys, sample size and distribution, nodal officers etc.; b. Proposed timelines for city field visits as discussed and finalized with MoHUA and State/City governments; c. Specific survey and raw data collection formats for the 79 standards as finalized in discussion with MoHUA;
Draft City Assessment Report	12 weeks from start date as per contract	Hard Copies, and Electronic version	Separate for each city, including: a. Database of aggregate data in the format as mutually agreed. b. All raw data and data sheets; c. Sources of data, assumptions (if any), record of discussions with key stakeholders, minutes of city kickoff meeting and other
Final City Assessment Report	20 weeks from start date as per contract	Hard Copies, and Electronic version	Separate report for each city. The Reports should include all recommendations of the MoHUA on the Draft Reports. The Report should also incorporate any valid suggestions/feedback received from cities/states with the approval of the MoHUA.

***** Timelines for subsequent years will be as decided by MoHUA

7.6 *Team Composition and Qualification Requirement for key Experts*

a. **Team (full-time):** Given that the assignment requires a deep understanding of the urban sector, as well as of economics, statistics and field studies, the Team Leader and the Core Team of experts must have suitable skills for undertaking the assignment and successfully completing the tasks enumerated. The Team Leader should bring to the table a strong mix of academic accomplishments, urban sector experience and experience of leading similar national/international assignments.

b. **Analytics Team (full-time):** should be manned with experts capable of analysing large data sets, checking and correcting for errors and inconsistencies, development and management of digital databases and preparation of reports. The team should therefore include adequate number of IT specialist(s), database management/ MIS expert(s), urban economics/planning specialists for **Core** data analysis and verification.

c. **Field Teams per city:** should be manned with adequate number of persons (depending upon city size, stratification and geography) capable of conducting field surveys and extracting credible secondary data from various city/state departments and utilities. Each team should therefore include adequate number of qualified urban professionals for extracting secondary data from various sources, persons with market/field research experience and data processors/ data entry operators. Each team should be led by a suitably experienced Urban Specialist (Urban Planner/ Urban Economist) with at least 10 years of experience in the urban sector and at least 5 years of experience in secondary and primary data collection and analysis. The Core Team proposed should be able to demonstrate the qualifications and experience as prescribed in table below:

7.7 *Core Team (CV to be evaluated)*

Position	**Minimum Qualifications & skills**	**Minimum Experience**
Team Leader	Qualification - Bachelor's Degree in Engineering/Architecture/Planning/Economics/Management with post-graduate degree in Planning/Management or equivalent from a recognized University In-depth knowledge of all aspects of urban sector, including governance-related, socio-economic, environmental and engineering aspects Proven academic credibility in terms of published papers, articles etc. Experience of leading national level urban research assignments Experience of leading	At least 20 years of which at least last 10 years must have been for the Urban Sector
Urban Management Specialist/ Planning Expert	Bachelor's Degree in Engineering/Architecture/Planning with post-graduate degree in Management or equivalent from a recognized University Good knowledge of urban sector Experience of playing a core role in similar national/international data collection and ranking assignments	At least 15 years of experience in the Urban Sector
Market Research Specialist	Master's Degree in Management from a recognized University Good knowledge of mobilization and organization for market research Experience of leading national/international field research assignments	At least 15 years of which at least last 7 years must have been in the field of Market Research
Statistician	Master's Degree in Statistics from a recognized University Good knowledge of urban data sources and urban data analysis Experience of statistically designing and managing sample surveys	At least 15 years of which at least last 5 years must have been for the Urban Sector

7.8 *TA management and counterpart staff*

The assignment will be contracted by the MoHUA (erstwhile MOUD) for carrying out the assignment.

Items to be provided by the MoHUA

a. The MoHUA will set up a Coordinating Team at the national level for providing guidance and support to the Core Team for executing the assignment;
b. Provide support for organizing various State and city level workshops and meetings;.
c. Provide feedback from time to time for finalizing deliverables;
d. Set up a monitoring system for timely validation of data and finalization of aggregate data.

Items to be provided by the agency

In addition to the results and deliverables listed above, the Consultant will:

a. Provide for all manpower, materials and equipment necessary for carrying out the assignment;
b. Provide all resources for report production and necessary translations;
c. Provide all Computers and software required by the teams for carrying out the tasks;
d. Arrange for all transportation and travelling required for the teams including Investigations.

Annexure A: List of Cities

Sl. No.	Name of State	Name of City	Population
1	Andaman Nicobar	Portblair	1,40,572
2	Andhra Pradesh	Kakinada	3,12,538
3	Andhra Pradesh	Visakhapatnam	17,28,128
4	Andhra Pradesh	Tirupati	2,87,482
5	Andhra Pradesh	Amaravati	1,03,000
6	Andhra Pradesh	Vijayawada	10,34,358
7	Arunachal Pradesh	Itanagar	59,490
8	Arunachal Pradesh	Pasighat	24,656
9	Assam	Guwahati	9,57,352
10	Bihar	Bhagalpur	4,10,210
11	Bihar	Muzaffarpur	3,54,462
12	Bihar	Biharsharif	2,97,268
13	Bihar	Patna	16,84,222
14	Chandigarh	Chandigarh	9,61,587
15	Chattishgarh	Bilaspur	3,31,030
16	Chhattisgarh	Raipur	10,47,389
17	Delhi	3 Municipal Corporation	1,61,11,096
18	Dadar & Nagar Haveli	Silvassa	98,265
19	Daman & Diu	Diu	23,991
20	Goa	Panaji	40,017
21	Gujarat	Ahmadabad	55,77,940
22	Gujarat	Surat	44,67,797
23	Gujarat	Vadodara	16,70,806
24	Gujarat	Gandhinagar	2,02,776
25	Gujarat	Dahod	96,000
26	Gujarat	Rajkot	12,86,678
27	Haryana	Karnal	2,86,827
28	Haryana	Faridabad	14,14,050
29	Himachal Pradesh	Dharamshala	22,580
30	Himachal Pradesh	Shimla	1,69,578
31	Jammu & Kashmir	Jammu	5,02,197
32	Jammu & Kashmir	Srinagar	11,80,570

Sl. No.	Name of State	Name of City	Population
33	Jharkhand	Ranchi	10,73,427
34	Jharkhand	Dhanbad	11,62,472
35	Karnataka	Davanagere	4,34,971
36	Karnataka	Belagavi	4,88,157
37	Karnataka	Hubbali-Dharwad	9,43,788
38	Karnataka	Mangaluru	4,88,968
39	Karnataka	Shivamogga	3,22,505
40	Karnataka	Tumakuru	3,02,143
41	Karnataka	Bangalore	84,43,675
42	Kerala	Kochi	6,02,046
43	Kerala	Thiruvananthapuram	7,43,691
44	Lakshadweep	Kavaratti	11,120
45	Madhya Pradesh	Indore	19,64,086
46	Madhya Pradesh	Bhopal	17,98,218
47	Madhya Pradesh	Ujjain	5,15,215
48	Madhya Pradesh	Satna	2,80,222
49	Madhya Pradesh	Sagar	2,73,296
50	Madhya Pradesh	Jabalpur	10,55,525
51	Madhya Pradesh	Gwalior	10,69,276
52	Maharashtra	Solapur	9,51,558
53	Maharashtra	Pune	50,57,709
54	Maharashtra	Aurangabad	11,75,116
55	Maharashtra	Kalyan-Dombivali	12,47,327
56	Maharashtra	Nagpur	24,05,665
57	Maharashtra	Amravati	6,47,057
58	Maharashtra	Nashik	14,86,053
59	Maharashtra	Thane	18,41,488
60	Maharashtra	Greater Mumbai	1,24,42,373
61	Maharashtra	Navi Mumbai	11,20,547
62	Maharashtra	Pimpri Chinchwad	17,27,692
63	Maharashtra	Vasai-Virar City	12,22,390
64	Manipur	Imphal	2,68,243
65	Meghalaya	Shillong	1,43,229
66	Mizoram	Aizawl	2,93,416
67	Nagaland	Kohima	99,039
68	NCT of Delhi	NDMC	2,57,803
69	Odisha	Bhubaneswar	8,40,834
70	Odisha	Rourkela	3,20,000

Sl. No.	Name of State	Name of City	Population
71	Puducherry	Puducherry	2,44,377
72	Punjab	Jalandhar	8,62,886
73	Punjab	Ludhiana	16,18,879
74	Punjab	Amritsar	11,32,383
75	Rajasthan	Udaipur	4,51,100
76	Rajasthan	Ajmer	5,42,321
77	Rajasthan	Jaipur	30,46,163
78	Rajasthan	Kota	10,01,694
79	Rajasthan	Jodhpur	10,33,756
80	Sikkim	Namchi	12,194
81	Sikkim	Gangtok	1,00,286
82	Tamil Nadu	Salem	8,29,267
83	Tamil Nadu	Thanjavur	2,22,943
84	Tamil Nadu	Vellore	1,85,803
85	Tamil Nadu	Dindigul	2,07,327
86	Tamil Nadu	Erode	1,57,101
87	Tamil Nadu	Tiruchirappalli	8,47,387
88	Tamil Nadu	Thoothukkudi	2,37,830
89	Tamil Nadu	Tiruppur	4,44,352
90	Tamil Nadu	Tirunelveli	4,73,637
91	Tamil Nadu	Chennai	46,46,732
92	Tamil Nadu	Coimbatore	10,50,721
93	Tamil Nadu	Madurai	10,17,865
94	Telengana	Warangal	8,19,406
95	Telengana	Hyderabad	67,31,790
96	Telangana	Karim Nagar	2,89,821
97	Tripura	Agartala	4,00,004
98	Uttar Pradesh	Lucknow	28,17,105
99	Uttar Pradesh	Agra	15,85,704
100	Uttar Pradesh	Moradabad	8,87,871
101	Uttar Pradesh	Aligarh	8,74,408
102	Uttar Pradesh	Rampur	3,25,313
103	Uttar Pradesh	Rae Bareli	1,91,316
104	Uttar Pradesh	Bareilly	9,03,668
105	Uttar Pradesh	Jhansi	5,05,693
106	Uttar Pradesh	Saharanpur	7,05,478
107	Uttar Pradesh	Kanpur	27,65,348
108	Uttar Pradesh	Varanasi	11,98,491

Sl. No.	Name of State	Name of City	Population
109	Uttar Pradesh	Ghaziabad	16,48,643
110	Uttar Pradesh	Meerut	13,05,429
111	Uttar Pradesh	Allahabad	11,12,544
112	Uttarakhand	Dehradun	5,69,578
113	West Bengal	New Town Kolkata	36,541
114	West Bengal	Durgapur	5,66,517
115	West Bengal	Kolkata	44,96,694
116	West Bengal	Howrah	10,77,075

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F.No.K.14012/101(11)/2017-SCM-III(V)/CBUD
Government of India
Ministry of Housing and Urban Affairs
CBUD Division

Nirman Bhavan, New Delhi
Dated January 2018

To
Shri. Parijat Chakraborty,
Executive Director and Head of Public Affairs,
M/s IPSOS Research Private Limited, 801, 8th Floor, Vipul Square, B-Block,
Sushant Lok, Part-1, Gurgaon-122016, Haryana.

Subject: Selection of M/s IPSOS Research Pvt. Ltd (lead) in consortium with M/s Athena Infonomics Pvt. Ltd, and M/s The Economist Group Limited' for Selection of Consulting firm for the assignment of Liveability Indices for 116 Cities in India- Issue of Letter of Intent Reg.

Sir,

This has a reference to your applications for the Request for Expression of Interest (REOI) issued by the Ministry on 8th September 2017 and the Request for Proposal (RFP) issued by the Ministry on 27th November 2017 regarding "**Selection of Consulting firm for the assignment of Liveability Indicies for 116 Cities in India**" under Capacity Building for Urban Development project. On the basis of combined Technical and Financial evaluation of the bids, in consultation with the World Bank, this Ministry issues a **Letter of Intent** to the consortium led by M/s IPSOS to carry out the project activities mentioned in the RFP document. The total cost of the Financial Proposal is Rs. 10,94,28,200 (without applicable taxes).

2. You are requested to contact the concerned CBUD officials of the Ministry for technical negotiations on the project and further signing of the contract immediately.

3. You are also requested to send your acceptance to this Letter of Intent.

(Sanjay Kumar)

Joint Secretary to Government of India
Tel-
23061665

No. K.14012/101(11)/2017-SCM.III(V)-Part(2)

Completion Certificate

This is to certify that Ipsos Research Private Limited (Lead member) in consortium with M/s Athena Infonomics India Private Limited and The Economist Group was awarded the contract for **'Assessment of Liveability Indices for 116 cities in India'** on 21.02.2018 and the effective date of commencement of services was 08.02.2018. The contract was awarded for a total amount of Rs. 10,94,28,200/- plus taxes. The time period of the contract was 20 weeks (from 8th February 2018 to 28th June 2018).

It is certified that the services as envisaged in the scope of the contract has been completed in accordance with the scope and terms of reference of the contract.

Reema Jain

Deputy Director (AMRUT)

Date: December, 2018